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Noise Feasibility Study
Proposed Residential Development
1140 Main Street
Cambridge, ON

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VERSION CONTROL

Proposed Residential Development, 1140 Main Street, Cambridge, Ontario

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1.0	Oct 21, 2024	Original Environmental Noise Feasibility Study and Land Use Compatibility Study for planning and approvals process.	H. Cai

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1 Introduction and Summary

HGC Engineering was retained by Madison Main (Cambridge) Ltd. to conduct a noise feasibility study for a proposed residential development located at 1140 Main Street in Cambridge, Ontario. The residential development will consist of various townhouse blocks, a stormwater pond, open space, and associated roadways. The study is required as part of the planning and approvals process.

The primary source of transportation noise is road traffic on Main Street. Forecasted road traffic data was obtained from the Region of Waterloo (RMOW), and was used to predict future traffic sound levels at the proposed building façades and outdoor living areas. The predicted sound levels were compared to the guidelines of the RMOW and the Ministry of Environment, Conservation and Parks (MECP) to develop noise control recommendations.

The results of the study indicate that the proposed development is feasible with the noise control measures described in this report. To address the impact of transportation noise, forced air ventilation systems with ductwork sized for the future installation of central air conditioning by the occupant are required for the townhouses adjacent to Main Street. The installation of central air conditioning will satisfy and exceed ventilation requirements. Noise warning clauses are also required for those units to inform future occupants of the traffic noise impacts.

An analysis was also conducted to determine the potential impact of noise from the industrial and commercial facilities, including metal recycling, landscaping, paving, and waste management facilities, at the proposed development. A computer model of the area was created, using acoustic modeling software, to predict the sound levels at the future residences. The results indicate that the sound emissions from the adjacent facilities have the potential to exceed the MECP guideline limits at the proposed development. Mitigation measures to achieve Class 1 sound level limits of the MECP are considered to be onerous in the context of the proposed development due to the proximity to nearby facilities.

The mitigation requirements would be significantly reduced if the Municipality is requested to designate the impacted subject lands as Class 4 areas. With a Class 4 designation, property line barriers, upgraded building construction recommendations, a Class 4 warning clause, and the

inclusion of central air conditioning, sound emissions of the nearby facilities, and architectural design (such that the west top-storey façades of the four townhouse blocks adjacent to the metal recycling facility have no windows to noise sensitive spaces) can comply with the applicable limits. A development to the south of the metal recycling facility has received a Class 4 designation.

A detailed noise study shall be conducted to refine the noise mitigation measures based on the determined Class of the acoustic environment, detailed floor plans and building elevations.

2 Site Description and Noise Sources

Figure 1 is a key plan indicating the location of the proposed site. The site is located north of Main Street in Cambridge, Ontario. Figure 2 shows the concept plan by MHBC, dated September 4, 2024. The proposed development will consist of various townhouse blocks, a stormwater pond, open space, and associated roadways.

HGC Engineering personnel visited the site on March 15 and March 18 to make observations of the acoustical environment, to conduct acoustical measurements, and to deploy/retrieve a sound monitor at the northwest portion of the subject site. During the site visit, it was noted that the primary source of traffic noise impacting the site was road traffic on Main Street. The primary source of stationary noise are sounds from the metal recycling facility to the west (Gerdau Metal Recycling).

The site is currently vacant. The lands surrounding the site are mainly industrial. To the immediate west of the site is Gerdau Metal Recycling and vacant lands to the southwest that are proposed for future residential development (345 Franklin Boulevard and 840 & 940 Main Street East). To the south of the site is a landscaping business (Laing's Landscaping), which is labelled for potential future residential development, and other existing residential buildings south of Main Street. To the southeast of the site is a paving business (5 Star Paving). To the east and north of the site are currently vacant lands owned by Cambridge Waste Management.

Sound emissions from the metal recycling facility are audible at the subject site, and sounds from the Cambridge Waste Management facilities are faintly audible at the east side of the subject site. While sounds from the landscaping and paving facilities were not audible at the time of the site visit, prior experience with similar facilities indicates that they can emit significant sound emissions at a busy

hour of operation. A discussion of land use compatibility regarding noise and setback distances is included in Section 7, and a detailed assessment of sound emissions from these facilities are included in Section 8.

In any case, it is recommended that a noise warning clause to identify that such industrial and commercial uses may be audible at times be included in the property and tenancy agreements as included in Section 6.

3 Noise Level Criteria

3.1 Road Traffic Noise

Guidelines for acceptable levels of road traffic noise impacting residential developments are given in the MECP publication NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", release date October 21, 2013, and are listed in Table I below.

The values in Table I are energy equivalent (average) sound levels [L_{EQ}] in units of A-weighted decibels [dBA].

Table I: MECP Road Traffic Noise Criteria (dBA)

Area	Daytime L_{EQ} (16 hour) Road	Nighttime L_{EQ}(8 hour) Road
Outdoor Living Area	55 dBA	--
Inside Living/Dining Rooms	45 dBA	45 dBA
Inside Bedrooms	45 dBA	40 dBA

Daytime refers to the period between 07:00 and 23:00. Nighttime refers to the time period between 23:00 and 07:00. The term "Outdoor Living Area" (OLA) is used in reference to an outdoor patio, a backyard, a terrace, or other area where passive recreation is expected to occur. Small balconies are not considered OLAs for the purposes of assessment. Terraces greater than 4 m in depth (measured perpendicular to the building façade) are considered to be OLAs.

The guidelines in the MECP publication allow the daytime sound levels in an Outdoor Living Area to be exceeded by up to 5 dBA, without mitigation, if warning clauses are placed in the purchase and

rental agreements to the property. Where OLA sound levels exceed 60 dBA, physical mitigation is required to reduce the OLA sound level to below 60 dBA and as close to 55 dBA as technically, economically, and administratively practical.

A central air conditioning system as an alternative means of ventilation to open windows is required for dwellings where nighttime sound levels outside bedroom or living/dining room windows exceed 60 dBA or daytime sound levels exceed 65 dBA. If the sound level in the plane of a bedroom or living/dining room window is greater than 55 dBA and less than or equal to 65 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion.

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

3.2 Criteria Governing Stationary (Industrial) Noise Sources

An industrial or commercial facility is classified in MECP guidelines as a stationary source of sound (as opposed to sources such as traffic or construction, for example) for noise assessment purposes. The proposed development is located in an urban acoustical environment can be classified as Class I according to MECP guidelines, which can be characterized by the background sound level being dominated by traffic and human activity.

The MECP guideline categorizes sounds from industry into two different types: non-impulsive and impulsive. Non-impulsive sounds are steady or slowly varying in nature, such as those produced by vehicles, motors, and most other mechanical equipment. Impulse sounds are instantaneous or short-duration pressure pulses, such as those generated by metal-on-metal impacts. These two sorts of sounds are assessed separately under MECP guidelines.

Commercial activities such as the occasional movement of customer vehicles, occasional deliveries, and garbage collection are not of themselves considered to be significant noise sources in the MECP guidelines. Accordingly, these sources have not been considered in this study. Noise from safety equipment (e.g. back-up beepers) are also exempt from consideration.

The MECP guidelines stipulate that the sound level impact during a "predicable worst-case hour" be considered. This is defined to be an hour when a typically busy "planned and predictable mode of operation" occurs at the subject facility, coincident with a period of minimal background sound. Compliance with MECP criteria generally results in acceptable levels of sound at residential receptors although there may still be residual audibility during periods of low background sound.

3.2.1 Stationary Noise Sound Level Limits

The façade of a residence, or any associated usable outdoor area, is considered a sensitive point of reception. NPC-300 stipulates that the exclusionary minimum sound level limit for a stationary noise source in an urban Class 1 area is 50 dBA during daytime (07:00 to 19:00) and evening (19:00 to 23:00) hours, and 45 dBA during nighttime hours (23:00 to 07:00) at the plane of window. For outdoor points of reception, the exclusionary minimum sound levels are 50 dBA during daytime and evening hours (07:00 to 23:00).

If the background sound levels due to road traffic exceed the exclusionary minimum limits, then the background sound level becomes the criterion. The background sound level is defined as the sound level that is present when the stationary source under consideration is not operating, and may include traffic noise and natural sounds. To ensure a conservative analysis, the exclusionary minimum criteria at all receptors will be adopted.

4 Traffic Noise Assessment

4.1 Road Traffic Data

Traffic data for Main Street was obtained from the RMOW in the form of forecasted Average Annual Daily Traffic (AADT) traffic values, and is provided in Appendix A. A forecasted volume of 8 900 vehicles per day at a posted speed limit of 60 km/h was applied for the analysis. A commercial vehicle percentage of 2 % for medium trucks and 4 % for heavy trucks was applied. A day/night split of 90 % / 10 % was used.

Table II summarizes the traffic volume data used in this study.

Table II: Ultimate Road Traffic Data

Road Name		Cars	Medium Trucks	Heavy Trucks	Total
Main Street	Daytime	7 529	160	320	8 010
	Nighttime	837	18	36	890
	Total	**8 366**	**178**	**356**	**8 900**

4.2 Road Traffic Noise Predictions

To assess the levels of road traffic noise which will impact the study area in the future, sound level predictions were made using STAMSON version 5.04, a computer algorithm developed by the MECP. Sample STAMSON output is included in Appendix B. For the purpose of this assessment, the townhouse blocks are assumed to be 3-storey in height.

Predictions of the traffic sound levels were chosen around the proposed residential development to obtain an appropriate representation of future sound levels. Sound levels were predicted at the plane of the top storey bedroom and/or living/dining room windows during daytime and nighttime hours to investigate ventilation and façade construction requirements. Sound levels were also predicted in possible OLA's to investigate the need for noise barriers. Figure 2 shows the concept plan with prediction locations. The results of these predictions are summarized in Table III.

Table III: Predicted Road Traffic Sound Levels [dBA], Without Mitigation

Prediction Location	Description	Daytime – in the OLA $L_{EQ\text{-}16\ hr}$	Daytime – at the Façade $L_{EQ\text{-}16\ hr}$	Nighttime – at the Facade $L_{EQ\text{-}8\ hr}$
[A]	Townhouses fronting Main St	--	61	55
[B]	Townhouses adjacent to Stormwater Pond and facing Main St	--	<55	<50
[C]	2nd row townhouse block flanking Main St	--	<55	<50
[D]	Rear yard flanking Main Street	60	--	--

5 Traffic Noise Recommendations

The sound level predictions indicate that the future traffic sound levels will exceed MECP guidelines at the proposed development. The following discussion outlines the recommendations for acoustic

barrier requirements, ventilation requirements, upgraded building façade construction, and warning clauses to achieve the noise criteria stated in Table I.

5.1 Outdoor Living Areas

The predicted traffic sound level at the closest rear yard to the roadway (designated by Prediction Location [D]) will be up to 60 dBA, which is within the 5 dBA allowable exceedance range over the 55 dBA sound level limit of the MECP. The RMOW has accepted sound levels up to 60 dBA in the past. Physical mitigation is not required.

There is an amenity area accessible to all residents which is at a significant distance from the roadways. Physical mitigation is not required.

5.2 Indoor Living Areas and Ventilation Requirements

Provision for Air Conditioning

The predicted future sound levels outside the top storey windows of the townhouses adjacent to Main Street will be between 56 and 65 dBA during the daytime hours and between 51 to 60 dBA during the nighttime hours. To address these excesses, these dwelling units require provisions for the future installation of central air conditioning systems so that windows may be kept closed. This requirement is typically satisfied through the installation of forced air ventilation systems with ductwork sized for the future installation of central air conditioning by the occupant. These units are indicated in Figure 3. The location, installation and sound ratings of the outdoor air conditioning devices should minimize noise impacts and comply with criteria of MECP publication NPC-300. Inclusion of air conditioning will meet and exceed the requirements.

5.3 Building Façade Constructions

The predicted sound levels at all units in the development will not exceed 65 dBA daytime and 60 dBA nighttime, thus will not require detailed building envelope design to conform to noise criteria. Any exterior wall and double-glazed window construction meeting the minimum requirements of the Ontario Building Code (OBC) will provide adequate sound insulation for the interior spaces.

6 Warning Clauses

The MECP guidelines recommend that warning clauses be included in the property and tenancy agreements and offers of purchase and sale for all units with anticipated traffic sound level excesses. The following noise warning clauses are required for specific dwellings as indicated in Table VIII.

Suggested wording for future dwellings which have traffic sound levels in excess of MECP criteria is given below.

A):

Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally 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.

Suggested wording for future dwellings which have provisions for central air conditioning to be installed is given below.

B):

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.

Suggested wording for future dwelling units in close proximity to industrial and commercial buildings is given below.

C):

Purchasers are advised that due to the proximity of the existing industrial and commercial buildings, sound levels from the facilities may be at times be audible.

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

7 MECP Guidelines for Land Use Compatibility and Distance Separation

MECP Guidelines D-1, 'Land Use Compatibility' and D-6 'Compatibility Between Industrial Facilities and Sensitive Land Uses' were prepared to address the potential incompatibility of industrial land uses and noise sensitive land uses in relation to land use approvals under the Planning Act. They recommend that technical studies, such as this noise study, be conducted to investigate the feasibility of providing sufficient mitigation when noise sensitive land uses are proposed within the potential zone of influence of an existing industry/commercial facility. The mitigation can be provided at the source, or can be incorporated on the development lands where the industrial/commercial facility is operating in compliance with legislated Ministry requirements.

In planning a sensitive land use near an existing industrial/commercial area, guideline D-6 suggests certain potential zones of influence for the industry, depending on the characterization of that industry. Three classes of industry are defined, as follows:

Class I Industrial Facility

A place of business for a small scale, self-contained plant or building which produces/stores a product which is contained in a package and has a low probability of fugitive emissions. Outputs are infrequent, and could be point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration. There are daytime operations only, with infrequent movement of products and/or heavy trucks and no outside storage.

Class II Industrial Facility

A place of business for medium scale processing and manufacturing with outdoor storage of wastes or materials (i.e. it has an open process) and/or there are periodic outputs of minor annoyance. There are occasional outputs of either point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration, and low probability of fugitive emissions. Shift operations are permitted and there is frequent movement of products and/or heavy trucks during daytime hours.

Class III Industrial Facility

A place of business for large scale manufacturing or processing, characterized by: large physical size, outside storage of raw and finished products, large production volumes and continuous movement of products and employees during daily shift operation. It has frequent outputs of major annoyance and there is high probability of fugitive emissions.

For screening purposes, guideline D-6 outlines some potential influence areas for the different classes of industry, as follows. Outside these potential influence areas, it is unlikely that an industry which has been appropriately classified will have significant impact.

Class I – 70 metres
Class II – 300 metres
Class III – 1000 metres

Guideline D-6 acknowledges that the actual influence areas may be less, subject to site specific studies performed in accordance with guideline NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning". Notwithstanding the actual influence area of an industry, in order to minimize the potential for future land use conflicts, the MECP recommends that certain minimum separation distances be respected, as follows:

Class I – 20 metres
Class II – 70 metres
Class III – 300 metres

The MECP recognizes that these minimum separation distances may not always be viable in certain cases, particularly in those cases of redevelopment, infilling and mixed-use areas, where the zoning or official plan has left no available land buffer. In those instances, the overall feasibility of the proposal is based on the anticipated adverse effects from the industrial/commercial use, including any mitigative measures that might be applied to address anticipated impacts. For infill projects or projects located in transitional areas such as the subject lands, the recommended minimum distance setbacks can be reduced, based on the results of technical studies such as this study.

7.1 Proximity to Nearby Industries

As described in Section 2, the facilities immediately surrounding the site include a metal recycling facility to the west, a landscaping business and paving business to the south, and a municipal waste management facility to the north and east. Table IV below shows the distances to these facilities, as

well as the distances to other industries further north of the site.

Table IV: Nearby Industrial/Commercial Facilities and their Distances to Site Area

Description	Address	Distance to Site	Industry Classification	Site Observations
Gerdau Recycling	1050 Main Street	Adjacent	II	Sounds audible at subject site
Cambridge Waste Management Centre	201 Savage Drive	Adjacent	II	Sounds faintly audible at subject site
Laing's Landscaping	1180 Main Street	Adjacent	II	Sounds not audible during site visit, but can be significant based on prior experience
5 Star Paving	1370 Main Street	Adjacent	II	
Gerdau Cambridge Steel Mill	160 Orion Place	650 m	III	Sounds not audible during site visit & not expected to be significant
Other industries on Dobbie Dr & Savage Dr	--	270 m	II	Sounds not audible & not expected to be significant

The facilities further north of the site, including the Gerdau Steel Mill and other industries on Dobbie Drive and Savage Drive are outside of the minimum separation distances to the proposed site. Based on site observations, sound emissions from these industries were not significant and are not expected to significantly impact the proposed development. These facilities are not considered further.

The separation distance from the site to Gerdau Recycling, Laing's Landscaping, 5-Star Paving, and Cambridge Waste Management Centre are within the minimum separation distances of their respective industrial classifications and share a mutual property line. As such, an assessment of their sound emissions is conducted and detailed in Section 8 to predict their noise impact on the proposed development.

8 Stationary Source Assessment

Noise sources associated with the adjacent industrial and commercial facilities are assessed separately from traffic sources under MECP guidelines. These facilities are considered to be Stationary Sources of Sound and criteria for their assessment are contained in the following section.

8.1 Sound Level Criteria at the Proposed Development

Typical ambient sound levels can be determined through prediction of road traffic volumes in areas where traffic sound is dominant. Where it can be demonstrated that the hourly background sound levels are greater than the exclusionary limits, the criterion becomes the minimum predicted one-hour L_{EQ} sound level during each respective period of the day. At locations where the background sound levels are low, the exclusionary limit of 50 dBA for daytime/evening and 45 dBA for nighttime respectively will apply.

The results show that the minimum background sound levels can be as low as the MECP exclusionary limits. As such, the exclusionary limits are used as the criteria and are shown below in Table V.

Table V: Applicable Sound Level Criteria at Proposed Development [L_{EQ-1hr} dBA / L_{LM} dBAI]

Receptor	Description	Façade			Outdoor Living Area	
		Daytime (07:00 – 19:00)	Evening (19:00 – 23:00)	Nighttime (23:00 – 07:00)	Daytime (07:00 – 19:00)	Evening (19:00 – 23:00)
R1 through R10	All proposed residences	50	50	45	50	50

8.2 Stationary Source Noise Predictions

Predictive noise modelling was used to assess the sound impact of the adjacent facilities at the most critically impacted residential buildings of the proposed development in accordance with MECP guidelines. The noise prediction model was constructed based on a review of the concept plan, site visit observations, sound level measurements, satellite aerial photos, and estimates of sound emission levels of stationary sources taken from similar past HGC Engineering project files.

Attended sound level measurements were conducted during the site visit on March 15, 2024. An automatic sound monitor was also installed at the northwest side of the field, close to Gerdau Recycling, from March 15 to March 18 for continuous sound level monitoring. The attended and monitored measurements were conducted with a Norsonic N140 sound signal analyzer.

Table VI: Source Sound Power Levels [dB re 10-12 W]

Source	Octave Band Centre Frequency [Hz]								Overall [dBA]
	63	125	250	500	1k	2k	4k	8k	
Gerdau Recycling									
Crane Material Handling	111	107	98	100	99	98	93	86	104
Dump Truck Movement	104	101	98	97	99	95	93	91	103
Dump Truck Unloading Scrap	111	109	106	109	109	107	103	98	113
Wheel Loader	109	103	101	97	99	105	96	86	108
Baler	103	110	113	109	108	102	101	100	112
Crane Material Handling (Impulsive)	115	112	107	112	112	110	104	95	116
Laing's Landscaping & 5-Star Paving									
Straight Truck Movement	108	90	92	90	94	91	84	77	97
Idling Truck	91	87	89	84	91	88	79	71	94
Skid-Steer Movement	104	105	98	93	94	98	90	83	102
Moving Aggregate Truck	104	101	101	99	97	94	89	81	102
Aggregate Truck Unloading Material	109	94	94	94	93	97	98	97	104
Cambridge Waste Management									
Front-End Loader	106	103	94	92	89	85	78	67	95
Waste Sorting Facility Open Door	93	93	92	91	91	88	81	77	95
Moving Waste Truck	104	101	101	99	97	94	89	81	102

Note: Sources are non-impulsive unless specifically stated

The above data were inputted into a predictive computer model. The software used for this purpose (*Cadna-A version 2024, build 205.5427*) is a computer implementation of ISO Standard 9613-2.2 "Acoustics - Attenuation of Sound During Propagation Outdoors." The ISO method accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures such as buildings and barriers. Details of Cadna-A modelling are included in Appendix C.

The following information and assumptions were used in the analysis.

- Based on posted business hours and automated monitoring data, the recycling facility to the west of the site operates during daytime hours only, from approximately 7am to 4pm.
- The metal recycling facility consists of material handling from cranes and wheel loaders, a metal compacting baler, dump truck movement, and dump truck unloading of scrap material. Sound levels for the recycling facility were derived from sound measurements conducted near the perimeter of the facility, with the exception of sounds from truck movement, wheel

loaders, and the baler, which were applied with spectrums of similar equipment measured at other metal recycling facilities.

- The municipal waste facility to the east consists of a sorting facility with open doors, movement of trucks for inflow of waste materials, and front-end loaders. Sound levels for the front-end loaders were derived from measurements conducted during the site visits. Previously measured sound levels for similar equipment were applied for the sorting facility and trucks.
- While sounds from the landscaping and paving facilities were not operating during the site visit, prior experience with similar facilities indicate that they could be active during dispatch and returning of the mobile equipment. Previously measured sound levels for similar mobile equipment were applied for these facilities.
- Location of all noise sources are shown in Figure 4.

In this impact assessment, we have considered typical worst-case (busiest hour) scenarios for each time period to be as follows:

Table VI: Hourly Worst-Case Scenario Assumptions of Surrounding Sources

Facility	Daytime worst-case scenario for non-impulsive sounds	Evening/Nighttime worst-case scenario for non-impulsive sounds	Worst-case scenario for impulsive sounds
Gerdau Recycling	Material handling with 2 cranes, operating continuously. 5 dump trucks accessing the site. 1 wheel loader operating continuously. Baler operating continuously. Trucks dumping metals for 5 minutes.	Not operating based on posted business hours and monitored data.	Material handling during daytime hours (>9 impulses in an hour).
Cambridge Waste Management Centre	6 front-end loaders, operating for 20 minutes. 6 waste trucks accessing the site. Sorting facility operating continuously with 8 open bays.	3 front-end loaders, operating for 20 minutes. No trucks access and sorting operations (outside of business hours).	--
Laing's Landscaping	2 aggregate trucks and 4 straight trucks accessing the site. 1 skid-steer operating for 10 minutes.	2 aggregate trucks and 4 straight trucks accessing the site.	--
5 Star Paving	2 aggregate trucks and 4 straight trucks accessing the site. 2 skid-steers operating for 20 minutes. Aggregate truck dumping for 5 minutes	2 aggregate trucks and 4 straight trucks accessing the site.	--

8.3 Results

The unmitigated sound levels due to the nearby stationary noise sources at the proposed development are summarized in Table VII, and presented graphically in Figures 5 and 6.

Table VII: Predicted Sound Levels from the Nearby Industrial/Commercial Facilities on the Proposed Development [dBA/dBAI], Unmitigated

	Non-Impulsive Sounds [dBA]			Impulsive Sounds [dBAI]		
Receptor Location	**Day**	**Eve**	**Night**	**Day**	**Criteria (Day / Eve / Night)**	**Meets Class 1 Criteria?**
R1	**57**	<30	<30	**61**	50 / 50 / 45	N
R2	**57**	<30	<30	**61**	50 / 50 / 45	N
R3	**55**	<30	<30	**54**	50 / 50 / 45	N
R4	**51**	<30	<30	**53**	50 / 50 / 45	N
R5	**54**	<30	<30	**54**	50 / 50 / 45	N
R5 OLA	**55**	<30	--	**51**	50 / 50 / --	N
R6 OLA	**53**	<30	--	**52**	50 / 50 / --	N
R7	**53**	47	**47**	<30	50 / 50 / 45	N
R8	**57**	41	41	44	50 / 50 / 45	N
R9	**51**	37	37	<30	50 / 50 / 45	N
R10	46	38	38	46	50 / 50 / 45	Y

Note:
Bold numbers indicate excesses over Class 1 limits

The results of the calculations indicate that the predicted sound levels due to the operation of the nearby industrial and commercial facilities has the potential to exceed the MECP limits at the residential building façades and outdoor living areas of the proposed development during a worst-case operational scenario. Mitigation is required.

9 Stationary Noise Discussion and Recommendations

The MECP does not typically accept mechanical ventilation as a mitigation measure for stationary noise sources since the criteria apply outside the residential windows. On-site mitigation is thereby generally implemented through the provision of property line noise barriers.

Based on the results of the stationary noise assessment, Class 4 designation from the municipality is recommended for the subject lands, in addition to property line barriers and some architectural modifications. Higher sound level criteria apply for lands designated as Class 4.

9.1 Mitigation Measures with Class 1 Designation

The mitigation measures to meet Class 1 criteria would be onerous, and are described as follows.

1) For façades with sound level excesses, they could be designed such that there are no windows to noise sensitive spaces on a large number of townhouse block façades. In accordance with MECP noise guidelines, noise sensitive spaces include the following: bedrooms, living/dining rooms, eat-in kitchens, and dens. Windows to non-noise sensitive spaces are still permitted, such as washrooms, hallways, and closets. Façades requiring mitigation are indicated in Figure 7.

2) Property line barriers to be constructed adjacent to Gerdau recycling, Laing's Landscaping, and 5-Star paving, as shown in Figure 7. Significant high noise barriers would be required to mitigate all floor and is not considered feasible. When detailed grading information is available, the barrier heights should be refined.

9.2 Mitigation Measures with Class 4 Designation (Recommended)

Request the City of Cambridge to designate the subject lands as a Class 4 area. It is understood that the development to the southwest of the subject site has received a Class 4 designation. The Class 4 designation provides relaxed (higher) daytime and nighttime sound level limits from that otherwise permitted in an urban area, for both indoor and outdoor areas. A Class 4 Area also permits receptor-based noise control measures (such as specific construction techniques and materials) to be used on

the subject lands, within the vicinity of industrial uses. Class 4 Areas require formal recognition of the classification by the land use planning authority.

Class 4 designation for the blocks close to the metal recycling, landscaping, and paving facilities are recommended since the mitigation measures required to achieve Class 1 criteria would generally be considered onerous. Figure 8 shows the blocks recommended for Class 4 designation.

Class 4 would allow 60 dBA/dBAI during the day and 55 dBA/dBAI at night at the façades. Other municipalities such as Hamilton, Stouffville, Welland, Mississauga, Goderich, Vaughan and Toronto have provided Class 4 designation for residential lands when mitigation is significant due to sound levels from an existing commercial/industrial facility and where the increased residential density is desired. It is our understanding that the proposed residential developments immediately west of the site area are proceeding with Class 4 designation.

With a Class 4 designation, the following mitigation is recommended:

1) Property line barriers to be constructed adjacent to Gerdau recycling, Laing's Landscaping, and 5-Star paving, as shown in Figure 8. When detailed grading information is available, the barrier heights should be refined.

   Acoustic barriers can be any combination of an earth berm with an acoustic wall on top. The wall component of the barrier should be of a solid construction with a surface density of no less than 20 kg/m^2. The walls may be constructed from a variety of materials such as wood, brick, pre-cast concrete or other concrete/wood composite systems provided that it is free of gaps or cracks within or below its extent.

2) Architectural modifications be incorporated to the west façades of the four townhouse blocks adjacent to the metal recycling facility, such that there are no windows to noise sensitive spaces for dwellings on the third floor of the buildings. In accordance with MECP noise guidelines, noise sensitive spaces include the following: bedrooms, living/dining rooms, eat-in kitchens, and dens. Windows to non-noise sensitive spaces are still permitted, such as washrooms, hallways, and closets, and stairwells. Façades recommended for mitigation are indicated in Figure 7.

3) All dwellings in Class 4 designated areas will require air conditioning as an alternative form of ventilation than open windows.

4) An additional clause is required to be included in the property and tenancy agreements and offers of purchase and sale for all dwelling units in Class 4 designated areas:

   Warning Clause D):

   Purchasers/tenants are advised that sound levels due to the adjacent industry are required to comply with sound level limits that are protective of indoor areas and are based on the assumption that windows and exterior doors are closed. This dwelling unit has been supplied with a ventilation/air conditioning system which will allow windows and exterior doors to remain closed.

5) Additionally, upgraded building constructions are recommended for all dwellings in Class 4 designated areas. A minimum STC-33 rating for all windows into sensitive spaces is recommended.

6) When detailed floor plans and building elevations are available for the proposed residential buildings on the subject site recommended to be designated Class 4, the drawings should be reviewed to refine the acoustic mitigation requirements.

With the above mitigation measures in place and a Class 4 designation, the predicted sound levels under a worst-case operational scenario will meet applicable limits at the proposed development.

10 Summary and Recommendations

The following list and Table VIII summarize the recommendations made in this report. The reader is referred to Figure 3, Figure 7, and previous sections of the report where these recommendations are applied and discussed in more detail.

For Transportation Noise

1. Forced air ventilation systems with ductwork sized for future installation of central air conditioning systems will be required for the four townhouse blocks adjacent to Main Street. The installation of central A/C will also satisfy and exceed ventilation requirements.

2. Warning clauses are recommended to be included in the property and tenancy agreements and offers of purchase and sale for the to inform the future occupants of traffic noise issues.

For Stationary Noise

1. Class 4 designation for the majority of the subject lands, specifically for the blocks with exposure to the nearby metal recycling, landscaping, and paving facilities, as shown in Figure 7.
2. Property line barriers as shown in Figure 7.
3. Design the west façades of the buildings directly adjacent and facing Gerdau Metal Recycling with no windows into sensitive spaces for the third floor of indicated blocks, as shown in Figure 7.
4. Air conditioning for all dwellings in Class 4 designated areas.
5. A minimum STC-33 rating for all windows into sensitive spaces are recommended to further protect the interior spaces of the dwellings in Class 4 designated areas.
6. A warning clause is required to be included in the property and tenancy agreements and offers of purchase and sale for the dwelling units to inform the future occupants that the lot has been designated as Class 4.
7. When detailed floor plans and building elevations are available for the proposed residential buildings on the subject site recommended to be designated Class 4, the drawings should be reviewed to refine acoustic mitigation requirements.

The following table summarizes the noise control recommendations and noise warning clauses for the proposed development.

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

Block Number	Description	Acoustic Barrier	Ventilation Requirements (1)(2)	Type of Warning Clause (3)	Architectural Modifications Required(4)	Class 4 Area Glazing Constructions(5)
2	Townhouse adjacent to Main Street	✓	Forced Air	A, B, C	--	STC-33
	Other townhouses		--			
3	All townhouses	✓	--	C	--	STC-33
1	Townhouses adjacent to Gerdau Recycling	✓	--	C	3rd storey west façades	STC-33
	Other townhouses		--		--	
4-7	Parks, open spaces & stormwater pond	--	--	--		--

Notes:
Stationary noise control measures described in Sections 9
(1) The location, installation and sound rating of the air conditioning condensers must be compliant with MECP Guideline NPC-300, as applicable.
(2) Central air conditioning for all units is required if Class 4 area designation is granted.
(3) Warning clause D is required for all units if Class 4 area designation is granted.
(4) Architectural modifications needed, such that no windows to noise-sensitive spaces are permitted.
(5) A minimum of STC-33 glazing elements for all units is recommended to further protect interior spaces from stationary noise if Class 4 area designation is granted.
-- No specific requirements for transportation noise
✓ Property line barrier recommended for stationary noise.
OBC – Any construction meeting the minimum requirements of the Ontario Building Code

10.1 Implementation

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

1. A detailed noise study shall be conducted to refine the noise mitigation measures based on the determined Class of the acoustic environment, detailed floor plans and building elevations.
2. When detailed grading information is available, the barrier heights should be refined.
3. Prior to the issuance of occupancy permits for this development, the Municipality's building inspector or a Professional Engineer qualified to perform acoustical engineering services in the Province of Ontario should certify that the noise control measures have been properly incorporated, installed, and constructed.

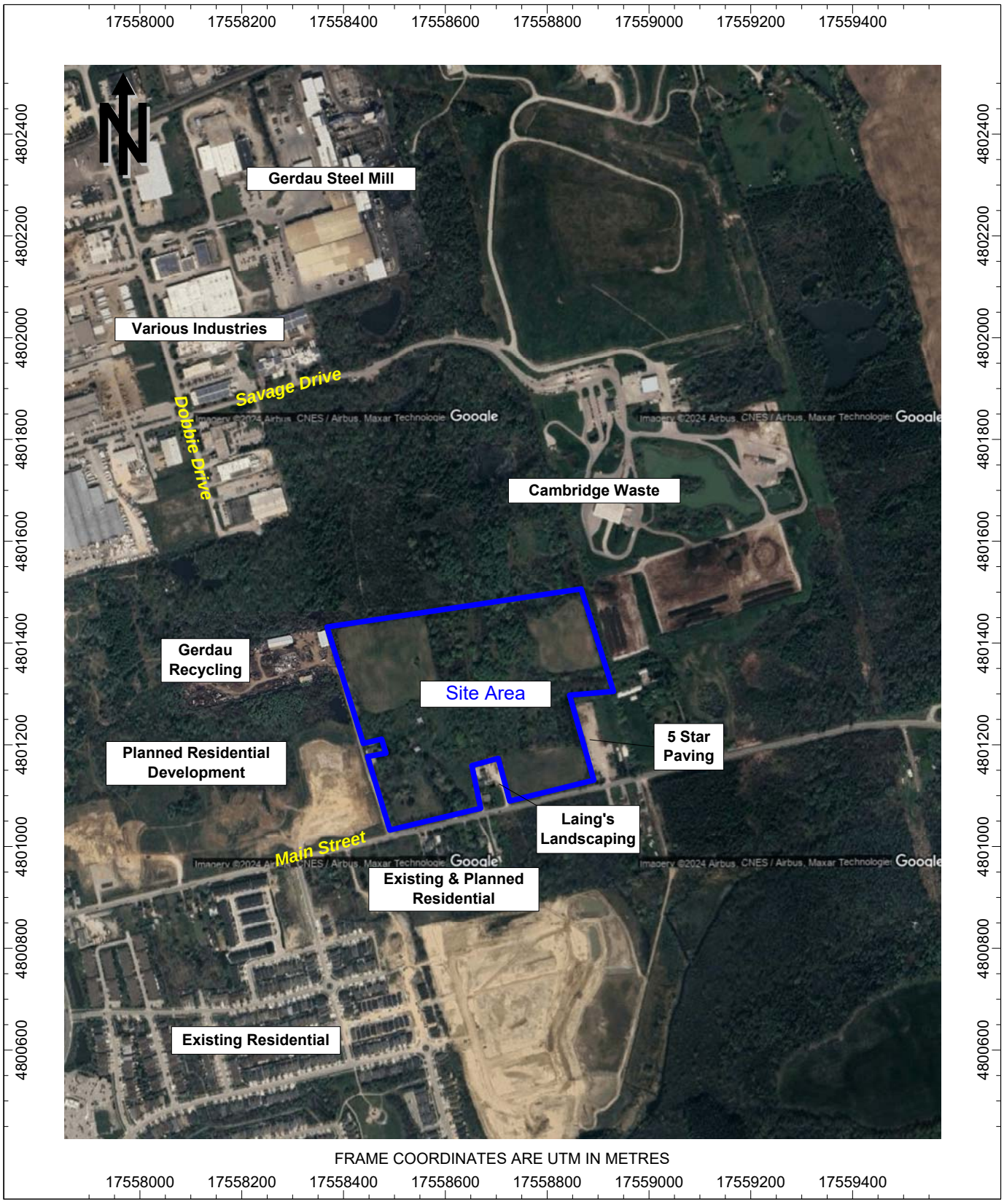


Figure 1: Key Plan Showing Nearby Land Uses

Multiple Block Preliminary Unit & Parking Estimates (Sept. 4, 2024)

	5.5m Rear-Lane Town	6.1m 2 Storey Town	Stacked Town	Back-to-Back	Total Units	Parking Rate (1.25/ unit)	Parking Provided
Block 1	62	96	0	198	356	445	454
Block 2	32	24	105	76	237	296.25	297
Block 3	21	0	35	32	88	110	93
Total	**115**	**120**	**140**	**306**	**681**	**851.25**	**844**

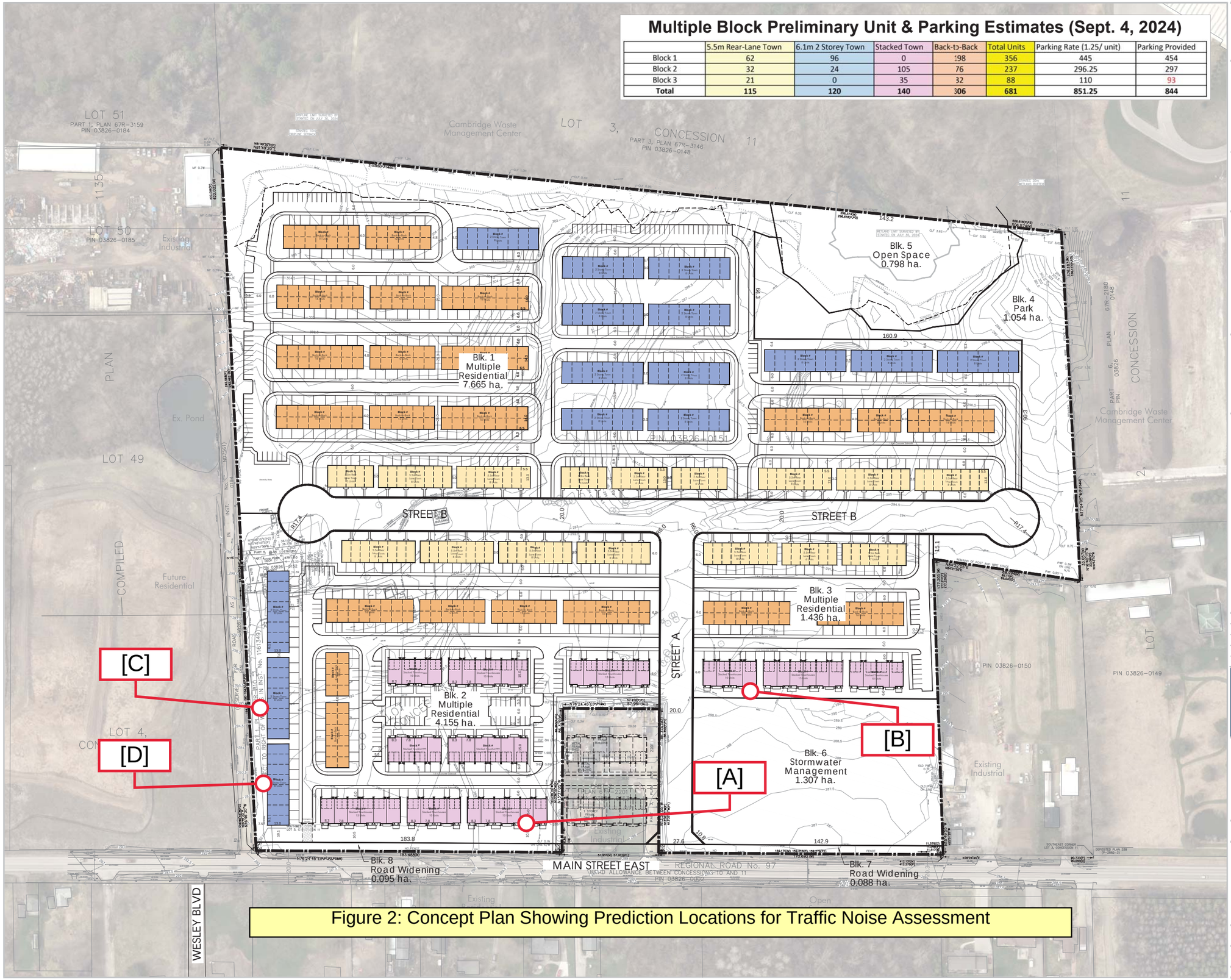


Figure 2: Concept Plan Showing Prediction Locations for Traffic Noise Assessment

CONCEPT PLAN #1

Legal Description
Pt Lt 3 Con 11 North Dumfries Pt 1, 67r810 & Pt 1, 67r3579, S/t 1161349; Cambridge

Owner's Certificate
I HEREBY AUTHORIZE MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED TO SUBMIT THIS PLAN FOR APPROVAL.

DATE:_____

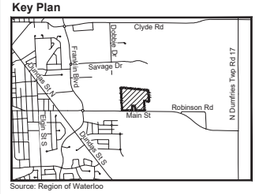
DATE:_____

DRAFT

Surveyor's Certificate
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE:_____

Key Plan



Source: Region of Waterloo

Subject Lands

north

SCALE: NTS

Additional Information Required Under Section 51(17) of the Planning Act R.S.O. 1990, c.P.13 as Amended

A. AS SHOWN	B. AS SHOWN	C. AS SHOWN
D. RESIDENTIAL, STORMWATER MANAGEMENT, PARK, OPEN SPACE		
E. AS SHOWN	F. AS SHOWN	G. AS SHOWN
H. MUNICIPAL WATER SUPPLY	I. LOAM, SANDY LOAM	J. AS SHOWN
K. ALL SERVICES AS REQUIRED	L. AS SHOWN	

Area Schedule

Description	Lots/Blocks	Units (min-max)	Area (ha)
Multiple Residential	1-3	±681	13.256
Park	4		1.054
Open Space	5		0.798
Stormwater Management	6		1.307
Road Widening	7,8		0.183
Roads			1.346
Total	**8**	**±681**	**17.944**

Notes
1. All dimensions are in metres unless otherwise shown.
2. Property Boundary & Topographic Survey Base prepared by Schaeffer Dzaldov Purcell Ltd. (February 16, 2024).
3. Contains information licensed under the open government licence- City of Cambridge.
4. Contains information licensed under the open government licence- Ontario.

Revision No.	Date	Issued / Revision	By
2.	Sept. 4, 2024	For Client Review;	SP
1.	July 5, 2024	For Client Review;	GC

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
200-540 BINGEMANS CENTRE DR, KITCHENER, ON, N2B 3X9 | P: 519.576.3650 F: 519.576.0121 |
WWW.MHBCPLAN.COM

Approval Stamp	**Date** September 4, 2024
	File No. 23291A
	Plan Scale 1:1,000 (Arch D)
	Drawn By G.C.
Project 1140 Main Street	**Checked By** D.A.
Applicant	**Other**
	north
File Name CONCEPT PLAN	**Dwg No.** 1 of 1
Scale Bar 10 0 25 50 75 100m	

K:\23291A-1140 Main St Cambridge\CP\CP1_4Sep_2024.dwg

Multiple Block Preliminary Unit & Parking Estimates (Sept. 4, 2024)

	5.5m Rear-Lane Town	6.1m 2 Storey Town	Stacked Town	Back-to-Back	Total Units	Parking Rate (1.25/ unit)	Parking Provided
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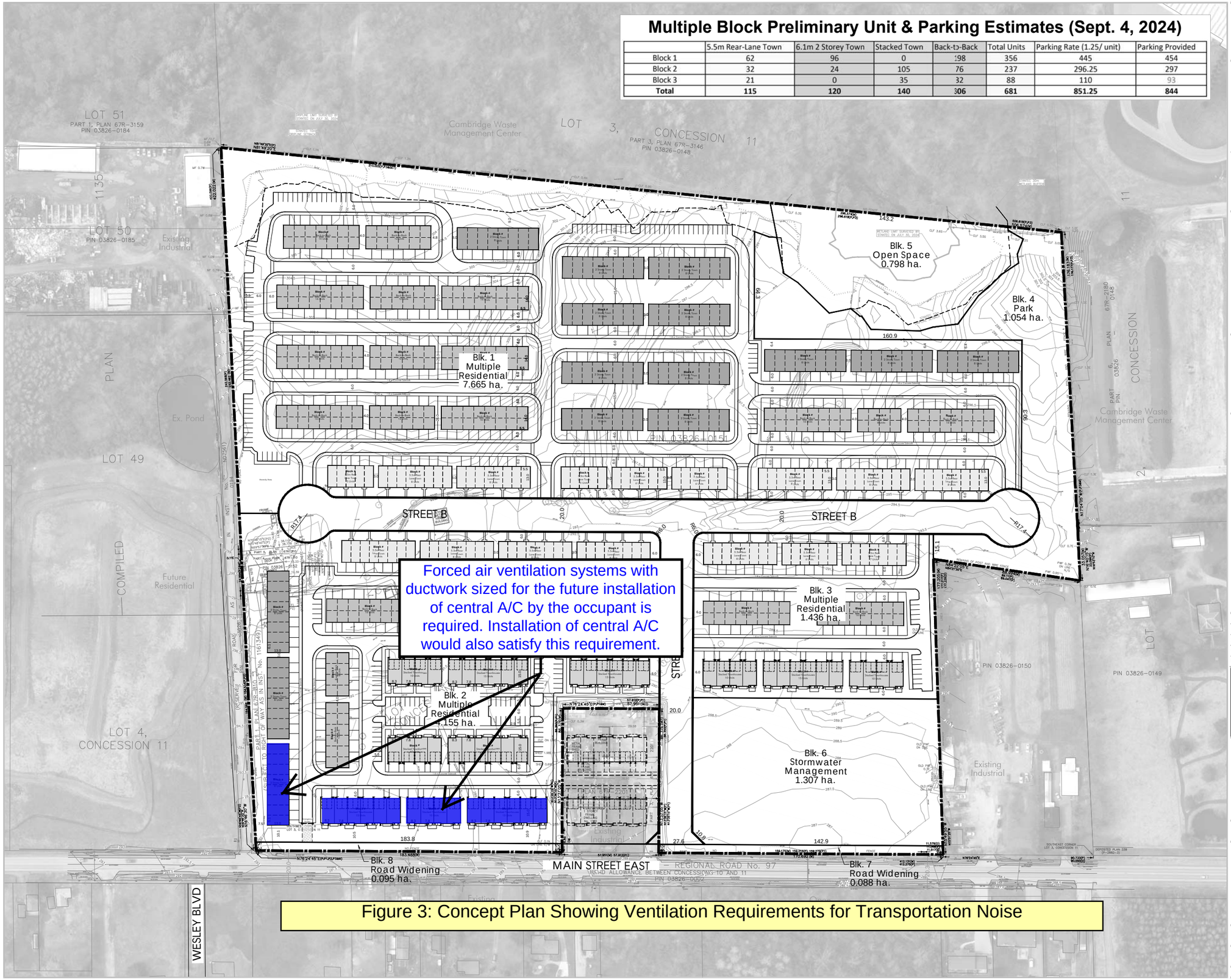

Figure 3: Concept Plan Showing Ventilation Requirements for Transportation Noise

CONCEPT PLAN #1

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DRAFT

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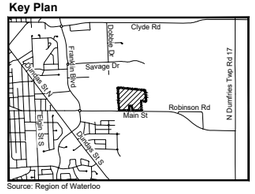
DATE:_____

Key Plan



Source: Region of Waterloo

Subject Lands

north

SCALE: NTS

Additional Information Required Under Section 51(17) of the Planning Act R.S.O. 1990, c.P.13 as Amended

A. AS SHOWN	B. AS SHOWN	C. AS SHOWN
D. RESIDENTIAL, STORMWATER MANAGEMENT, PARK, OPEN SPACE		
E. AS SHOWN	F. AS SHOWN	G. AS SHOWN
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Approval Stamp	**Date** September 4, 2024
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Applicant	**Other**
	north
File Name CONCEPT PLAN	**Dwg No.** 1 of 1
Scale Bar 10 0 25 50 75 100m	

K:\23291A-1140 Main St Cambridge\CP\CP1_4Sep_2024.dwg

Figure 4: Locations of Stationary Noise Sources

Figure 5a: Stationary Noise Impact of Non-Impulsive Sources, Unmitigated, Daytime (07:00 - 19:00)
Contour Height = 7.5m, Leq [dBA]

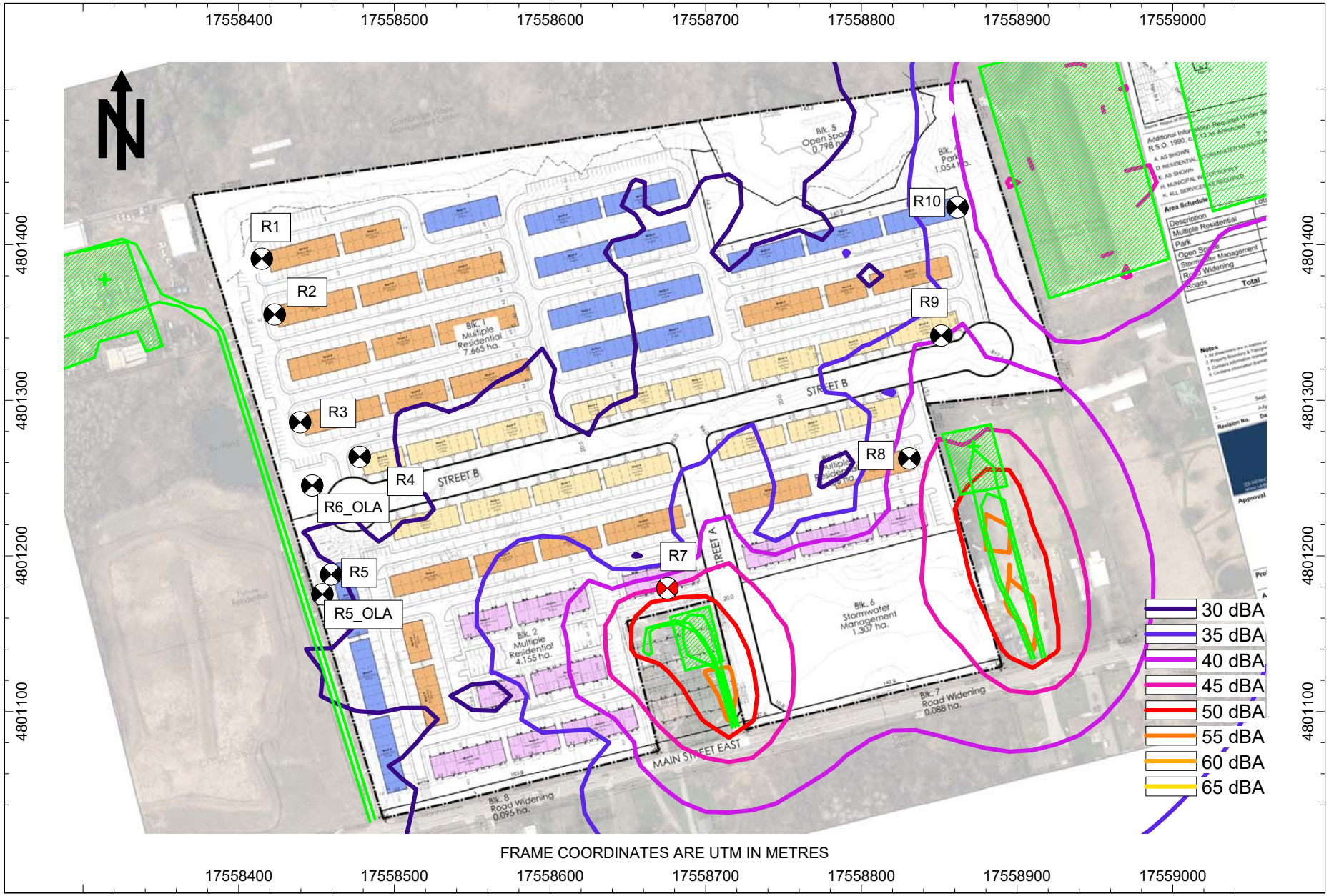


Figure 5b: Stationary Noise Impact of Non-Impulsive Sources, Unmitigated, Evening/Night(19:00 - 07:00)
Prediction Height = 7.5m, Leq [dBA]

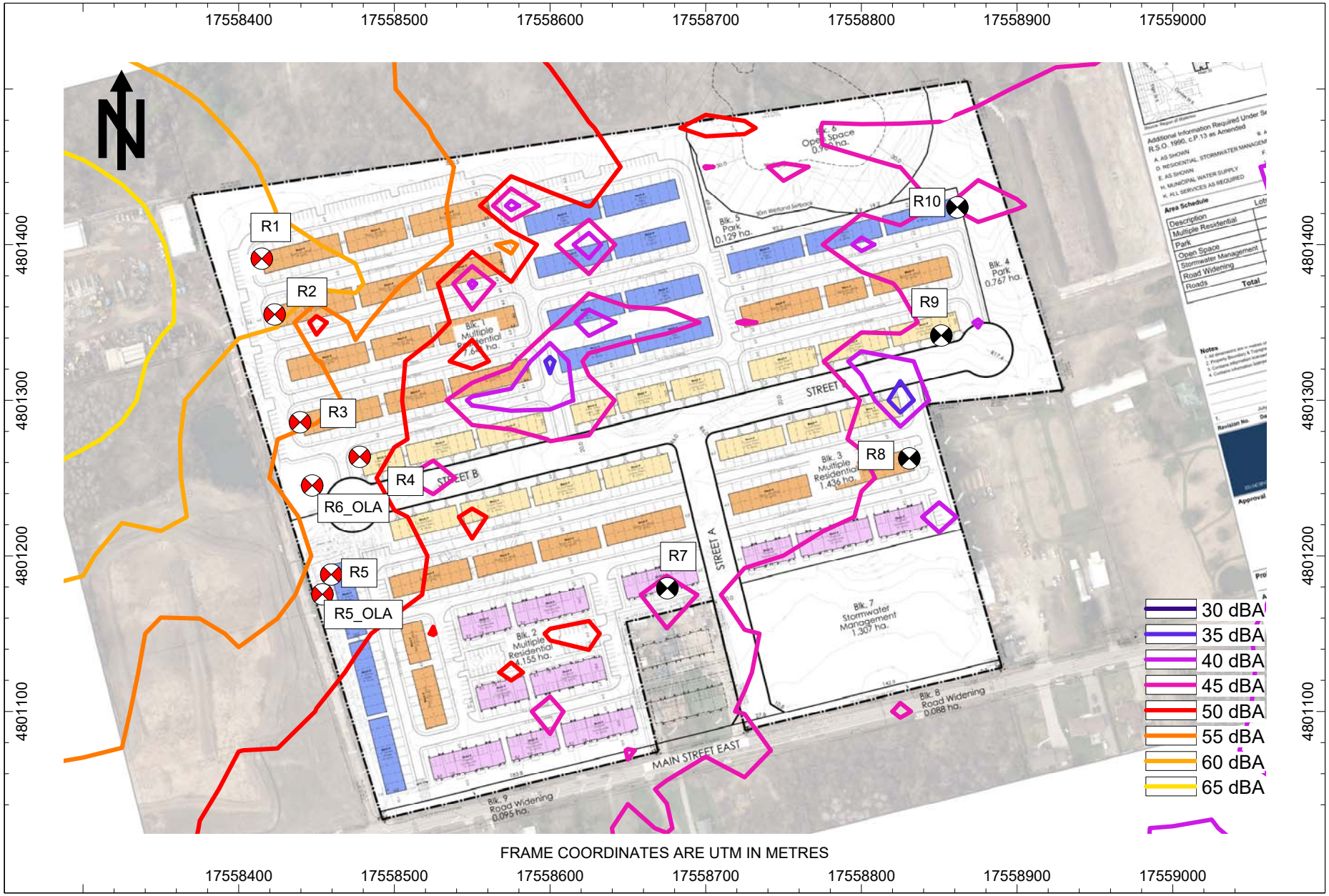


Figure 6: Stationary Noise Impact of Impulsive Sources, Unmitigated, Daytime (07:00 - 19:00)
Contour Height = 7.5m, Llm [dBAI]

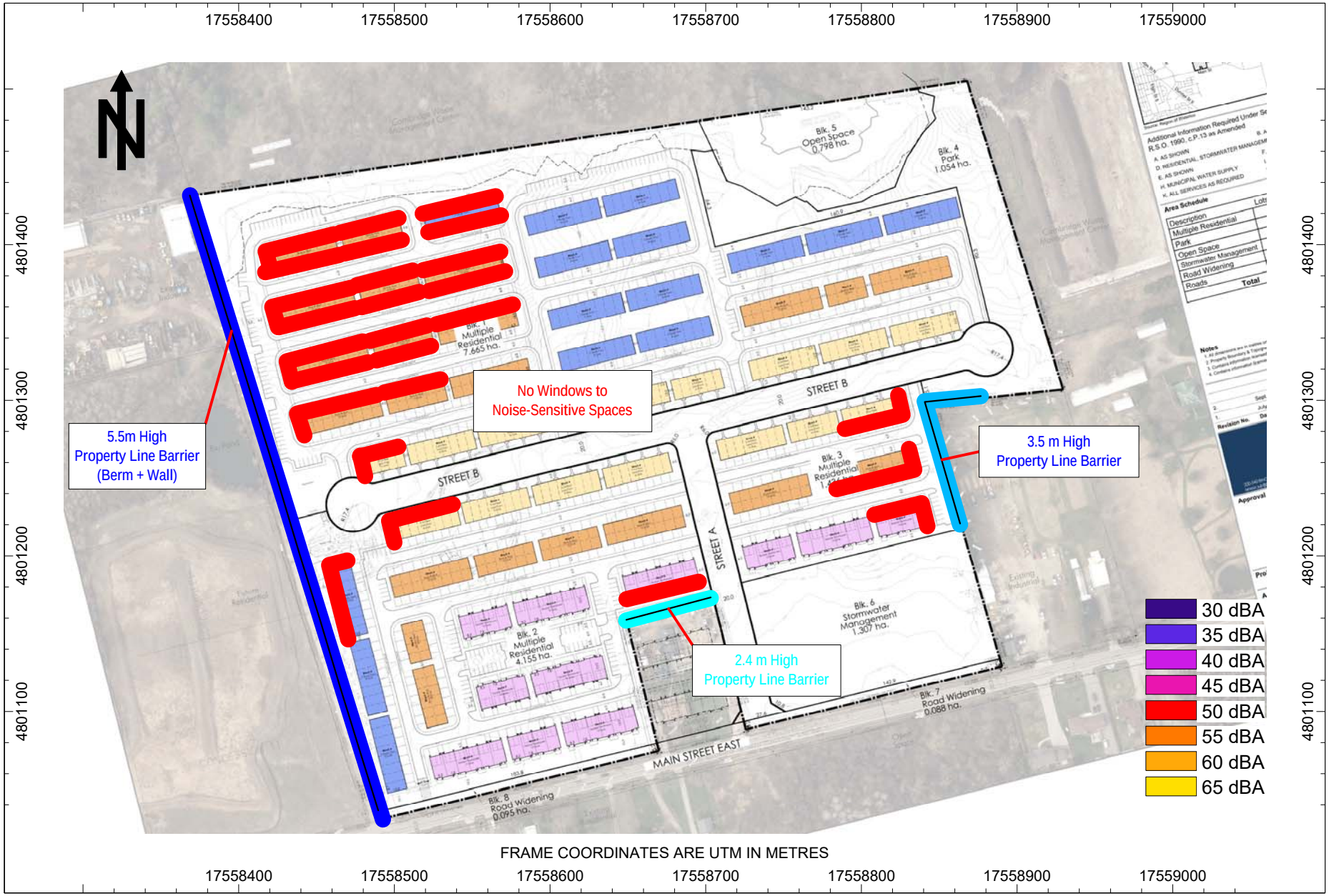


Figure 7: Mitigation for Stationary Noise - with Class 1 Area Designation

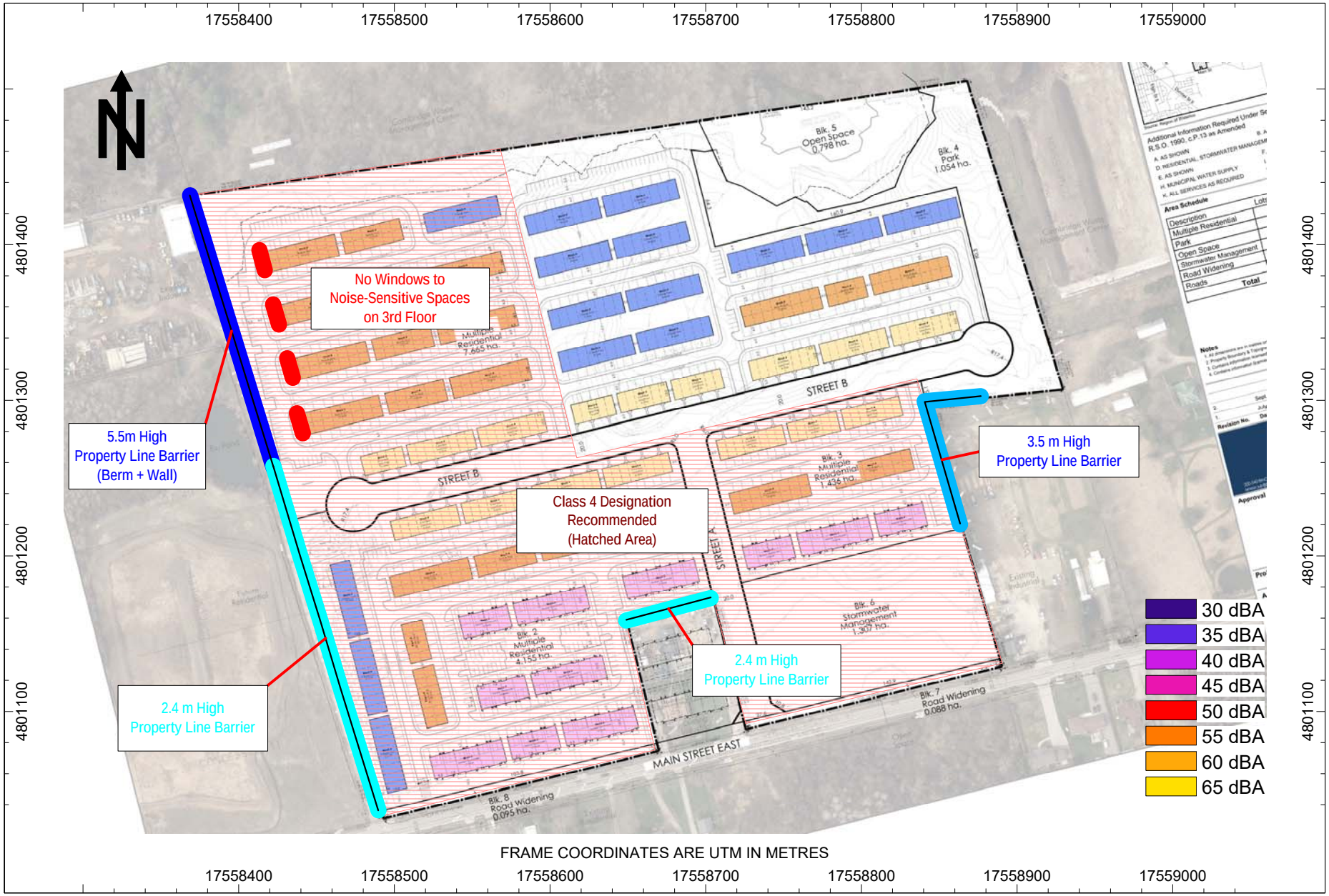


Figure 8: Mitigation for Stationary Noise - with Class 4 Area Designation (Recommended)

Appendix A

Road Traffic Information

Region of Waterloo AADT Forecast for Noise Studies

1. Development/Location

1140 Main St, Cambridge

2. Current AADT (2024)

Main St
6,600

3. Forecast AADT (2034)

Main St
8,900

4. Commercial Vehicle Rates

	Main St
% Medium Trucks	2%
% Heavy Trucks	4%

5. Posted Speed Limit

Main St
60 km/h

6. Day/Night Splits

Regional Standard 90/10 Day/Night Split

7. Expiry

Dec 31 2026

8. Notes

This forecast is intended for the purpose of carrying out a noise study only. The above AADT represents the traffic volume on Main St adjacent to the property. This forecast remains valid up to the date indicated above. The Region of Waterloo should be contacted for an updated forecast if there are plans to use this forecast beyond the above validity period.

Appendix B

Sample STAMSON 5.04 Output

STAMSON 5.0 NORMAL REPORT Date: 21-10-2024 13:55:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a.te Time Period: Day/Night 16/8 hours
Description: Pred. Loc. [A], Townhouse fronting Main St

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

Car traffic volume : 7529/837 veh/TimePeriod *
Medium truck volume : 160/18 veh/TimePeriod *
Heavy truck volume : 320/36 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): 8900
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 2.00
Heavy Truck % of Total Volume : 4.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Main St (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 27.00 / 27.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Main St (day)

Source height = 1.41 m

ROAD (0.00 + 61.40 + 0.00) = 61.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.48	66.33	0.00	-3.78	-1.14	0.00	0.00	0.00	61.40

Segment Leq : 61.40 dBA

Total Leq All Segments: 61.40 dBA

Results segment # 1: Main St (night)

Source height = 1.42 m

ROAD (0.00 + 54.91 + 0.00) = 54.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.48	59.83	0.00	-3.78	-1.14	0.00	0.00	0.00	54.91

Segment Leq : 54.91 dBA

Total Leq All Segments: 54.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.40
(NIGHT): 54.91

Appendix C

Cadna/A Model Details and Sample Calculation

The source sound power levels were used as input to a computational acoustical model (*Cadna-A*, Version 2024, build 205.5427). The model is based on the methods from ISO Standard 9613-2.2 "Acoustics - Attenuation of Sound During Propagation Outdoors", which accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures (or by topography and foliage where applicable). This modelling technique is acceptable to the MECP.

The subject site and surrounding area were modelled based on topographical information obtained from Ontario Ministry of Natural Resources and Forestry. Ground attenuation was assumed to be spectral for all sources, with the ground factor (G) assumed to be 0.25 on paved roadways, 0.5 on gravel, and 1.0 in all other areas, representative of grassy areas. The temperature and relative humidity were assumed to be 10° C and 70%, respectively.

The predictive modelling considered one order of reflection, with shielding/reflections afforded by buildings which were assigned spectral absorptive characteristics representative of concrete block, sheet steel, and unglazed brick, as appropriate.

R1	R1	17558414	4801391	312.5																			
Src ID	Src Name	X	Y	Z	LxD	LxE	LxN	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	CmetD	CmetE	CmetN	ReflD	ReflE	ReflN	LrD	LrE	LrN
Gerdau	Crane Material Handling Impulses	17558242	4801362	311.0	117	--	--	55.9	0	0.0	-1.1	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61	--	--
Gerdau	Crane Material Handling - Steady	17558242	4801358	310.0	104	--	--	55.9	0	0.0	-1.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48	--	--
Gerdau	Truck Dumping	17558312	4801377	306.0	103	--	--	51.2	0	0.0	-1.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52	--	--
Gerdau	Baler	17558210	4801334	308.0	112	--	--	57.5	0	0.0	-1.0	4.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	--	--
5-Star	Aggregate Dumping	17558878	4801272	291.6	93	--	--	64.5	0	0.0	-0.7	22.6	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	--	--
Gerdau	Moving Dump Trucks	17558444	4801288	304.5	101	--	--	51.5	0	0.0	-0.5	0.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48	--	--
Laing's	Moving Trucks	17558726	4801141	289.8	87	87	87	62.6	0	0.0	-1.4	21.6	1.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	4	4	4
Laing's	Moving Dump Trucks	17558722	4801132	289.5	87	87	87	62.9	0	0.0	0.7	20.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	2	2
Waste	Moving Waste Trucks	17559010	4801708	298.7	100	--	--	67.8	0	0.0	4.1	13.7	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13	--	--
5-Star	Moving Dump Truck	17558848	4801215	291.3	89	89	89	65.2	0	0.0	0.9	19.8	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	2	2
5-Star	Moving Medium Truck	17558876	4801194	290.9	87	87	87	65.4	0	0.0	-1.7	21.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	1	1
Gerdau	Gerdau Loader	17558160	4801391	306.7	108	--	--	53.9	0	0.0	-1.1	1.2	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50	--	--
Laing's	Landscaping Skidsteer	17558710	4801149	289.3	94	--	--	62.4	0	0.0	0.5	21.4	1.8	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	8	--	--
Waste	Waste Front End Loader - West	17559008	4801429	299.6	93	90	90	65.4	0	0.0	2.0	15.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10	7	7
Waste	Waste Front End Loader - East	17559126	4801513	296.6	93	90	90	68.4	0	0.0	2.3	14.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8	5	5
Waste	Waste Front End Loader - East	17559224	4801796	295.7	90	87	87	70.1	0	0.0	3.5	14.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	--	--
5-Star	Paving Skid Steers	17558838	4801263	292.4	100	--	--	64.6	0	0.0	0.0	21.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	--	--
Waste	Sorting Facility Opening	17558898	4801689	306.5	95	--	--	66.1	3	0.0	3.5	14.2	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	--	--
Waste	Sorting Facility Opening	17558932	4801643	304.4	95	--	--	66.4	3	0.0	3.4	21.1	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	--	--
Waste	Sorting Facility Opening	17558946	4801658	304.5	95	--	--	66.4	3	0.0	3.5	21.2	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	--	--
Waste	Sorting Facility Opening	17558946	4801664	304.5	95	--	--	66.5	3	0.0	3.5	21.1	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	--	--
Waste	Sorting Facility Opening	17558948	4801666	304.5	95	--	--	66.6	3	0.0	3.5	21.1	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	--	--
Waste	Sorting Facility Opening	17558898	4801671	306.5	95	--	--	66.0	3	0.0	3.5	14.3	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	--	--
Waste	Sorting Facility Opening	17558894	4801666	306.5	95	--	--	65.9	3	0.0	3.5	14.3	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	--	--
Waste	Sorting Facility Opening	17558894	4801664	306.5	95	--	--	65.8	3	0.0	3.5	14.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13	--	--

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl

Appendix D

Statutory Consultant Declaration and Owner's Declaration Statement

CONSULTANT STATUTORY DECLARATION

CANADA	)	In the Matter of the
	)	Environmental Protection
PROVINCE OF ONTARIO	)	Act and the Planning Act
	)	
	)	And in the Matter of a
	)	Residential Development,
	)	1140 Main Street, Cambridge
	)	Regional Municipality of
	)	Waterloo

I, Harry Ao Cai, of the City of Toronto, SOLEMNLY DECLARE THAT:

1. I am a Professional Engineer employed by HGC Engineering which holds a Certificate of Authorization and have personal knowledge of the matters set out below.

2. I was retained or employed as the principal consultant to undertake the assessment of noise impacts and recommendation of noise mitigation measures for the property described as 1140 Main Street, Cambridge, Regional Municipality of Waterloo.

3. I had the expertise required to perform these services. Any assessment activities or recommendations requiring the application of engineering principles have been undertaken or supervised by an engineer qualified to perform such services.

4. The information used in the study entitled Noise Feasibility Study, Proposed Residential Development, 1140 Main Street, Cambridge, Ontario is the best available information as of the date of the study.

5. The sound level calculations, the interpretation of noise attenuation requirements, and the recommended measures are in accordance with Ministry of Environment Guidelines, Region of Waterloo policies, any applicable policy of guidelines or the Area Municipality, and any other applicable policy or guideline.

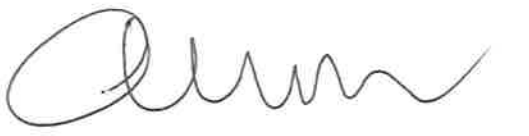
6. The physical noise attenuation measures proposed in this study are feasible to implement and will provide the level of attenuation indicated in the study.

7. I acknowledge that this study may be subject to a peer review conducted at my cost.

8. I acknowledge that public authorities and future owners, occupants and others may rely on this statement.

AND I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath.

DECLARED before me at the City)
of Mississauga, in the Region of Peel)



this 21st day of October 2024.)

Grzegorz Guzik

Greg Guzik
Professional Corporation
82 Queen Street South
Mississauga, ON L5M 1K6
TEL. 905-286-4570
FAX. 905-286-9692

OWNER/AUTHORIZED AGENT STATEMENT

I am the owner of the property, or the owner's agent, and that I understand and agree with the noise attenuation measures proposed in study entitled " Noise Feasibility Study, Proposed Residential Development, 1140 Main Street, Cambridge, Ontario " dated October 21, 2024.

The application has been designed to avoid the use of berms or walls as noise attenuation features where feasible. Where berms or walls are recommended, the Noise Study provides economic, planning and engineering justification.

If the application is changed in a way that may affect the noise level calculations, I will have a revised noise study submitted to the Region.

Name Ryan Chin Signature Ryan Chin

Title Manager, Land Development Company Madison Main (Cambridge) Limited

Date October 28, 2024