



# 1101, 1105, 1163 Kingston Road

## Environmental Noise Assessment Pickering, ON

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## 1.0 Introduction

SLR Consulting (Canada) Ltd. was retained by Tribute (Brookdale) Limited, to conduct an Environmental Noise Assessment for the proposed development (“the Site”) located at 1105 Kingston Road, located in Pickering, Ontario. This report is in support of the Official Plan Amendment/Zoning By-Law Amendment (OPA/ZBA) application for the development.

### 1.1 Focus of Report

The intent of this report is to meet the requirement of the City of Pickering and the Region of Durham. In keeping with standard acoustical practices, this report examines the potential for:

- Impacts of the environment on the proposed development;
- Impacts of the proposed development on the environment; and
- Impacts of the proposed development on itself.

The setback to the CN/Metrolinx Kingston Subdivision is greater than 140 meters and is outside of the recommended 75-meter setback, therefore, an environmental vibration assessment has not been conducted.

### 1.2 Nature of the Subject Lands

The development site is located at 1105 Kingston Road in Pickering, Ontario. The proposed development is located between Kingston Road and Highway 401<sup>1</sup>, just east of Dixie Road. A context plan is provided in **Figure 1**. The site plan and architectural drawings of the Site are provided in **Appendix A**. Excerpts from the site plan are provided in **Figure 2**.

The site is currently occupied by parking lots and low-rise commercial buildings. The proposed master plan development consists of Blocks A1, A2, B, C1, C2, and D, including multiple towers ranging from 17 to 35 storeys in height, with multiple shared six-storey podiums.

### 1.3 Nature of the Surroundings

Immediately surrounding the site there are lightly forested fields to the east; Highway 401 to the southeast through south; low-rise commercial buildings to the southwest and northeast; and low-rise residential developments to the west through north. Beyond the immediate surroundings, Frenchman’s Bay lies to the south and there are low-rise residential and commercial buildings in all other directions. To the east, there is a high-rise development under construction on Walnut Lane, south of the grocery store.

An overall context plan can be found in **Figure 2**.

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<sup>1</sup> For the sake of simplicity, when describing general directions in the report text, Kingston Road is assumed to run west to east.



## Part 1: Impacts of the Environment on the Development

In assessing the potential impacts of the environment on the proposed development, the focus of this report is to assess the potential for:

- Transportation noise impacts from the surrounding roadways and railways; and
- “Stationary” noise impacts from the surrounding commercial lands.

### 2.0 Transportation Noise Impacts

#### 2.1 Transportation Noise Sources

Roadway and rail noise sources of interest with the potential to produce noise at the proposed development are:

- Kingston Road;
- Liverpool Road;
- Highway 401; and
- The Metrolinx/Canadian National Railway (“CN”) Kingston Subdivision.

Sound exposure levels at the development have been predicted, and this information has been used to identify façade, ventilation, and warning clause requirements.

#### 2.2 Surface Transportation Noise Criteria

##### Noise Sensitive Developments

Ministry of the Environment, Conservation and Parks (MECP) Publication NPC-300 provides sound level criteria for noise sensitive developments. The applicable portions of NPC-300 are Part C – Land Use Planning and the associated definitions outlined in Part A – Background. **Tables 1 to 4** below summarize the applicable surface transportation (road and rail) criteria limits.

##### Location Specific Criteria

**Table 1** summarizes criteria in terms of energy equivalent sound exposure ( $L_{eq}$ ) levels for specific noise-sensitive locations. Both outdoor and indoor locations are identified, with the focus of outdoor areas being amenity spaces. Indoor criteria vary with sensitivity of the space. As a result, sleep areas have more stringent criteria than Living / Dining room space.





**Table 1: NPC-300 Sound Level Criteria for Road and Rail Noise**

Type of Space	Time Period	Energy Equivalent Sound Exposure Level $L_{eq}$ [5] (dBA)		Assessment Location
		Road	Rail [1]	
Outdoor Amenity Area	Daytime (0700-2300h)	55	55	Outdoors [2]
Living/Dining Room [3]	Daytime (0700-2300h)	45	40	Indoors [4]
	Night-time (2300-0700h)	45	40	Indoors [4]
Sleeping Quarters	Daytime (0700-2300h)	45	40	Indoors [4]
	Night-time (2300-0700h)	40	35	Indoors [4]

**Notes:** [1] Whistle noise is excluded for OLA noise assessments and included for Living/Dining Room and Sleeping Quarter assessments, where applicable.  
 [2] Road and Rail noise impacts are to be combined for assessment of OLA impacts.  
 [3] Residence area Dens, Hospitals, Nursing Homes, Schools, Daycares are also included. During the nighttime period, Schools and Daycares are excluded.  
 [4] An assessment of indoor noise levels is required only if the criteria in Table 3 are exceeded.  
 [5]  $L_{eq}$  – the energy equivalent sound exposure level, integrated over the time period shown.

## Outdoor Living Areas

**Table 2** summarizes the noise mitigation requirements for communal outdoor amenity areas (“Outdoor Living Areas” or “OLAs”).

For the assessment of outdoor sound levels, total surface transportation noise is determined by combining road and rail traffic sound levels. Whistle noise from trains is not included in the determination of outdoor sound levels.

**Table 2: NPC-300 OLA Sound Level Criteria for Road and Rail Noise**

Time Period	OLA Energy Equivalent Sound Level $L_{eq}$ (dBA)	Mitigation Requirements/Warning Clause Recommendations
Daytime (0700-2300h)	≤ 55	<ul style="list-style-type: none"> <li>None</li> </ul>
	56 to 60 inc.	<ul style="list-style-type: none"> <li>Noise barrier OR Type A Warning Clause</li> </ul>
	> 60	<ul style="list-style-type: none"> <li>Noise barrier to reduce noise to 55 dBA OR</li> <li>Noise barrier to reduce noise to 60 dBA and Type B Warning Clause</li> </ul>

## Ventilation and Warning Clauses

**Table 3** summarizes recommendations for ventilation where windows would potentially have to remain closed as a means of noise control. Despite implementation of ventilation measures where recommended, if sound exposure levels exceed the guideline limits in **Table 1**, warning clauses advising future occupants of the potential excesses are also recommended. Warning clauses also apply to OLAs.



**Table 3: NPC-300 Ventilation and Warning Clause Recommendations**

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - $L_{eq}$ (dBA)		Ventilation and Warning Clause Recommendations <sup>[2]</sup>
		Road	Rail <sup>[1]</sup>	
Outdoor Living Area	Daytime (0700-2300h)	56 to 60 incl.		Type A Warning Clause
Plane of Window	Daytime (0700-2300h)	$\leq 55$		None
		56 to 65 incl.		Forced Air Heating with provision to add air conditioning + Type C Warning Clause
		$> 65$		Central Air Conditioning + Type D Warning Clause
	Night-time (2300-0700h)	51 to 60 incl.		Forced Air Heating with provision to add air conditioning + Type C Warning Clause
		$> 60$		Central Air Conditioning + Type D Warning Clause

**Notes:** [1] Whistle noise is excluded from assessment.  
[2] Road and Rail noise is combined for determining Ventilation and Warning Clause requirements.

## Building Component Requirements

**Table 4** provides sound level thresholds which, if exceeded, trigger a requirement for the building shell components (i.e., wall, windows) to be designed accordingly to meet the applicable indoor sound criteria.

**Table 4: NPC-300 Building Component Assessment Requirements**

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - $L_{eq}$ (dBA)		Component Requirements
		Road	Rail <sup>[1]</sup>	
Plane of Window	Daytime (0700-2300h)	$> 65$	$> 60$	Designed/ Selected to Meet Indoor Requirements <sup>[2]</sup>
	Night-time (2300-0700h)	$> 60$	$> 55$	

**Notes:** [1] Whistle noise is included in assessment  
[2] Building component requirements are assessed separately for Road and Rail, and then combined for a resultant sound isolation parameter.

### 2.2.1 Region of Durham and City of Pickering

The applicable Ministry of the Environment noise guideline for assessing new residential development applications is Publication NPC-300, which is also referenced in the City of Pickering's Terms of Reference for Noise Studies. Noise levels from industry meeting NPC-300 requirements will meet the requirements of the City/Region.



## 2.3 Traffic Data and Future Projections

### 2.3.1 Roadway Traffic Data

Ultimate traffic volumes for Kingston and Liverpool Road were obtained directly from the Region of Durham. Highway 401 volumes were obtained from the MTO's iCorridor website for the year 2019. Volumes were projected to a 2033 year based on a 1.5% growth per annum, which is typical for highways. Total Commercial vehicle percentages were also included within the provided dataset from the Region/MTO. A day/night traffic volume split of 90% daytime/ 10% night-time was used for Kingston Road and Liverpool Road, which is typical for urban arterial roadways. A day/night traffic volume split of 80% daytime/ 20% night-time was used for Highway 401, which were calculated based on hourly traffic counts from the MTO.

Copies of applicable traffic data and calculations can be found in **Appendix B**. The following **Table 5** summarizes the road traffic volumes used in the analysis.

**Table 5: Summary of Road Traffic Data Used in the Transportation Analysis**

Roadway Link	Traffic Volumes <sup>[1]</sup> AADT	% Day/Night Volume Split <sup>[1]</sup>		Commercial Vehicle Breakdown <sup>[2]</sup>		Vehicle Speed (km/hr)
		Daytime	Night-time	% Medium Trucks	% Heavy Trucks	
Kingston Road	35,000	90	10	2.4	5.6	60
Liverpool Road	32,000	90	10	2.1	4.9	60
Highway 401	304,613	80	20	1.5	10.5	100

**Notes:** [1] A typical Day/Night split of 90% day and 10% night was assumed, consistent with MEC/ MTO practices, and typical for urban arterial roadways (Kingston/Liverpool). A Day/Night split of 80%/20% was assumed based on MTO hourly traffic counts.  
[2] Total Commercial vehicle percentages obtained from the Region (Kingston/Liverpool) / MTO (Highway 401).

### 2.3.2 Railway Traffic Data

Railway traffic data for Metrolinx commuter trains were provided by Metrolinx for future conditions. CN rail traffic data (Freight/Way-Freight, Passenger) was obtained from previous studies conducted by SLR in the area. The 2033 CN traffic numbers were estimated based off a 2.5% annual growth rate. Excerpts of the rail traffic data from this assessment can be found in **Appendix B**. The following **Table 6** summarizes the railway traffic volumes used in the analysis.

**Table 6: Summary of Railway Traffic Data Used in the Transportation Analysis**

Train Type	Forecast 2033 # of Trains		No. of Locomotives/Train	No. of Cars/Train	Vehicle Speed (km/h)
	Daytime (7 AM-11 PM)	Night-time (11 PM-7 AM)			
GO Commuter	277	47	1	12	72
Freight	16	7	2	140	64
Way-Freight	2	5	2	25	64
VIA Passenger	46	0	2	10	64

**Notes:** [1] Train volumes were grown based on a 2.5%/annum growth rate provided by CN. See **Appendix B**.



### 2.3.3 Transportation Impact Modelling

Future (2033) road and railway sound levels at the proposed development were predicted using Cadna/A, a commercially available noise propagation modelling software.

Roadways were modelled as line sources of sound, with sound emission rates calculated using ORNAMENT algorithms, the road traffic noise model of the MECP. Future rail sound levels at the proposed development were predicted using the FTA/FRA modelling algorithms included in Cadna/A, a commercially available noise propagation modelling software. FRA reference sound levels were used for diesel-electric locomotives, and FTA reference sound levels were used for rail cars. These predictions were validated and are equivalent to those made using the MECP's STAMSON v5.04 noise models.

Sound levels were predicted along the façades of the proposed development using the “building evaluation” feature of Cadna/A. This feature allows for noise levels to be predicted across the entire façade of a structure.

Ground absorption was included in the assessment. As a conservative assumption, the entire model was assumed to be reflective.

### 2.3.4 Façade Sound Levels

Predicted worst-case façade sound levels are presented in **Table 7**. The transportation façade sound levels of the development, showing the ranges of predicted daytime and night-time sound levels are shown in **Figure 3a/b** for combined roadway and railway impacts at each Buildings.

STAMSON calculations at the most exposed location to Kingston Road (Building A1) are also provided in **Appendix B**. The STAMSON and Cadna/A predictions are within 1 dB and are acoustically equivalent.



**Table 7: Summary of Transportation Façade Sound Levels**

Component	Façade [1]	Roadway Sound Levels [1]		Railway Sound Levels [1]		Combined Sound Levels [1]	
		L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)	L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)	L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)
A1 – Podium	North	71	64	53	50	71	64
	East	68	63	54	50	68	63
	South	66	63	58	54	67	64
	West	69	64	57	54	69	64
A1 – 17 Storey	North	66	60	52	49	66	61
	East	66	62	55	52	66	62
	South	67	64	59	56	67	64
	West	65	61	57	54	65	62
A1 – 19 Storey	North	66	60	53	50	66	61
	East	66	60	53	50	66	61
	South	66	60	53	50	66	61
	West	66	60	53	50	66	61
A2 – Podium	North	65	60	53	50	66	61
	East	68	65	59	55	69	66
	South	73	70	64	61	74	71
	West	72	69	62	59	73	69
A2 – 21 Storey	North	65	60	53	50	66	61
	East	62	58	52	49	63	59
	South	71	68	62	58	72	68
	West	71	68	62	59	72	69
A2 – 23 Storey	North	65	59	50	46	65	59
	East	68	65	57	54	68	65
	South	73	70	64	60	74	70
	West	72	69	62	59	72	69
B – Podium	North	64	61	50	47	64	61
	East	79	76	66	63	80	77
	South	81	78	68	65	81	78
	West	78	75	65	62	78	75
B – 29 Storey	North	64	61	50	47	65	61
	East	69	66	59	55	70	66
	South	70	67	60	57	71	68
	West	66	63	56	53	67	64
B – 29 Storey 2	North	65	61	54	51	65	61
	East	75	72	64	61	75	72
	South	75	72	65	61	76	73
	West	66	63	56	53	67	64
Continued...							



Component	Façade [1]	Roadway Sound Levels [1]		Railway Sound Levels [1]		Combined Sound Levels [1]	
		L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)	L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)	L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)
B – 35 Storey	North	73	70	61	57	73	70
	East	79	76	66	63	79	76
	South	80	77	68	64	81	78
	West	79	76	67	63	79	76
C1 – Podium	North	65	61	55	52	65	62
	East	67	64	56	52	67	64
	South	66	63	55	52	66	63
	West	64	61	55	52	64	61
C1 – 23 Storey	North	63	59	50	46	63	59
	East	68	64	57	54	68	65
	South	69	66	60	57	70	67
	West	64	61	53	50	65	61
C1 – 24 Storey	North	65	61	54	51	65	62
	East	69	66	59	56	70	67
	South	69	66	59	56	70	67
	West	64	61	56	53	65	62
C2 - Podium	North	59	55	50	47	59	56
	East	57	54	51	47	58	55
	South	73	70	63	59	73	70
	West	73	70	63	60	73	70
C2 – 24 Storey	North	60	56	50	47	61	57
	East	67	63	57	53	67	64
	South	73	70	63	60	73	70
	West	73	70	63	60	73	70
D – Podium	North	62	59	53	50	62	59
	East	79	76	66	63	80	77
	South	81	78	68	65	81	78
	West	78	75	65	62	78	75
D – 27 Storey	North	71	68	61	58	71	68
	East	71	68	61	58	72	69
	South	74	71	64	60	75	72
	West	74	71	64	61	75	72
D – 30 Storey	North	63	60	54	52	63	60
	East	77	74	65	62	77	74
	South	80	77	68	65	80	77
	West	77	74	65	62	77	74
Continued...							



Component	Façade [1]	Roadway Sound Levels [1]		Railway Sound Levels [1]		Combined Sound Levels [1]	
		L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)	L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)	L <sub>eq</sub> Daytime (dBA)	L <sub>eq</sub> Night-time (dBA)
D – 33 Storey	North	65	61	56	53	65	62
	East	73	70	61	58	73	70
	South	79	76	67	64	80	77
	West	78	75	66	63	78	75
D - 35 Storey	North	69	66	57	53	69	66
	East	78	75	66	62	78	75
	South	80	77	68	65	81	78
	West	79	76	67	63	79	76

**Notes:** [1] The sound levels presented are for the worst-case exposed façade, in which totals may not correspond to the same location.  
[2] East and West façades are perpendicular to Kingston Road/Highway 401; North and South façades are parallel.

## 2.4 Outdoor Amenity Spaces

Based on the current architectural drawing set provided at the time of writing (**Appendix A**), there are no outdoor amenity spaces specified for the development. Landscaped areas are included and open park spaces which do not classify as outdoor living areas per NPC-300. It is expected that future plans might include outdoor living areas. OLA sound levels will be predicted at future planning stages if applicable (e.g. at SPA).

## 2.5 Façade Recommendations

### 2.5.1 Glazing Requirements

An assessment of indoor noise levels is required providing the façade sound levels due to road traffic exceed 65 dBA during the daytime or 60 dBA during the night-time periods. A detailed assessment of glazing requirements is required to ensure the indoor noise criteria listed in **Table 4** are met.

Indoor sound levels and required Sound Transmission Class (STC) ratings for façade components were estimated using the procedures outlined in the National Research Council Building Practice Note BPN-56. This document provides corrections to estimate the STC ratings required based on either roadway and railway noise levels. BPN-56 calculations are provided in **Appendix D**.

- Detailed floor plates were not provided at the time of this assessment. For the analysis, room dimensions for bedrooms and living/dining rooms have been assumed;
- Window wall construction with vision glazing and glass spandrel panel elements;
- For kitchen/dining/living rooms 70% of the exterior wall area is vision glass / patio doors;
- For bedrooms 50% of the exterior wall area is vision glass;
- Non-glazing portions of the wall have an assumed STC rating of 50;



- Living rooms were assumed to be 3 m x 6 m in size and typically have an intermediate level of acoustic absorption; and
- Bedrooms were assumed to be 3 m x 3 m in size typically have an intermediate level of acoustic absorption.

The following table provides the required STC ratings:

**Table 8: Facade Sound Transmission Class Requirements**

Building	Facade	Minimum Required Sound Transmission Class Rating (STC) <sup>[1]</sup>		
		Non-Vision Glazing Veneer	Living/Dining Room Windows and Patio Doors	Bedroom Windows
A1 – Podium	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	OBC	OBC
	West	50	OBC	OBC
A1 – 17 Storey	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	OBC	OBC
	West	50	OBC	OBC
A1 – 19 Storey	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	OBC	OBC
	West	50	OBC	OBC
A2 – Podium	North	50	OBC	OBC
	East	50	OBC	30
	South	50	33	35
	West	50	32	34
A2 – 21 Storey	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	31	33
	West	50	31	33
A2 – 23 Storey	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	33	35
	West	50	31	33
Continued...				





Building	Facade	Minimum Required Sound Transmission Class Rating (STC) <sup>[1]</sup>		
		Non-Vision Glazing Veneer	Living/Dining Room Windows and Patio Doors	Bedroom Windows
B – Podium	North	50	OBC	OBC
	East	50	38	41
	South	50	40	43
	West	50	37	40
B – 29 Storey	North	50	OBC	OBC
	East	50	OBC	31
	South	50	30	32
	West	50	OBC	OBC
B – 29 Storey 2	North	50	OBC	OBC
	East	50	34	36
	South	50	35	37
	West	50	OBC	OBC
B – 35 Storey	North	50	32	34
	East	50	38	40
	South	50	39	42
	West	50	38	41
C1 – Podium	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	OBC	OBC
	West	50	OBC	OBC
C1 – 23 Storey	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	OBC	31
	West	50	OBC	OBC
C1 – 24 Storey	North	50	OBC	OBC
	East	50	OBC	31
	South	50	OBC	31
	West	50	OBC	OBC
C2 - Podium	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	32	34
	West	50	33	35



Building	Facade	Minimum Required Sound Transmission Class Rating (STC) <sup>[1]</sup>		
		Non-Vision Glazing Veneer	Living/Dining Room Windows and Patio Doors	Bedroom Windows
C2 – 24 Storey	North	50	OBC	OBC
	East	50	OBC	OBC
	South	50	33	35
	West	50	33	35
D – Podium	North	50	OBC	OBC
	East	50	38	41
	South	50	40	43
	West	50	37	39
D – 27 Storey	North	50	30	33
	East	50	31	33
	South	50	34	36
	West	50	34	36
D – 30 Storey	North	50	OBC	OBC
	East	50	36	38
	South	50	39	42
	West	50	36	38
D – 33 Storey	North	50	OBC	OBC
	East	50	32	34
	South	50	38	41
	West	50	37	40
D – 35 Storey	North	50	OBC	30
	East	50	37	40
	South	50	39	42
	West	50	38	41

**Notes:** [1] STC requirements for corner units with two exposed facades may be up to 3 points higher. Requirements should be confirmed by an acoustical consultant as the design progresses.

With the inclusion of the above, indoor sound levels will meet the applicable limits.

## 2.5.2 Ventilation Requirements

Due to combined roadway and railway impacts exceeding 65 dBA during the daytime and 60 dBA during the night-time, forced air heating and a provision for air conditioning with a “Type D” warning clause are required for all residential units except the following:

- East Facing Units in Building A2 – 21 storey;



- North Facing Units in Building A2 – 23 storey;
- North Facing Units in Building C1 – 23 storey;
- North and East Facing Units in Building C2 – Podium;
- North Facing Units in Building C2 – 24 storey; and
- North Facing Units in Building D – Podium.

### 2.5.3 Warning Clause Requirements

MECP Publication NPC-300 **Type D** noise warning clauses are required for all units except those listed above. A **Type C** warning clause is required for the units mentioned above. In addition, CN requires a warning clause for developments within 300 m of their rail lines.

Warning Clauses are summarized in **Appendix C**. Warning Clauses should be included in agreements registered on Title for the residential units and included in all agreements of purchase and sale or lease, and all rental agreements.

## 3.0 Stationary Source Noise Impacts

A review has been conducted for the potential impacts on the development from stationary commercial noise sources.

### 3.1 D-Series of Guidelines

The D-series of guidelines were developed by the MECP in 1995 to assess recommended separation distances and other control measures for land use planning proposals in an effort to prevent or minimize ‘adverse effects’ from the encroachment of incompatible land uses where a facility either exists or is proposed. D-series guidelines address sources including sewage treatment (Guideline D-2), gas and oil pipelines (Guideline D3), landfills (Guideline D-4), water services (Guideline D-5) and industries (Guideline D-6).

For this project, the applicable guideline is Guideline D-6 - *Compatibility between Industrial Facilities and Sensitive Land Uses*. The guideline specifically addresses issues of air quality, odour, dust, noise, and litter.

To minimize the potential to cause an adverse effect, areas of influence and recommended minimum setback distances are included within the guidelines. The areas of influence and recommended separation distances from the guidelines are provided in the table below.

**Table 9: Guideline D-6 - Potential Influence Areas and Recommended Minimum Setback Distances for Industrial Land Uses**

Industry Classification	Area of Influence	Recommended Minimum Setback Distance
Class I – Light Industrial	70 m	20 m
Class II – Medium Industrial	300 m	70 m
Class III – Heavy Industrial	1000 m	300 m

Industrial categorization criteria are supplied in Guideline D-6-2, and are shown in the following table:



**Table 10: Guideline D-6 - Industrial Categorization Criteria**

Category	Outputs	Scale	Process	Operations / Intensity	Possible Examples
Class I Light Industry	<ul style="list-style-type: none"> <li>Noise: Sound not audible off-property</li> <li>Dust: Infrequent and not intense</li> <li>Odour: Infrequent and not intense</li> <li>Vibration: No ground-borne vibration on plant property</li> </ul>	<ul style="list-style-type: none"> <li>No outside storage</li> <li>Small-scale plant or scale is irrelevant in relation to all other criteria for this Class</li> </ul>	<ul style="list-style-type: none"> <li>Self-contained plant or building which produces/stores a packaged product</li> <li>Low probability of fugitive emissions</li> </ul>	<ul style="list-style-type: none"> <li>Daytime operations only</li> <li>Infrequent movement of products and/or heavy trucks</li> </ul>	<ul style="list-style-type: none"> <li>Electronics manufacturing and repair</li> <li>Furniture repair and refinishing</li> <li>Beverage bottling</li> <li>Auto parts supply</li> <li>Packaging and crafting services</li> <li>Distribution of dairy products</li> <li>Laundry and linen supply</li> </ul>
Class II Medium Industry	<ul style="list-style-type: none"> <li>Noise: Sound occasionally heard off-property</li> <li>Dust: Frequent and occasionally intense</li> <li>Odour: Frequent and occasionally intense</li> <li>Vibration: Possible ground-borne vibration, but cannot be perceived off-property</li> </ul>	<ul style="list-style-type: none"> <li>Outside storage permitted</li> <li>Medium level of production allowed</li> </ul>	<ul style="list-style-type: none"> <li>Open process</li> <li>Periodic outputs of minor annoyance</li> <li>Low probability of fugitive emissions</li> </ul>	<ul style="list-style-type: none"> <li>Shift operations permitted</li> <li>Frequent movements of products and/or heavy trucks with the majority of movements during daytime hours</li> </ul>	<ul style="list-style-type: none"> <li>Magazine printing</li> <li>Paint spray booths</li> <li>Metal command</li> <li>Electrical production</li> <li>Manufacturing of dairy products</li> <li>Dry cleaning services</li> <li>Feed packing plants</li> </ul>
Class III Heavy Industry	<ul style="list-style-type: none"> <li>Noise: Sound frequently audible off property</li> <li>Dust: Persistent and/ or intense</li> <li>Odour: Persistent and/ or intense</li> <li>Vibration: Ground-borne vibration can frequently be perceived off-property</li> </ul>	<ul style="list-style-type: none"> <li>Outside storage of raw and finished products</li> <li>Large production levels</li> </ul>	<ul style="list-style-type: none"> <li>Open process</li> <li>Frequent outputs of major annoyances</li> <li>High probability of fugitive emissions</li> </ul>	<ul style="list-style-type: none"> <li>Continuous movement of products and employees</li> <li>Daily shift operations permitted</li> </ul>	<ul style="list-style-type: none"> <li>Paint and varnish manufacturing</li> <li>Organic chemical manufacturing</li> <li>Breweries</li> <li>Solvent recovery plants</li> <li>Soaps and detergent manufacturing</li> <li>Metal refining and manufacturing</li> </ul>

### 3.1.1 Requirements for Assessments

Guideline D-6 requires that studies be conducted to assess impacts where sensitive land uses are proposed within the potential area of influence of an industrial facility. This report is intended to fulfill this requirement.

The D-series guidelines reference previous versions of the air quality regulation (Regulation 346) and noise guidelines (Publications NPC-205 and LU-131). However, the



D-Series of guidelines are still in force, still represent current MECP policy and are specifically referenced in numerous other current MECP policies. In applying the D-series guidelines, the current policies, regulations, standards and guidelines have been used (e.g., Regulation 419, Publication NPC-300).

### 3.1.2 Requirements for Minimum Separation Distances

Guideline D-6 also *recommends* that no sensitive land use be placed within the Recommended Minimum Separation Distance. However, it should be noted that this is a recommendation only. Section 4.10 of the Guideline allows for development within the separation distance, in cases of redevelopment, infilling, and transitions to mixed use, provided that the appropriate studies are conducted and that the relevant air quality and noise guidelines are met.

### 3.1.3 Guideline D-6 Assessment

**Figure 4** shows the Guideline D-6 separation distances measured from the development property line.

There are no Class III Heavy Industries within 1 km of the development and there are no Class II Medium Industries within 300 m of the Development. There are no industrially zoned properties within 300 m of the Development.

As can be seen in **Figure 4**, there are a number of light commercial land uses to the immediate north of the development of interest:

- CARSTAR Pickering (1167 Kingston Road); and
- Mr. Lube + Tires (1195 Kingston Road).

Mr. Lube + Tires is open from 8AM to 8PM and has not been assessed for night-time stationary noise impacts. CARSTAR Pickering is open between 8AM and 5PM and has not been assessed for evening or night-time stationary noise impacts. Stationary source modelling inputs and operating conditions are detailed in **Appendix E**.

The Pickering EMS HVAC units are expected to have insignificant impacts on the proposed development due to the presence of high ambient roadway sound levels generated by Kingston Road. Testing of sirens is considered an infrequent scenario and has not been assessed. Sirens associated with emergency calls are exempt under NPC-300 and the City of Pickering Noise By-Law 6834/08 (Schedule 3).

The remaining commercial properties are considered insignificant for stationary noise. Predicted ambient roadway background sound levels from Highway 401 are expected to be dominant for all west, east and south facing façades.

None of these are industrial land uses, and the requirements of Guideline D-6 do not technically apply. Under Guideline D-6, a detailed assessment of industrial noise impacts is not required. Nonetheless, a stationary noise impact assessment of the commercial operations has been conducted, as outlined below.

## 3.2 Stationary Noise Criteria

### 3.2.1 MECP NPC-300 Guidelines for Stationary Noise Sources

The applicable MECP noise guidelines for new sensitive land uses adjacent to existing industrial/ commercial uses are provided in MECP Publication NPC-300. NPC-300 revokes and replaces the previous noise assessment guideline, Publication LU-131 and Publication NPC-



205, which was previously used for assessing noise impacts as part of Certificates of Approval / Environmental Compliance Approvals granted by the MECP for industries.

The new guideline sets out noise limits for two main types of noise sources:

- Non-impulsive, “continuous” noise sources such as ventilation fans, mechanical equipment, and vehicles while moving within the property boundary of an industry. Continuous noise is measured using 1-hour average sound exposures ( $L_{eq}$  (1-hr) values), in dBA; and
- Impulsive noise, which is a “banging” type noise characterized by rapid rise time and decay. Impulsive noise is measured using a logarithmic mean (average) level ( $L_{LM}$ ) of the impulses in a one-hour period, in dBA.

Furthermore, the guideline requires an assessment at, and provides separate guideline limits for:

- Outdoor points of reception (e.g., back yards, communal outdoor amenity areas); and
- Façade points of reception such as the plane of windows on the outdoor façade which connect onto noise sensitive spaces, such as living rooms, dens, eat-in kitchens, dining rooms and bedrooms.

The applicable noise limits at a point of reception are the higher of:

- The existing ambient sound level due to road traffic, or
- The exclusion limits set out in the guideline.

The following table sets out the exclusion limits from the guideline for continuous noise sources.

**Table 11: NPC-300 Exclusion Limits for Non-Impulsive Sounds ( $L_{eq}$  (1-hr), dBA)**

Receiver Category	Time Period	Class 1 Area Exclusionary Sound Level Limits ( $L_{eq}$ (1-hr), (dBA) <sup>[1]</sup>
Outdoor	0700-1900h	50
	1900-2300h	50
	2300-0700h	-
Plane of Window <sup>[2]</sup>	0700-1900h	50
	1900-2300h	50
	2300-0700h	45

**Notes:** [1] Tables values or minimum hourly  $L_{eq}$  of background noise, whichever is higher.  
 [2] Applicable for “Noise Sensitive Spaces”, as defined in NPC-300.



**Table 12: NPC-300 Exclusion Limits for Impulsive Sounds (LLM dBAI)**

Time of Day	No. of Impulses in a 1-hour Period	Class 1 Area	
		Plane of Windows of Noise Sensitive Spaces	Outdoor Points of Reception
7 am to 11 pm	9 or more	50	50
	7 to 8	55	55
	5 to 6	60	60
	4	65	65
	3	70	70
	2	75	75
	1	80	80
11 pm to 7 am	9 or more	45	n/a
	7 to 8	50	n/a
	5 to 6	55	n/a
	4	60	n/a
	3	65	n/a
	2	70	n/a
	1	75	n/a
<b>Notes:</b> N/A - Not Applicable. Outdoor points of reception are not considered to be noise sensitive during the overnight period.			

### 3.2.2 Application of the NPC-300 Guidelines

The stationary noise guidelines apply only to residential land uses and to noise-sensitive commercial and institutional uses, as defined in NPC-300 (e.g., schools, daycares, hotels). For the Project, the stationary noise guidelines only apply to the residential portions of the development, including Residential Development Buildings A1-D, facades of individual residences.

All of the above have been considered as noise-sensitive points of reception in the analysis.

### 3.3 Site Visit and Noise Observations

SLR staff completed a site visit on August 1, 2023, to survey the surrounding area for potential stationary noise sources. An aerial review was also conducted of the development lands and surrounding area. No major industrial facilities were identified within 500m of the development.

During the site visit, the auto body shops north of Building A1 were identified as potential sources for “stationary” noise. Therefore, an assessment of surrounding stationary noise impacts was completed due to the proximity to the two commercial buildings.

There are no impulsive-type noise sources in the area. Impulsive noise has not been considered further.



### 3.3.1 Sources of Interest

Based on the information obtained during the site visit, the significant sources of noise in the area of the development have been identified. Noise emission rates for the equipment were determined based on information from SLR’s in-house database. Modelled noise sources include:

- Impact Wrenches;
- Compressed Air;
- General Exhaust Fans; and
- Paint Booth Exhaust Fans.

**Figure 5** shows the location of all modelled sources. Noise emission data used in the assessment can be found in **Appendix E**. Noise emission levels were based on data for similar types and sizes of equipment from SLR’s in-house emission level database.

All other stationary noise sources have been deemed insignificant within the 70m radius presented in **Figure 4**.

### 3.4 Ambient Roadway – Background Sound Level

During the site visit on August 1<sup>st</sup>, 2023, it was observed that the acoustic environment surrounding the Project site is dominated by the roadway noise from Kingston Road, and Highway 401. As NPC-300 allows for the higher of the existing ambient sound level or the exclusion limits, an assessment of roadway noise ambient levels was completed.

Road traffic data was obtained from the City of Pickering’s open data website. 2019 average annual daily traffic (AADT) volumes were provided online. The percentage of vehicle splits were used from the ultimate data obtained from the Region of Durham, see Section 2.3.1 above. Excerpts of the traffic data and traffic volume calculations are provided in **Appendix B**. The road traffic data used in the modelling is summarized in **Table 13**.

**Table 13: Summary of Ambient Road Traffic Data Used**

Roadway Link	Existing Traffic Volume (AADT)	Minimum Hourly Percentages <sup>[1]</sup>			Commercial Traffic Breakdown		Vehicle Speed (km/h)
		Daytime 7AM-7PM	Evening 7PM-11PM	Night 11PM-7AM			
Kingston Road	30,405	3.5	2.5	0.2	2.4	5.6	60

**Notes:** [1] Minimum percentages are from standard ITE distribution.

Existing road traffic was modelled using Cadna/A (a commercially available noise propagation modelling software). Line sources of sound were used, with sound emission rates calculated using the ORNAMENT algorithms, the road traffic noise model of the MECP. These predictions were validated and are equivalent to those made using the MECP ORNAMENT or STAMSON v5.04 road traffic noise models.

Resulting ambient (background) sound levels from the surrounding roadway are shown in **Table 14** as the applicable guideline limit. **Figure 6a** and **Figure 6b** provides the ambient roadway sound levels for the proposed development Building C1 only (most affected by the stationary noise sources).





### 3.5 Noise Modelling and Results

Worst-case scenario noise levels from the surrounding commercial/ industrial operations were modelled using Cadna/A, a computerized version of the internationally recognized ISO 9613-2 noise propagation algorithms. This is the preferred noise modelling methodology of the MECP. The ISO 9613 equations account for:

- Source to receiver geometry;
- Distance attenuation;
- Atmospheric absorption;
- Reflections off of the ground and ground absorption;
- Reflections off of vertical walls; and
- Screening effects of buildings, terrain, and purpose-built noise barriers (noise walls, berms, etc.).

The following additional parameters were used in the modelling, which are consistent with providing a conservative (worst-case assessment of noise levels):

- Temperature: 10°C;
- Relative Humidity: 70%;
- Ground Absorption G: 0 for paved areas, 1 for grassy areas;
- Reflection: An order of reflection of 1 was used (accounts for noise reflecting from walls); and
- Wall absorption coefficients: Set to 0.20 (20% of energy is absorbed, 80% reflected).

Predicted daytime and night-time façade sound levels are shown in **Figure 6a** and **Figure 6b** for the proposed development. Overall predicted sound levels from surrounding commercial properties are provided in the following table. The applicable Class 1 guideline limit is the greater of the ambient (background) sound levels or the

**Table 14: Overall Commercial Sound Levels - Normal Operations, Non-Impulsive Noise**

Building	Component	Maximum Predicted Sound Levels <sup>[1]</sup>		Applicable Class 1 Guideline Limit		Meets Guideline?
		Day	Evening	Day	Evening	
Building C1 – Podium	North	54	53	58	57	Yes
	East	45	42	52	51	Yes
	South	33	22	50	50	Yes
	West	25	24	53	51	Yes
Building C1 – 23 Storey	North	53	52	58	57	Yes
	East	45	37	53	52	Yes
	South	34	26	50	50	Yes
	West	41	39	56	55	Yes



Building	Component	Maximum Predicted Sound Levels <sup>[1]</sup>		Applicable Class 1 Guideline Limit		Meets Guideline?
		Day	Evening	Day	Evening	
<b>Notes:</b> [1] The sound levels presented are for the worst-case exposed façade. Sound levels are $L_{eq}$ (1-hr) values, in dBA.						

Façade sounds levels due to surrounding stationary noise sources are predicted to meet the applicable NPC-300 guideline limits at all façades. Therefore, additional noise mitigation measures are not required.

### 3.6 Warning Clause Requirements

A ‘Type E’ noise warning clause is recommended. See **Appendix C** for warning clause details.

## PART 2: IMPACTS OF THE DEVELOPMENT ON THE SURROUNDING AREA

### 4.0 Impacts on Surrounding Properties

In terms of the noise environment of the area, it is expected that the project will have a negligible effect on the neighbouring properties.

The traffic related to the proposed development will be small relative to the existing traffic volumes within the area and is not of concern with respect to noise impact.

Other possible development noise sources with potentially adverse impacts on the surrounding neighbourhood are the mechanical roof-top equipment (chillers, make up air units and generator). This equipment is required to meet MECP Publication NPC-300 requirements at the worst-case off-site noise sensitive receptors. Given the requirement for the systems to meet the applicable noise guideline at closer on-site receptors, off-site impacts are not anticipated.

Regardless, potential impacts should be assessed as part of the final building design. The criteria can be met at all surrounding and on-site receptors by the appropriate selection of mechanical equipment, by locating equipment with sufficient setback from noise sensitive locations, and by incorporating control measures (e.g., silencers, barriers) into the design.

It is recommended the mechanical systems be reviewed by an Acoustical Consultant prior to final selection of equipment.

## PART 3: IMPACTS OF THE DEVELOPMENT ON ITSELF

### 5.0 Noise Impacts from the Development Mechanical Systems on Itself

The building mechanical systems (e.g., cooling systems, emergency generator, parking garage vents) have not been designed in detail at this stage. Although no adverse impacts are expected, such equipment has the potential to result in noise impacts on the noise sensitive spaces within the development.

Therefore, the potential impacts should be assessed as part of the final building design. The criteria is expected to be met at all on-site receptors with the appropriate selection of



mechanical equipment, by locating equipment to minimize noise impacts within the development.

It is recommended that the mechanical systems be reviewed by an Acoustical Consultant prior to final selection of equipment.

## 6.0 Conclusions and Recommendations

The potential for noise impacts on and from the proposed development have been assessed. Impacts of the environment on the development, the development on the surrounding area and the development on itself have been considered. Based on the results of our studies, the following conclusions have been reached:

### 6.1 Transportation Noise

An assessment of transportation noise impacts from surrounding roadways and the CN/Metrolinx railway line has been completed. Based on the assessment:

- Window upgrades are required, as outlined in **Section 2.4.1**
- Forced air heating and a provision for central air-conditioning is required for some units, as outlined in **Section 2.4.2**.
- Mandatory air conditioning is required for all units except those listed in **Section 2.4.3**.
- **Type C** and **Type D** noise warning clauses are required, as well as a warning clause for CN/Metrolinx activity. Warning clauses are summarized in **Appendix C**.

### 6.2 Stationary Noise

An assessment of stationary noise has been completed, as outlined in Section 3. No additional mitigation is required to address surrounding stationary noise impacts.

### 6.3 Overall Assessment

- Impacts of the environment on the proposed development can be adequately controlled through the feasible mitigation measures, façade designs, and warning clauses detailed in **Part 1** of this report.
- Impacts of the proposed development on the surrounding area are anticipated to be negligible and can be adequately controlled by following the design guidance outlined in **Part 2** of this report.
- Impacts of the proposed development on itself are anticipated to be negligible and can be adequately controlled by following the design guidance outlined in **Part 3** of this report.
- As the mechanical systems for the proposed development have not been designed at the time of this assessment, the acoustical requirements above should be confirmed by an Acoustical Consultant as part of the final building design.

## 7.0 References

Canadian National Railways (CN), 2008, *Principal Main Line Requirements*



International Organization for Standardization, *ISO 9613-2: Acoustics – Attenuation of Sound During Propagation Outdoors Part 2: General Method of Calculation*, Geneva, Switzerland, 1996.

National Research Council, (NRC, 1985). *Building Practice Note: Controlling Sound Transmission into Buildings*, ISSN 0701-5216

Ontario Ministry of the Environment, Conservation and Parks (MECP, 1989). *Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT)*

Ontario Ministry of the Environment, Conservation and Parks (MECP, 1996). *STAMSON v5.03: Road, Rail and Rapid Transit Noise Prediction Model*

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1995), Guideline D-6: *Compatibility Between Industrial Facilities and Sensitive Land Uses*

Ontario Ministry of the Environment, Conservation and Parks (MECP, 2013), *Publication NPC-300: Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning*

Railway Association of Canada/ Federation of Canadian Municipalities (RAC/ FCM), 2013, *Guidelines for New Development in Proximity to Railway Operations*



## 8.0 Closure

Should you have questions on the above report, please contact the undersigned.

Regards,

**SLR Consulting (Canada) Ltd.**



**Jason Dorssers, B.Eng., EIT**  
Acoustics Consultant

**Aaron Haniff, P.Eng.**  
Principal, Acoustics Engineer



# Figures

## **1101, 1105, 1163 Kingston Road**


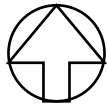
Environmental Noise Assessment Pickering, ON

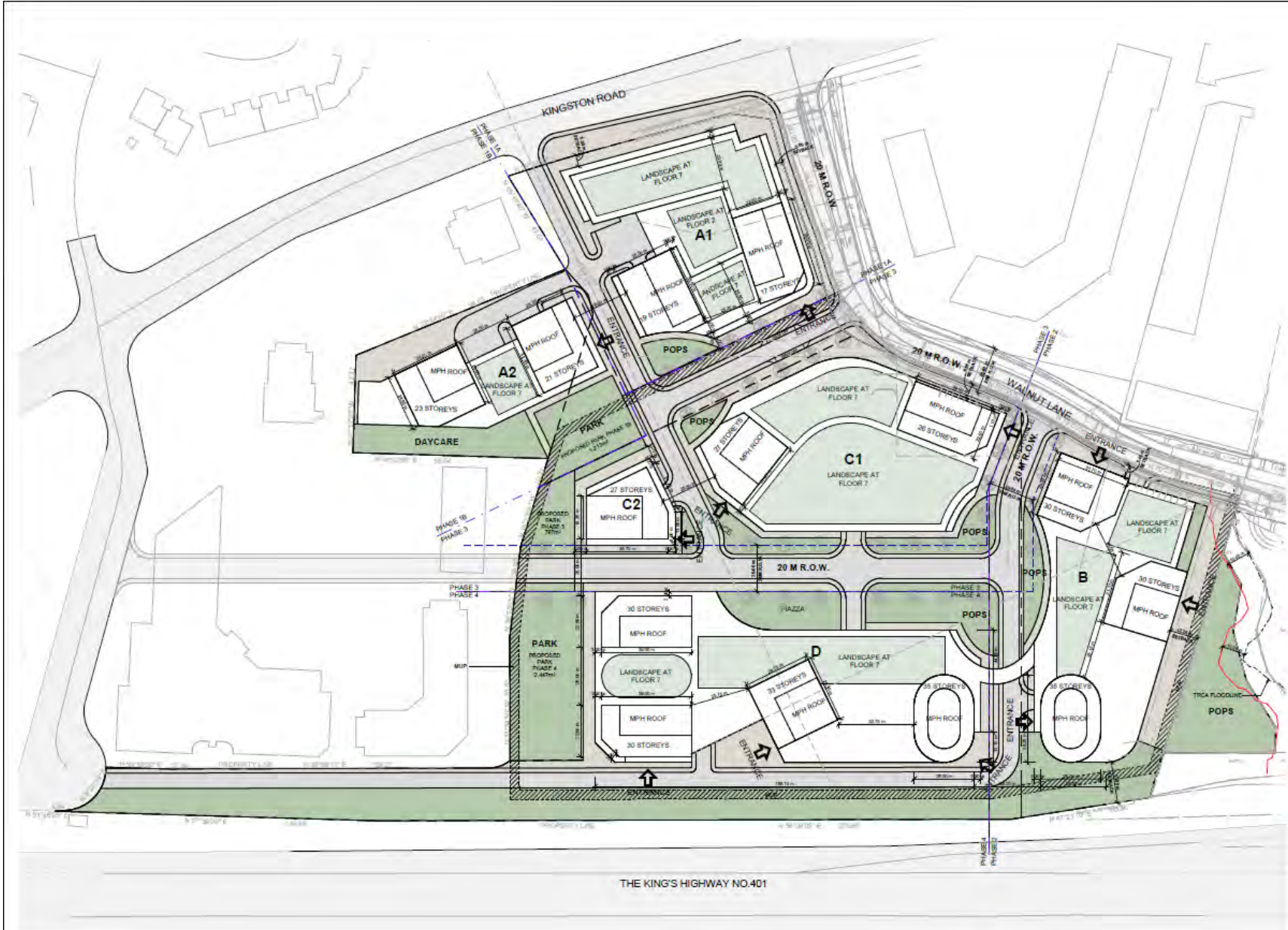
**Tribute (Brookdale) Limited**



SLR Project No.: 241.013026.00001

October 18, 2023



<p><b>TRIBUTE (BROOKDALE) LIMITED</b></p>	<p>True North</p>	<p>Scale: 1: 9,000</p>	<p>METRES</p>	
<p>1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON</p>		<p>Date: Oct. 2023</p>	<p>Rev 3.0</p>	
<p>CONTEXT PLAN</p>		<p>Project No. 241.013026.00001</p>	<p>Figure No. <b>1</b></p>	



<b>TRIBUTE (BROOKDALE) LIMITED</b>		True North 	Scale: NTS		METRES	
1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON			Date: Oct. 2023	Rev 3.0	Figure No.	
EXCERPTS FROM SITE PLAN			Project No. 241.013026.00001		<b>2</b>	





Legend	
<span style="color: green;">■</span>	≥45 ... <50 dBA
<span style="color: yellow;">■</span>	≥50 ... <55 dBA
<span style="color: orange;">■</span>	≥55 ... <60 dBA
<span style="color: cyan;">■</span>	≥60 ... <65 dBA
<span style="color: blue;">■</span>	≥65 ... <70 dBA
<span style="color: pink;">■</span>	≥70 ... <75 dBA
<span style="color: red;">■</span>	≥ 75 dBA

Legend	
<span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Proposed Development
<span style="border-bottom: 2px solid yellow; width: 20px; display: inline-block;"></span>	Property Line
<span style="border-bottom: 1px solid black; width: 20px; display: inline-block;"></span>	Road Source
<span style="border-bottom: 2px solid black; width: 20px; display: inline-block;"></span>	Rail Source
<span style="color: green;">●</span> <span style="color: yellow;">●</span> <span style="color: orange;">●</span> <span style="color: cyan;">●</span> <span style="color: blue;">●</span> <span style="color: pink;">●</span> <span style="color: red;">●</span>	Façade Sound Level (dBA) (see right Legend)

**TRIBUTE (BROOKDALE) LIMITED**

1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON

PREDICTED FAÇADE SOUND LEVELS – DAYTIME – ROAD + RAIL

True North



Scale: 1: 2,000

METRES

Date: Oct. 2023

Rev 3.0

Figure No.

**3a**

Project No. 241.013026.00001





Legend	
<span style="color: green;">■</span>	≥45 ... <50 dBA
<span style="color: yellow;">■</span>	≥50 ... <55 dBA
<span style="color: orange;">■</span>	≥55 ... <60 dBA
<span style="color: cyan;">■</span>	≥60 ... <65 dBA
<span style="color: blue;">■</span>	≥65 ... <70 dBA
<span style="color: pink;">■</span>	≥70 ... <75 dBA
<span style="color: red;">■</span>	≥ 75 dBA

Legend	
<span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Proposed Development
<span style="border-bottom: 2px solid yellow; width: 20px; display: inline-block;"></span>	Property Line
<span style="border-bottom: 1px solid black; width: 20px; display: inline-block;"></span>	Road Source
<span style="border-bottom: 2px solid black; width: 20px; display: inline-block;"></span>	Rail Source
<span style="color: green;">●</span> <span style="color: yellow;">●</span> <span style="color: orange;">●</span> <span style="color: cyan;">●</span> <span style="color: blue;">●</span> <span style="color: pink;">●</span> <span style="color: red;">●</span>	Façade Sound Level (dBA) (see right Legend)

**TRIBUTE (BROOKDALE) LIMITED**

1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON

PREDICTED FAÇADE SOUND LEVELS – NIGHT-TIME – ROAD + RAIL





	Scale:	1: 2,000	METRES
	Date:	Oct. 2023	Rev 3.0
	Project No.	241.013026.00001	


Figure No.  
**3b**





Legend	
	Property Line
	20 m Setback
	70 m Setback

<b>TRIBUTE (BROOKDALE) LIMITED</b>
1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON
MECP GUIDELINE D-6 SEPARATION DISTANCES FROM DEVELOPMENT – TO 70 M

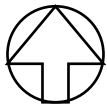
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	Date:	Oct. 2023	Rev 3.0
	Project No.	241.013026.00001	
			Figure No. <b>4</b>





Legend	
+	Point Source

<b>TRIBUTE (BROOKDALE) LIMITED</b>
1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON
MODELLED NOISE SOURCE LOCATIONS

True North 	Scale:	1: 500	METRES
	Date:	Oct. 2023	Rev 3.0
	Project No.	241.013026.00001	
			Figure No. <b>5</b>





Legend	
<span style="color: green;">█</span>	≥45 ... <50 dBA
<span style="color: yellow;">█</span>	≥50 ... <55 dBA
<span style="color: orange;">█</span>	≥55 ... <60 dBA
<span style="color: cyan;">█</span>	≥60 ... <65 dBA
<span style="color: blue;">█</span>	≥65 ... <70 dBA
<span style="color: pink;">█</span>	≥70 ... <75 dBA
<span style="color: red;">█</span>	≥ 75 dBA

**TRIBUTE (BROOKDALE) LIMITED**

1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON

PREDICTED FAÇADE SOUND LEVELS – AMBIENT BACKGROUND - DAYTIME

True North

Scale:	1: 1,000
Date:	Oct. 2023
Rev:	3.0
Project No.:	241.013026.00001

METRES

Figure No. **6a**



Legend	
<span style="color: lightgreen;">■</span>	≥45 ... <50 dBA
<span style="color: yellow;">■</span>	≥50 ... <55 dBA
<span style="color: orange;">■</span>	≥55 ... <60 dBA
<span style="color: cyan;">■</span>	≥60 ... <65 dBA
<span style="color: blue;">■</span>	≥65 ... <70 dBA
<span style="color: pink;">■</span>	≥70 ... <75 dBA
<span style="color: red;">■</span>	≥ 75 dBA

**TRIBUTE (BROOKDALE) LIMITED**

1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON

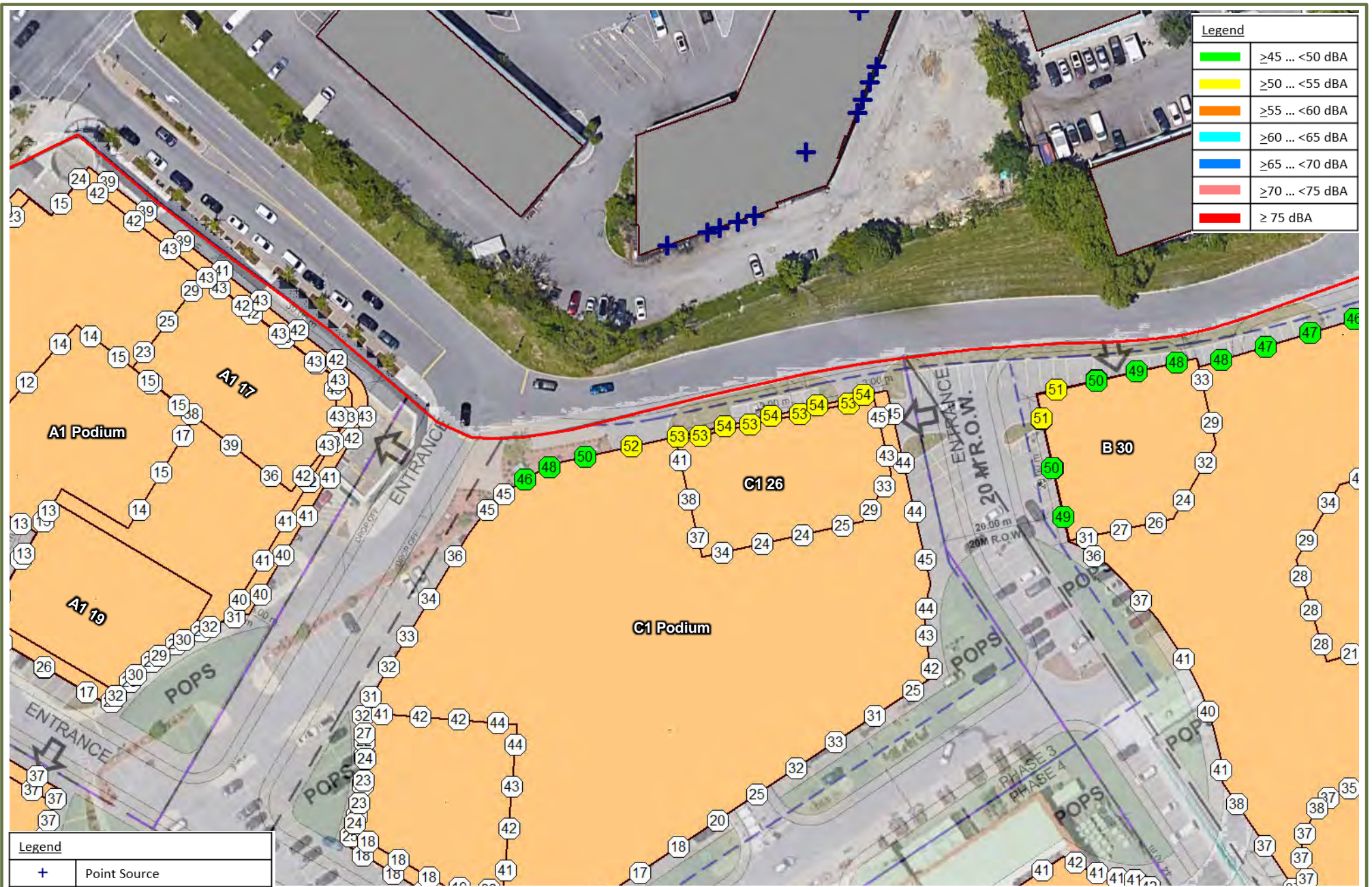
PREDICTED FAÇADE SOUND LEVELS - AMBIENT BACKGROUND - EVENING

True North

Scale:	1: 1,000
Date:	Oct. 2023
Rev:	3.0
Project No.:	241.013026.00001

METRES

Figure No. **6b**



Legend	
+	Point Source

**TRIBUTE (BROOKDALE) LIMITED**

1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON

PREDICTED FAÇADE SOUND LEVELS – CONTINUOUS STATIONARY - DAYTIME

True North



Scale: 1: 1,000

METRES

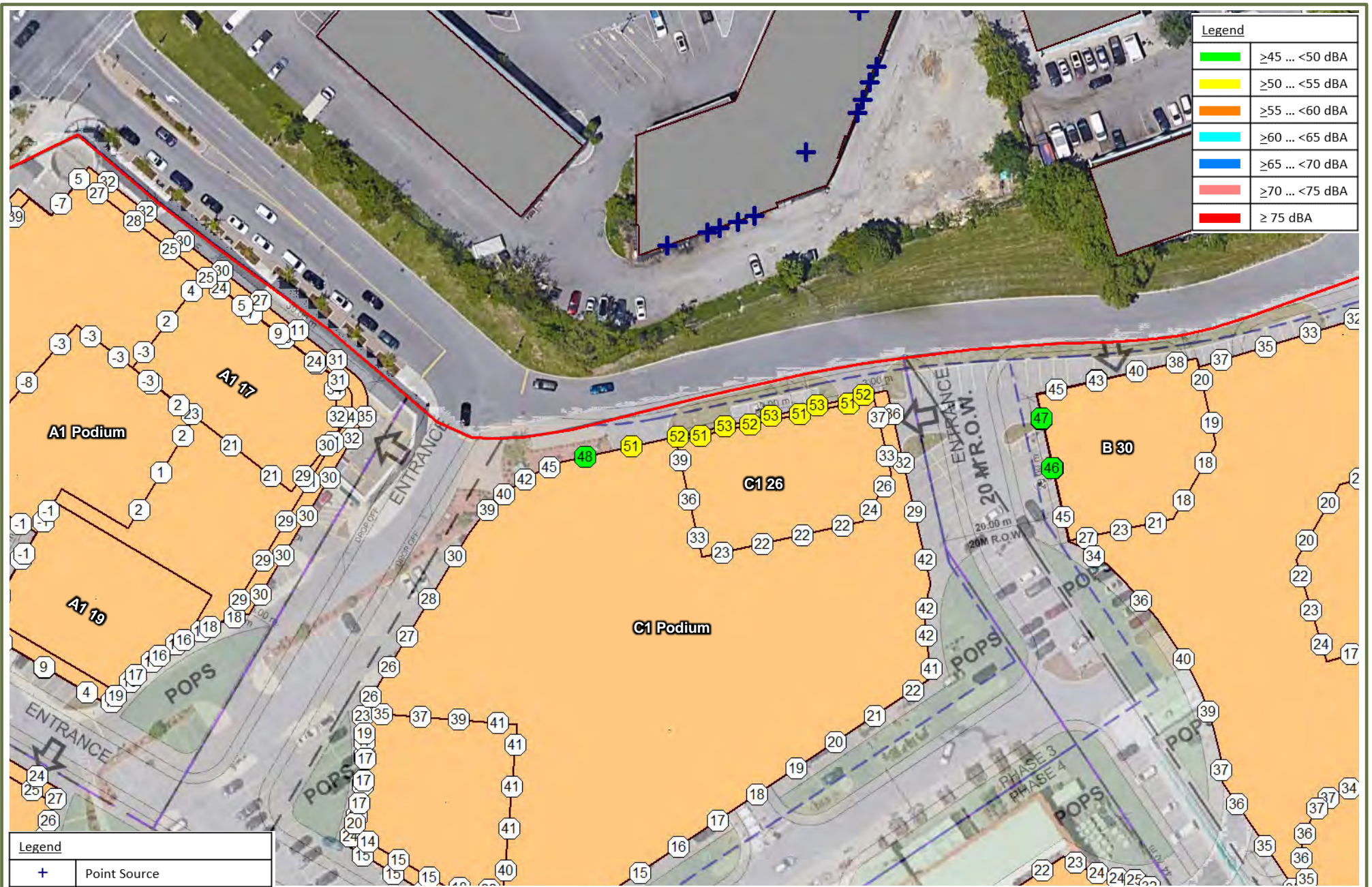
Date: Oct. 2023 Rev 3.0

Figure No.

Project No. 241.013026.00001

**7a**





Legend	
+	Point Source

**TRIBUTE (BROOKDALE) LIMITED**

1101, 1105, 1163 KINGSTON ROAD, PICKERING, ON

PREDICTED FAÇADE SOUND LEVELS – CONTINUOUS STATIONARY - EVENING

True North



Scale: 1: 1,000

METRES

Date: Oct. 2023 Rev 3.0

Figure No.

Project No. 241.013026.00001

**7b**







# Appendix A Development Drawings

## **1101, 1105, 1163 Kingston Road**

Environmental Noise Assessment Pickering, ON

**Tribute (Brookdale) Limited**

SLR Project No.: 241.013026.00001

October 18, 2023

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STATISTICS	M2	SF
SITE AREA:	77,476	833,953
R.O.W. AREA	5,683	61,172
TOTAL NFA	340,726	3,667,570
FSI (ON NET SITE AREA)	5.00	
TOTAL RETAIL	7,149	76,951
TOTAL RESIDENTIAL	332,861	3,582,915
NET AVERAGE APARTMENT UNIT SIZE	59	635
TOTAL RESIDENTIAL UNIT#	5,238	
TOTAL UPH (ON NET SITE AREA)	768.1	

PHASE 1	10,251
PHASE 2	9,373
PHASE 3	14,096
PHASE 4	13,420
PHASE 5	28,253
POPS	6,180
PARK	4,515
TOTAL (POPS AND PARK)	10,695
R.O.W	5,683
SITE AREA EXCLUDING R.O.W.	71,793
NET SITE AREA	68,203
TOTAL	77,476

8.6% OF SITE AREA EXCLUDING R.O.W.  
6.3% OF SITE AREA EXCLUDING R.O.W.  
14.9% OF SITE AREA EXCLUDING R.O.W.  
  
DEDUCTED BY PARKLAND (5%) AND R.O.W.

### NFA CALCULATION

	DESCRIPTION	FLOORS	RETAIL		DAYCARE		TOWNHOUSE			RESIDENTIAL APARTMENT		NET SALEABLE			TOTAL NFA	
			PORTION	m2	ft2	m2	ft2	m2	ft2	UNITS	m2	ft2	m2	ft2	UNIT#	m2
BUILDING 'A1'	BASE (F1-F6)	6	4,946	53,242						21,374	230,069	19,268	207,404	327	26,320	283,311
	TOWER (F7-F19)	13								17,661	190,104	16,634	179,054	282	17,661	190,104
BUILDING 'A2'	BASE (F1-F6)	6			716	7,705				13,956	150,224	12,575	135,361	213	14,672	157,929
	TOWER (F7-F23)	17								24,330	261,885	22,973	247,287	389	24,330	261,885
BUILDING 'B'	BASE (F1-F6)	6								23,807	256,254	21,271	228,962	361	23,807	256,254
	TOWER (F7-F30)	24								55,364	595,935	51,933	559,006	880	55,364	595,935
	TOWER (F31-F35)	5								3,863	41,579	3,650	39,292	62	3,863	41,579
BUILDING 'C1'	BASE (F1-F6)	6	2,203	23,709						17,396	187,249	15,653	168,493	265	19,598	210,958
	TOWER (F7-F27)	21								31,648	340,663	29,797	320,732	505	31,648	340,663
BUILDING 'C2'	BASE (F1-F6)	6								5,317	57,233	4,831	52,002	82	5,317	57,233
	TOWER (F7-F27)	21								15,772	169,770	14,789	159,184	251	15,772	169,770
BUILDING 'D'	BASE (F1-F6)	6								20,694	222,746	18,743	201,751	318	20,694	222,746
	TOWER (F7-F27)	21								64,526	694,559	60,878	655,288	1,032	64,526	694,559
	TOWER (F28-F31)	4								12,495	134,495	11,691	125,844	198	12,495	134,495
	TOWER (F32-F33)	2								3,100	33,365	2,922	31,448	50	3,100	33,365
	TOWER (F34-F35)	2								1,559	16,785	1,460	15,717	25	1,559	16,785
GRAND TOTAL			7,149	76,951	716	7,705				332,861	3,582,915	309,069	3,326,823	5,238	340,726	3,482,925

### UNIT MIX

	FLOOR	UNIT TYPE						SUB-TOTAL
		BACH	1B	1B+D	2B	2B+D	3B	
BUILDING 'A1' PHASE 1A	BASE (F1-F6)	33	160	0	108	0	26	327
	TOWER (F7-F19)	28	138	0	93	0	23	282
	TOTAL	61	298	0	201	0	49	609
	UNIT MIX	10.0%	49.0%		33.0%		8.0%	100.0%
			59.0%		41.0%			
BUILDING 'A2' PHASE 1B	BASE (F1-F6)	21	104	0	70	0	17	213
	TOWER (F7-F23)	39	191	0	128	0	31	389
	TOTAL	60	295	0	199	0	48	603
	UNIT MIX	10.0%	49.0%		33.0%		8.0%	100.0%
			59.0%		41.0%			
BUILDING 'B' PHASE 2	BASE (F1-F6)	36	177	0	119	0	29	361
	TOWER (F7-F35)	94	462	0	311	0	75	942
	TOTAL	130	638	0	430	0	104	1,303
	UNIT MIX	10.0%	49.0%		33.0%		8.0%	100.0%
			59.0%		41.0%			
BUILDING 'C1', 'C2' PHASE 3	BASE (F1-F6)	35	170	0	115	0	28	347
	TOWER (F7-F25)	76	370	0	249	0	60	756
	TOTAL	110	540	0	364	0	88	1,103
	UNIT MIX	10.0%	49.0%		33.0%		8.0%	100.0%
			59.0%		41.0%			
BUILDING 'D' PHASE 4	BASE (F1-F6)	32	156	0	105	0	25	318
	TOWER (F7-F35)	130	639	0	430	0	104	1,304
	TOTAL	162	795	0	535	0	130	1,622
	UNIT MIX	10.0%	49.0%		33.0%		8.0%	100.0%
			59.0%		41.0%			
TOTAL	TOTAL	524	2,567	0	1,729	0	419	5,238
	UNIT MIX	10.0%	49.0%		33.0%		8.0%	100.0%
			59.0%		41.0%			

### PARKING REQUIRED (1)(2)(3)

	COMMERCIAL	TOWNHOUSE	RESIDENTIAL	VISITOR	TOTAL
	2/100M2	0.6/UNIT	0.6/UNIT	0.15/UNIT	
PARCEL 'A1'	99	0	365	91	555
PARCEL 'A2'	0	0	362	90	452
PARCEL 'B'	0	0	782	195	977
PARCEL 'C1', 'C2'	66	0	847	212	1,125
PARCEL 'D'	0	0	973	243	1,216
TOTAL	165	0	3,329	832	4,326

### PARKING PROVIDED

	ABOVE GRADE/LEVEL 1	ABOVE GRADE/LEVEL 2-6	UG1	UG2	UG3	TOTAL
PARCEL 'A1'			185	185		370
PARCEL 'A2'			157	157		314
PARCEL 'B'	42	305	313	321		981
PARCEL 'C1', 'C2'	74	475	288	290		1,127
PARCEL 'D'	94	920	215			1,229
TOTAL	210	1,700	1,158	953	347	4,368

NOTE: 1) ASSUMING COMMERCIAL PARKING RATIO= 2/100M2.  
2) ASSUMING RESIDENTIAL PARKING RATIO= 0.6 /UNIT, 0.15/ VISITOR  
3) ASSUMING TOWNHOUSE PARKING=0.6/ UNIT, 0.15/ VISITOR

### AMENITY REQUIRED (4)

	OUTDOOR	INDOOR
	2M2/ UNIT	2M2/ UNIT
PARCEL 'A1'	1,217	1,217
PARCEL 'A2'	1,205	1,205
PARCEL 'B'	2,605	2,605
PARCEL 'C1', 'C2'	2,206	2,206
PARCEL 'D'	3,244	3,244
TOTAL	10,477	10,477

### AMENITY PROVIDED

	OUTDOOR	INDOOR
PARCEL 'A1'	1,217	1,217
PARCEL 'A2'	1,205	1,205
PARCEL 'B'	2,605	2,605
PARCEL 'C1', 'C2'	2,206	2,206
PARCEL 'D'	3,244	3,244
TOTAL	10,477	10,477

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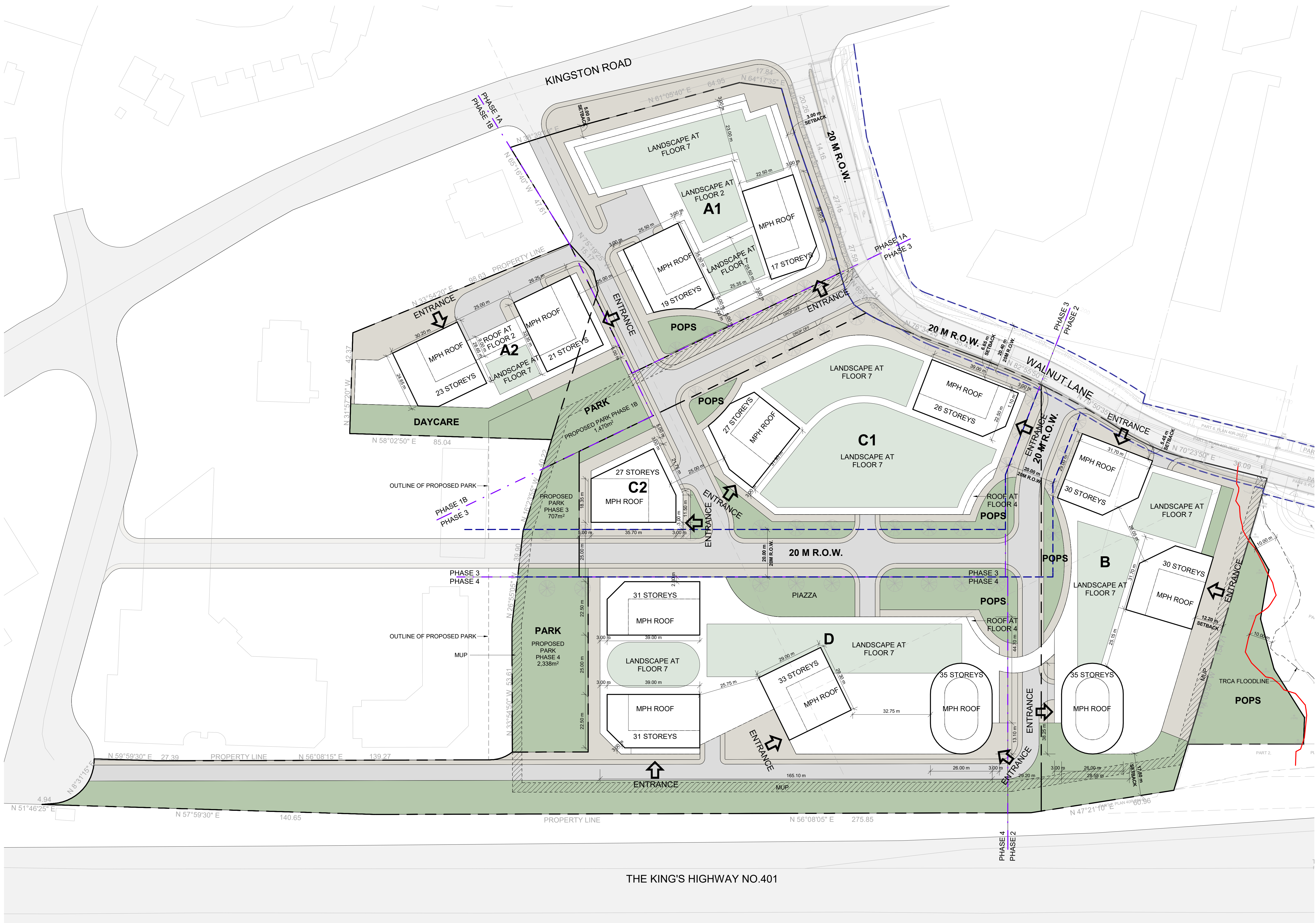
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**1163 Kingston Road, Pickering, ON**

DRAWING  
**STATISTICS**

PROJECT NO.  
22.122P01  
PROJECT DATE  
2023-10-06  
DRAWN BY  
MZH  
CHECKED BY  
AYU  
SCALE

DRAWING NO.  
**RZ002**  
REV.  
**1**

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**WITHOUT PREJUDICE**

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**1163 Kingston Road, Pickering, ON**

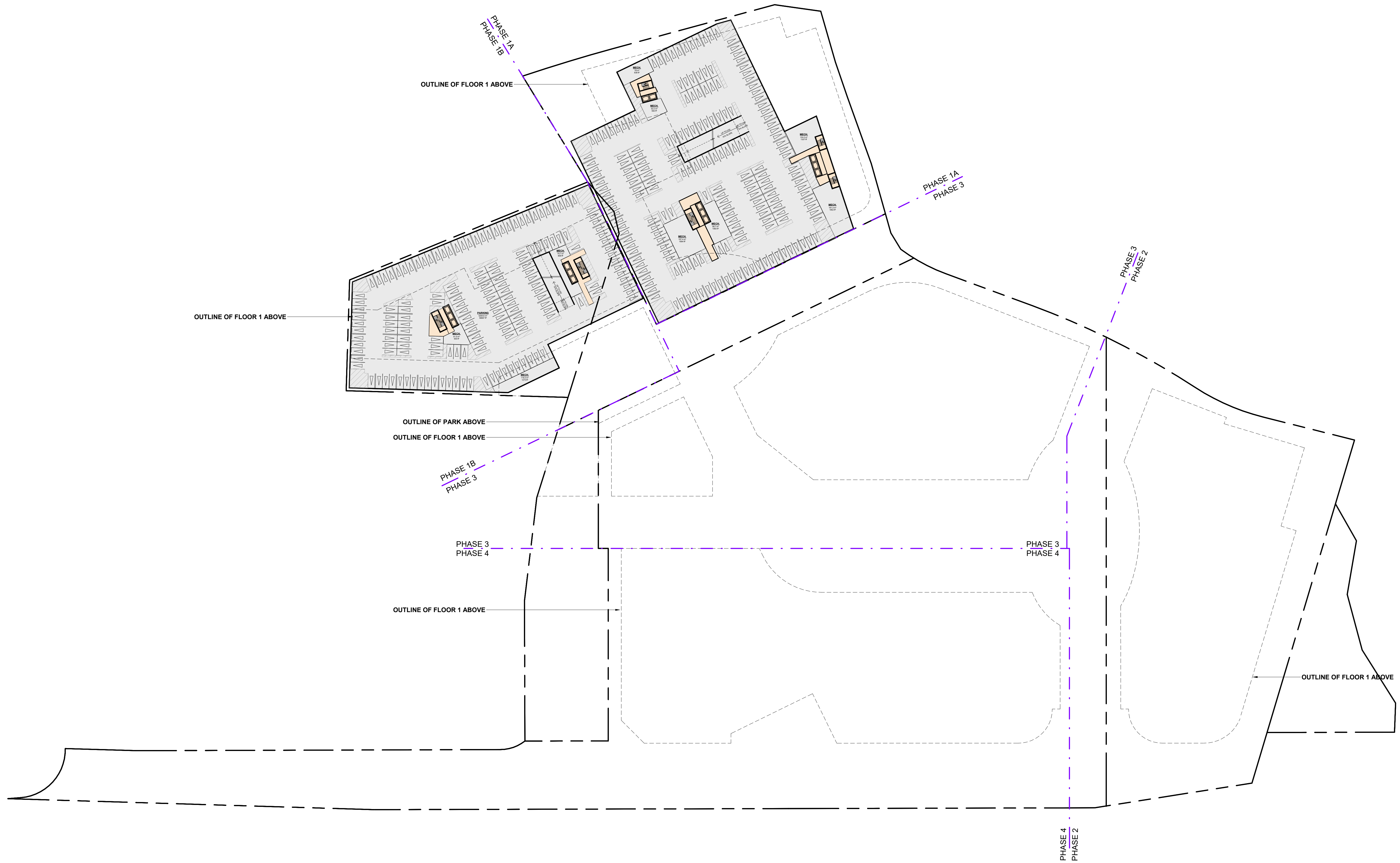
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PROJECT NO. 22.122P01
PROJECT DATE 2023-10-06
DRAWN BY MZH
CHECKED BY AYU
SCALE 1 : 700

DRAWING NO. <b>RZ005</b>	REV. <b>1</b>
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THE KING'S HIGHWAY NO.401

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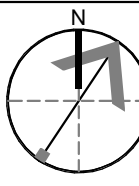
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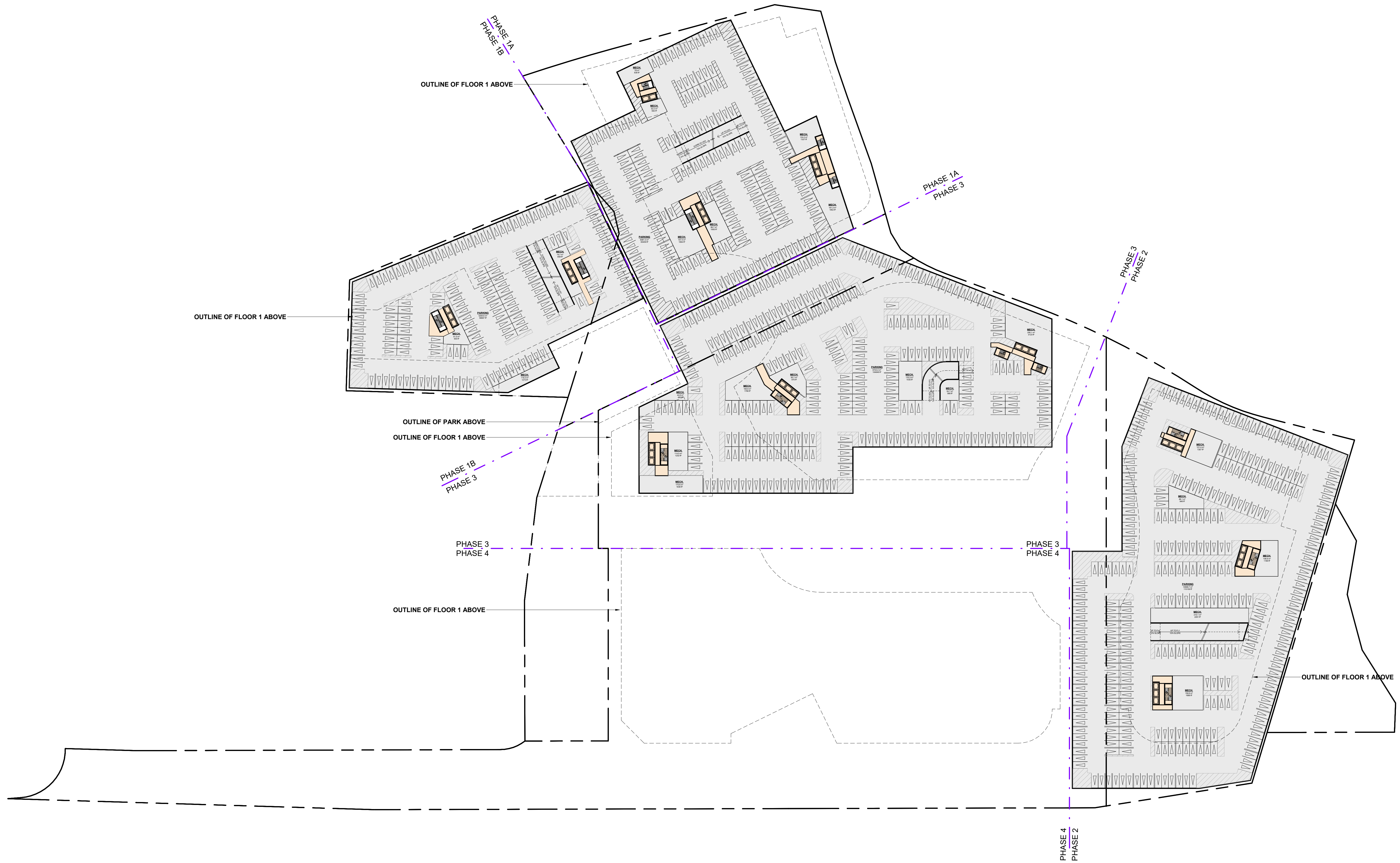
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**1163 Kingston Road, Pickering, ON**

DRAWING  
**UNDERGROUND LEVEL 03**

PROJECT NO.  
22.122P01  
 PROJECT DATE  
2023-10-06  
 DRAWN BY  
Author  
 CHECKED BY  
Checker  
 SCALE  
1 : 700

DRAWING NO.	REV.
<b>RZ100</b>	





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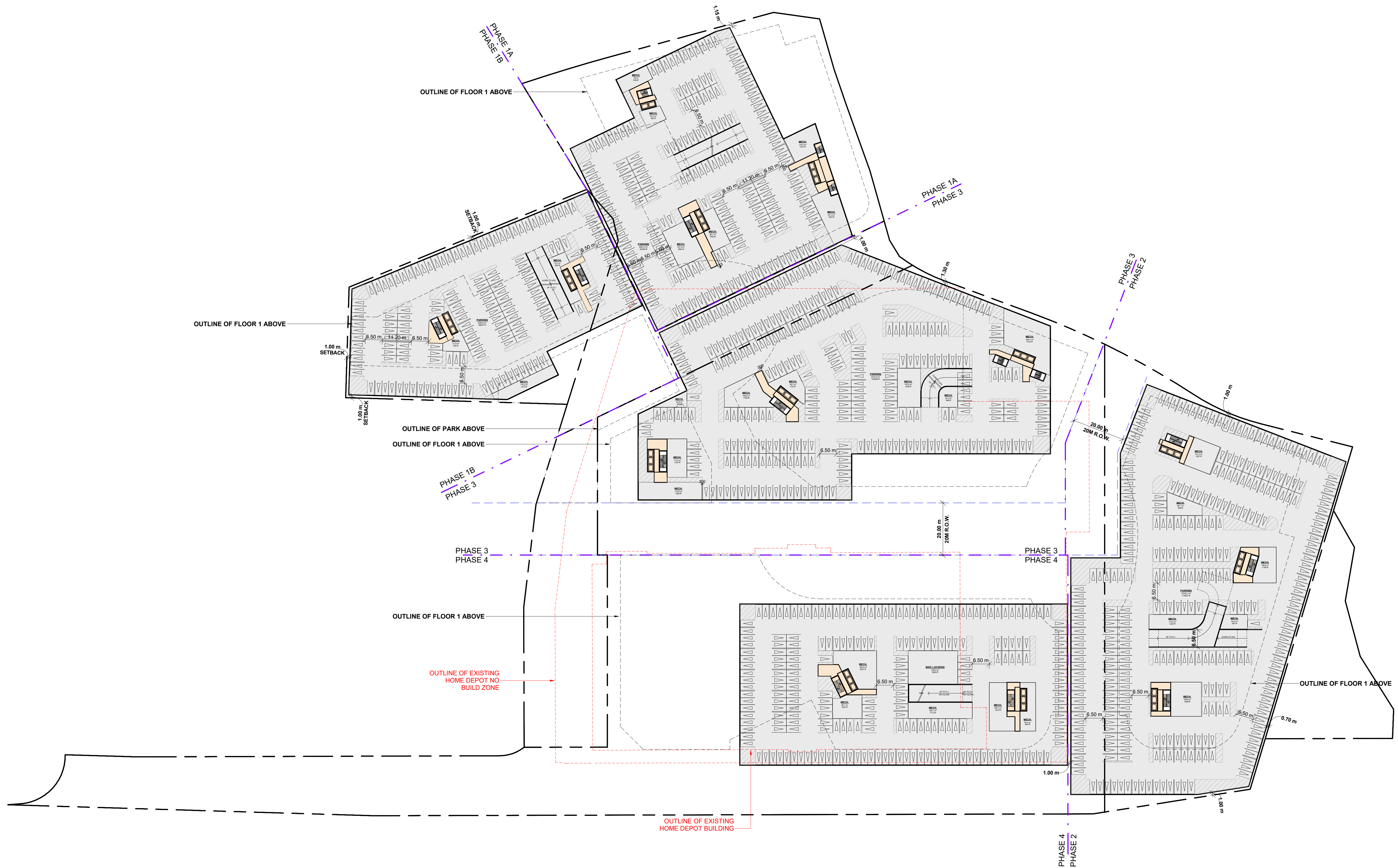
PROJECT  
**1163 Kingston Road, Pickering, ON**

DRAWING  
**UNDERGROUND LEVEL 02**

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PROJECT DATE 2023-10-06					
DRAWN BY Author					
CHECKED BY Checker					
SCALE 1 : 700					

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#	DATE	DESCRIPTION	BY
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PROJECT  
**1163 Kingston Road, Pickering, ON**




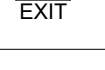
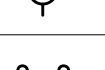
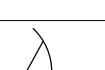

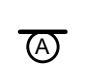



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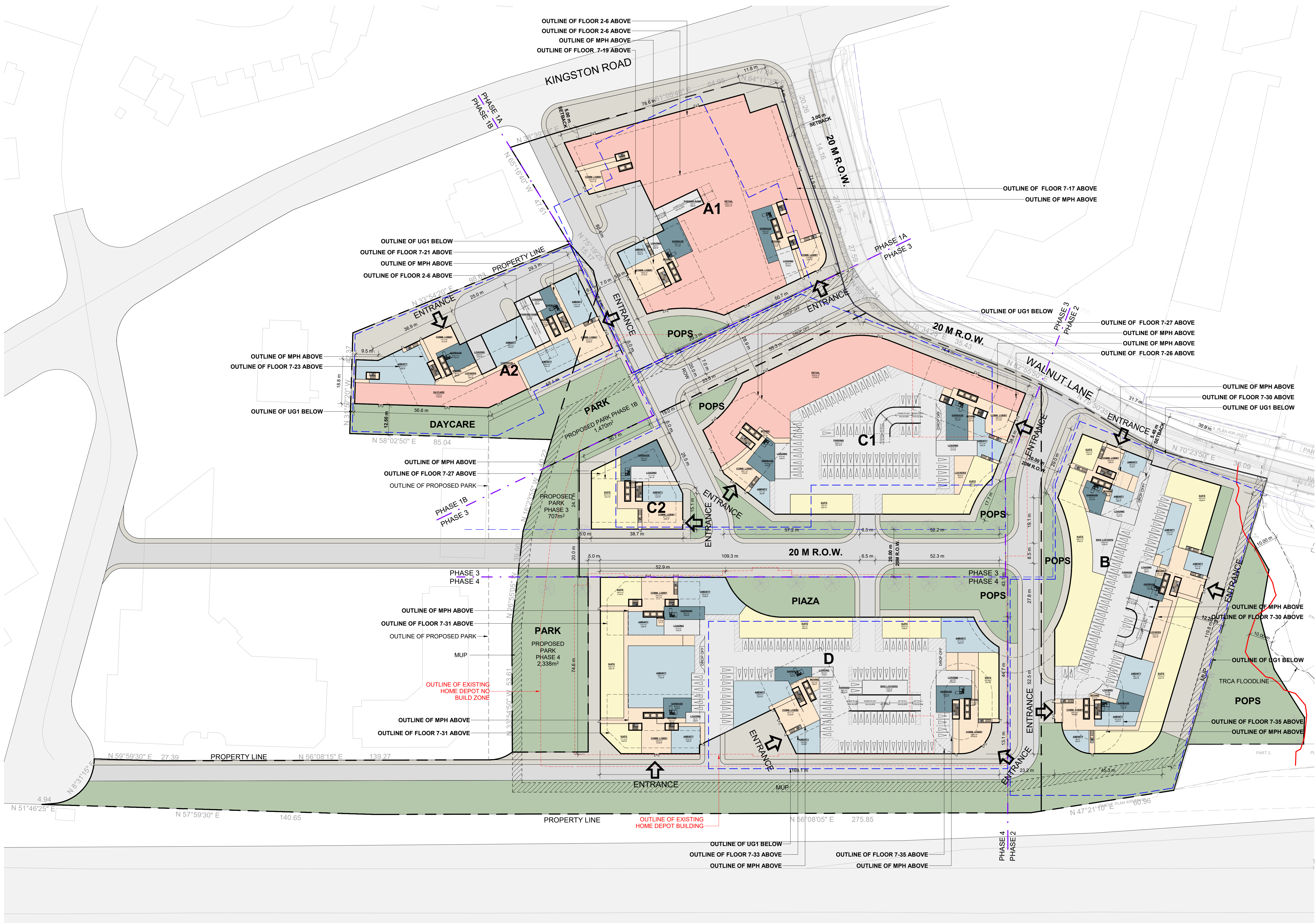
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PROJECT DATE 2023-10-06
DRAWN BY Author
CHECKED BY Checker
SCALE 1 : 700

	DRAWING NO. <b>RZ102</b>	REV.
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## LEGEND

-  PRIMARY RESIDENTIAL ENTRANCE
-  SECONDARY RESIDENTIAL ENTRANCE
-  RETAIL ENTRANCE
-  EXIT
-  FIRE HYDRANT
-  SIAMESE CONNECTION
-  CONVEX MIRROR
-  TRANSFORMER WITH CLEARANCES
-  FIRE ROUTE SIGN
-  0.000.00 SPOT ELEVATION
-  GAS/HYDRO METER



#	DATE	DESCRIPTION	BY

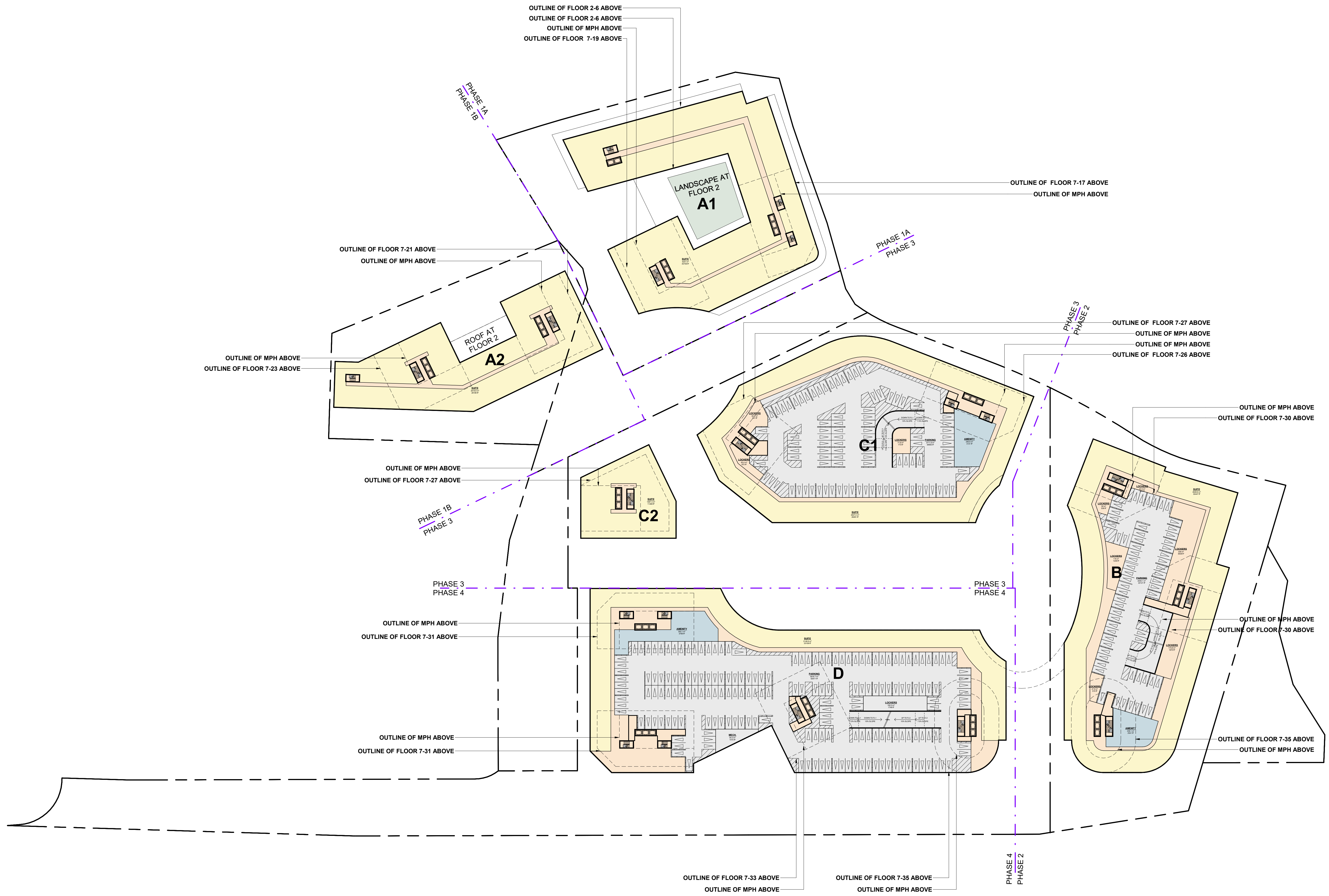
PROJECT  
**1163 Kingston Road, Pickering, ON**

DRAWING  
**FLOOR 01**

PROJECT NO. 22.122P01
PROJECT DATE 2023-10-06
DRAWN BY MZH
CHECKED BY AYU
SCALE 1:700

DRAWING NO. <b>RZ151</b>	REV.
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#	DATE	REVISION 1	DESCRIPTION	BY
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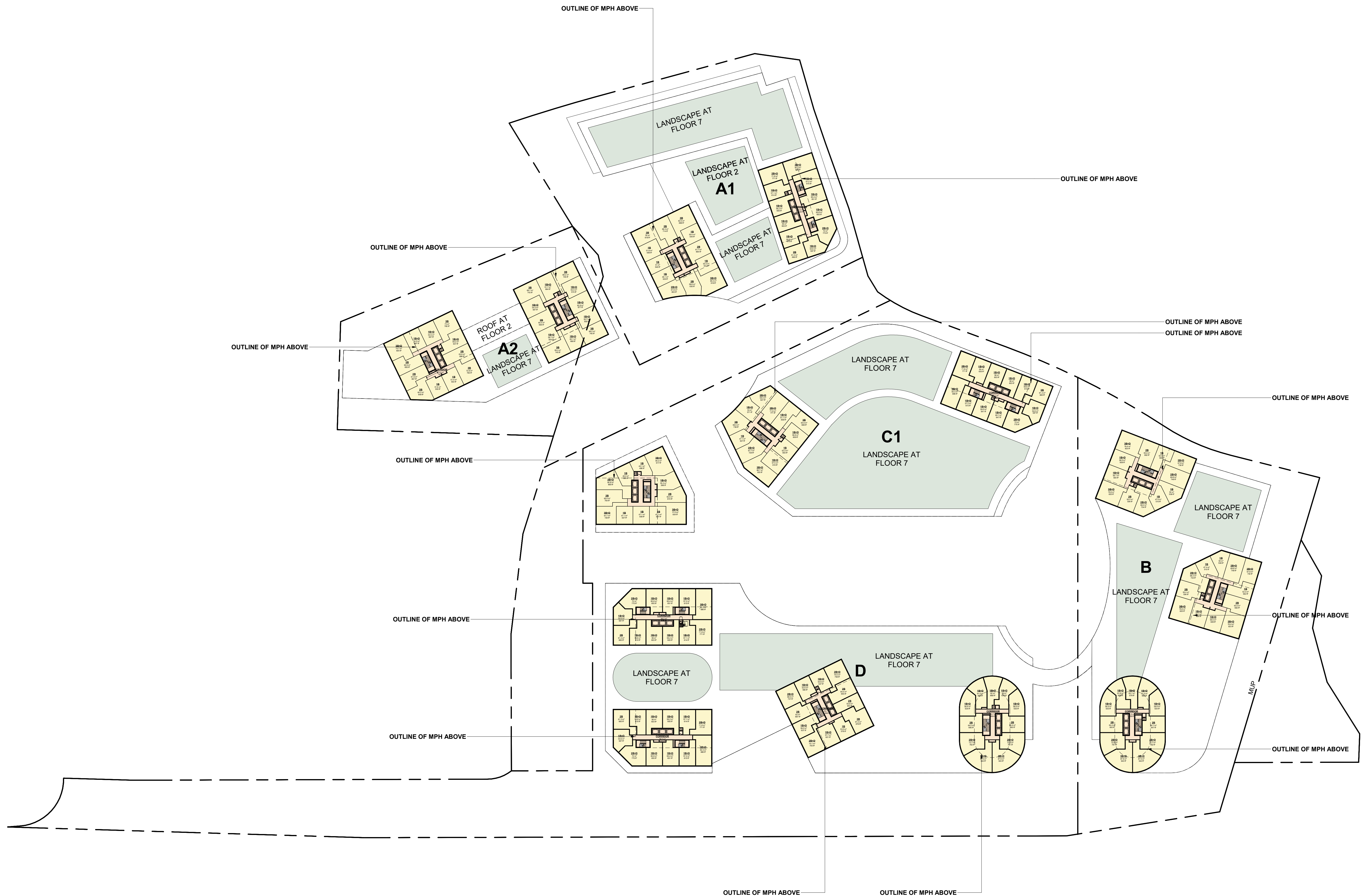
PROJECT  
**1163 Kingston Road, Pickering, ON**

DRAWING  
**FLOOR 02**

PROJECT NO. 22.122P01
PROJECT DATE 2023-10-06
DRAWN BY MZH
CHECKED BY AYU
SCALE 1 : 700

DRAWING NO. <b>RZ152</b>	REV. <b>1</b>
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#	DATE	DESCRIPTION	BY

PROJECT  
**1163 Kingston Road, Pickering, ON**

DRAWING  
**FLOOR 07**

PROJECT NO. 22.122P01	<table border="1"> <tr> <td>DRAWING NO.</td> <td>REV.</td> </tr> <tr> <td><b>RZ155</b></td> <td> </td> </tr> </table>	DRAWING NO.	REV.	<b>RZ155</b>	
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<b>RZ155</b>					
PROJECT DATE 2023-10-06					
DRAWN BY Author					
CHECKED BY Checker					
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DRAWING NO.	REV.				
<b>RZ155</b>					



# Appendix B Traffic Data and Calculations

## 1101, 1105, 1163 Kingston Road

Environmental Noise Assessment Pickering, ON

Tribute (Brookdale) Limited

SLR Project No.: 241.013026.00001

October 18, 2023



# The Regional Municipality of Durham

Planning and Economic  
Development Department

Planning Division

605 ROSSLAND RD. E.  
4TH FLOOR  
P.O. BOX 623  
WHITBY, ON L1N 6A3  
CANADA  
905-668-7711  
1-800-372-1102  
Fax: 905-666-6208  
E-Mail: [planning@durham.ca](mailto:planning@durham.ca)

[www.durham.ca](http://www.durham.ca)

**Brian Bridgeman, MCIP, RPP**  
Commissioner of Planning and  
Economic Development

## ROAD SEGMENT TRAFFIC FORECASTS FOR NOISE ANALYSES

This information is to be used as the basis for assessing the potential impacts of noise, generated by traffic on Provincial Highways and arterial roads, on proposed land uses that are sensitive (e.g., residential subdivisions). Arterial roads include existing and future Type A, B and C, as designated in the Durham Regional Official Plan.

Noise assessment reports recommend specific measures to be integrated into the design of sensitive developments to reduce road noise impacts to acceptable levels.

### Provided For:

Name / Name of Firm: Jason Dorssers, SLR Consulting  
Address: 100 Stone Road West, Guelph, ON N1G 5L3  
Telephone: (519) 362-0958 Fax:

### Location of Proposal:

1163 Kingston Road, Pickering

Municipality: Lot(s): Concession:

Durham Region File No. (if available):

Name of Property Owner (if available):

**Date Request Received:** July 26, 2023 Received By: Anthony Caruso

**Date Forecast Sent:** August 1, 2023

Name of Road Segment	Forecasted AADT*	No. of Lanes	% of Trucks	Heavy : Medium		Speed (km/h)
				Truck	Truck Ratio	
Kingston Road (Dixie to Liverpool)	35,000	4	8	30	70	60
Liverpool Road (401 to Kingston)	32,000	4	7	30	70	60

\* Average Annual Daily Traffic. Forecast based on ultimate development according to the Durham Regional Official Plan.

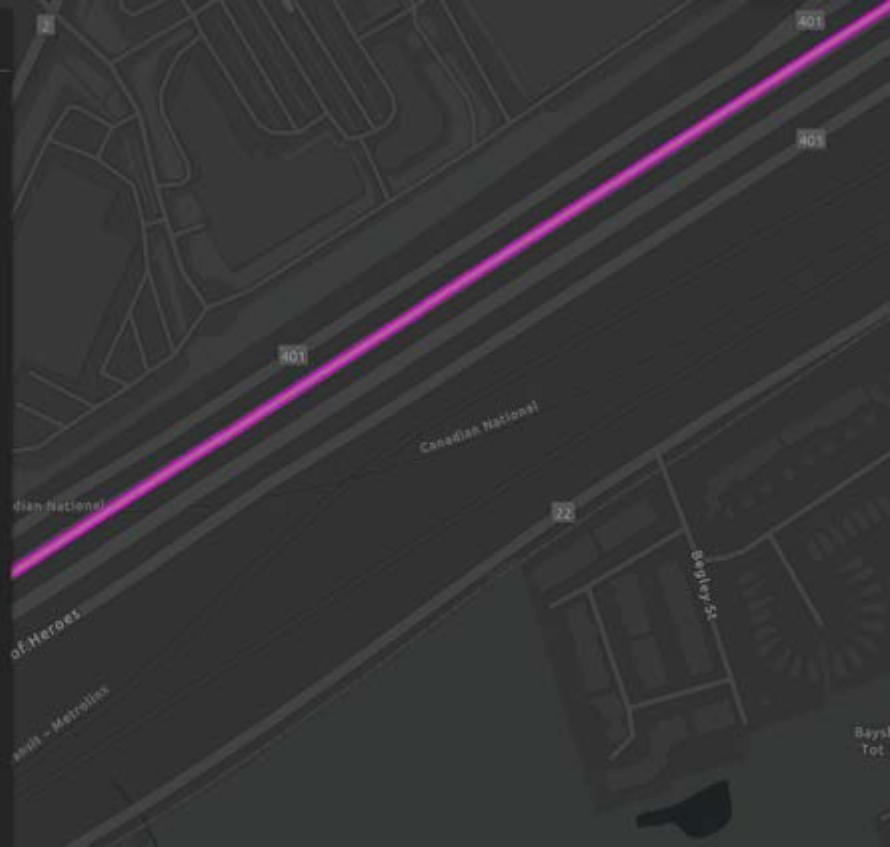


### Historical AADT/DJMA

#### Historiques



AADT04	183,200
AADT05	187,700
AADT06	193,000
AADT07	197,400
AADT08	201,900
AADT09	206,300
AADT10	210,800
AADT11	215,200
AADT12	219,700
AADT13	222,000
AADT14	224,000
AADT15	228,000
AADT16	230,000
AADT17	238,800.00
AADT18	243,100.00
AADT19	247,300.00





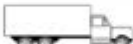







### Historical AADTT/DJMAC Historiques

AADTT04	18,320
AADTT05	18,770
AADTT06	19,300
AADTT07	19,740
AADTT08	20,190
AADTT09	20,630
AADTT10	21,080
AADTT11	21,520
AADTT12	21,970
AADTT13	22,200
AADTT14	22,400
AADTT15	22,800
AADTT16	23,000
AADTT17	28,700.00
AADTT18	29,200.00
AADTT19	29,700.00

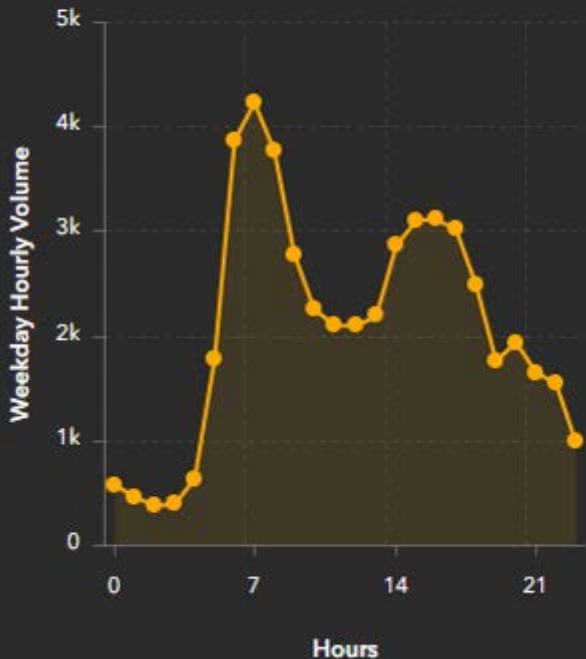
### Layers

- Historical AADT/DJMA Historiques
- Historical AADTT/DJMAC Historiques

100 m  
200 ft

FHWA VEH. CLASS	CONF.	TRUCK FLOW VOL.	TRUCK FLOW %
4		333	1.5
5		2845	12.82
6		1358	6.12
7		313	1.41
8		328	1.48
9		11093	49.98
10		4881	21.99
11		78	0.35
12		40	0.18
13		926	4.17
	TOTAL	22195.0	100%

# 2008 Weekday Hourly Volume - All Traffic



Records: 1,917



REGIONAL ROAD: Kingston Road

Traffic\_AADT



OBJECTID	21
SLRN_ID	111,591
REGIONAL_ROAD	Kingston Road
MUNICIPALITY	Pickering
AADT_2017	27,635
AADT_2018	22,720
AADT_2019	30,405
COMMENTS	PCS 258 count used for 2019. PCS 265 has no count.
SHAPE	undefined
SHAPE.STLength()	321.64
AADT_2022	24,450
Comments_2022	Used ATR 7026 count

Zoom to





# Train Count Data

## TRANSMITTAL

*To:* Novus Environmental  
*Destinataire :* 150 Redesrch Lane, Suite 105  
Guelph, ON  
N1G 4T2

*Project :* KNG – 312.02 - 313.04 – Liverpool Rd and Brock Rd, Pickering, ON

*Att'n:* Luke Arnold  
*From:* Derek Basso  
*Expéditeur :*

*Routing:* lucasa@novusenv.com

*Date:* July 12<sup>th</sup>, 2016

*date :*

*Cc:* Raymond Beshro CN  
via e-mail


Urgent  For Your Use  For Review  For Your Information  Confidential

**Re: Train Traffic Data – CN Kingston Subdivision near \_\_\_\_\_ Road in  
Pickering, ON**

Please find attached the requested Train Traffic Data; this data does not reflect GO Metrolinx Traffic. The application fee in the amount of **\$500.00** +HST will be invoiced.

Should you have any questions, please do not hesitate to contact the undersigned at 905-669-3184.

Sincerely,  
CN Design & Construction

  
Derek Basso  
Engineering Technician  
[Derek.Basso@cn.ca](mailto:Derek.Basso@cn.ca)

Dear Luke:

**Re: Train Traffic Data – CN Kingston Subdivision between Liverpool road and Brock Road in Pickering, ON**

The following is provided in response to Luke’s 2016/07/27 request for information regarding rail traffic in the vicinity of Liverpool road and Brock road in Pickering between Miles approximately 312.02 - 313.04 on CN’s Kingston Subdivision.

Typical daily traffic volumes are recorded below. However, traffic volumes may fluctuate due to overall economic conditions, varying traffic demands, weather conditions, track maintenance programs, statutory holidays and traffic detours that when required may be heavy although temporary. For the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.

Typical daily traffic volumes at this site location are as follows:

\*Maximum train speed is given in Miles per Hour

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	10	140	40	4
Way Freight	1	25	40	4
Passenger	28	10	40	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	4	140	40	4
Way Freight	3	25	40	4
Passenger	0	10	40	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN’s Kingston Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There are zero at-grade crossing in the immediate vicinity of the study area. Anti-whistling bylaws are not in effect at this crossing. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

With respect to equipment restrictions, the gross weight of the heaviest permissible car is 286,000 lbs.

The quintuple mainline track is considered to be continuously welded rail throughout the study area. The presence of 7 switches located at Mile 311.25, 311.34, 311.39, 312.9, 313.04, 313.05 and 313.06 may exacerbate the noise and vibration caused by train movements.

The Canadian National Railway continues to be strongly opposed to locating developments near railway facilities and rights-of-way due to potential safety and environmental conflicts. Development adjacent to the Railway Right-of-Way is not appropriate without sound impact mitigation measures to reduce the incompatibility. For confirmation of the applicable rail noise, vibration and safety standards, Mr. Raymond Beshro, Canadian National Railway Properties at 514-399-7627 should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,



Derek Basso  
Engineering Technician  
[Derek.Basso@cn.ca](mailto:Derek.Basso@cn.ca)

cc. Raymond Beshro – CN – via e-mail

**From:** [Rail Data Requests](#)  
**To:** [Jason Dorssers](#)  
**Cc:** [Aaron Haniff](#)  
**Subject:** RE: Rail Data Request - 1105 Kingston Road - Pickering  
**Date:** August 21, 2023 10:31:12 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)

Hi Jason,

Further to your request dated August 16th, 2023, the subject lands (1105 Kingston Road) are located within 300 metres of the Metrolinx GO Subdivision (which carries Lakeshore East GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and electric trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 12 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 324 trains. The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives		1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives
Day (0700-2300)	64	0	213	0	Night (2300-0700)	10	0	37	0

The current track design speed near the subject lands is 45 (72 km/h).

There are no *anti-whistling by-laws* in affect near the subject lands.

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase. Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the procurement phase. The successful proponent team will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process and teams have submitted their bids to Infrastructure Ontario and Metrolinx for evaluation and contract award. GO Expansion construction will get underway in late 2023.

However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel-track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.

I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

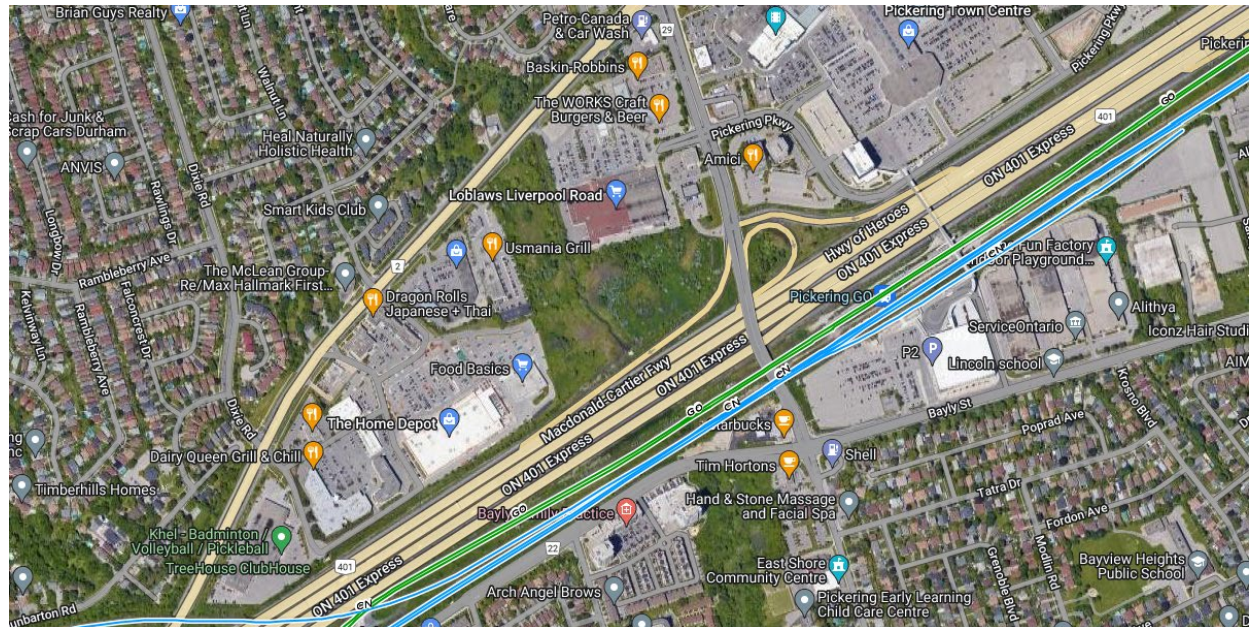
**Justin Neale**  
 Third Party Projects Review Team  
 Metrolinx | Toronto | Ontario | M5J 2W3

**From:** Jason Dorssers <jdorssers@slrconsulting.com>  
**Sent:** August 16, 2023 4:19 PM  
**To:** Rail Data Requests <RailDataRequests@metrolinx.com>  
**Cc:** Aaron Haniff <ahaniff@slrconsulting.com>  
**Subject:** Rail Data Request - 1105 Kingston Road - Pickering

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Good afternoon,

I am working on a proposed residential development on Kingston Road located at 1105 Kingston Road in Ajax/Pickering. The project is in close proximity to the Lakeshore East corridor. We also believe that CN could be using this as well. We require forecasted rail traffic data and any further clarification about the operations on this line to use in our assessment. I have attached an image of the area being developed.



Thank you,  
 Jason  
**Jason Dorssers** B.Eng., EIT

Acoustics Consultant

O +1 226 706 8080  
M 519-362-0958  
E [jdorssers@slrconsulting.com](mailto:jdorssers@slrconsulting.com)

SLR Consulting (Canada) Ltd  
100 Stone Road West, Suite 201, Guelph ON Canada N1G 5L3



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# ORNAMENT - Sound Power Emissions & Source Heights

Ontario Road Noise Analysis Method for Environment and Transportation

Road Segment ID	Roadway Name	Link Description	Speed (kph)	Period (h)	Total Traffic Volumes	Auto %	Med %	Hvy %	Auto	Med	Heavy	Road Gradient (%)	Cadna/A Ground Absorption G	PWL (dBA)	Source Height, s (m)
KingstonE_avg	Kingston Road - Eastbound	Daytime Impacts	60	16	15750	92.0%	2.4%	5.6%	14490	378	882	0	0.00	85.3	1.5
KingstonE_avg	Kingston Road - Eastbound	Nighttime Impacts	60	8	1750	92.0%	2.4%	5.6%	1610	42	98	0	0.00	78.8	1.5
KingstonW_avg	Kingston Road - Westbound	Daytime Impacts	60	16	15750	92.0%	2.4%	5.6%	14490	378	882	0	0.00	85.3	1.5
KingstonW_avg	Kingston Road - Westbound	Nighttime Impacts	60	8	1750	92.0%	2.4%	5.6%	1610	42	98	0	0.00	78.8	1.5
LiverpoolN_avg	Liverpool Road - Northbound	Daytime Impacts	60	16	14400	93.0%	2.1%	4.9%	13392	302	706	0	0.00	84.5	1.5
LiverpoolN_avg	Liverpool Road - Northbound	Nighttime Impacts	60	8	1600	93.0%	2.1%	4.9%	1488	34	78	0	0.00	78.0	1.5
LiverpoolS_avg	Liverpool Road - Southbound	Daytime Impacts	60	16	14400	93.0%	2.1%	4.9%	13392	302	706	0	0.00	84.5	1.5
LiverpoolS_avg	Liverpool Road - Southbound	Nighttime Impacts	60	8	1600	93.0%	2.1%	4.9%	1488	34	78	0	0.00	78.0	1.5
401_avg	Highway 401 - 1 Segment (x4)	Daytime Impacts	100	16	60923	88.0%	1.5%	10.5%	53606	938	6379	0	0.00	97.0	1.8
401_avg	Highway 401 - 1 Segment (x4)	Nighttime Impacts	100	8	15231	88.0%	1.5%	10.5%	13402	234	1595	0	0.00	94.0	1.8
Kingston_min	Kingston Road - Eastbound	Daytime Ambient	60	1	532	92.0%	2.4%	5.6%	490	13	30	0	0.00	82.7	1.5
Kingston_min	Kingston Road - Eastbound	Evening Ambient	60	1	380	92.0%	2.4%	5.6%	350	9	21	0	0.00	81.2	1.5
Kingston_min	Kingston Road - Eastbound	Nighttime Ambient	60	1	30	92.0%	2.4%	5.6%	28	1	2	0	0.00	70.2	1.5
Kingston_min	Kingston Road - Westbound	Daytime Ambient	60	1	532	92.0%	2.4%	5.6%	490	13	30	0	0.00	82.7	1.5
Kingston_min	Kingston Road - Westbound	Evening Ambient	60	1	380	92.0%	2.4%	5.6%	350	9	21	0	0.00	81.2	1.5
Kingston_min	Kingston Road - Westbound	Nighttime Ambient	60	1	30	92.0%	2.4%	5.6%	28	1	2	0	0.00	70.2	1.5

Filename:                                  Time Period: 16 hours  
Description: 1st Floor Test Receptor - Kingston Road

Road data, segment # 1: Kingston EB

-----  
Car traffic volume    : 14490 veh/TimePeriod  
Medium truck volume    :   378 veh/TimePeriod  
Heavy truck volume    :    82 veh/TimePeriod  
Posted speed limit    :    60 km/h  
Road gradient            :     0 %  
Road pavement         :     1 (Typical asphalt or concrete)

Data for Segment # 1: Kingston EB

-----  
Angle1    Angle2            : -90.00 deg    90.00 deg  
Wood depth                    :     0            (No woods.)  
No of house rows              :     0  
Surface                        :     2            (Reflective ground surface)  
Receiver source distance    :  20.44 m  
Receiver height                :    1.50 m  
Topography                    :     1            (Flat/gentle slope; no barrier)  
Reference angle                :    0.00

↑

Road data, segment # 2: Kingston WB

-----  
Car traffic volume    : 14490 veh/TimePeriod  
Medium truck volume    :   378 veh/TimePeriod  
Heavy truck volume    :    82 veh/TimePeriod  
Posted speed limit    :    60 km/h  
Road gradient            :     0 %  
Road pavement         :     1 (Typical asphalt or concrete)

Data for Segment # 2: Kingston WB

-----  
Angle1    Angle2            : -90.00 deg    90.00 deg  
Wood depth                    :     0            (No woods.)  
No of house rows              :     0  
Surface                        :     2            (Reflective ground surface)  
Receiver source distance    :  31.35 m  
Receiver height                :    1.50 m  
Topography                    :     1            (Flat/gentle slope; no barrier)  
Reference angle                :    0.00

↑

Results segment # 1: Kingston EB

-----  
Source height = 1.54 m

ROAD (0.00 + 68.92 + 0.00) = 68.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	70.26	0.00	-1.34	0.00	0.00	0.00	0.00	68.92

-----

Segment Leq : 68.92 dBA

↑  
Results segment # 2: Kingston WB

-----  
Source height = 1.54 m

ROAD (0.00 + 67.06 + 0.00) = 67.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	70.26	0.00	-3.20	0.00	0.00	0.00	0.00	67.06

-----

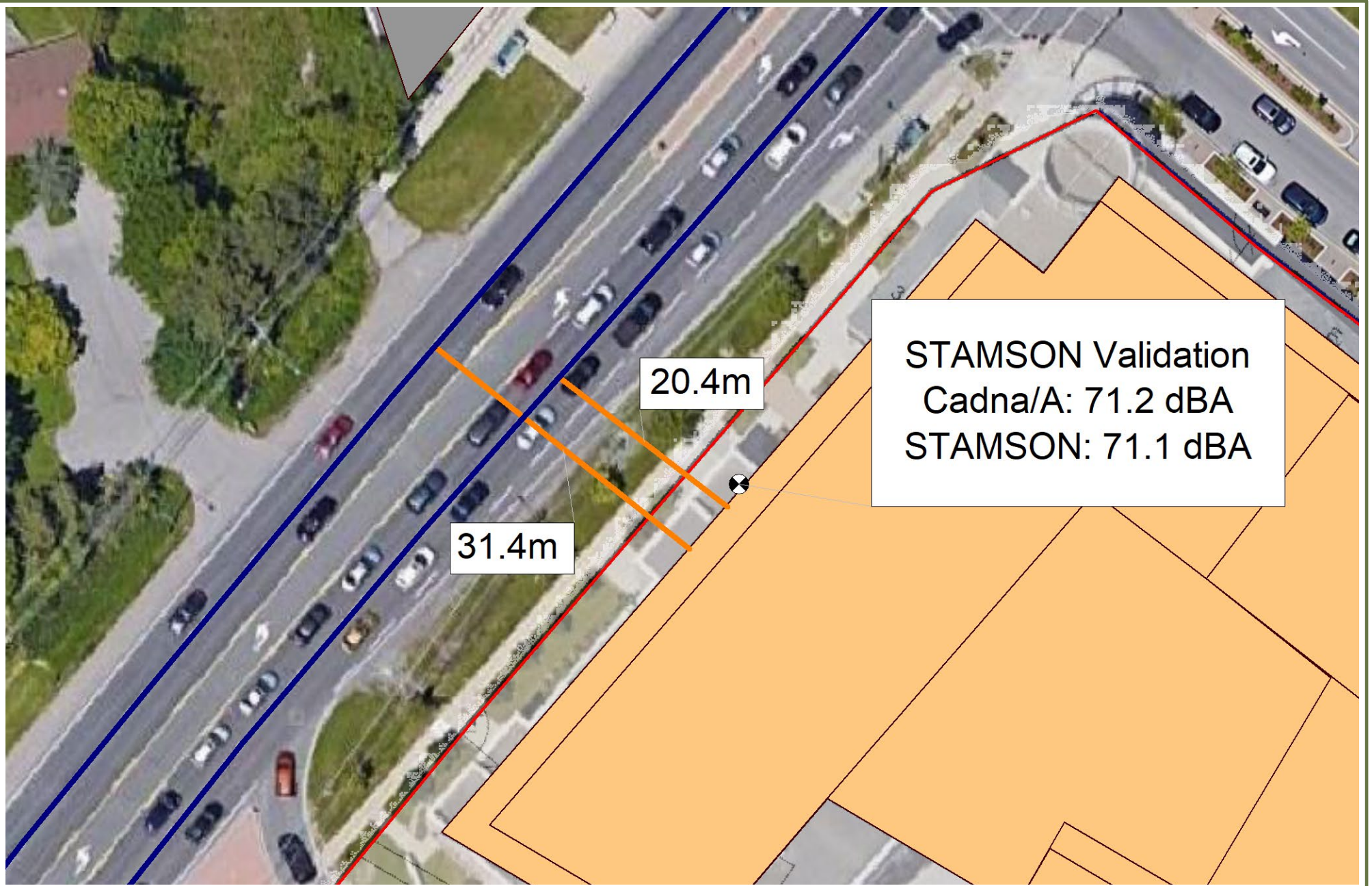
Segment Leq : 67.06 dBA

Total Leq All Segments: 71.10 dBA

↑  
  
TOTAL Leq FROM ALL SOURCES:           71.10

↑  
↑





STAMSON Validation  
 Cadna/A: 71.2 dBA  
 STAMSON: 71.1 dBA

20.4m

31.4m

<b>TRIBUTE (BROOKDALE) LIMITED</b>
1101, 1105, 1163 KINGSTON ROAD – PICKERING, ON
STAMSON VALIDATION

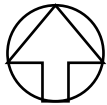
 True North	Scale: 1: 500	METRES
	Date: Oct. 2023	Rev 3.0
	Project No. 241.013026.00001	

Figure No. <b>B1</b>
-------------------------





# Appendix C Warning Clause Text

## **1101, 1105, 1163 Kingston Road**

Environmental Noise Assessment Pickering, ON

**Tribute (Brookdale) Limited**

SLR Project No.: 241.013026.00001

October 18, 2023

## Appendix C Warning Clause Text

### **Type C Warning Clause**

“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.”

### **Type D Warning Clause**

“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.”

### **Type E Warning Clause**

“Purchasers/tenants are advised that due to the proximity of adjacent industries, noise from these facilities may at times be audible.”

### **Canadian National Railways Warning Clause**

“Purchasers are advised that the Canadian National Railway Company or its assigns or successors in interest has or have a right-of-way within 300 metres from the land the subject thereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future, including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). CNR will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way.”

### **Metrolinx Warning Clause**

Metrolinx, carrying on business as GO Transit, and its assigns and successors in interest are the owners of lands within 300 metres from the land which is the subject hereof. In addition to the current use of the lands owned by Metrolinx, there may be alterations to or expansions of the rail and other facilities on such lands in the future including the possibility that GO Transit or any railway entering into an agreement with GO Transit to use the Metrolinx lands or Metrolinx and their respective assigns or successors as aforesaid may expand their operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwellings. Metrolinx will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under its lands.”





# Appendix D BPN-56 Calculations

## **1101, 1105, 1163 Kingston Road**

Environmental Noise Assessment Pickering, ON

**Tribute (Brookdale) Limited**

SLR Project No.: 241.013026.00001

October 18, 2023













D - 30 storey - N	Roadways, Night-time	60	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	23
D - 30 storey - E	Roadways, Night-time	74	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	37
D - 30 storey - S	Roadways, Night-time	77	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	41
D - 30 storey - W	Roadways, Night-time	74	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	37
D - 33 storey - N	Roadways, Night-time	61	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	24
D - 33 storey - E	Roadways, Night-time	70	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	33
D - 33 storey - S	Roadways, Night-time	76	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	40
D - 33 storey - W	Roadways, Night-time	75	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	39
D - 35 storey - N	Roadways, Night-time	66	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	29
D - 35 storey - E	Roadways, Night-time	75	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	39
D - 35 storey - S	Roadways, Night-time	77	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	41
D - 35 storey - W	Roadways, Night-time	76	40	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	D. mixed road traffic, distant aircraft	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	40





D - 30 storey - N	Locomotives, Night-time	51	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	16
D - 30 storey - E	Locomotives, Night-time	61	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	26
D - 30 storey - S	Locomotives, Night-time	64	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	29
D - 33 storey - W	Locomotives, Night-time	61	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	26
D - 33 storey - N	Locomotives, Night-time	52	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	17
D - 33 storey - E	Locomotives, Night-time	57	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	22
D - 33 storey - S	Locomotives, Night-time	63	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	28
D - 33 storey - W	Locomotives, Night-time	62	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	27
D - 35 storey - N	Locomotives, Night-time	52	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	17
D - 35 storey - E	Locomotives, Night-time	62	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	27
D - 35 storey - S	Locomotives, Night-time	64	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	29
D - 35 storey - W	Locomotives, Night-time	62	40	70%	2.9	3.0	6.0	Intermediate	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	27





D - 30 storey - N	Locomotives, Night-time	51	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	21
D - 30 storey - E	Locomotives, Night-time	61	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	31
D - 30 storey - S	Locomotives, Night-time	64	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	34
D - 30 storey - W	Locomotives, Night-time	61	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	31
D - 33 storey - N	Locomotives, Night-time	52	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	22
D - 33 storey - E	Locomotives, Night-time	57	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	27
D - 33 storey - S	Locomotives, Night-time	63	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	33
D - 33 storey - W	Locomotives, Night-time	62	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	32
D - 35 storey - N	Locomotives, Night-time	52	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	22
D - 35 storey - E	Locomotives, Night-time	62	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	32
D - 35 storey - S	Locomotives, Night-time	64	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	34
D - 35 storey - W	Locomotives, Night-time	62	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	F. diesel railway locomotive	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	32













D - 30 storey - N	Rail Cars, Night-time	51	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	16
D - 30 storey - E	Rail Cars, Night-time	61	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	26
D - 30 storey - S	Rail Cars, Night-time	64	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	29
D - 30 storey - W	Rail Cars, Night-time	61	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	26
D - 33 storey - N	Rail Cars, Night-time	52	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	17
D - 33 storey - E	Rail Cars, Night-time	57	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	22
D - 33 storey - S	Rail Cars, Night-time	63	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	28
D - 33 storey - W	Rail Cars, Night-time	62	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	27
D - 35 storey - N	Rail Cars, Night-time	52	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	17
D - 35 storey - E	Rail Cars, Night-time	62	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	27
D - 35 storey - S	Rail Cars, Night-time	64	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	29
D - 35 storey - W	Rail Cars, Night-time	62	35	50%	2.9	3.0	3.0	Very Absorptive	0 - 90	0	B. avg aircraft, railway wheel noise	50	D. sealed thick window, or exterior wall, or roof/ceiling	C. sealed thin window, or openable thick window	27



# Appendix E    Stationary Modelling Inputs

## **1101, 1105, 1163 Kingston Road**

Environmental Noise Assessment Pickering, ON

**Tribute (Brookdale) Limited**

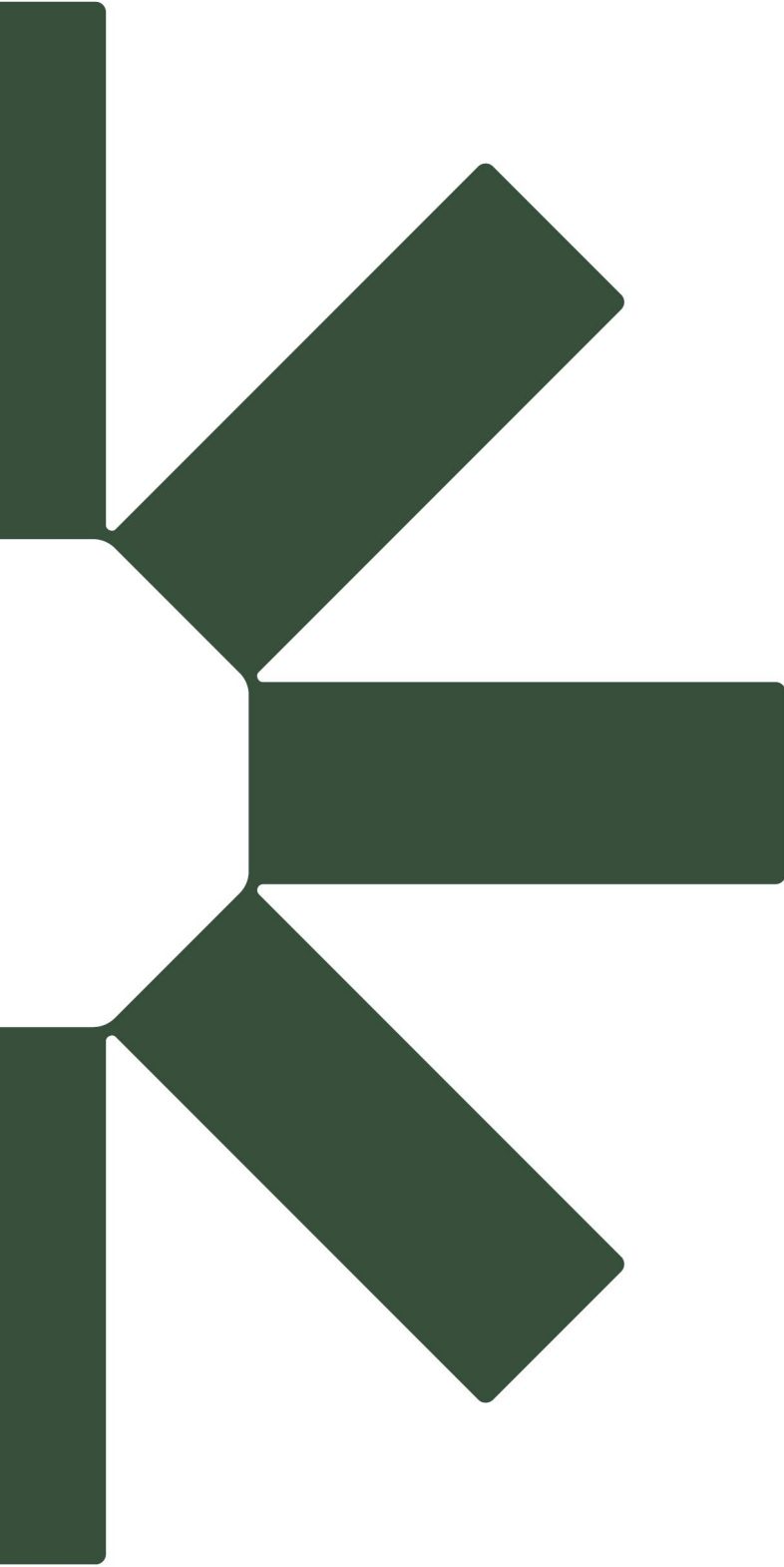
SLR Project No.: 241.013026.00001

October 18, 2023

**Table E.1: Summary of Noise Source Sound Power Levels**

Source Description	Maximum Sound Power Levels (1/1 Octave Band Levels)									Total PWL (dBA)	Notes
	32 (dBA)	63 (dBA)	125 (dBA)	250 (dBA)	500 (dBA)	1000 (dBA)	2000 (dBA)	4000 (dBA)	8000 (dBA)		
Mr Lube - Impact Wrench	86	81	85	79	82	81	89	88	88	94	- based on SLR historical data - assessed based on 1 minute operations during the day/eve per bay door - +10 tonality penalty for quasi-steady
Mr Lube - Compressed Air	99	99	94	87	84	84	82	83	79	90	- based on SLR historical data - assessed based on 10 minute operations during the day/eve per bay door - +5 tonality penalty
Car Star - Impact Wrench	87	82	86	80	83	82	90	89	89	95	- based on SLR historical data - assessed based on 1 minute operations during the day/eve per bay door - +10 tonality penalty for quasi-steady
Car Star - Compressed Air	105	105	100	93	90	90	88	89	85	96	- based on SLR historical data - assessed based on 10 minute operations during the day/eve per bay door - +5 tonality penalty
Paint Spray Booth Exhaust - Car Star	98	101	101	101	97	96	96	92	78	100	- based on SLR historical data - assessed based on operations during all periods of the day. - Assumed continuous operation during the daytime and evening
General Exhaust - Car Star	83	83	93	88	82	77	75	69	66	85	- based on SLR historical data - assessed based on operations during all periods of the day. - Assumed continuous operation during the daytime





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