1120 Cooke Boulevard

Environmental Noise Study

SLR Project No: 241.30122.00000

November 2021

1120 Cooke Boulevard ENVIRONMENTAL NOISE ASSESSMENT

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Burlington, ON, L7T 4A8

SLR Project No: 241.30122.00000

Prepared by
SLR Consulting (Canada) Ltd.
150 Research Lane, Suite 105
Guelph, Ontario, N1G 4T2

for

Adi Developments (Masonry) Inc.
1100 Burloak Dr
Burlington ON, L7L 6B2

November 18th, 2021

Prepared by:



Dylan Diebolt, B.Sc.

Acoustics, Noise and Vibration Scientist

Reviewed by:



Marcus Li, P.Eng.

Principal, Noise

Distribution: 1 copy – ADI Development Group
1 copy – SLR Consulting (Canada) Ltd.

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1.0 INTRODUCTION

SLR Consulting (Canada) Ltd. ("SLR"), was retained by Adi Developments (Masonry) Inc. to conduct an environmental noise assessment for their proposed 1120 Cooke Blvd development in Burlington, Ontario.

1.1 Focus of Report

In assessing 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 nearby roadways; and
- Railway noise impacts from adjacent rail line; and
- Stationary noise impacts from adjacent commercial and industrial properties.

1.2 Nature of Subject Lands

The subject property is at 1120 Cooke Blvd, on the northeast corner of intersection of Waterdown Road and Masonry Court in Burlington Ontario. The site is currently unoccupied.

The proposed development will include two buildings, the western building (Building A) will have a thirty-six (36) storey tower (Tower A) atop of a Five (5) storey podium. The Eastern building (Building B) will have a twenty-six (26) storey tower (Tower B) and a thirty-six (36) storey tower (Tower C) atop of a Four (4) storey podium.

A copy of the site plan is included in **Appendix A**.

1.3 Nature of Surroundings

Immediately to the north of the development is a rail line used by both GO and CN Rail that runs southwest/northeast. North of the rail line is Aldershot GO station and highway 403.

Directly to the east past a GO parking lot of the development is residential properties.

To the south of the development is Masonry court. Across the road to the southeast is several commercial properties that back on to the residential homes on Waterdown Rd.

To the west across Waterdown Road are industrial lands (KPM Industries Asphalt Plant, and St. Mary's Cement / CBM Ready Mix Facility).

A context plan of the site and surroundings is shown in **Figure 1**.

2.0 TRANSPORTATION NOISE IMPACTS

2.1 Transportation Noise Sources

Transportation noise sources of interest with the potential to produce noise at the proposed development include:

- Roadway traffic along Masonry Court, Waterdown Road, and Highway 403; and
- Railway traffic along Go Lakeshore West Line, and CN Oakville 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

2.2.1 MECP Publication NPC-300

2.2.1.1 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.

2.2.1.2 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: MECP Publication NPC-300 Sound Level Criteria for Road and Rail Noise

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

Notes: [1] Whistle noise is excluded for OLA noise assessments and included for Living / Dining Room and Sleeping Quarter assessments.
[2] Road and Rail noise impacts are to be combined for assessment of OLA impacts.
[3] An assessment of indoor noise levels is required only if the criteria in **Table 4** are exceeded

Table 2 summarizes the noise mitigation requirements for outdoor amenity areas ("Outdoor Living Areas" or "OLAs"). This would include the ground level patios/backyards and raised terraces.

Table 2: MECP Publication NPC-300 Outdoor Living Area Mitigation Requirements

Time Period	Equivalent Sound Level in Outdoor Living Area (dBA)	Ventilation Requirements
Daytime (0700-2300h)	≤ 55	• None
	55 to 60 incl.	• Noise barrier **OR** Warning Clause A
	> 60	• Noise barrier to reduce noise to 55 dBA **OR** • Noise barrier to reduce noise to 60 dBA and Warning Clause B

2.2.1.3 Ventilation and Warning Clauses

Table 3 summarizes requirements for ventilation where windows potentially would have to remain closed as a means of noise control. Despite implementation of ventilation measures where required, if sound exposure levels exceed the guideline limits in Table 1, warning clauses advising future occupants of the potential excesses are required. Warning clauses are discussed further in Section 2.4.2.

Table 3: MECP Publication NPC-300 Ventilation & Warning Clause Requirements

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

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

Table 4 provides sound level thresholds which, if exceeded require the building shell and components (i.e., wall, windows) to be designed to ensure that the Table 3 and 4 indoor sound criteria are met.

Table 4: MECP Publication NPC-300 Building Component Requirements

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

Notes: [1] Including whistle noise.
[2] Building component requirements are assessed separately for Road and Railway noise. The resultant sound isolation parameter is required to be combined to determine and overall acoustic parameter.

2.2.2 Halton Region

The Halton Region guidelines include the Noise Abatement Guidelines – Regional Official Plan Guidelines and the Land Use Compatibility Guidelines – Regional Official Plan Guidelines, both dated June 18, 2014. In general, the Halton Region guidelines are consistent with the MECP NPC-300 guidelines, with the exception of the barrier assessment.

2.2.3 CN and Metrolinx-GO Transit Guidelines

Both CN and Metrolinx have published updated noise guidelines for new residential developments located adjacent to their railway corridors. The GO Lakeshore West Line and CN Oakville Subdivision are classified as Principal Main Lines. Accordingly, the applicable guideline limits are presented in **Table 5** below.

Table 5: CN / Metrolinx Sound Level Criteria for Rail Noise

Type of Space	Time Period	Equivalent Sound Exposure Level - L_{eq} (dBA)	Assessment Location
Outdoor Living Area (OLA)	Daytime (0700-2300h)	55	Outdoors [2]
Living / Dining Room	Daytime (0700-2300h)	40	Indoors
	Night-time (2300-0700h)	--	Indoors
Sleeping Quarters	Daytime (0700-2300h)	--	Indoors
	Night-time (2300-0700h)	35	Indoors

2.3 Traffic Data and Future Projections

2.3.1 Roadway Traffic Data

Traffic volumes for Masonry Court and Waterdown Road were obtained from a previous SLR Consulting Report written in 2018 for 101 Masonry Court. The 2017 AADT traffic data was grown further to 2041 using a 2% growth rate per annum. Traffic data for Highway 403 was obtained from the Ministry of Transportation Provincial Highway Traffic Volumes document for the year 2016. The data was grown further to 2041 at a 2% growth rate per annum. **Table 6** below summarizes the road traffic volumes used in the analysis.

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

Roadway Link	2041 Traffic Volumes (AADT)	% Day/ Night Volume Split [3]		Commercial Traffic Breakdown		Vehicle Speed (km/h)
		Daytime	Night-time	% Med Trucks	% Heavy Trucks	
Masonry Ct (West of Cooke)	3,723	90[1]	10[1]	8.3	4.2	50
Masonry Ct (East of Cooke)	1,917	90[1]	10[1]	8.3	4.2	50
Waterdown Rd (North of Masonry)	28,419	90[1]	10[1]	10	5	50
Waterdown Rd (South of Masonry)	25,915	90[1]	10[1]	10	5	50
Highway 403	23,1817	85[2]	15[2]	2.1	6.4	100

Notes: [1] The Day/Night split was determined from historic data at SLR for urban areas.
[2] The Day/Night split was determined from historic data at SLR for Freeways

2.3.2 Rail Traffic Data

Rail traffic data CN Oakville Subdivision were obtained directly from CN. An annual growth rate of 2.5% was applied to the rail data to reach a 2031 future year. Forecasted GO Train data was provided by Metrolinx.

The rail traffic data used in the assessment is summarized in the Table 7 and included in Appendix B.

Table 7: Summary of Rail Traffic Data Used in the Transportation Analysis

Rail Line	Train Type	Typical No. of Engines/Train	No. of Cars/Train	No of Trains		Maximum Speed (km/h)
				Daytime (7am to 11pm)	Night-time (11pm to 7am)	
GO Lakeshore West Line	Diesel Freight	1	12	60	12	129
CN Oakville Subdivision	Freight	4	140	13	6	97
CN Oakville Subdivision	Way freight	4	25	10	3	97
CN Oakville Subdivision	VIA Train Commuter	2	10	16	0	153

2.4 Projected Sound Levels

Future road traffic 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. These predictions were validated and are equivalent to those made using the MECP's ORNAMENT or STAMSON v5.04 road traffic noise models. A STAMSON validation file is included in Appendix B.

Rail operation sound levels at the proposed development were predicted using the FTA/FRA modelling algorithms included in the Cadna/A software, FTA reference sound levels were used for diesel-electric locomotives, and rail cars.

Noise from warning bells were modelled starting at a distance of 300m from the station platform, which is a conservative distance based on historical observations made by SLR personnel. As the FTA/FRA reference sound levels are for warning horns, and not the typical bells associated with the GO trains, an adjustment was applied. An adjustment of -14 dBA was used, based on the historical SLR sound data for a GO Train bell (approx. LMax of 96 dBA at 15m).

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.

Changes in ground elevation contours for the surrounding area were included in the modelling using topography from the City of Burlington Open Data files.

As a conservative assessment, ground absorption was set to G=0 (Reflective) globally.

2.4.1 Façade Sound Levels

The façade sound levels were predicted at all noise sensitive spaces within the proposed development. The worst-case façade sound levels for each façade are presented in **Table 8**. 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, Figure 4a/b, and Figure 5a/b** for roadway, railway, and the combined road and rail impacts, respectively. As façade sound levels are predicted to be above 65 dBA during the day and 60 dBA at night for railway noise, an assessment of building components is required for the development.

Table 8: Summary of Transportation Facade Sound Levels

Building	Façade [1]	Roadway Sound Levels		Railway Sounds Levels[2]		Combined Road & Rail[2]	
		L_{eq} Day (dBA)	L_{eq} Night (dBA)	L_{eq} Day (dBA)	L_{eq} Night (dBA)	L_{eq} Day (dBA)	L_{eq} Night (dBA)
Building A Podium	North	69	64	64	62	70	66
	East	66	61	58	57	66	62
	South	62	56	50	49	63	56
	West	69	63	62	60	70	65
Tower A	North	69	64	64	63	71	67
	East	66	61	62	60	67	63
	South	62	56	50	49	62	56
	West	69	63	62	60	69	65
Building B+C Podium	North	65	60	60	60	68	63
	East	63	59	55	53	64	60
	South	65	59	49	47	66	59
	West	69	63	60	59	70	65
Tower B	North	67	62	63	61	68	65
	East	65	61	61	59	66	63
	South	61	55	49	47	61	55
	West	64	59	58	57	64	60
Tower C	North	68	63	61	60	69	64
	East	63	59	59	57	65	61
	South	65	58	49	47	65	58
	West	69	63	60	59	69	64

Notes: [1] Sound Levels shown are the maximums along the facade and are not necessarily for the same location for the various source types.
[2] Including GO Train bells within station.

2.4.2 Outdoor Living Areas

Two common outdoor amenity areas are currently planned for the rooftops of the podiums of both buildings as shown in **Figure 6.**

As the development includes a common amenity space for all occupants, the private terraces are not considered to be the only outdoor amenity space available. Therefore, an assessment of private terraces was excluded based on the definitions outlined in NPC-300.

Landscaped areas at grade are considered to be publicly accessible and have not been included as an Outdoor Living Area based on the definitions outlined in NPC-300.

The predicted road and rail noise impacts are shown in **Figure 6a** are summarized for the seating areas in the following table:

Table 9: Summary of Predicted Outdoor Living Area Sound Levels

ID	Location	Transportation Impacts L_{eq} Day (dBA)	Applicable Guideline Limit L_{eq} Day (dBA)	Meets Criteria? (Yes/No)
OLA 1	On Top of Building A Podium	63-67[1]	55[2]	No
OLA 2	On Top of Building B Podium	62-66	55[2]	No

Notes: [1] Sound levels of at all currently planned seating areas were assessed.
[2] NPC 300 and its predecessors require 55 dBA as the outdoor amenity limit. In cases where mitigation may not be technically, economically, and administratively feasible, a tolerance of up to 5 dB may be permitted, subject to feasibility.

Sound levels are predicted to be above 55 dBA for the outdoor amenity space; therefore, an assessment noise control measures is required.

2.5 Façade Assessment

2.5.1 Glazing Requirements

Based on the sound levels shown in **Table 8**, façade sound levels were predicted to exceed the above criteria at multiple locations throughout the development. Therefore, an assessment of glazing requirements is necessary for meeting the indoor sound level requirements outlined in **Table 1**.

Indoor sound levels and required facade Sound Transmission Classes (STCs) were estimated using the procedures outlined in National Research Council Building Practice Note BPN-56.

The following assumptions were considered for both buildings:

- 70% glazing for both living room and bedroom facades;
- sleeping quarters were assumed to have a façade-to-floor area ratio of 100%;
- living/dining rooms were assumed to have a façade-to-floor area ratio of 50%;
- non-glazing portion of wall was assumed to have a rating of STC 45 for all locations.

The acoustic requirements are provided below in **Table 10**, which is the STC rating taking into consideration roadway noise and railway noise and the assumptions listed in the previous section.

The combined glazing and frame assembly must be designed to ensure the overall sound isolation performance for the entire window unit meets the sound isolation requirements. It is recommended window manufacturers test data be reviewed to confirm acoustical performance is met.

The glazing requirements above are approximated, based on the generic room, façade and glazing dimensions. Once detailed floor plans and façade plans become available, the glazing requirements should be re-assessed and reviewed by an Acoustical Consultant.

Table 10: Façade Sound Transmission Class (STC) Requirements

Building	Façade [1]	Non-Glazing Component	Glazing Requirements	
			Living Room	Bedroom
Building A Podium	North	45	30	35
	East	45	OBC	31
	South	45	OBC	OBC
	West	45	OBC	32
	North Corners	45	33	38
	Southeast Corners	45	OBC	33
	Southwest Corners	45	32	35
Tower A	North	45	30	36
	East	45	OBC	32
	South	45	OBC	OBC
	West	45	OBC	34
	North Corner	45	33	39
	Southeast Corners	45	30	35
	Southwest Corners	45	33	38
Building B+C Podium	North	45	OBC	33
	East	45	OBC	OBC
	South	45	OBC	OBC
	West	45	OBC	33
	North Corners	45	30	36
	Southeast Corners	45	OBC	35
	Southwest Corners	45	32	36
Tower B	North	45	30	35
	South	45	OBC	33
	East	45	OBC	OBC
	West	45	OBC	31
	North Corners	45	31	37
	Southeast Corners	45	OBC	35
	Southwest Corners	45	OBC	33
Tower C	North	45	OBC	33
	East	45	OBC	31
	South	45	OBC	OBC
	West	45	OBC	32
	North Corners	45	31	36
	Southeast Corners	45	31	34
	Southwest Corners	45	32	35

Notes: OBC = Ontario Building Code, meeting a rating of STC 29

2.5.2 Ventilation and Warning Clause Requirements

The requirements regarding warning clauses are summarized in Table 3. Based on the predicted noise sound levels, warning clauses are recommended to 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.

Forced air heating with provisions for future installation of central air conditioning, and a Type C warning clause, is recommended for all affected units with façade sound levels that are between 56 and 65 dBA during the daytime, or between 51 and 60 dBA during night-time hours. This includes all the Façades listed below, Warning clause text can be found in Appendix C.

- Building A Podium – South Façade
- Tower A – South Façade
- Building B+C Podium – East Façade
- Tower B –South Façade
- Tower C –South Façade

Central Air Conditioning and a Type D Warning Clause is recommended for all affected units with façade sound levels that are above 60 dBA during night-time hours. This includes all the Façades listed below, Warning clause text can be found in.

- Building A Podium – North, East, West Façade
- Tower A – North, East, West Façade
- Building B+C Podium – North, South, West Façade
- Tower B – North, East, West Façade
- Tower C– North, East, West Façade

In addition, CP and Metrolinx Warning Clauses are required for all blocks of the development. Warning clause text can be found in Appendix C.

2.6 Outdoor Living Area Requirements

2.6.1 Acoustic Barriers

An assessment of noise barriers was completed for OLA1, OLA2. Barriers along the perimeter of each outdoor amenity space, as well as a barrier separating OLA 1 into two sections were assessed. The following table summarizes the predicted OLA sound levels with acoustic barriers at different heights.

Table 11: Summary of OLA Noise Barrier Modelling

Building Section	Location	ID	Barrier Height (m)	Transportation Noise Levels Leq Day (dBA)	Applicable Guideline Limit Leq Day (dBA) [1]
Podium A Rooftop	Level 5	OLA 1	0	62-67	55
			1	58-66	55
			2	54-60	55
			3	53-59	55
			3.25	53-58	55
			4	52-56	55
			5	52-55	55
Podium B+C Rooftop	Level 4	OLA 2	0	62-66	55
			1	62-66	55
			2	58-60	55
			3	55-58	55
			3.25	54-57	55
			4	53-57	55
			5	53-55	55

Notes: [1] NPC 300 and its predecessors require 55 dBA as the outdoor amenity limit. In cases where mitigation may not be technically, economically, and administratively feasible, a tolerance of up to 5 dB may be permitted, subject to feasibility.

Based on discussions with the owners and design team, it has been indicated that for this development, a barrier height limit of 3.25 m is considered feasible. Heights beyond this are understood to be infeasible from a structural and architectural perspective.

As shown in Table 11, 5 m high barriers would be required to mitigate sound levels for outdoor living areas to meet the 55 dBA sound level limit, which is not considered technically feasible or practical.

A maximum height of 3.25 m was applied to the perimeter barriers on Building A and B due to structural limitations and maintenance concerns for acoustic barriers on elevated structures. A maximum height of 3 m was applied for the interior barrier on Building A to provide additional screening for the seating areas. The results, based on 3 m high perimeter barriers for building A and B, and 3 m high interior barrier for building A are summarized in Table 12 below and are displayed in Figure 6b.

Table 12: Summary of Recommended Barriers

Building Section	Location	ID	Barrier Height (m)	Transportation Noise Level Leq Day (dBA)	Applicable Guideline Limit Leq Day (dBA)	Notes
Podium A Rooftop	Level 5	OLA 1	3/3.25	53-58	55[1]	• Perimeter barrier • Height = 3 m for North, East, South, and interior barriers, and 3.25 m for western barrier. • Approx. length of 90 m • Surface Density of 20 kg/m^2 required • Must be sealed with no gaps • Localized screening for seating areas to be included to reduce levels as close to 55 dBA as possible.
Podium B+C Rooftop	Level 4	OLA 2	3	55-58	55[1]	• Perimeter barriers on north and south side • Height = 3m • Approx. lengths of 30 m (North), 40m (south) • Surface Density of 20 kg/m^2 required • Must be sealed with no gaps

Notes: [1] NPC 300 and its predecessors require 55 dBA as the outdoor amenity limit. In cases where mitigation may not be technically, economically, and administratively feasible, a tolerance of up to 5 dB may be permitted, subject to feasibility.

The perimeter barriers and localized screening (interior barrier) can be composed of solid walls and glass/ plexiglass panels. The panels should be selected so that they have sufficient mass to adequately attenuate the noise (generally a minimum of 20 kg/m^2 face density). The panels and frames should be free of gaps and cracks on the sides and bottom. The system should also be designed to withstand any wind loading.

2.6.2 Warning Clause Requirements

As physical mitigation will be required for the common outdoor amenity areas, a Type B warning clause is required. Warning clause text can be found in Appendix C.

3.0 STATIONARY SOURCE NOISE IMPACTS

3.1 Site Visit and Noise Observations

A review has been conducted for the potential impacts on the development from “stationary” noise sources in the surrounding area.

SLR staff completed site visits in February 2016, October 2018 and again in April 2021 to the development lands and surrounding area. The surrounding area primarily includes residential and commercial/retail lands, with industrial facilities located to the west (approx. 150 m from the development).

The general ambient environment surrounding the development lands are dominated by roadway noise from Highway 403 during all periods of the day. Railway noise along the CN Oakville subdivision is frequent throughout the day and audible within the area surrounding the development lands.

The industrial facilities located in a 1000 m radius, with a potential to impact the development, are summarized in Table 13. Facilities currently operating under an approved MECP Certificate of Approval (CofA) or Environmental Compliance Approval (ECA) are identified in the following table.

Table 13: Summary of Surrounding Industries with Potential for Noise

Name	Description	Separation Distance (m)	CofA/ECA No.
Aldershot GO Station	GO Train Station	250	-
AldershotRail Yard	Rail Yard	325	-
KPM Industries – Howard Road Plant	Asphalt Plant	130	Amended CofA Number 3669-5TPS2E
St. Mary's Cement / CBM Co. – 1093 Howard Road	Ready-Mix Plant	350	Amended ECA Number 5639-ABLLKT

3.2 Stationary Source Data

3.2.1 Surrounding Industries

Aldershot GO Station

During the overnight period, GO Trains are not kept within the station. Therefore, the station is not considered to be a Layover Yard.

The 5:03 am GO Train was observed to arrive from the east, idle within the GO Station for a 10-minute period prior to departing east bound. In general, through trains were observed to stop for a period of 1 to 3 minutes, where end-of-line trains (arrive from east, then depart eastbound) were observed to stop and idle for a 10-minute period.

During the daytime period, fuel trucks were observed to park within the loading area and await the trains. The truck engines were shut down when fueling was not taking place.

Stationary noise sources modelled for the Aldershot GO Station include idling locomotives and idling fuel trucks. Based on current operations, three (3) GO Trains arrive (westbound), idle for 10 minutes during the stop and depart within a 1-hour period. During the night-time period, two (2) GO Trains arrive/idle/depart during the worst-case hour. In addition, GO Train fueling was observed to occur during the daytime period.

Source locations are shown in Figure 7. Reference sound levels and additional details regarding noise modelling parameters are included in Table E.1 of Appendix E.

Aldershot Rail Yard

Freight trains were observed by SLR personnel to move within the Rail Yard during site visits.

Rail car movements were observed to occur periodically during the day. Impulsive noise from rail car movements were not consistently present, where trains of rail cars were observed to come to a complete stop without the associated knuckle-thump impulsive noise. On occasion, a single impulse was observed when the train came to a stop, as opposed to the successive impulses associated with a long train of railway cars.

Noise impacts from the Aberdeen Rail Yard were modelled for both continuous and impulsive noise. Three (3) idling locomotives were modelled within the west end of the yard. Impulsive noise was modelled as a line, representing the single impulse within the west end of the yard.

The locations of the above sources are shown in Figure 7, with reference sound levels and modelling parameters summarized in Table D.1 of Appendix D.

KPM Industries – Asphalt Plant

The only significant noise sources audible near the KPM Industries property line were an excavator, front end loader and crusher. The KPM Industries operations were observed to be inaudible during all periods of the day at the development lands, due to high ambient noise from highway 403.

Stationary noise sources modelled for the KPM Industries facility include the east end operations (excavator, front end loader and crusher), and the Asphalt Plant located in the west end of the facility.

Figure 7 shows the locations of the above sources. Table D.1 of Appendix D summarizes the reference sound levels and parameters used in the noise modelling.

St. Mary's Cement / CBM Co. – Ready Mix Plant

Similarly to the KPM Industries operations, the ready-mix plant operations were observed to be inaudible at the development land due to the high ambient noise from Highway 403.

Typical noise sources for a ready-mix plant include the delivery of cement powder, truck loadout and truck wash/mix. The locations of these sources are shown in Figure 7, with reference sound levels and modelling parameters summarized in Table D.1 of Appendix D.

Sound level data from past site visit measurements and generic SLR historical sound level data was applied in the stationary noise modelling. All stationary sources modelled are shown in Figure 7. A summary of the sound power levels, and duty cycles used in the assessment are included in Appendix D.

3.3 Stationary Noise Modeling

The impacts from stationary sources were modelled using Cadna/A, a software implementation of the internationally recognized ISO-9613-2 environmental noise propagation algorithms. Cadna/A / ISO-9613 is the preferred noise model 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 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: G=0.0 (Reflective); and
- Reflection: An order of reflection of 0 was used.

As described in ISO 9613-2, ground factor values that represent the effect of ground absorption on sound levels range between 0 and 1. Based on the specific site conditions, the ground factor values used in the modelling were a ground factor value of 0 for acoustically reflective surfaces, such as asphalt. Large

grassy areas are considered to have a ground factor of 1, and included as localized ground absorption in the modelling. Dirt areas considered to be intermediate ground type with an absorption factor of 0.5.

The "building evaluation" feature of the Cadna/A was used to assess noise impacts on the residential portions of the towers. This feature allows for noise levels to be predicted across the entire façade of a structure.

3.3.1 MECP NPC-300 Guidelines for Stationary Noise Sources

MECP noise guidelines for stationary source noise impacting residential developments are given in MECP publication NPC-300.

The lands were designated as an NPC-300 Class 4 area, as part of the Phase 1 development for Station West. The NPC-300 Class 4 area exclusionary sound level limits for steady and impulsive sound sources are expressed as a 1-hr equivalent sound level (L_{eq} (1 hr) values and are summarized in Table 14 and Table 15 respectively and applied in this assessment.

Table 14: NPC-300 Class 4 Continuous Sound Noise Requirements

Receiver Category	Time Period	Class 4 Exclusionary Sound Level Limits, L_{eq} (1 hr), dBA [1]
Plane of Window [1]	0700 – 1900h 1900 – 2300h 2300 – 0700h	60 60 55
Outdoor Living Area [1]	0700 – 1900h 1900 – 2300h 2300 – 0700h	55 55 -

Notes: [1] Applicable for "Noise Sensitive Spaces", as defined in NPC-300.

Table 15: NPC-300 Class 4 Impulsive Sound Noise Requirements

Number of Impulses In a 1-Hour Period (7 am to 11 pm) / (11 pm to 7 am)	Outdoor [1] (L_{LM}, dBAI)	Plane of Window (L_{LM}, dBAI)
9 or More	55	60/55
7 to 8	60	65/60
5 to 6	65	70/65
4	70	75/70
3	75	80/75
2	80	85/80
1	85	90/85

Railway impulsive noise was not observed to occur more than once per hour, and as indicated above was observed to be a single impulse. Therefore, the exclusionary limits of 90 dBAI and 85 dBAI were applied for the daytime/evening and night-time periods, respectively and 85dBAI for outdoor living areas.

3.3.2 Emergency Equipment Testing

Sound level limits for emergency equipment operating in non-emergency situations are 5 dB greater than the sound level limits otherwise applicable to other stationary sources, as outlined in NPC-300.

Additionally, emergency equipment operating in non-emergency situations is to be assessed independently of all other stationary sources of noise.

3.3.3 Predicted Façade Levels

Continuous Stationary Noise

A summary of the predicted noise impacts on each façade are shown in **Table 16**, and **Figure 8** for the daytime/evening and night-time periods, respectively.

The predicted worst-case noise impacts at the façade of both buildings are predicted to be at or below the default class 4 criteria of 60dBA during the day and 55dBA at night. Therefore, additional noise mitigation is not required.

Table 16: Summary of Stationary Continuous Façade Sound Levels

Building	Façade [1]	Stationary Sound Levels [2]		Applicable Guideline Limit		Meets Guideline Limits?	
		Day/Eve (dBA)	Night (dBA)	Day/Eve (dBA)	Night (dBA)	Day/Eve (Y/N)	Night (Y/N)
Building A Podium	North	54	48	60	55	Y	Y
	East	49	46	60	55	Y	Y
	South	54	45	60	55	Y	Y
	West	54	47	60	55	Y	Y
Tower A	North	56	53	60	55	Y	Y
	East	53	52	60	55	Y	Y
	South	57	50	60	55	Y	Y
	West	57	52	60	55	Y	Y
Building B Podium	North	51	47	60	55	Y	Y
	East	52	48	60	55	Y	Y
	South	54	48	60	55	Y	Y
	West	54	46	60	55	Y	Y
Tower B	North	56	54	60	55	Y	Y
	East	56	54	60	55	Y	Y
	South	53	48	60	55	Y	Y
	West	56	51	60	55	Y	Y
Tower C	North	58	54	60	55	Y	Y
	East	53	51	60	55	Y	Y
	South	55	48	60	55	Y	Y
	West	58	52	60	55	Y	Y

Notes: [1] Façade locations are identified in **Figure 8.**
[2] Sound levels shown represent the worst-case impact along the identified façade

Outdoor Living Areas

The continuous stationary sound levels within the rooftop common amenity areas without any mitigation are predicted to be 54-55 dBA for OLA 1 and 50-52 dBA for OLA 2, which are at or below the exclusionary

guideline limit of 55 dBA. Therefore, no additional mitigation is required. Sound Levels are shown in Figure 9.

Impulsive Stationary Noise

As Aldershot Rail Yard impacts are not expected to change over the periods of the day, impulsive noise is shown against the strictest night-time sound level limits.

A summary of the predicted noise impacts on each façade are shown in Figure 10 and in the following table.

Table 17: Summary of Stationary Impulsive Façade Sound Levels

Building	Façade [1]	Stationary Sound Levels [2]		Applicable Guideline Limit		Meets Guideline Limits?	
		Day/Eve (dBAI)	Night (dBAI)	Day/Eve (dBAI)	Night (dBAI)	Day/Eve (Y/N)	Night (Y/N)
Building A Podium	North	49	49	90	85	Y	Y
	East	49	49	90	85	Y	Y
	South	44	44	90	85	Y	Y
	West	33	33	90	85	Y	Y
Tower A	North	55	55	90	85	Y	Y
	East	55	55	90	85	Y	Y
	South	50	50	90	85	Y	Y
	West	37	37	90	85	Y	Y
Building B Podium	North	50	50	90	85	Y	Y
	East	50	50	90	85	Y	Y
	South	35	35	90	85	Y	Y
	West	31	31	90	85	Y	Y
Tower B	North	55	55	90	85	Y	Y
	East	55	55	90	85	Y	Y
	South	43	43	90	85	Y	Y
	West	40	40	90	85	Y	Y
Tower C	North	54	54	90	85	Y	Y
	East	54	54	90	85	Y	Y
	South	42	42	90	85	Y	Y
	West	38	38	90	85	Y	Y

Notes: [1] Façade locations are identified in **Figure 10.**
[2] Sound levels shown represent the worst-case impact along the identified façade

The impulsive noise from rail car knuckle thumps were found to be below the exclusionary Class 4 sound levels for all facades, during all periods of the day. Therefore, the applicable guideline limits are met on all facades of the proposed development and additional noise mitigation measures are not required.

Outdoor Living Areas

The predicted impulsive stationary sound level within the rooftop common amenity areas without any mitigation are 42-47 dBAI for OLA 1 and 31-33 dBAI for OLA 2, which are below the exclusionary guideline

limit of 90 dBAI for daytime/evening periods. Therefore, no additional mitigation is required. Sound levels are shown in Figure 11.

3.3.4 Generator Testing

Façade Sound Levels

Noise impacts from generator testing were predicted on the development facades and shown in Figure 12 and summarized in Table 18. Generator testing is assumed to occur during daytime periods only for a duration of 30 minutes.

Table 18: Summary of Emergency Generator Façade Sound Levels

Building	Façade [1]	Stationary Sound Levels [2]		Applicable Guideline Limit		Meets Guideline Limits?	
		Day/Eve (dBA)	Night (dBA)	Day/Eve (dBAI)	Night (dBAI)	Day/Eve (Y/N)	Night (Y/N)
Building A Podium	North	43	0	65	60	Y	Y
	East	47	0	65	60	Y	Y
	South	38	0	65	60	Y	Y
	West	28	0	65	60	Y	Y
Tower A	North	42	0	65	60	Y	Y
	East	46	0	65	60	Y	Y
	South	38	0	65	60	Y	Y
	West	26	0	65	60	Y	Y
Building B Podium	North	44	0	65	60	Y	Y
	East	46	0	65	60	Y	Y
	South	30	0	65	60	Y	Y
	West	21	0	65	60	Y	Y
Tower B	North	44	0	65	60	Y	Y
	East	51	0	65	60	Y	Y
	South	42	0	65	60	Y	Y
	West	38	0	65	60	Y	Y
Tower C	North	40	0	65	60	Y	Y
	East	41	0	65	60	Y	Y
	South	36	0	65	60	Y	Y
	West	20	0	65	60	Y	Y

Outdoor Living Areas

The predicted impulsive stationary sound level within the rooftop common amenity areas are 41-42 dBA for OLA 1 and 37-42 dBA for OLA 2, which are below the exclusionary guideline limit of 65 dBA During the daytime/evening. Therefore, no additional mitigation is required. Sound levels are shown in Figure 13.

3.4 Ventilation and Warning Clause Requirements

As the surrounding industries have the potential to be audible at times, a warning clause should be included in the Agreement of Purchase and Sale or Lease and in the relevant Development Agreements. An MECP NPC-300 Type E warning clause is recommended for the all suites within the development. See Appendix C for warning clause details.

In addition, central air conditioning and a Type F Warning Clause is recommended as a component of the Class 4 Area designation. See Appendix C for warning clause details.

PART 2: IMPACTS OF THE DEVELOPMENT ON ITSELF

4.0 STATIONARY SOURCE NOISE IMPACTS ON THE DEVELOPMENT ITSELF

At the time of this assessment, the proposed development's mechanical systems have not been sufficiently designed.

If common mechanical systems will be implemented as part of the proposed development, the impacts from all equipment should comply with the MECP Publication NPC-300 guideline limits. The mechanical equipment is to be included with proposed development; the 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) into the design. This can be confirmed at later stages of approval.

If individual air conditioning systems are to be implemented for each residential unit for the proposed site, the sound levels from each unit should meet MECP Publication NPC-216.

PART 3: IMPACTS OF THE DEVELOPMENT ON THE SOUROUNDING AREA

5.0 STATIONARY SOURCE NOISE IMPACTS ON SORROUNDING AREA

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 possible adverse impacts on the surrounding neighbourhood are the potential mechanical equipment (make up air units, cooling units, and parking garage vents). This equipment is required to meet MECP Publication NPC-300 requirements at the worst-case off-site noise sensitive receptors.

Off-site impacts are not anticipated given that the systems will be designed to ensure that the applicable noise guidelines are met at on-site receptors.

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

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 the CP and Metrolinx railway noise as well as roadway noise from Waterdown Road, Masonry Court, and Highway 403.
- Based on transportation façade sound levels upgraded glazing is required within the development, as outlined in outlined in Section 2.5.1.
- Noise impacts within the common outdoor amenity areas, are predicted to exceed the applicable guidelines. With the inclusion of a combination of noise barriers (perimeter + localized screening for seating areas) and optimization of locales within the rooftop amenity space as passive areas, transportation noise can be reduced to normally acceptable levels in the context of urban development, as outlined in Section 2.6.1.
- Forced air heating and the provision for air conditioning and a Type C Warning Clause are recommended for units on the southern Façade of every building, as outlined in Section 2.4.2. Warning clauses are included in Appendix C.
- Central Air Conditioning and a Type D Warning Clause is recommended for units on the North, East, and South facades of every building, as outlined in Section 2.4.2. Warning clauses are included in Appendix C.
- As acoustic barriers are required to reduce transportation noise levels within the rooftop amenity spaces, a Type B warning Clauses are required as outlined in Section 2.6.2. Warning clauses are included in Appendix C.
- In addition, CP, and Metrolinx Warning Clauses are also required for all units in the development.

6.2 Stationary Noise

- “Stationary” noise from the surrounding commercial and industrial facilities were assessed on the proposed development based on the Class 4 Area designation approved for the development lands, as outlined in Section 3.
- Stationary noise impacts from the surrounding commercial noise are predicted to meet NPC-300 Class 4 guideline limits at all facades and outdoor amenity areas.
- A Type E noise warning clause is recommended, as outlined in Section 3.4, due to the general noise from the surrounding industries and commercial properties. Warning clauses are included in Appendix C.

- Central air conditioning and a **Type F** noise warning clause should be included as a component of the Class 4 Area designation, as outlined in **Section 3.5**. Warning clauses are included in **Appendix C**.

6.3 Overall Assessment

- Impacts of the environment on the proposed development can be adequately controlled with upgraded glazing, inclusion of noise barriers, ventilation requirements and warning clauses, as outlined in **Part 1** of this report.
- Impacts of the proposed development on itself are not anticipated and can be adequately controlled by following the design guidance outlined in **Part 2** of this report.
- Impacts of the proposed development on the surroundings are expected to meet the applicable guideline limits and can be adequately controlled by following the design guidance outlined **Part 3** of this report.
- As the glazing analysis was completed based on generic room and window dimensions, the analysis should be revised once detailed floor and façade plans are available.
- As the mechanical systems for the proposed development have not been designed at the time of this assessment, the acoustical design should be reviewed by an Acoustical Consultant as part of the final building design.

7.0 REFERENCES

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, Building Practice Note 56: *Controlling Sound Transmission into Buildings*, Canada 1985.

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

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

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

8.0 STATEMENT OF LIMITATIONS

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FIGURES

Environmental Noise Assessment
1120 Cook Blvd
SLR Project No.: 241.30122.00000



ADI	True North	Scale: 1:10000	METRES	SLR global environmental solutions
1120 COOKE BOULEVARD		Date: SEP 20th 2021 Rev 0.0	Figure No. 1	
CONTEXT MAP		Project No. 241.30122.00000		



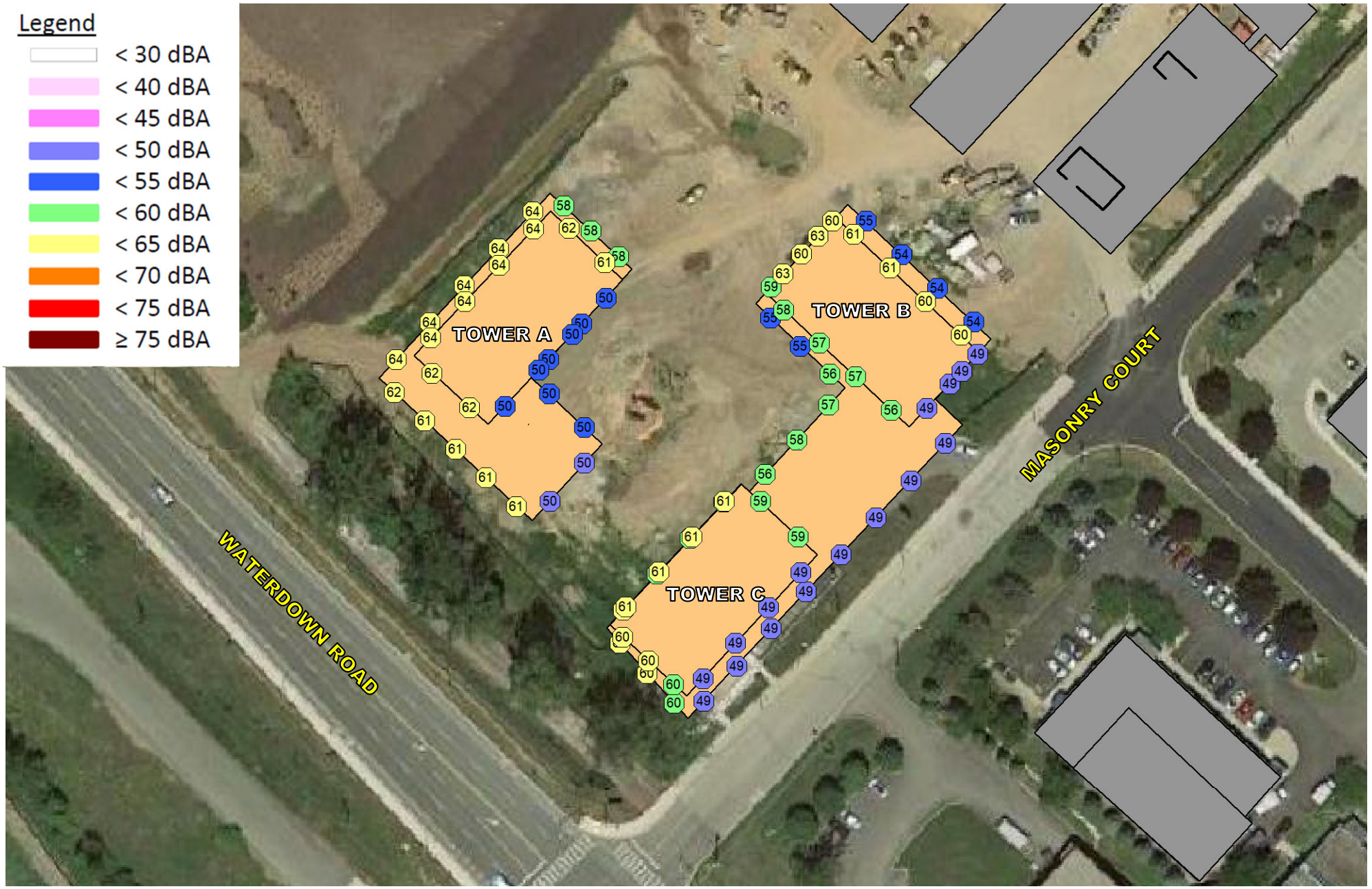
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PROPOSED BUILDING LAYOUT		Project No. 241.30122.00000		



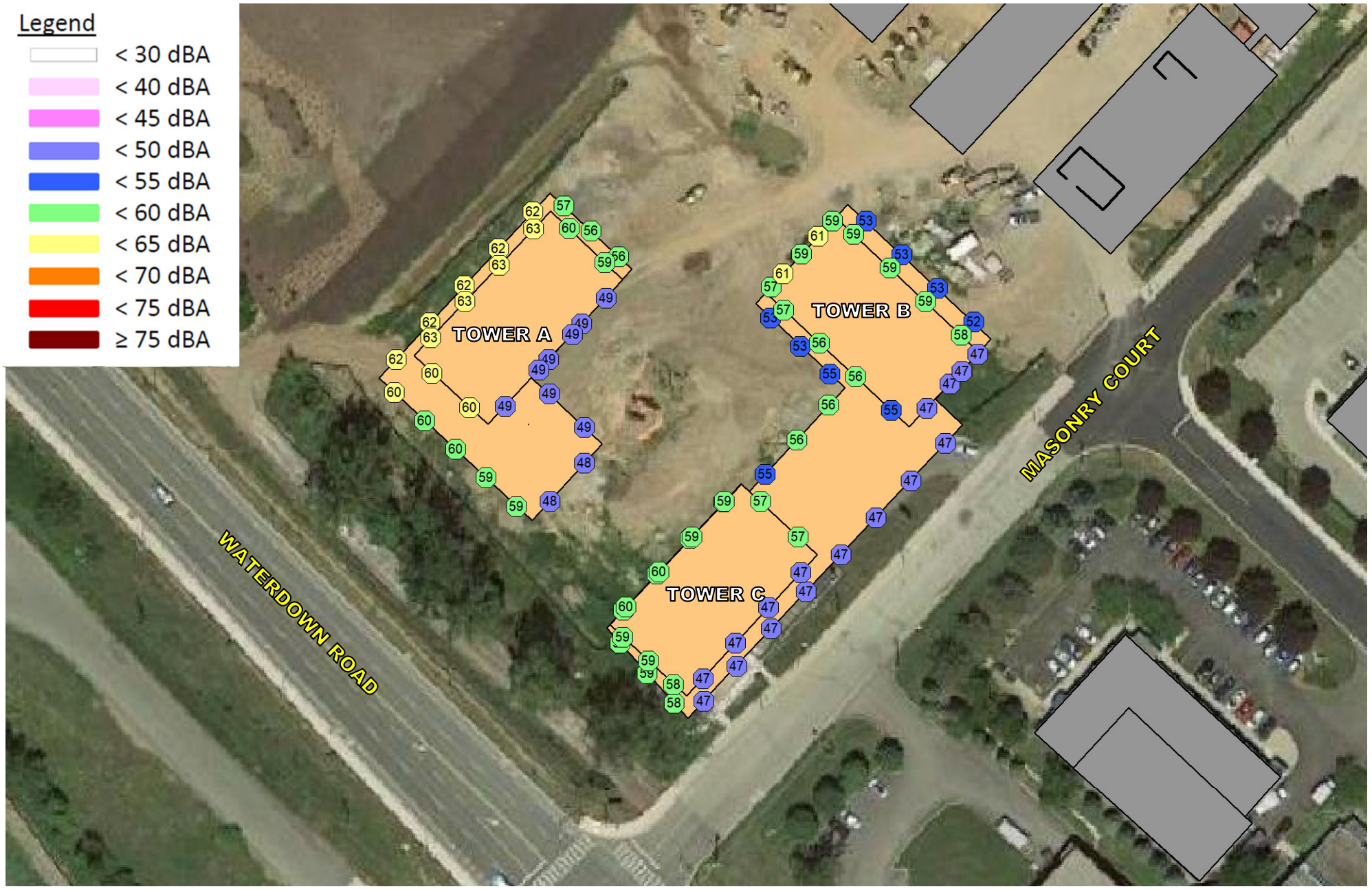
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MODELLED ROADWAY NOISE IMPACTS - DAYTIME		Project No. 241.30122.00000		



ADI	True North	Scale: 1:1000	METRES	SLR global environmental solutions
1120 COOKE BOULEVARD		Date: SEP 20th 2021 Rev 0.0	Figure No. **3b**	
MODELLED ROADWAY NOISE IMPACTS - NIGHTTIME		Project No. 241.30122.00000		



ADI	True North	Scale: 1:1000	METRES	SLR global environmental solutions
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MODELLED RAILWAY NOISE IMPACTS - DAYTIME		Project No. 241.30122.00000		



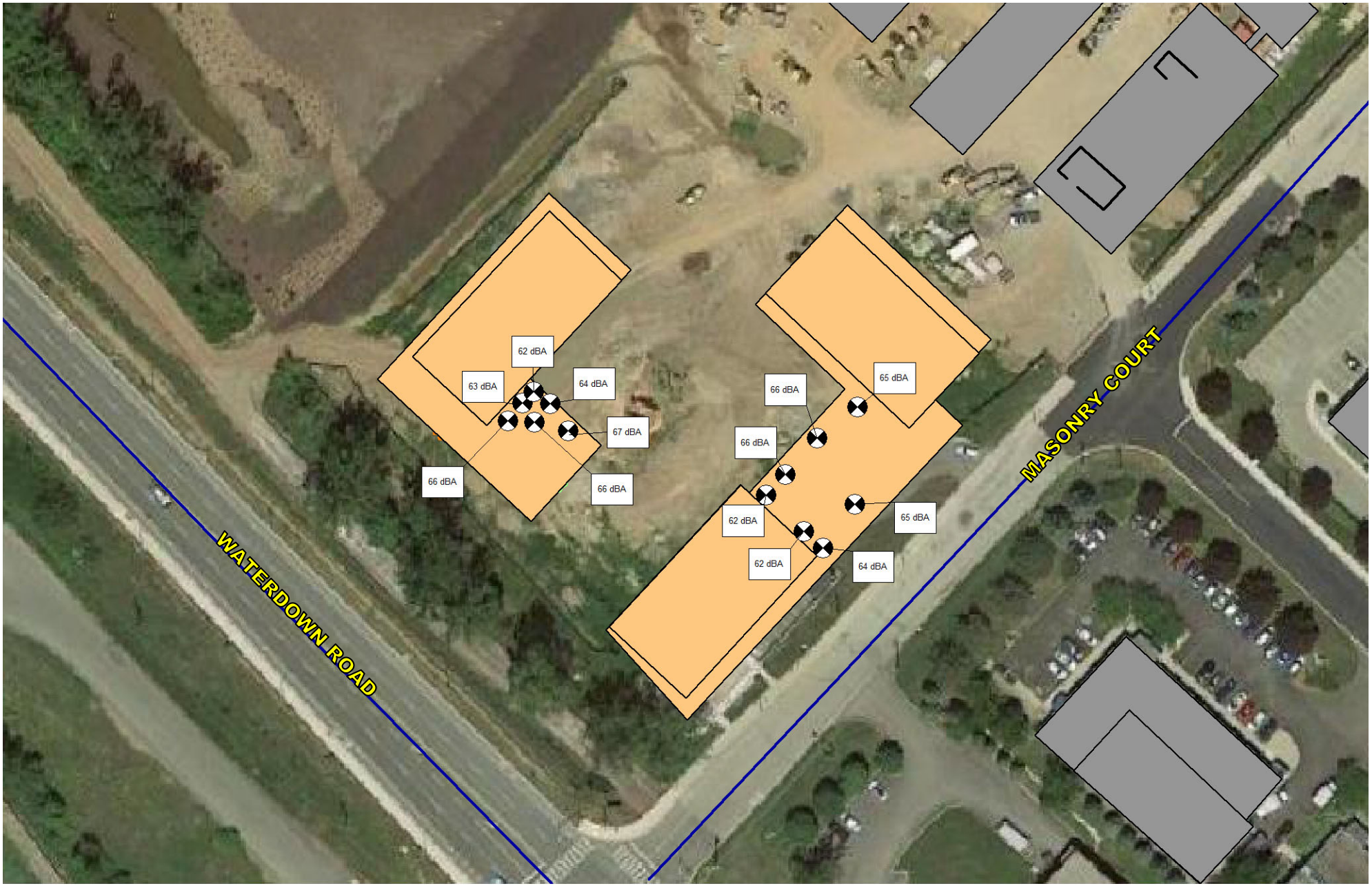
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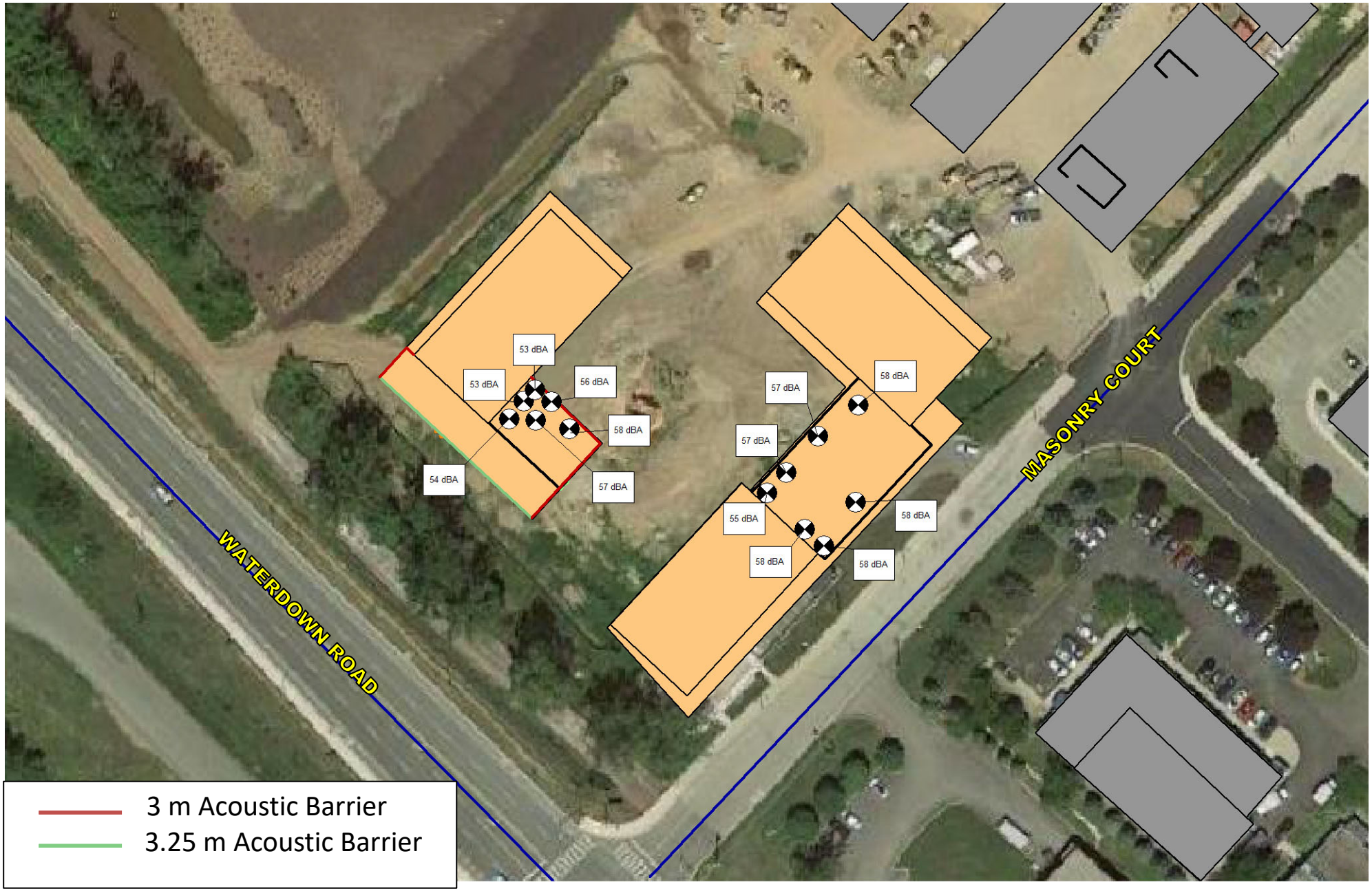
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MODELLED ROAD + RAIL NOISE IMPACTS - DAYTIME		Project No. 241.30122.00000		



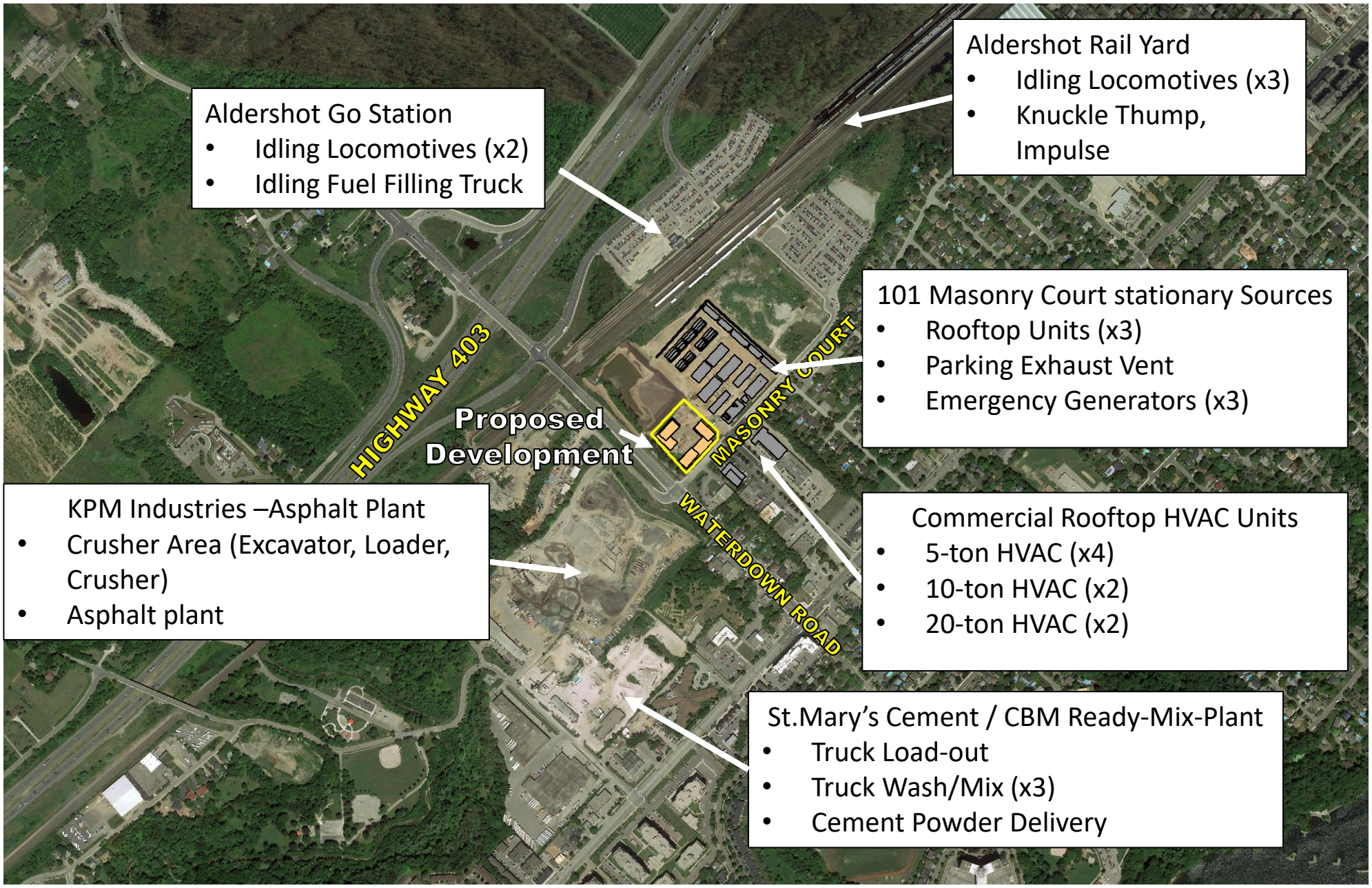
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MODELLED ROAD + RAILWAY NOISE IMPACTS – OLA WITHOUT MITIGATION		Project No. 241.30122.00000		



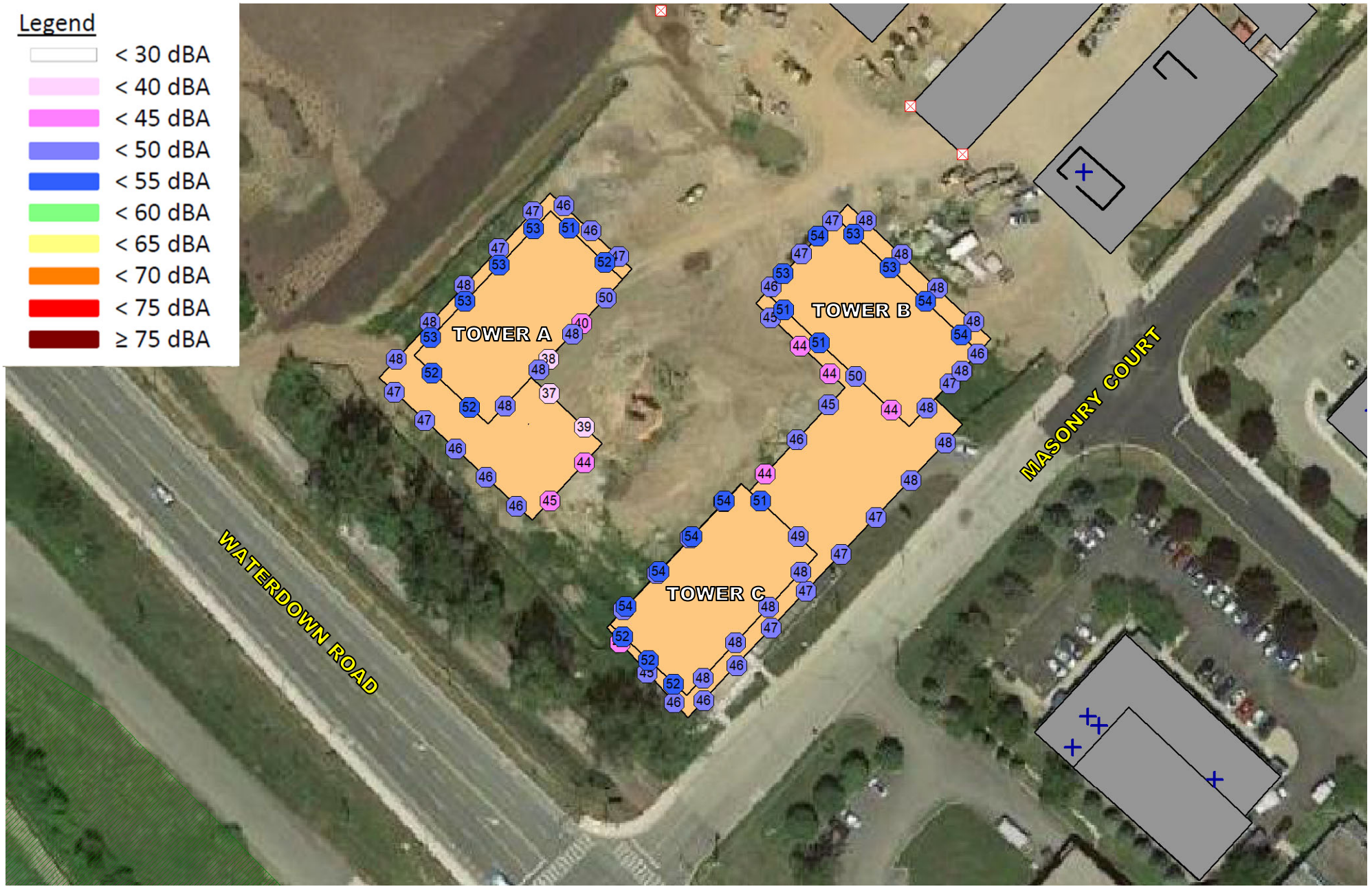
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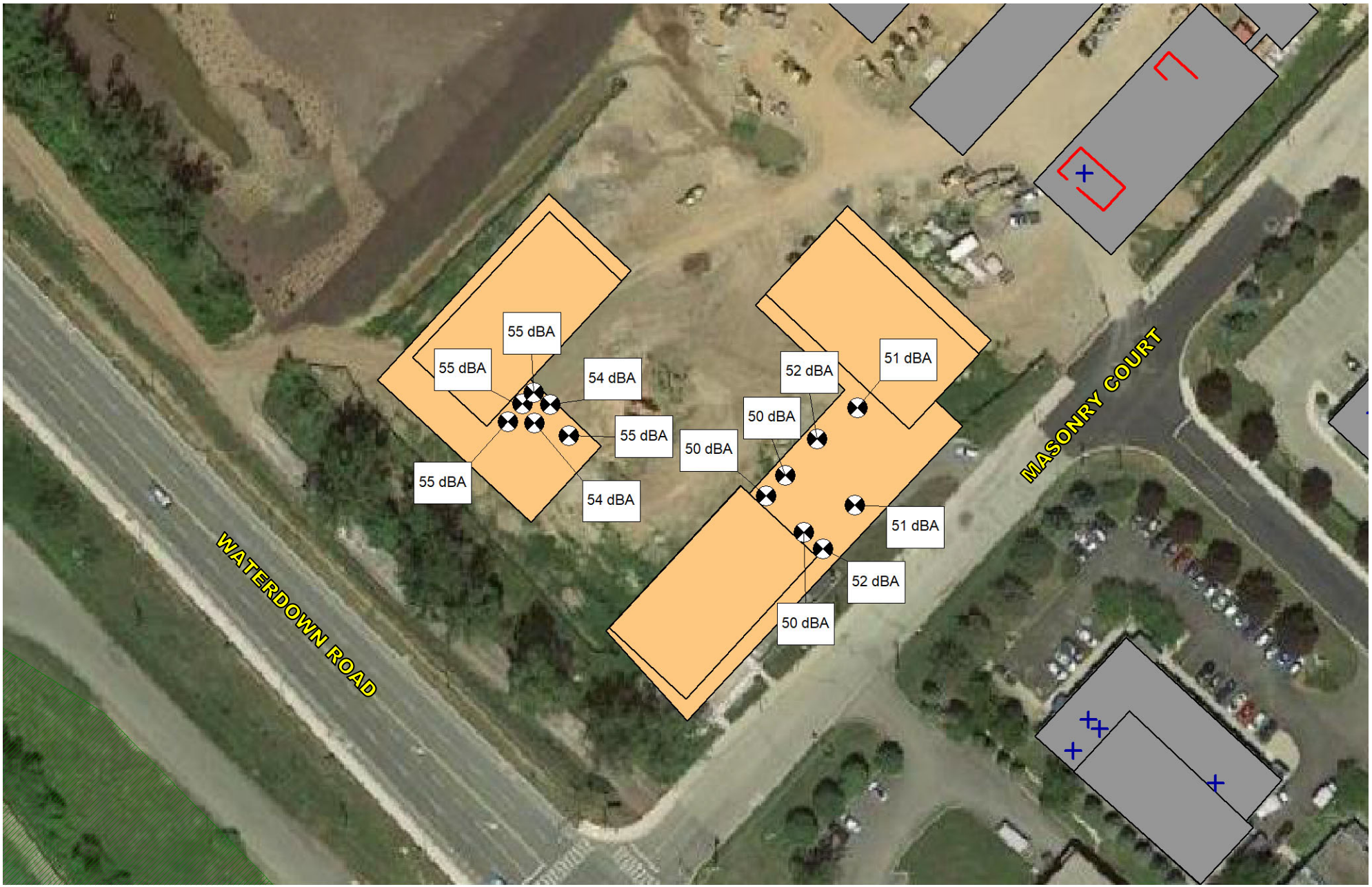
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STATIONARY NOISE SOURCE LOCATIONS		Project No. 241.30122.00000		



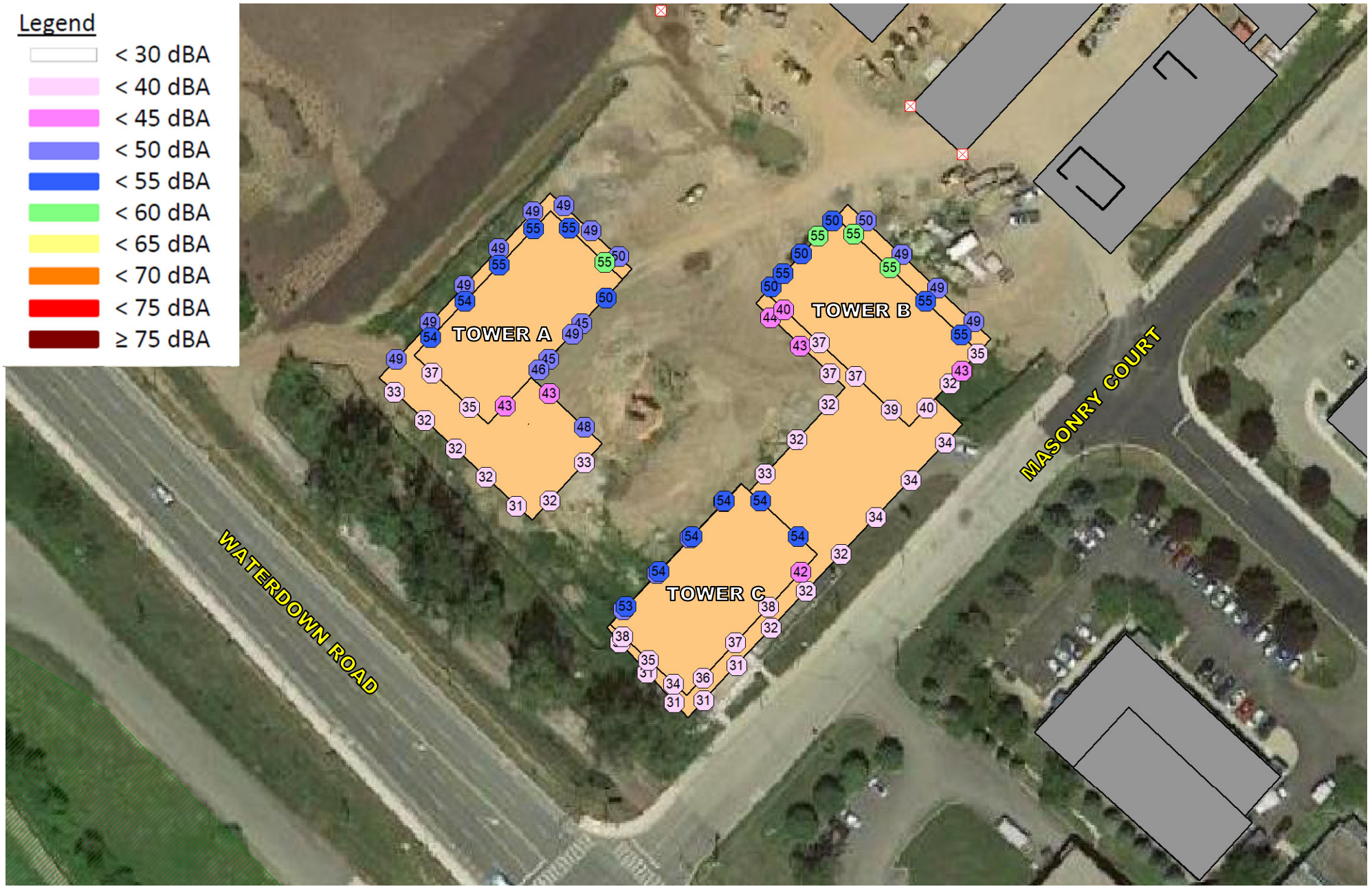
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MODELLED STATIONARY NOISE IMPACTS (CONTINUOUS) - DAYTIME		Project No. 241.30122.00000		



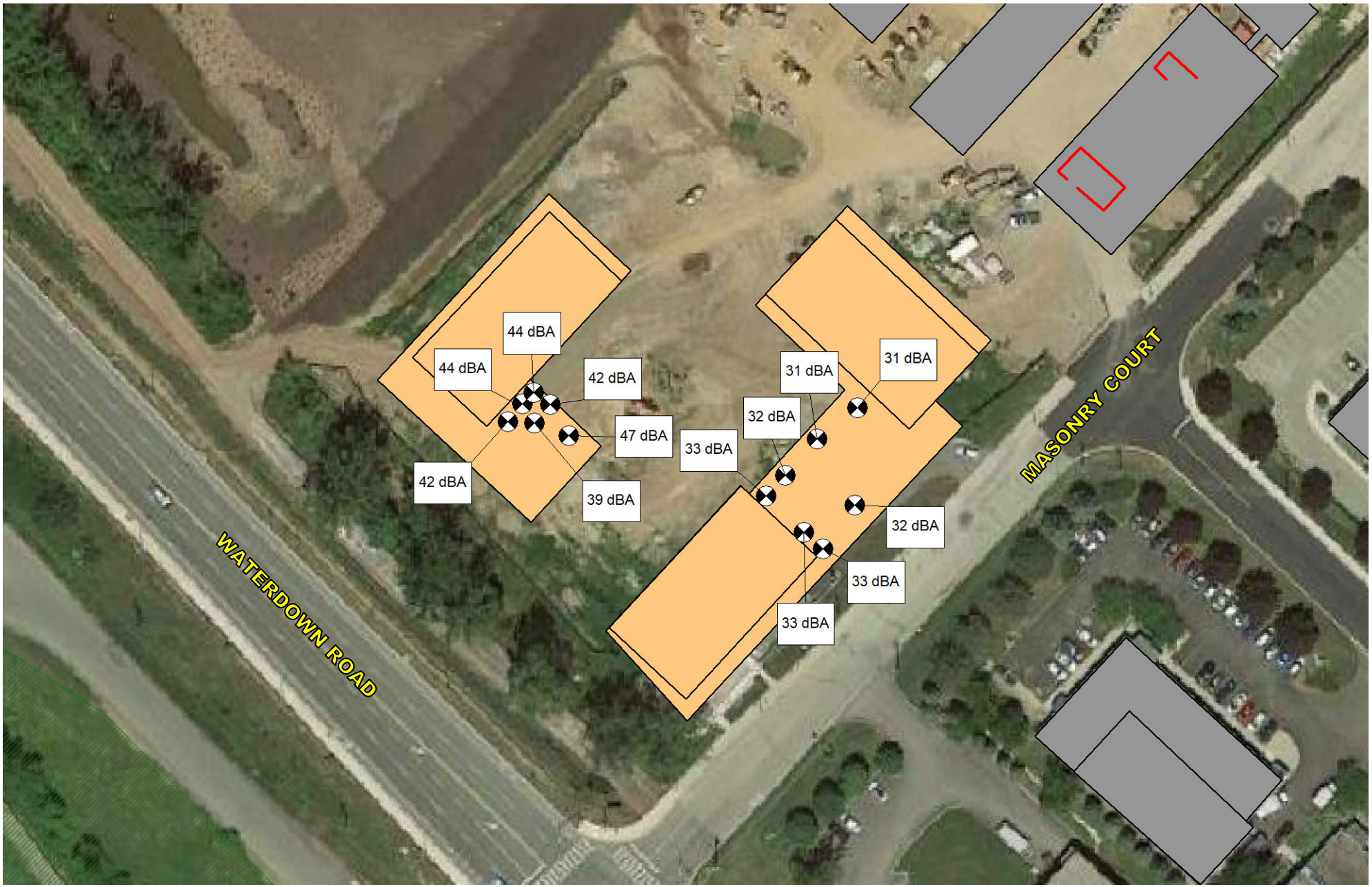
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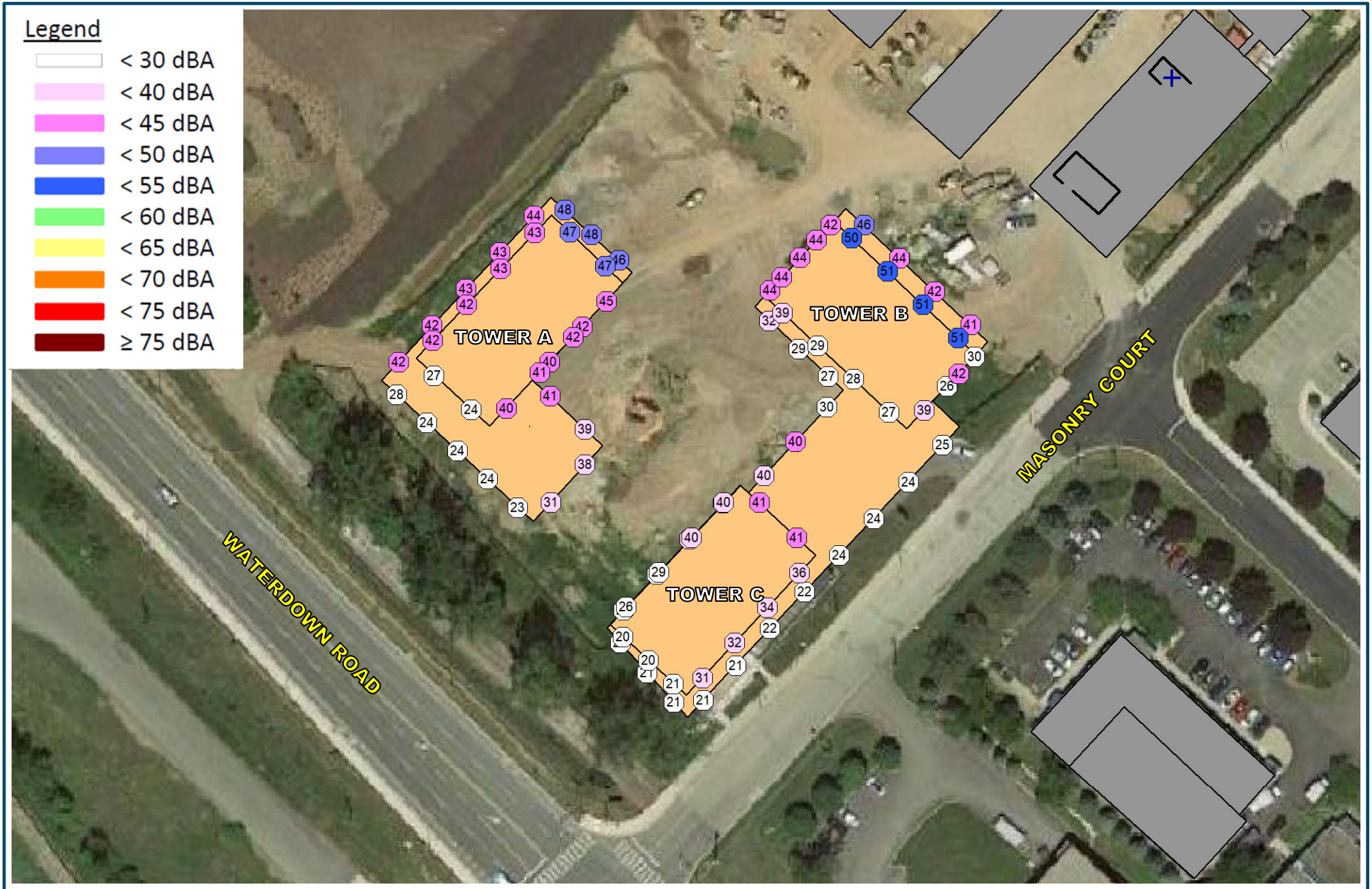
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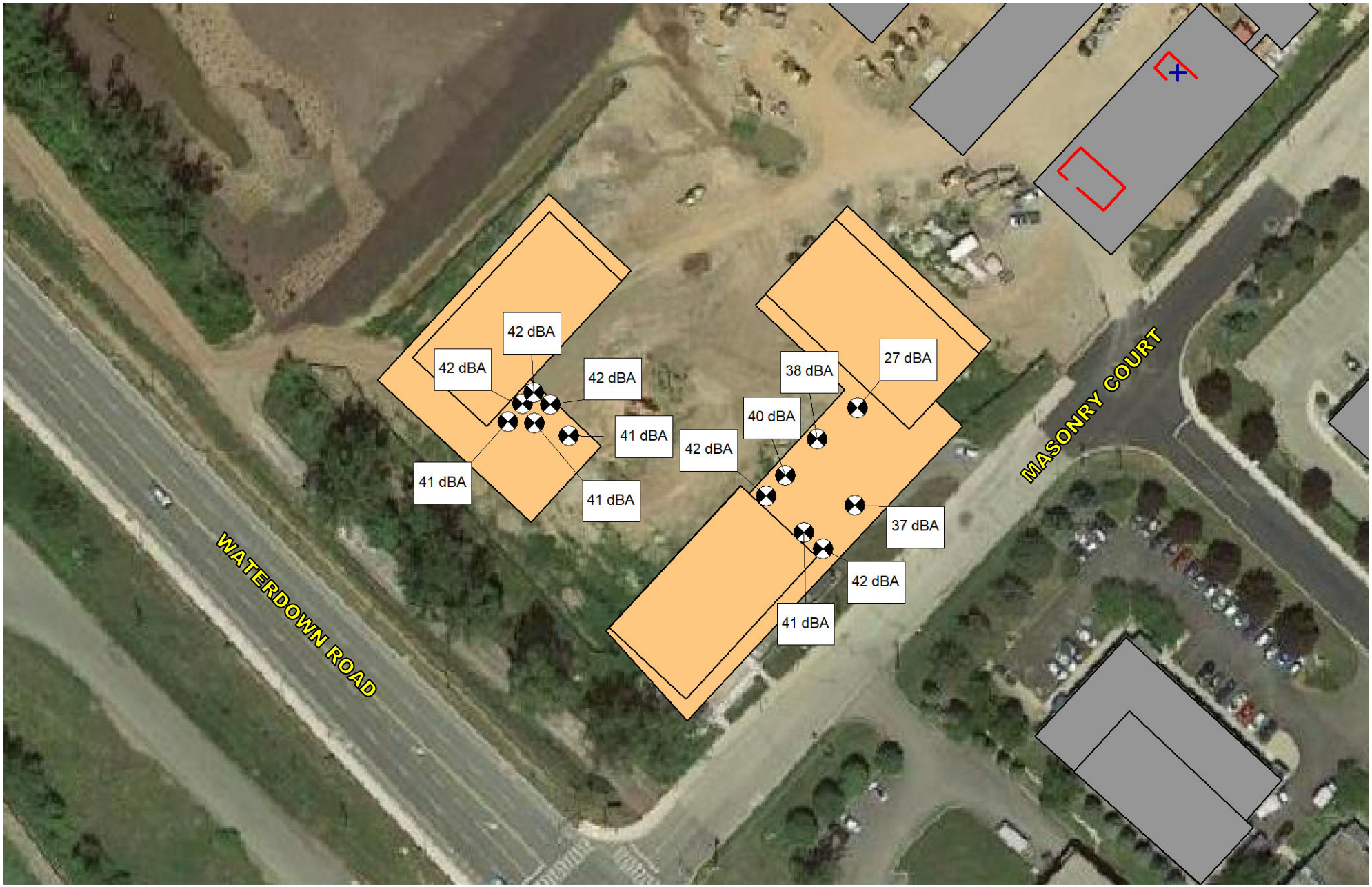
ADI	True North	Scale: 1:1000	METRES	SLR global environmental solutions
1120 COOKE BOULEVARD		Date: SEP 20th 2021 Rev 0.0	Figure No. **10**	
MODELLED STATIONARY NOISE IMPACTS (IMPULSIVE) – DAYTIME/NIGHTTIME		Project No. 241.30122.00000		



ADI	True North	Scale: 1:1000	METRES	SLR global environmental solutions
1120 COOKE BOULEVARD		Date: SEP 20th 2021 Rev 0.0	Figure No. **11**	
MODELLED STATIONARY NOISE IMPACTS – OLA (IMPULSIVE)		Project No. 241.30122.00000		



ADI	True North	Scale: 1:1000	METRES	SLR global environmental solutions
1120 COOKE BOULEVARD		Date: SEP 20th 2021 Rev 0.0	Figure No. **12**	
MODELLED STATIONARY NOISE IMPACTS – GENERATOR TESTING		Project No. 241.30122.00000		



ADI	True North	Scale: 1:1000	METRES	SLR global environmental solutions
1120 COOKE BOULEVARD		Date: SEP 20th 2021 Rev 0.0	Figure No. **13**	
MODELLED STATIONARY NOISE IMPACTS – GENERATOR TESTING - OLA		Project No. 241.30122.00000		

APPENDIX A
Development Drawings

Environmental Noise Assessment
1120 Cook Blvd
SLR Project No.: 241.30122.00000

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1120 COOKE BOULEVARD - PHASE 2

ISSUED FOR OPA/ ZBA
07 OCTOBER 2021

No.	Revisions	Date
01	ISSUED FOR OPA/ZBA	07 OCT 2021

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COREARCHITECTS
130 QUEENS QUAY EAST, SUITE 700, WEST TOWER
TORONTO, ON CANADA M5A 0P6
T +1 416 343 0400 • F +1 416 343 0401
INFO@COREARCHITECTS.COM
WWW.COREARCHITECTS.COM

1120 COOKE BLVD

PHASE 2
BURLINGTON, ONTARIO

Drawn	Scale: NTS
Checked	Date: 11 JUN 2021

Title: TITLE

Project No.	Drawing No.
20-129	A001

101 Masonry Court - GCA Chart

	BUILDING A		BUILDING B		BUILDING C		RETAIL		TOTAL	
	BUILDING OUTLINE (GCA) sq.ft.	BUILDING OUTLINE (GCA) sq.m.	BUILDING OUTLINE (GCA) sq.ft.	BUILDING OUTLINE (GCA) sq.m.	BUILDING OUTLINE (GCA) sq.ft.	BUILDING OUTLINE (GCA) sq.m.	BUILDING OUTLINE (GCA) sq.ft.	BUILDING OUTLINE (GCA) sq.m.	sq.ft.	sq.m.
GROUND	15,477	1,437.83	25,475	2,366.68			2,489	231.22	43,440	4,035.73
LEVEL 2	15,477	1,437.83	26,044	2,419.59					41,521	3,857.42
LEVEL 3	15,477	1,437.83	26,044	2,419.59					41,521	3,857.42
LEVEL 4	15,477	1,437.83	8,072	749.92	8,483	788.05			32,031	2,975.80
LEVEL 5	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 6	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 7	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 8	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 9	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 10	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 11	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 12	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 13	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 14	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 15	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 16	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 17	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 18	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 19	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 20	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 21	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 22	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 23	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 24	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 25	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 26	8,073	750.00	8,072	749.92	8,070	749.69			24,215	2,249.60
LEVEL 27	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 28	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 29	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 30	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 31	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 32	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 33	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 34	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 35	8,073	750.00			8,070	749.69			16,142	1,499.68
LEVEL 36	8,073	750.00			8,070	749.69			16,142	1,499.68
MPH	4,810	446.82	4,801	446.00	4,875	452.86			14,485	1,345.68
TOTAL GCA	320,239.38	30,198.03	263,221.56	24,900.09	266,707.95	25,230.84	2,488.83	231.22	867,143	80,560.18

TOTAL RESIDENTIAL GCA (ABOVE GRADE)	867,143	80,560.18
TOTAL RESIDENTIAL GFA (ABOVE GRADE)	794,979	73,855.94
TOTAL COMMERCIAL GFA (ABOVE GRADE)	2,489	231.22
TOTAL DEDUCTABLE (ABOVE GRADE)	69,675	6,473.01
TOTAL SITE AREA (m2)	9,534.66	
TOTAL SITE COVERAGE	7.8	

7 A100 GCA CHART REF.

ABBREVIATION LEGEND

ACC	ARCHITECTURAL CONCRETE TYPE	EL	ELEVATION	H	HOT	0/C	ON CENTRE	S	SINK	U/S	UNDERSIDE
ACT	ACOUSTIC TILE	ELEC	ELECTRICAL	HD	HUB DRAIN	OD	OUTSIDE DIAMETER	S/A	SUPPLY AIR		
AD	AREA DRAIN	EOS	EDGE OF SLAB	HM	HOLLOW METAL	OH	OVERHEAD	SC	SEALED CONCRETE	V	VOLT
AES	ARCHITECTURAL EXPOSED STEEL	EP	ELECTRICAL PANEL	HOR	HORIZONTAL			SD	SCUPPER DRAIN	VB	VAPOUR BARRIER
ALUM	ALUMINUM	EQ	EQUAL	HSS	HOLLOW STEEL SECTION	PC	PRECAST CONCRETE	SPEC	SPECIFICATION	VCT	VINYL COMPOSITE TILE TYPE
AFF	ABOVE FINISHED FLOOR	EIF	EXTERIOR INSULATION FINISHTYPE	HT	HEIGHT	PLM	PLASTIC LAMINATE	SQ	SQUARE	VERT	VERTICAL
		EXP	EXPOSED	HW	HARDWOOD STRIP	PLYWD	PLYWOOD	SQ FT	SQUARE FEET	VEST	VESTIBULE
C	COLD	EXJ	EXPANSION JOINT			PRE-FAB	PRE-FABRICATED	SSTL	STAINLESS STEEL	VP	VAPOUR BARRIER
C/H	COLD & HOT	EXT	EXTERIOR	IM	INSULATED METAL	PS	PRESSED STEEL	STL	STEEL		
CAR	CARPET			INS	INSULATION	PT	PAINT	SIM	SIMILAR	W	WASHER, WIDE
CB	CONCRETE BLOCK	FD	FLOOR DRAIN	INT	INTERIOR	P/T	PRESSURE TREATED	ST	STONE TYPE	WD	WOOD TYPE
CL	CENTRE LINE	FDN	FOUNDATION					STOR	STORAGE	WF	WOOD FINISH TYPE
CF	CERAMIC TILE	FIN	FINISH(ED)	JT	JOINT	QM	QUIRK MITRE	STRUCT	STRUCTURE, STRUCTURAL	WP	WORKING POINT
CJ	CONCRETE FINISH TYPE	FL	FLOOR					SW	SWITCH	W.P.	WATERPROOF (MEMBRANE)
CL	CONCRETE JOINT	FT	FOOT	LAM	LAMINATED	R	RISER, RADIUS			W.R.T.	WITH RESPECT TO
COL	CLOSET	FTG	FOOTING	LIN	LINEN	R.O.	ROUGH OPENING	T	TREAD	W/	WITH
CONC	CONCRETE BLOCK	FRG	FIBRE REINFORCED GYPSUM			R/A	RETURN AIR	TBB	TILE BACKER BOARD		
CONT	CONTINUOUS			MA	MARBLE TYPE	RAD	RADIATOR	TEL	TELEPHONE	XGWB	EXTERIOR GYPSUM BOARD
CT	CONCRETE COLUMN	GALV	GALVANIZED	MAX	MAXIMUM	RB	RUBBER BASE	THK	THICK, THICKNESS		
C/W	COVERED WITH	GBL	GLASS BLOCK	MECH	MECHANICAL	RC	REINFORCED CONCRETE	T&G	TONGUE & GROOVE		
		GR	GRANITE	MIN	MINIMUM	RD	ROOF DRAIN	TV	TELEVISION		
D	DIAMETER, DRYER	GL	GLASS	ML	MELAMINE	REF	REFERENCE DIMENSIONS	TYP	TYPICAL		
DFJ	DEFLECTION JOINT	GWB	GYPSUM WALLBOARD	MOD	MODULE	REINF	REINFORCED, REINFORCING	T/O	TOP OF SLAB		
DN	DOWN			MT	METAL TYPE	REQ'D	REQUIRED	T.O.B.	TOP OF BEAM		
DWG	DRAWING					RV	REVEAL	T.O.W.	TOP OF WALL		
				NFWH	NO FREEZE WATER HOSE	REV	REVERSE				
				NIC	NOT IN CONTRACT	R INSUL	RIGID INSULATION				
				N°	NUMBER	RM	ROOM				
				NTS	NOT TO SCALE						

3 A100 ABBREVIATION LEGEND 1:300

GROSS FLOOR AREA BREAKDOWN

FLOOR		RESIDENTIAL UNIT	RETAIL		RESIDENTIAL BUILDING B (PHASE 1) SALABLE		BUILDING B (PHASE 1) NON-SALABLE		BUILDING C (PHASE 2) SALABLE		BUILDING C (PHASE 2) NON-SALABLE		BUILDING A (PHASE 3) SALABLE		BUILDING A (PHASE 3) NON-SALABLE		TOTAL RESIDENTIAL GFA		TOTAL INDOOR AMENITY		TOTAL DEDUCTABLE	
			ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2	ft2	m2
PARKING LEVEL P-5	PARKING				0	0.00	0	0.00					0	0.00	178	16.57	178	16.57	0	0.00	98,635	9,163.52
PARKING LEVEL P-4					0	0.00	0	0.00					0	0.00	178	16.57	178	16.57	0	0.00	98,635	9,163.52
PARKING LEVEL P-3					0	0.00	0	0.00					0	0.00	178	16.57	178	16.57	0	0.00	98,635	9,163.52
PARKING LEVEL P-2					0	0.00	2,081	193.35					0	0.00	178	16.57	2,260	209.92	0	0.00	96,554	8,970.18
PARKING LEVEL P-1					0	0.00	10,317	958.44					0	0.00	2,893	268.79	13,210	1,227.23	0	0.00	85,604	7,952.87
GROUND	PODIUM	0	2,558	231.22	0	0.00	9,333	867.07	0	0.00	7,720	717.22	0	0.00	13,053	1,212.63	30,106	2,796.92	19,127	1,777.00	10,846	1,007.58
LEVEL 2		51			12,313	1,143.89	1,228	114.06	8,309	771.91	1,968	182.87	12,893	1,197.78	1,228	114.11	37,939	3,524.62	0	0.00	3,582	332.81
LEVEL 3		52			12,313	1,143.89	1,228	114.06	9,585	890.48	829	77.03	12,893	1,197.78	1,228	114.11	38,076	3,537.35	0	0.00	3,445	320.08
LEVEL 4		28			2,491	231.41	4,891	454.41	2,587	240.37	5,335	495.60	12,893	1,197.78	1,228	114.11	29,425	2,733.69	8,254	766.83	2,606	242.11
LEVEL 5	TOWER	33			6,855	636.87	657	61.01	6,897	640.72	612	56.89	5,727	532.07	1,786	165.88	22,534	2,093.44	1,064	98.81	1,681	156.17
LEVEL 6		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 7		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 8		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 9		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 10		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 11		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 12		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 13		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 14		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 15		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 16		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 17		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 18		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 19		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 20		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 21		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 22		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 23		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 24		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 25		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 26		35			6,855	636.87	657	61.01	6,897	640.72	612	56.89	6,849	636.29	664	61.66	22,534	2,093.44	0	0.00	1,681	156.17
LEVEL 27		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 28		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 29		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 30		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 31		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 32		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 33		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 34		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 35		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
LEVEL 36		24							6,897	640.72	612	56.89	6,849	636.29	664	61.66	15,022	1,395.56	0	0.00	1,121	104.12
MECHANICAL PH		0			0	0.00	4,655	432.43	0	0.00	4,444	412.84	0	0.00	4,379	406.82	13,477	1,252.09	0	0.00	1,007	93.59
TOTAL		1,139	2,558.00	231.22	177,930.21	16,530.26	48,179.33	4,476.01	241,174.86	22,405.88	39,891.95	3,706.08	256,723.06	23,850.35	47,084.14	4,374.26	810,983.55	75,342.84	28,445.14	2,642.64	547,739.18	50,886.64

TOTAL ABOVE GRADE DEDUCTABLE	6,473.01
TOTAL BELOW GRADE DEDUCTABLE	44,413.62

2 A100 GFA CHART REF.

BUILDING A(36 STORIES)

UNIT BREAKDOWN	BACHELOR (400-450sf)	1BED (450-529sf)	1BED+D (530-625sf)	2BED (625-750sf)	2BED+D (751-825sf)	3BED (900-1100sf)	NO. OF LEVELS	TOTAL
GROUND	0	0	0	0	0	0	1	0
LEVELS 2 - 4	0	3	11	5	1	0	3	60
LEVEL 5	0	6	1	3	0	0	1	10
LEVELS 6 - 36	0	6	4	2	0	0	31	372
TOTAL	0	201	158	80	3	0	36	442
PROVIDED %	0%	45%	36%	18%	1%	0%		100%
NO OF BARRIER FREE UNITS REQUIRED	0	53.85		12.45		0		

PHASE 1 (BUILDING B)	UNIT NUMBER
GROUND	0
LEVELS 2 - 4	0
LEVEL 5	0
LEVELS 6 - 36	0
TOTAL	0

PHASE 2 (BUILDING C)	UNIT NUMBER
GROUND	0
LEVELS 2 - 4	0
LEVEL 5	0
LEVELS 6 - 36	0
TOTAL	0

PHASE 3 (BUILDING A)	UNIT NUMBER
GROUND	0
LEVELS 2 - 4	60
LEVEL 5	10
LEVELS 6 - 36	372
TOTAL	442

BUILDING B & C PODIUM(4 STORIES)

UNIT BREAKDOWN	BACHELOR (400-450sf)	1BED (450-529sf)	1BED+D (530-625sf)	2BED (650-750sf)	2BED+D (751-900sf)	3BED (900-1100sf)	NO. OF LEVELS	TOTAL
GROUND	0	0	0	0	0	0	1	0
LEVEL 2	0	4	22	0	5	0	1	31
LEVEL 3	0	4	22	0	5	1	1	32
LEVEL 4	0	1	4	3	0	0	1	8
TOTAL	0	9	48	3	10	1	4	71
PROVIDED %	0%	13%	68%	4%	14%	5%		100%
NO OF BARRIER FREE UNITS REQUIRED	0	8.55		1.95		0.15		

PHASE 1 (BUILDING B)	UNIT NUMBER
GROUND	0
LEVEL 2	18
LEVEL 3	18
LEVEL 4	4
TOTAL	40

PHASE 2 (BUILDING C)	UNIT NUMBER
GROUND	0
LEVEL 2	13
LEVEL 3	14
LEVEL 4	4
TOTAL	31

PHASE 3	UNIT NUMBER
GROUND	0
LEVEL 2	0
LEVEL 3	0
LEVEL 4	0
TOTAL	0

BUILDING B(26 STORIES)

UNIT BREAKDOWN	BACHELOR (400-450sf)	1BED (450-529sf)	1BED+D (530-625sf)	2BED (650-750sf)	2BED+D (751-900sf)	3BED (900-1100sf)	NO. OF LEVELS	TOTAL
LEVELS 5-26	0	1	7	3	0	0	22	242
TOTAL	0	22	154	66	0	0	22	242
PROVIDED %	0%	9%	64%	27%	0%	0%		100%
NO OF BARRIER FREE UNITS REQUIRED	0	26.4		9.9		0		

PHASE 1 (BUILDING B)	UNIT NUMBER
LEVELS 5-26	242
TOTAL	242

PHASE 2 (BUILDING C)	UNIT NUMBER
LEVELS 5-26	0
TOTAL	0

PHASE 3	UNIT NUMBER
LEVELS 5-26	0
TOTAL	0

BUILDING C(36 STORIES)

UNIT BREAKDOWN	BACHELOR (400-450sf)	1BED (450-529sf)	1BED+D (530-625sf)	2BED (650-750sf)	2BED+D (751-900sf)	3BED (900-1100sf)	NO. OF LEVELS	TOTAL
LEVEL 5	0	6	2	4	0	0	1	12
LEVELS 6-36	0	6	2	4	0	0	31	372
TOTAL	0	192	64	128	0	0	32	384
PROVIDED %	0%	50%	17%	33%	0%	0%		100%
NO OF BARRIER FREE UNITS REQUIRED	0	38.4		19.2		0		

PHASE 1 (BUILDING B)	UNIT NUMBER
LEVEL 5	0
LEVELS 6-36	0
TOTAL	0

PHASE 2 (BUILDING C)	UNIT NUMBER
LEVEL 5	12
LEVELS 6-36	372
TOTAL	384

PHASE 3	UNIT NUMBER
LEVEL 5	0
LEVELS 6-36	0
TOTAL	0

UNIT BREAKDOWN	1B	1B+D	2B	2B+D	3B	TOTAL
TOTAL	424	424	277	13	1	1,139
REQURE %	40%	15%	40%	5%	0%	100%
PROVIDE %	37.2%	37.2%	24.3%	1.1%	0.1%	100%

TOTAL UNITS
1,139

PHASE 1	TOTAL UNITS
TOTAL	282

PHASE 2	TOTAL UNITS
TOTAL	415

PHASE 3	TOTAL UNITS
TOTAL	442

6 A100 UNIT BREAKDOWN REF.

PARKING (RESIDENTIAL+VISITOR)	REGULAR PARKING		BARRIER FREE PARKING TYPE A	BARRIER FREE PARKING TYPE B	TOTAL
P-5 PARKING	201	11 (TENDEM)	3	4	219
P-3 TO P-4 PARKING	201		3	4	208
P-2 PARKING	198		3	4	205
P-1 PARKING	179		3	4	186
GROUND	0		0	0	0
TOTAL PARKING REQUIRED					1026
TOTAL PARKING PROVIDED	991		35		1026

PARKING (COMMERCIAL)	REGULAR PARKING	BARRIER FREE PARKING TYPE A	BARRIER FREE PARKING TYPE B	TOTAL
GROUND(OUTDOOR)	4	0	1	5
TOTAL PARKING PROVIDED	4	1		5

	PHASE 1 (BUILDING B & C)		PHASE 2 (BUILDING A)
P-5 PARKING	125	11 (TENDEM)	83
P-3 TO P-4 PARKING	125		83
P-2 PARKING	122		83
P-1 PARKING	117		69

BIKE PARKING PARKING		RESIDENTIAL LONG-TERM		RESIDENTIAL SHORT-TERM	COMMERCIAL
PHASE 1 (BUILDING B)	PROVIDED	GROUND: 86, UNDERGROUND: 55	141	6(OUTDOOR), 34 (GROUND)	5(OUTDOOR)
	REQUIRED				
PHASE 2 (BUILDING C)	PROVIDED	GROUND: 208	208	8(OUTDOOR)	
	REQUIRED				
PHASE 3 (BUILDING A)	PROVIDED	GROUND: 115, UNDERGROUND: 49	164	8(OUTDOOR)	
	REQUIRED				
TOTAL	PROVIDED	513		56	
	REQUIRED				

5 A100 PARKING & BIKE PARKING STATISTICS REF.

AMENITY SPACE	AMENITY (15 sq.m./UNIT) INDOOR AMENITY	OUTDOOR AMENITY	BALCONY & TERRACE	PARK AREA	TOTAL
BUILDING A					
PROVIDED	793	512	5153	1244	7701
REQUIRED					6630
BUILDING B					
PROVIDED	905	630	3409	1244	6187
REQUIRED					4230
BUILDING C					
PROVIDED	1037	271	4585	1244	7137
REQUIRED					6225
A+B+C	2735	1412	13147	3732	21026
PARK AREA					3732
TOTAL REQUIRED					17085
TOTAL PROVIDED					21026

4 A100 AMENITY STATISTICS REF.

ARCHITECTURAL DRAWING LIST

DRAWING NO.	TITLE	CONSULTANT
SCHEDULES		
A001	TITLE	CORE
A100	STATISTICS & ZONING	CORE
A101	CONTEXT PLAN	CORE
A103	PHASING DIAGRAM	CORE
A104	SITE PLAN	CORE
A105	SURVEY PLAN	CORE
PLANS		
A200	PARKING LEVEL 5	CORE
A201	PARKING LEVELS 3 & 4	CORE
A202	PARKING LEVEL 2	CORE
A203	PARKING LEVEL 1	CORE
A204	GROUND LEVEL	CORE
A205	LEVEL 2	CORE
A206	LEVEL 3	CORE
A207	LEVEL 4	CORE
A208	LEVEL 5	CORE
A209	TYPICAL TOWER	CORE
A210	MECHANICAL PENTHOUSE	CORE
A211	ROOF PLAN	CORE
ELEVATIONS / SECTIONS		
A410	BUILDING SECTION 1	CORE
A411	BUILDING SECTION 2	CORE
A412	BUILDING SECTION 3	CORE
PERSPECTIVES		
A600	BUILDING PERSPECTIVE	CORE
A601	BUILDING PERSPECTIVE	CORE
A602	BUILDING PERSPECTIVE	CORE

NOTE: SHADOW STUDY AT SEPARATE PACKAGE

1 A100 DRAWING LIST REF.

No.	Revisions	Date
01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021

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WWW.COREARCHITECTS.COM

1120 COOKE BLVD

PHASE 2
BURLINGTON ONTARIO

ONTARIO ASSOCIATION OF ARCHITECTS
BABAK ESLAHJOU
LICENCE
4706

Drawn	Scale
CW	N.T.S.
Checked	**Date**
DL	11 JUN 2021

Title
STATISTICS & ZONING

Project No.	Drawing No.
20-129	A100



5 A101 CONTEXT PLAN 1:1000

LEGEND

HATCH DENOTES EXISTING PHASE 1

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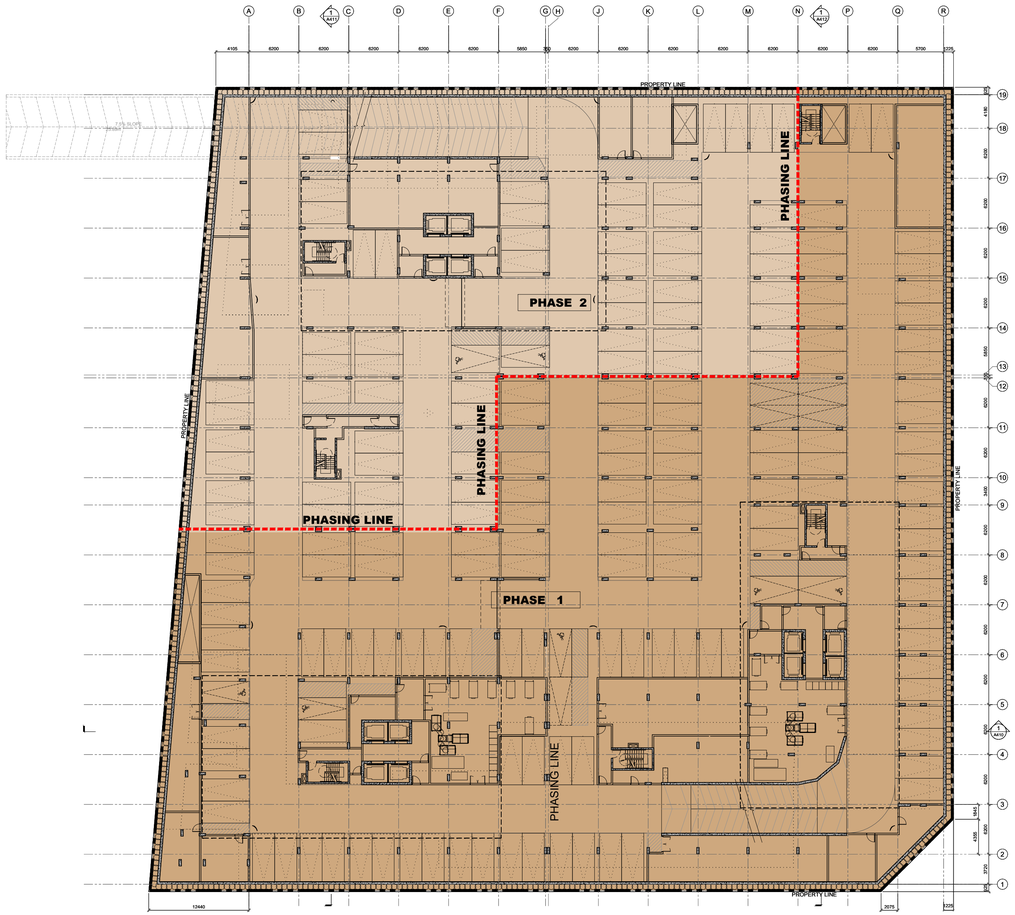
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DUSAN ESUKHUOU LICENCE 9375

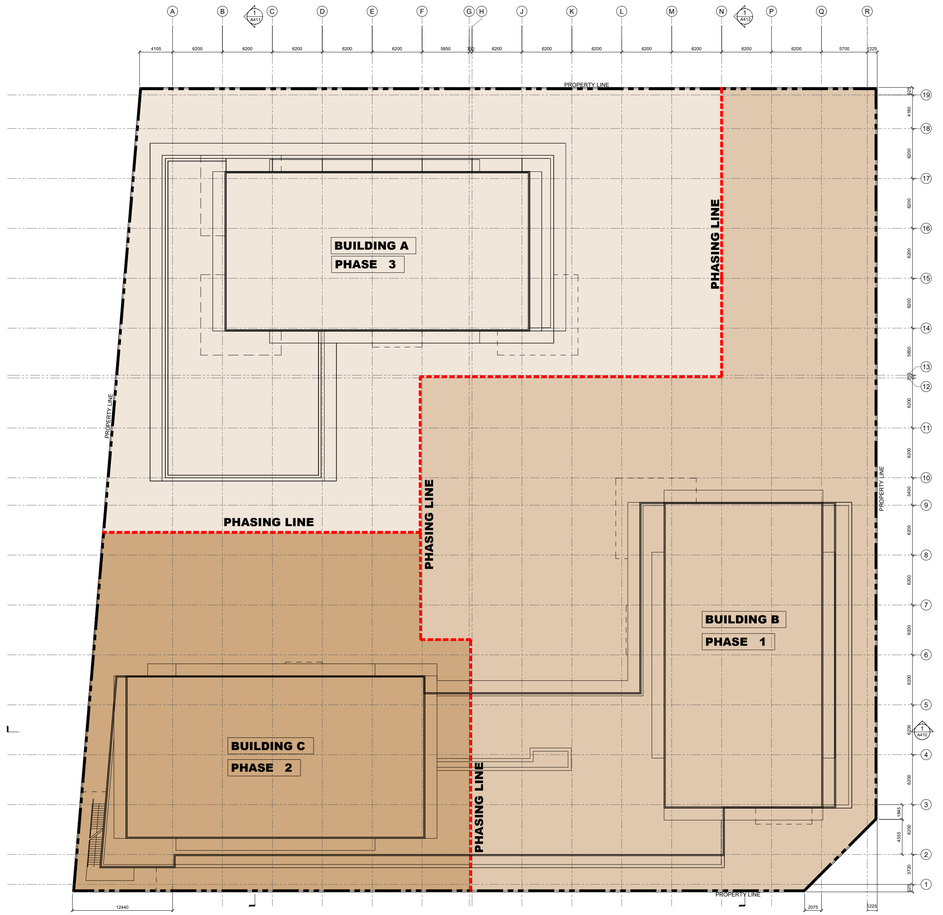
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Checked: DL	Date: 11 JUN 2021

Title: CONTEXT PLAN

Project No.: 20-129	Drawing No.: A101



2 A103 PHASING DIAGRAM BELOW GRADE 1:350



1 A103 PHASING DIAGRAM ABOVE GRADE 1:350

LEGEND

- HATCH DENOTES PHASE 1
- HATCH DENOTES PHASE 2
- HATCH DENOTES PHASE 3

No.	Revisions	Date
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BURLINGTON ONTARIO

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ONTARIO ASSOCIATION OF ARCHITECTS
PRISM STUDIO INC.
LICENCE
4256

Drawn	Scale
CW	1:350
Checked	Date
DL	11 JUN 2021

Title

PHASING DIAGRAM

Project No.	Drawing No.
20-129	A103

WATERDOWN ROAD

WATERDOWN ROAD

PARKING ENTRANCE

7.5% SLOPE
25.89m

PROPERTY LINE

7800

37850

3000

ROOF OF RAMP
(2.30 m HEIGHT)

INTAKE SHAFT

ROOF OF STAIR @ GROUND LEVEL

INTAKE SHAFT

EXIT

8425

2025

4000

11805

4000

3495

CAONPY @ LEVEL 37

GROUND FLOOR
F.F.
EL 105.06

EXTERIOR
MECHANICAL
AREA @
LEVEL 37
EL 217.360

BUILDING A

ROOF OF MECHANICAL
ROOM
@ LEVEL 38
EL 222.860

EXTERIOR
MECHANICAL
AREA @
LEVEL 37

3.7m FROM FIRE
DEPARTMENT CONNECTION
TO RESIDENTIAL ENTRANCE

EL 217.360

CAONPY @ LEVEL 37

CANOPY @ LEVEL 37

ROOF @ LEVEL 5

EXIT

OUTDOOR AMENITY

DASHED LINE DENOTES CANOPY @ LEVEL 5.

RESIDENTIAL ENTRANCE

EXIT

4.7m FROM FIRE DEPARTMENT CONNECTION TO RESIDENTIAL ENTRANCE

CAONPY @ LEVEL 37

DASHED LINE DENOTES CANOPY @ LEVEL 5.

WIND SCREEN (2200 mm min.) @ PERIMETER OF OUTDOOR AMENITY @ LEVEL 5

DASHED LINE DENOTES CANOPY @ GROUND LEVEL.

BIKE RACKS 4 UNITS.

RESIDENTIAL ENTRANCE

34.7m FROM PROPOSED FIRE HYDRANT TO FIRE DEPARTMENT CONNECTION

DROP OFF

R13000

18650

ROOF @ LEVEL 5
EL 119.560

FIRE ROUTE

R13000

27055

EXIT

3000 4000

11740

4000 3590

6000

PROPERTY LINE

LOADING ENTRANCE/ EXIT

EXIT EXIT

LOADING SPACE
3.5m (W) x 12.0m (L) x 7.5m (H) MIN. CLEARANCE

6000

GARBAGE BIN STAGING PAD. PROPERTY MANAGEMENT TO STAGE BINS FOR VARIOUS WASTE STREAMS.

20150

BIKE RACKS 4 UNITS.

INTAKE SHAFT

DROP OFF

DROP OFF

17.2m FROM PROPOSED FIRE HYDRANT TO FIRE DEPARTMENT CONNECTION

13.3m FROM EXISTING FIRE HYDRANT TO FIRE DEPARTMENT CONNECTION

BUILDING B

PROPERTY LINE

CANOPY @ LEVEL 27

R13000

RESIDENTIAL ENTRANCE

PARKING AND TYPE C LOADING ENTRANCE

RESIDENTIAL ENTRANCE

37130

29700

PARKING ENTRANCE
F.F.H
EL 105.200

13.3m FROM FIRE DEPARTMENT CONNECTION TO RESIDENTIAL LOBBY ENTRANCE

CAONPY @ LEVEL 37

37990

5.5m FROM FIRE DEPARTMENT CONNECTION TO RESIDENTIAL ENTRANCE

ROOF OF MECHANICAL
ROOM
@ LEVEL 29
EL 192.400

GROUND FLOOR
F.F.
EL 105.36

EXTERIOR
MECHANICAL
AREA @
LEVEL 27
EL 186.900

CANOPY @ LEVEL 27

EXTERIOR
MECHANICAL
AREA @
LEVEL 27
EL 186.900

RESIDENT ENTRANCE

4400

WIND SCREEN (2200 mm min.) @ PERIMETER OF OUTDOOR AMENITY @ LEVEL 4

EXTERIOR MECHANICAL AREA
@ LEVEL 37
EL 217.200

4000

TYPE C
6.0m(L) x 3.5m (W)
x3.0m(H)

STAGING

4.3m FROM FIRE DEPARTMENT CONNECTION TO RESIDENTIAL ENTRANCE

17.3m FROM EXISTING FIRE HYDRANT TO FIRE DEPARTMENT CONNECTION

A410

DROP OFF

COOKE BLVD

3150

BUILDING C

ROOF OF MECHANICAL
ROOM
@ LEVEL 38
EL 222.700

GROUND FLOOR
F.F.
EL 104.90

TYPE C
6.0m(L) x 3.5m (W)
x3.0m(H)

12195

ROOF
@ LEVEL 5

OUTDOOR AMENITY @
LEVEL 4
ROOF @ LEVEL 4
EL 116.400

GROUND FLOOR
F.F.H
EL 105.20

EXIT

DASHED LINE DENOTES CANOPY @ LEVEL 2.

EXTERIOR MECHANICAL AREA
@ LEVEL 37
EL 217.200

STAGING

4000

3650

7415

CANOPY @ LEVEL 27

EXIT

RETAIL ENTRANCE

PRIVATE PATIO

77580

AD

AD

EXIT EXIT

EXIT

15825

3150

PROPERTY LINE

PROPERTY LINE

2.2m FROM FIRE DEPARTMENT CONNECTION TO RESIDENTIAL LOBBY ENTRANCE

33.7m FROM EXISTING FIRE HYDRANT TO FIRE DEPARTMENT CONNECTION
REFER TO CIVIL DRAWING FOR EXISTING FIRE HYDRANT LOCATION

12440

SECOND LOBBY ENTRANCE @ LEVEL 2

MASONRY COURT

DASHED LINE DENOTES CISTERN LOCATED AT P-1.

DASHED LINE DENOTES CANOPY @ GROUND LEVEL

CAR SHARE PARKING SPOTS

PROPOSED FIRE HYDRANT

DASHED LINE DENOTES CANOPY @ GROUND LEVEL

DENOTES RETAIL PARKING @ GROUND LEVEL.

EXISTING FIRE HYDRANT

DASHED LINE DENOTES CANOPY @ GROUND LEVEL

DASHED LINE DENOTES CANOPY @ LEVEL 4.

BIKE RACKS 5 UNITS.

DASHED LINE DENOTES CANOPY @ GROUND LEVEL

WIND SCREEN (2000mm HIGH) @ LEVEL 4/ PERIMETER OF EXTERIOR AMENITY

UG PARKING BELOW

LIMIT OF FOUNDATION WALL

MAX 3:1

LEGEND

- REGULATION PARKING
- BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- CM TYPICAL CONVEX MIRROR
- EV ELECTRICAL CHARGING STATION

No.	Revisions	Date
01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021

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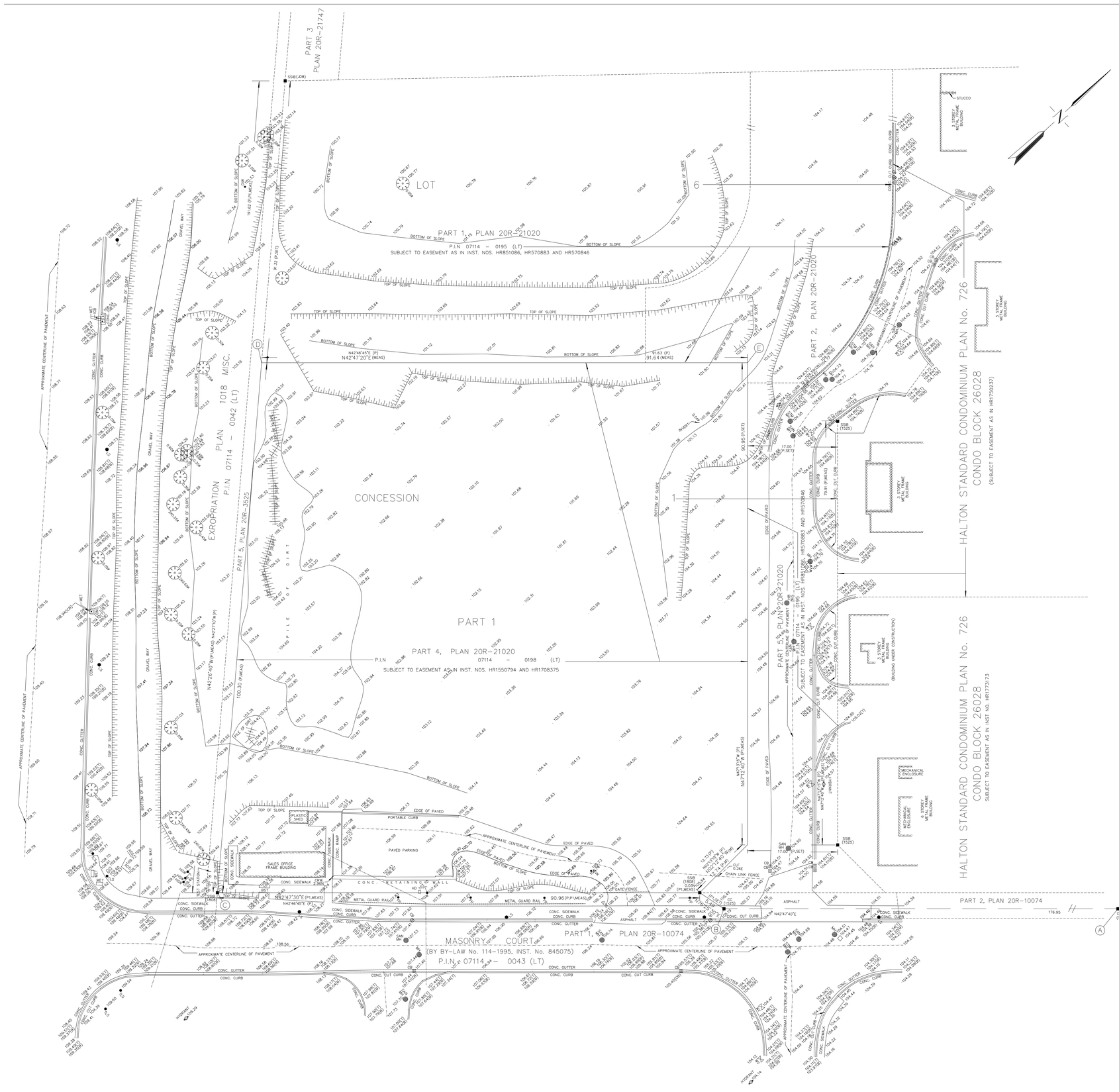
PHASE 2
BURLINGTON ONTARIO

Drawn: CW	Scale: 1:200
Checked: DL	Date: 11 JUN 2021

Title: SITE PLAN

Project No.: 20-129

Drawing No.: A104



TOPOGRAPHICAL SURVEY OF

PART OF LOT 6
CONCESSION 1
(GEOGRAPHIC TOWNSHIP OF EAST FLAMBOROUGH)
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 300

5m 4 3 2 1 0 5 10 15 20m

R. AVIS SURVEYING INC.

METRIC : DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

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NOTES AND LEGEND

BEARINGS SHOWN HEREON ARE GRID BEARINGS AND ARE OBSERVED REFERENCE POINTS A AND B HAVING A BEARING OF N42°47'40"E BY REAL TIME NETWORK (RTK) OBSERVATION, UTM ZONE 17, CENTRAL MERIDIAN 81° 00' WEST LONGITUDE.
(6° UNIVERSAL TRANSVERSE MERCATOR PROJECTION, NAD 83 (CSRS-2010)

6° UTM ZONE 17 COORDINATES
NAD83(CSRS-2010) (CENTRAL MERIDIAN 81°00' WEST LONGITUDE)

DERIVED OBSERVED REFERENCE POINTS A AND B

	NORTHING	EASTING
A	4795993.73	593012.39
B	4795863.89	592892.17
C	4795795.85	592825.04
D	4795869.86	592757.35
E	4795937.11	592819.60

(1) THE UTM COORDINATES LISTED ABOVE ARE TO AN URBAN ACCURACY, PER SUBSECTION 14(2) OF ONTARIO REGULATION 216/10 FILED UNDER THE SURVEYORS ACT.
(2) THE UTM COORDINATES LISTED ABOVE ARE TO BE USED FOR GEOGRAPHIC INFORMATION SYSTEM INTEGRATION ONLY AND CANNOT BE USED TO RE-ESTABLISH THE PROPERTY CORNERS OR BOUNDARIES SHOWN HEREON.

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO THE CITY OF BIRLINGTON BENCHMARK No. 0011922U2445, HAVING AN ELEVATION = 100.718 metres.

DISTANCES SHOWN HEREON ARE ADJUSTED GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.99971063.

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT PLANTED
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
CC	DENOTES	CUT CROSS
CP	DENOTES	CONCRETE PIN
NI	DENOTES	NOT IDENTIFIABLE
WIT	DENOTES	WITNESS
MEAS/M	DENOTES	MEASURED
N,S,E,W	DENOTES	NORTH, SOUTH, EAST, WEST
P	DENOTES	PLAN 20R-21020
P1	DENOTES	PLAN 20R-21714
1808	DENOTES	J.H. CELBLOOM SURVEYING LIMITED, O.L.S.
JDB	DENOTES	J.D. BARNES LIMITED, O.L.S.
1525	DENOTES	R. AVIS SURVEYING INC. O.L.S.
ORP	DENOTES	OBSERVED REFERENCE POINTS
ADS	DENOTES	ADVERTISEMENT SIGN
B	DENOTES	BOTTOM OF CONCRETE CURB
BTS	DENOTES	BOTTOM OF STEP
CB	DENOTES	CATCH BASIN
CD	DENOTES	COMMUNICATION DUCT
CLF	DENOTES	CHAIN LINK FENCE
CONC/C	DENOTES	CONCRETE
CRW	DENOTES	CONCRETE RETAINING WALL
FH	DENOTES	FIRE HYDRANT
FP	DENOTES	FLAG POLE
GI	DENOTES	GAS LINE INDICATOR
HD	DENOTES	HYDRO DUCT
HGW	DENOTES	HYDRO GUY WIRE
GVK	DENOTES	GAS VALVE KEY
ICB	DENOTES	INLET CATCH BASIN
LS	DENOTES	LIGHT STANDARD
MET	DENOTES	METAL
OH	DENOTES	OVERHEAD WIRE
SMH	DENOTES	SANITARY MANHOLE
STMH	DENOTES	STORM MANHOLE
T	DENOTES	TOP OF CONCRETE CURB
TLS	DENOTES	TRAFFIC LIGHT STANDARD
TS	DENOTES	TRAFFIC SIGN
WV	DENOTES	WATER VALVE
1.4 0.10ø	DENOTES	CONIFEROUS TREE WITH TRUNK DIAMETER 0.10 metres
0.10ø	DENOTES	DECIDUOUS TREE WITH TRUNK DIAMETER 0.10 metres
100.00	DENOTES	SPOT ELEVATION

AREA : 9535.9 sq. m.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.

2. THE SURVEY WAS COMPLETED ON THE 27th DAY OF MARCH, 2021.

APRIL 23, 2021
DATE

PIRATHEEPAN RAMACHANDRAN
Ontario Land Surveyor

R. AVIS SURVEYING INC.
SUITE 203
235 YORKLAND BOULEVARD
TORONTO, ONTARIO
M2J 4Y8
TEL.: (416) 490-8352 FAX: (416) 491-6206
EMAIL : office@ravissurveying.com

CHECKED BY : P.R., O.L.S.
CALCULATED BY : HT/SR | PROJECT No. : 3211-8
DRAWN BY : GN/S.S./SR/F.M. | DRAWING No. : 3211-8T.DWG

No.	Revisions	Date
01	ISSUED FOR OPA/ZBA	07 OCT 2021

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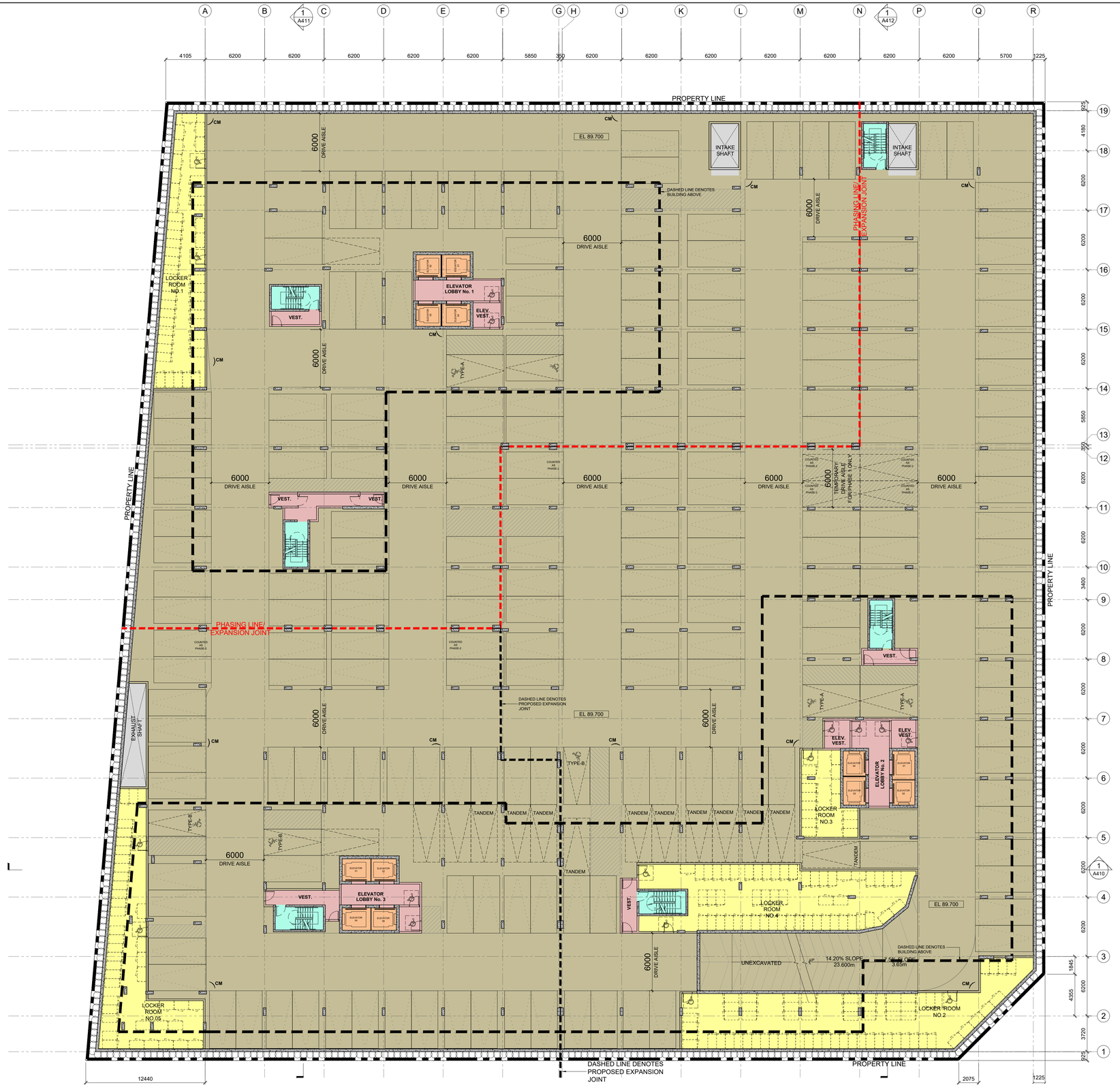
1120 COOKE BLVD

PHASE 2
BURLINGTON, ONTARIO

Drawn	Scale: N.T.S.
Checked	Date: 11 JUN 2021

Title: SURVEY PLAN

Project No.: 20-129	Drawing No.: A0.5



LEGEND

- REGULATION PARKING
- BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR
- ELECTRICAL CHARGING STATION
- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING

No.	Revisions	Date
01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021

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PHASE 2
BURLINGTON ONTARIO

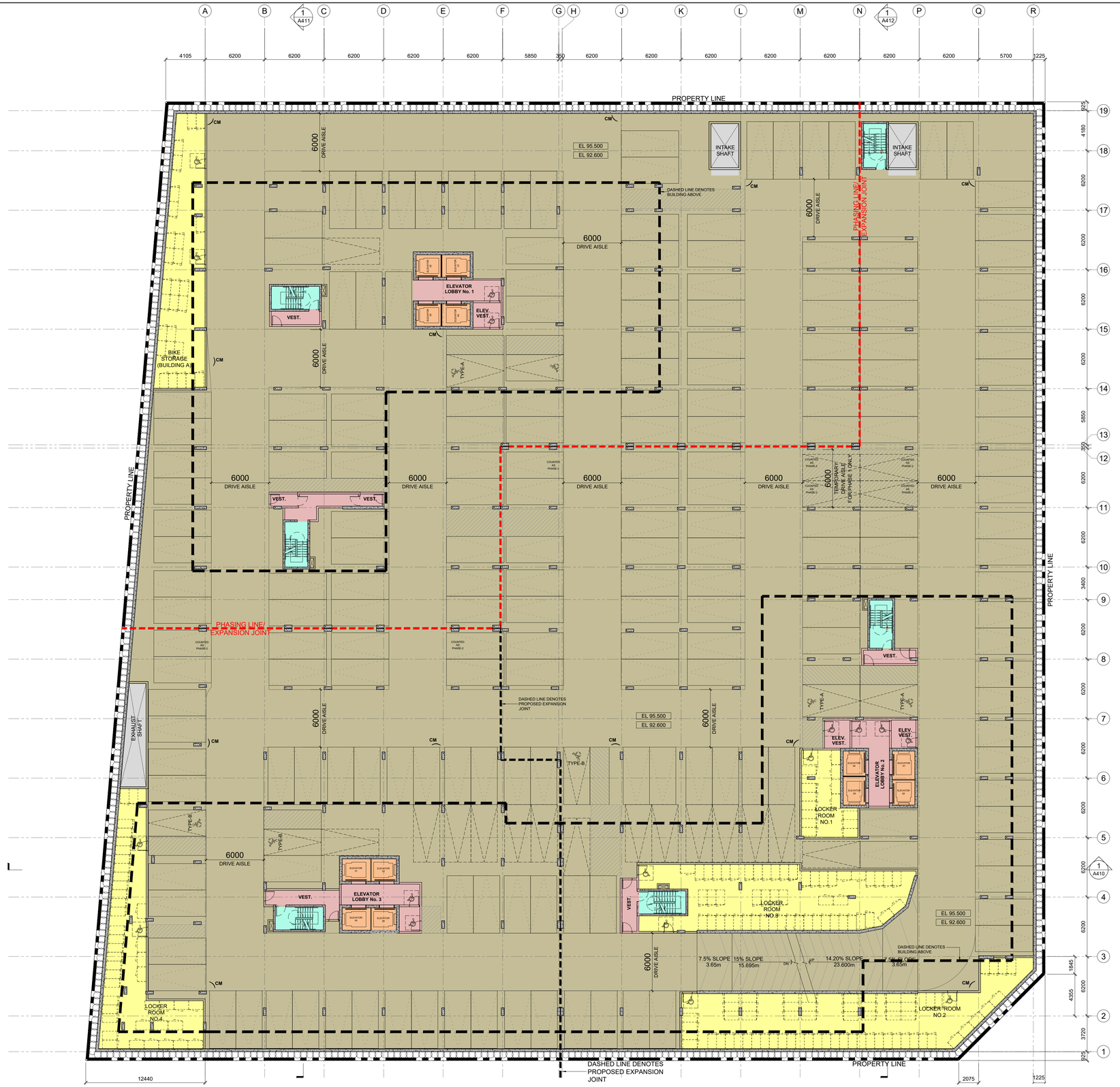
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ONTARIO ASSOCIATION OF ARCHITECTS
MIBAK ESLAHJOO
LICENCE
2019

Drawn	Scale
AZ	1:200
Checked	Date
DL	11 JUN 2021

Title
PARKING LEVEL 5

Project No.	Drawing No.
20-129	A200



LEGEND

- REGULATION PARKING
- BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR
- ELECTRICAL CHARGING STATION
- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING

No.	Revisions	Date
01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021

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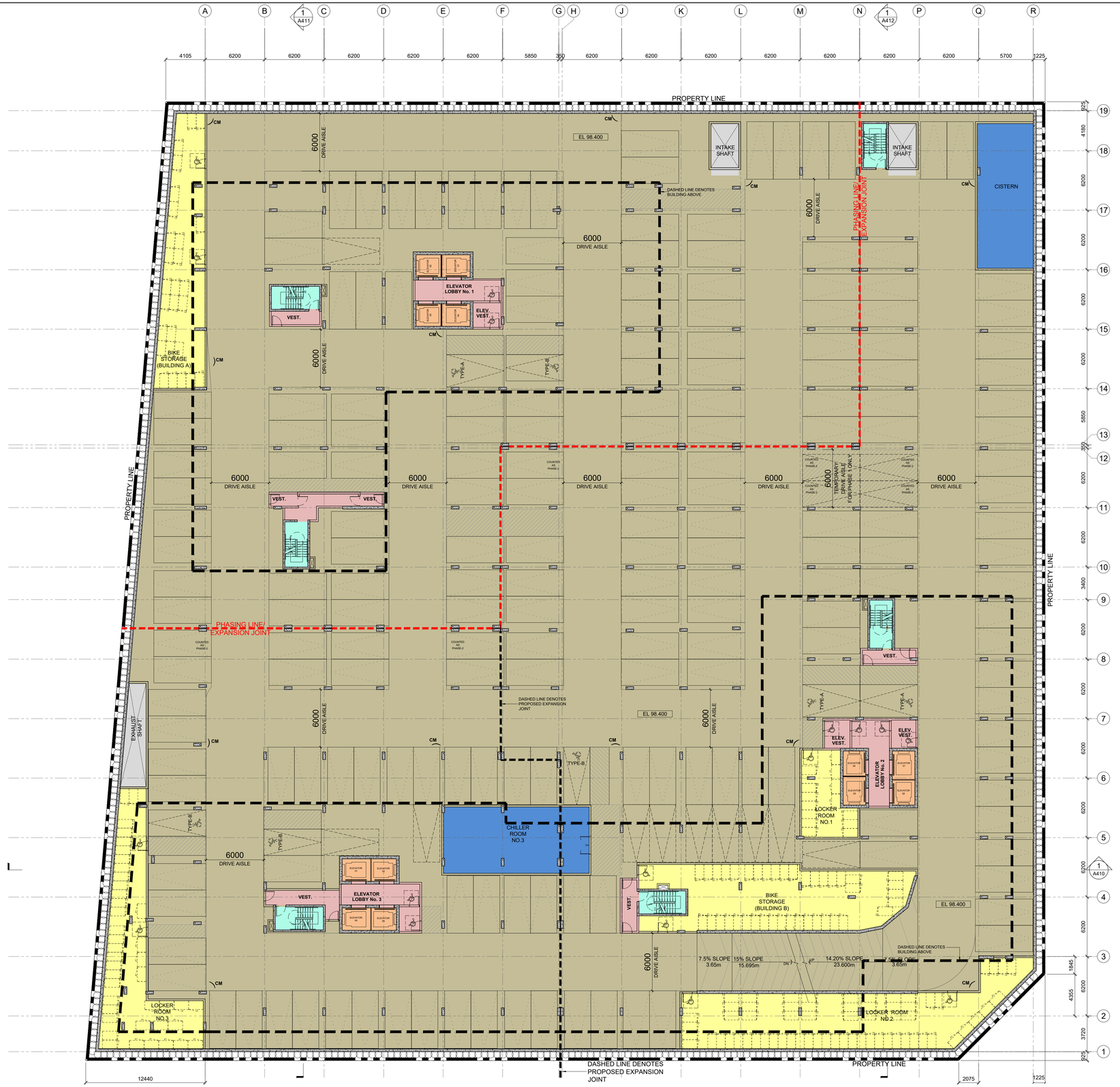
PHASE 2
BURLINGTON ONTARIO

ONTARIO ASSOCIATION OF ARCHITECTS
MIBAK ESLAHJOO
LICENCE
2019

Drawn	Scale
AZ	1:200
Checked	Date
DL	11 JUN 2021

Title
PARKING LEVELS 3 & 4

Project No.	Drawing No.
20-129	A201



LEGEND

- REGULATION PARKING
- BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- CM — TYPICAL CONVEX MIRROR
- EV — ELECTRICAL CHARGING STATION
- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING

No.	Revisions	Date
01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021

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1 A410

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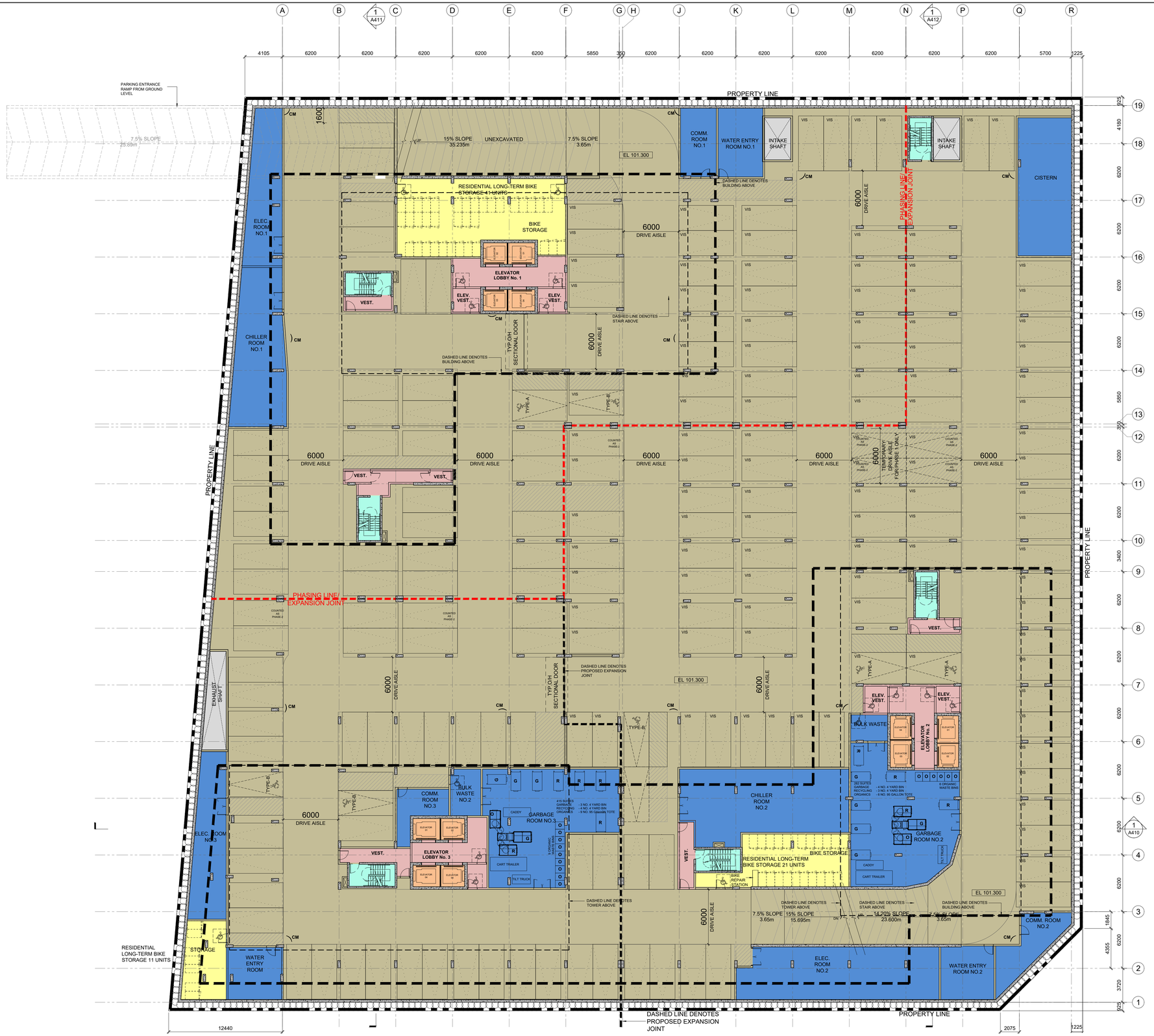
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BABAK ESLAHJOO LICENCE 10178

Drawn: AZ	Scale: 1:200
Checked: DL	Date: 11 JUN 2021

Title: PARKING LEVEL 2

Project No.	Drawing No.
20-129	A202



LEGEND

- REGULATION PARKING
- BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- CM — TYPICAL CONVEX MIRROR
- EV — ELECTRICAL CHARGING STATION
- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING

No.	Revisions	Date
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BABAK ESLAHJOO
LICENCE
2019

Drawn: AZ	Scale: 1:200
Checked: DL	Date: 11 JUN 2021

Title: PARKING LEVEL 1

Project No.	Drawing No.
20-129	A203

PHASE 3

PROPERTY LINE

48650

3000

4105 | 6200 | 6200 | 6200 | 6200 | 6200 | 5850 | 350 | 6200 | 6200 | 6200 | 6200 | 6200 | 6200 | 6200 | 5700 | 1225

A | B | 1 A411 | C | D | E | F | G | H | J | K | L | M | N | 1 A412 | P | Q | R

WATERDOWN ROAD

DASHED LINE DENOTES ROOF ABOVE

TYP. ON SECTIONAL DOOR

7.5% SLOPE 25.89m

15% SLOPE 35.235m

7.5% SLOPE 3.65m

48650

8425

INTAKE SHAFT

INTAKE SHAFT

EXIT

PHASING LINE

3495

BUILDING A

LOBBY & AMENITY

EL 105.06

RESIDENTIAL ENTRANCE

EXIT

BIKE REPAIR STATION

VES.

ELEVATOR LOBBY No. 1

EXIT

21830

RESIDENTIAL LONG-TERM BIKE STORAGE 115 UNITS (56 STACKED, 3 VERTICAL)

BIKE STORAGE

342 SUITES GARBAGE 4 NO. 4 YARD BIN

RECYCLING 4 NO. 4 YARD BIN

ORGANICS 9 NO. 95 GALLON TOTE

MOVING CORRIDOR

VESTIBULE

LOBBY & AMENITY

40480

RESIDENTIAL ENTRANCE

DASHED LINE DENOTES CANOPY @ GROUND LEVEL

CAR SHARE CS1

CAR SHARE CS2

DROP OFF AREA

GARBAGE ROOM

SERVICE CORRIDOR

JANITOR

BULK STORAGE

RESIDENTIAL SHORT-TERM BIKE RACK 8 UNITS (4 RACKS)

18650

PROPERTY LINE

3015

20150

LOADING SPACE

3.5m (W) x 12.0m (L) x 7.5m (H) MIN. CLEARANCE

EXIT EXIT

9000

PHASING LINE

PHASING LINE

EXIT

26330

RETAIL RETAIL RETAIL RETAIL RETAIL

C01 C02 C03 C04 C05

DASHED LINE DENOTES CANOPY @ GROUND LEVEL

DASHED LINE DENOTES LEVELS 4-26

EL 105.36

PROPERTY LINE

COOKE BLVD.

FIRE DEPARTMENT CONNECTION @ GROUND FLOOR

DROP OFF AREA

23655

LOBBY & AMENITY

BUILDING B

19200

24 ORGANIC 360L CART(0.8m/W) PER CART

RESIDENTIAL SHORT-TERM BIKE RACK 8 UNITS (4 RACKS)

DROP OFF AREA

EXHAUST SHAFT

3150

DASHED LINE DENOTES CANOPY @ GROUND LEVEL

FIRE DEPARTMENT CONNECTION @ GROUND FLOOR

38385

PARKING ENTRANCE

RESIDENTIAL SHORT-TERM BIKE RACK 6 UNITS (3 RACKS)

RESIDENTIAL ENTRANCE

26700

VESTIBULE

EL 105.360

ELEVATOR LOBBY No. 2

MOVING ROOM

VESTIBULE

RESIDENTIAL ENTRANCE

DASHED LINE DENOTES LEVELS 5-36

EL 104.90

RESIDENTIAL ENTRANCE

VESTIBULE

LOBBY & AMENITY

BUILDING C

EL 104.90

6000 DRIVE AISLE

TYPE C 6m (L) x 3.5m (W) x 3m (H)

STAGING

RETAIL LOADING/ GARBAGE

DROP OFF AREA

1 A410

C. PARKING/ G- EL 105.200

ELEVATOR LOBBY No. 3

TYPE C 6m (L) x 3.5m (W) x 3m (H)

SERVICE CORRIDOR

RETAIL

EL 105.210

FIRE DEPARTMENT CONNECTION @ GROUND FLOOR

EL 104.90

RESIDENTIAL LONG-TERM BIKE STORAGE 208 UNITS (100 STACKED, 8 VERTICLE)

MOVING ROOM

UNDERGROUND PARKING ENTRANCE

7.5% SLOPE 3.65m

14.20% SLOPE 23.600m

EXIT

RETAIL ENTRANCE

BIKE REPAIR STATION

SERVICE CORRIDOR

STAGING

BIKE STORAGE

DASHED LINE DENOTES CANOPY @ GROUND LEVEL PRIVATE PATIO

7415

BIKE STORAGE

RESIDENTIAL LONG-TERM BIKE STORAGE 86 UNITS(39 STACKED 8 VERTICLE)

BIKE STORAGE

77580

3000

15825

3150

RETAIL LONG/SHORT TERM BIKE STORAGE 5 RACKS

12440

PHASE 2

EXIT

EXIT EXIT

PROPERTY LINE

PHASE 1

2075

MASONRY COURT

LEGEND

- REGULATION PARKING
- BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR
- EV — ELECTRICAL CHARGING STATION
- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING
- MASONRY COURT PHASE 1

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Drawn: CW	Scale: 1:200
Checked: DL	Date: 11 JUN 2021

Title: GROUND LEVEL

Project No.	Drawing No.
20-129	A204



LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT

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Date: 11 JUN 2021

Title: LEVEL 2

Project No.: 20-129
Drawing No.: A205



LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT

No	Revisions	Date
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DIDAR ESLAHJOU
LICENCE
2021

Drawn	Scale
CW	1:200
Checked	Date
DL	11 JUN 2021

Title
LEVEL 3

Project No.	Drawing No.
20-129	A206



LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT

No.	Revisions	Date
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ONTARIO ASSOCIATION OF ARCHITECTS
FRANK DILANNOY
LICENCE
2756

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Checked: DL	Date: 11 JUN 2021

Title: LEVEL 4

Project No.	Drawing No.
20-129	A207



LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT

No.	Revisions	Date
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FRANK DILANDO
LICENCE
2756

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Title: LEVEL 5

Project No.	Drawing No.
20-129	A208



PHASE 2

PHASE 1

LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT

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Title: TYPICAL TOWER

Project No.	Drawing No.
20-129	A209



LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - ELEVATOR SHAFT

No.	Revisions	Date
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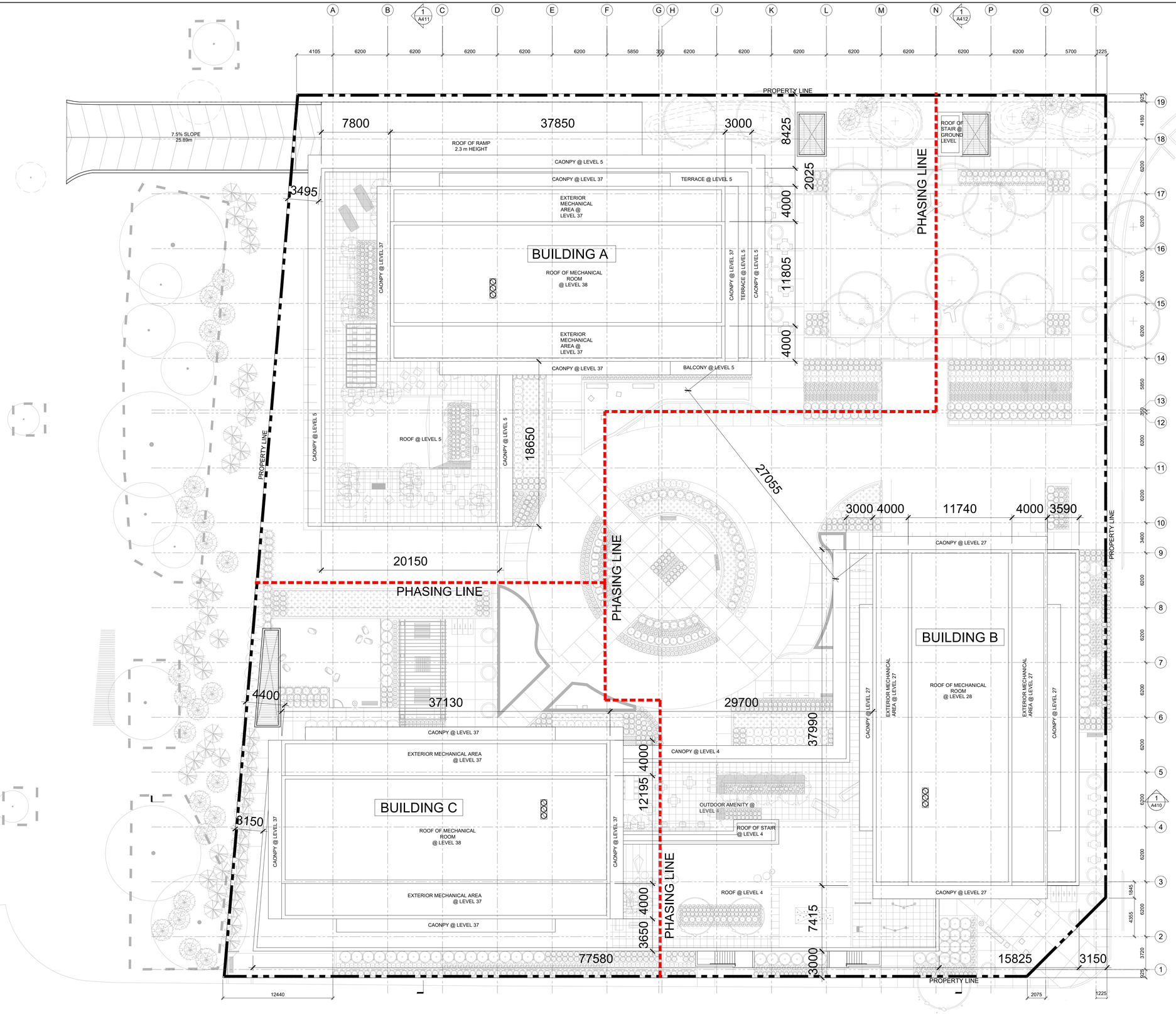
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BRIAN DUNLOP
LICENCE
6756

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Title
MECHANICAL PENTHOUSE

Project No.	Drawing No.
20-129	A210



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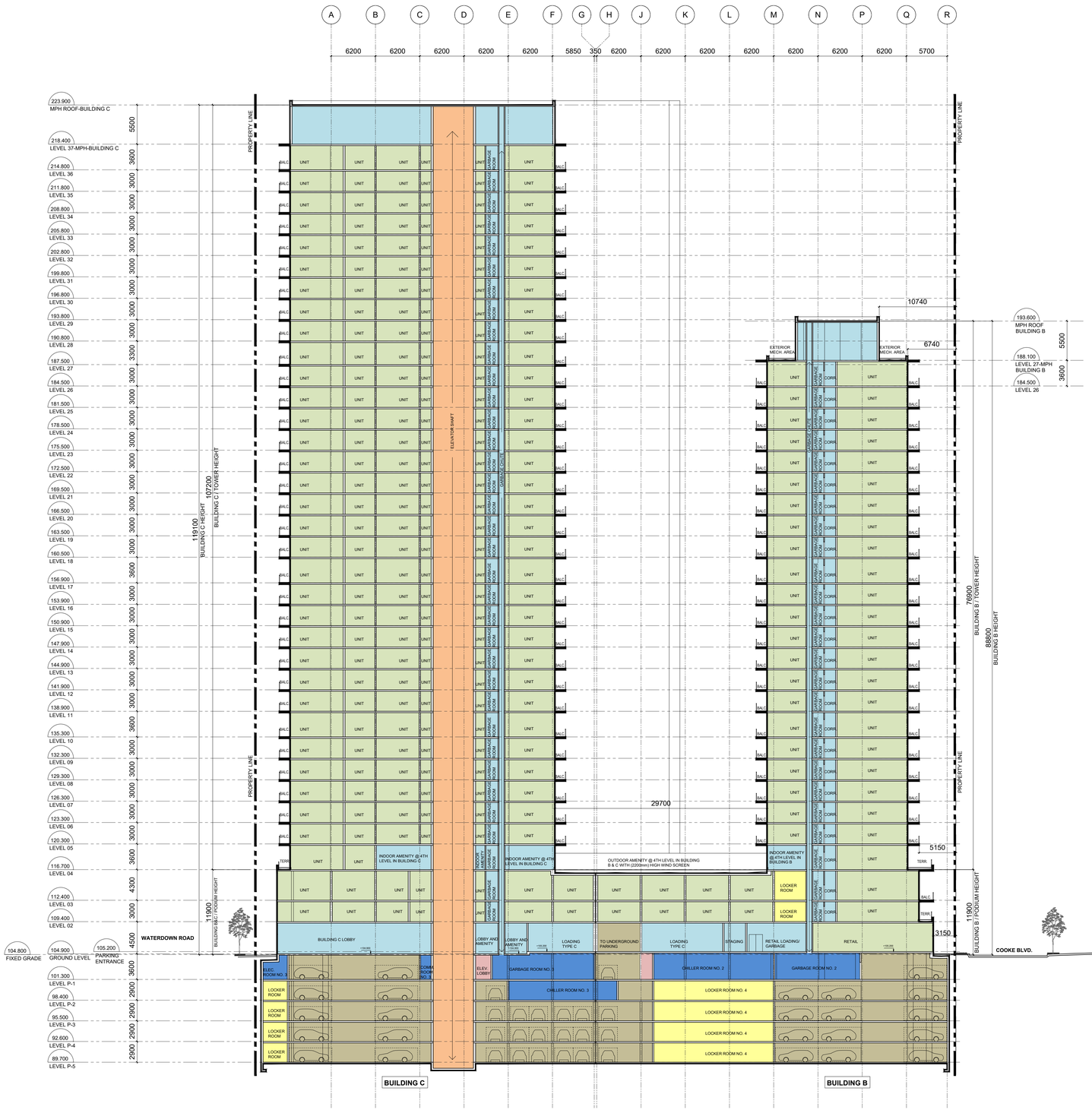
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ISSAK EISAHOU
LICENCE
2021

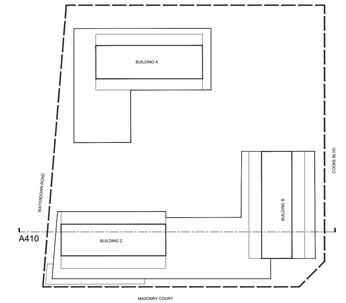
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Title: ROOF PLAN

Project No.: 20-129	Drawing No.: A211



1 / A410 BUILDING SECTION
REF.



2 / A410 KEYPLAN
REF.

LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING

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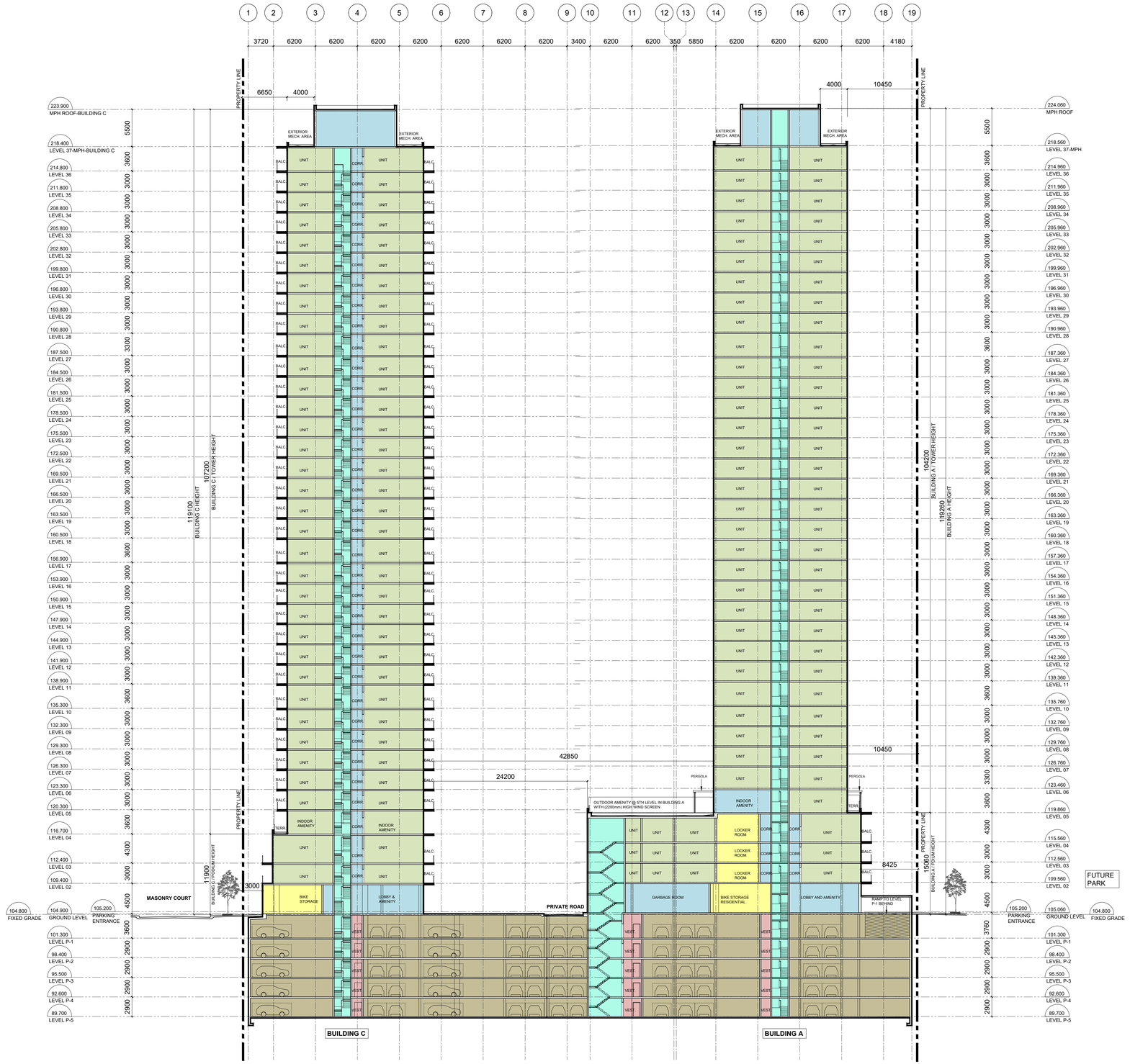
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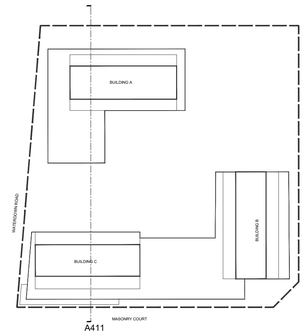
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Title: BUILDING SECTION 1

Project No.	Drawing No.
20-129	A410





2 / A411 KEYPLAN REF.

1 / A411 BUILDING SECTION REF.

LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING

No.	Revisions	Date
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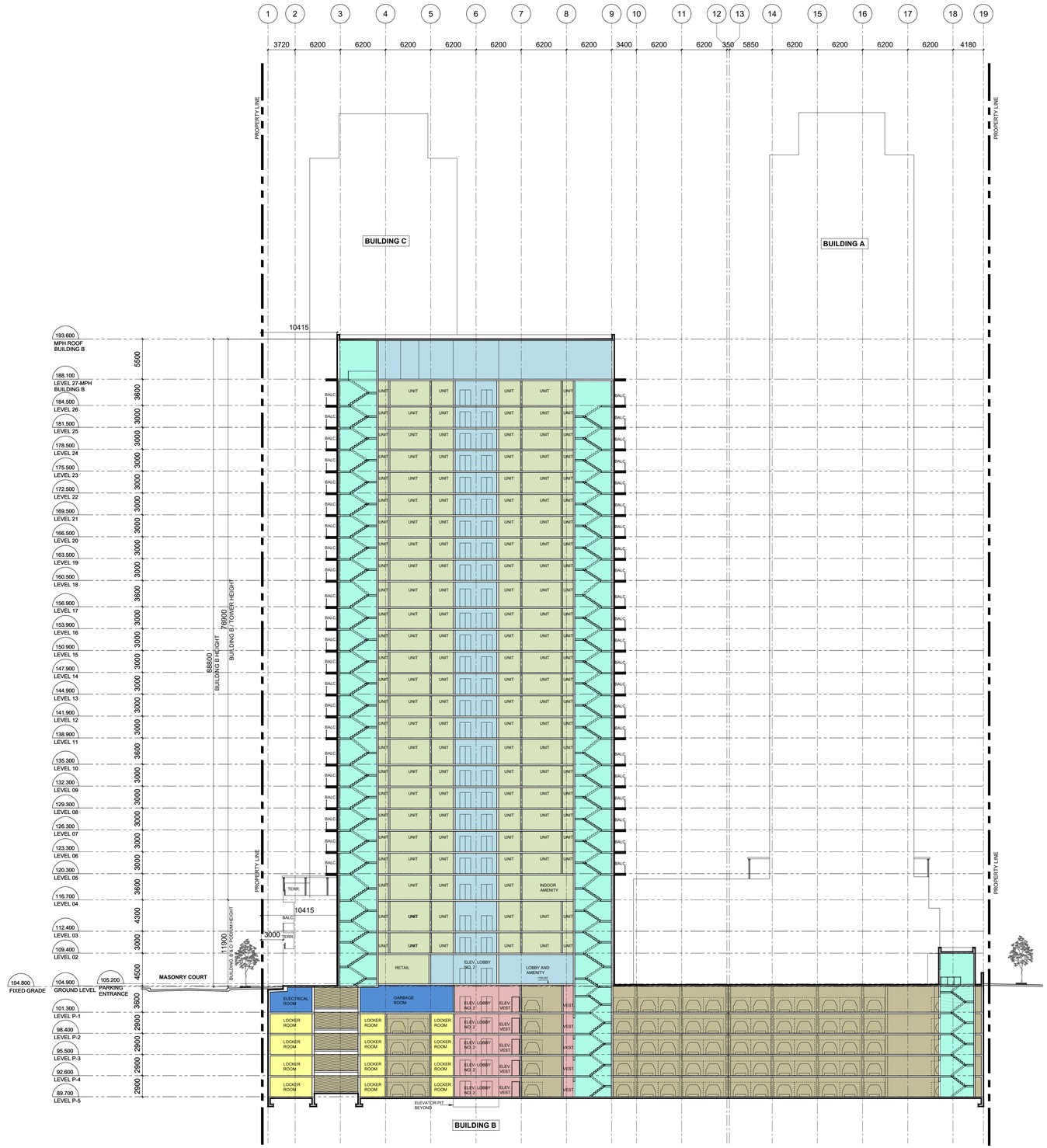
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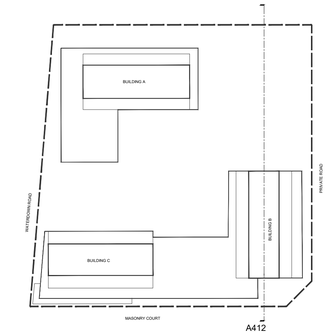
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Title: BUILDING SECTION 2

Project No.	Drawing No.
20-129	A411



1 / A412 BUILDING SECTION
REF.



2 / A412 KEYPLAN
REF.

LEGEND

- NON-SALABLE GFA
- SALABLE GFA
- DEDUCTABLE - STORAGE
- DEDUCTABLE - STAIRWAY
- DEDUCTABLE - AIR HANDLING
- DEDUCTABLE - FOYER AND LOBBY
- DEDUCTABLE - PARKING

No.	Revisions	Date
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T +1 416 343 0400 • F +1 416 343 0401
INFO@COREARCHITECTS.COM
WWW.COREARCHITECTS.COM

1120 COOKE BLVD

PHASE 2
BURLINGTON ONTARIO

ONTARIO ASSOCIATION OF ARCHITECTS
DAVID LOUIS DL
LICENCE
2756

Drawn: UA	Scale: 1:300
Checked: DL	Date: 11 JUN 2021

Title: BUILDING SECTION 3

Project No.	Drawing No.
20-129	A412



01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021
No.	Revisions	Date

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WWW.COREARCHITECTS.COM

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Drawn: AZ	Scale: NTS
Checked: DL	Date: 11 JUN 2021

Title

BUILDING PERSPECTIVE

Project No.: 20-129	Drawing No.: A600



01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021
No.	Revisions	Date

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INFO@COREARCHITECTS.COM
WWW.COREARCHITECTS.COM

1120 COOKE BLVD

PHASE 2
BURLINGTON ONTARIO

ONTARIO ASSOCIATION OF ARCHITECTS
MASAK ESLAHIOU
LICENCE

Drawn: AZ	Scale: NTS
Checked: DL	Date: 11 JUN 2021

Title: BUILDING PERSPECTIVE

Project No.: 20-129	Drawing No.: A601



01	ISSUED FOR OPA/ZBA	07 OCTOBER 2021
No.	Revisions	Date

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1120 COOKE BLVD

PHASE 2
BURLINGTON ONTARIO

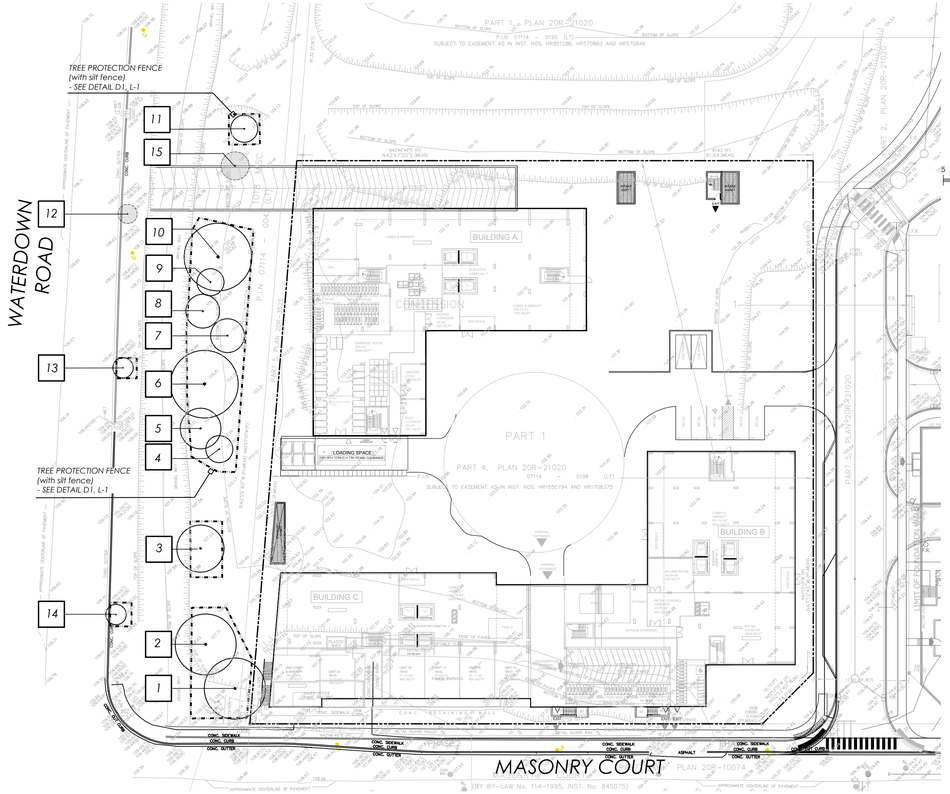
ONTARIO ASSOCIATION OF ARCHITECTS
ESLAHJOU, MASAK
LICENCE

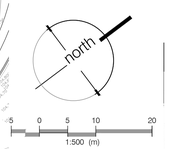
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Checked: DL	Date: 11 JUN 2021

Title: BUILDING PERSPECTIVE

Project No.: 20-129	Drawing No.: A602

project #: 20-175





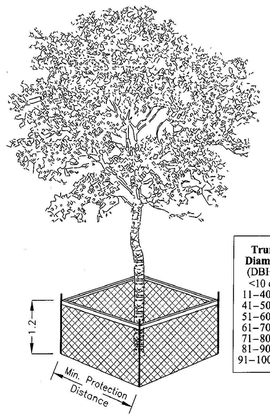


Table 1– Tree Protection Zones

Trunk Diameter (DBH)[2]	Tree Protection Zone (TPZ) Minimum Protection Distances Required[1]	Critical Root Zone (CRZ) Distances Required[3 & 4]
<10 cm	1.8 m	1.8 m
11–40 cm	2.4 m	4.0 m
41–50 cm	3.0 m	5.0 m
51–60 cm	3.6 m	6.0 m
61–70 cm	4.2 m	7.0 m
71–80 cm	4.8 m	8.0 m
81–90 cm	5.4 m	9.0 m
91–100+cm	6.0 m	10.0 m

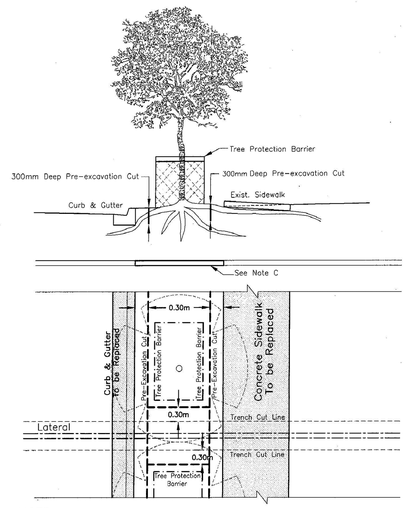
TREE PROTECTION BARRIER

1. Tree protection barriers for trees situated on the City road allowance where visibility must be maintained can be 1.2m high and consist of orange plastic web snow fencing on a wood frame of 2" x 4" s, supported on metal "T" bars, 2.0m c/c max. Where orange plastic web snow fencing creates a restriction to sightlines, page wire fencing shall be used.

2. Where some excavate or fill has to be temporarily located near a tree protection barrier plywood must be used to ensure no material enters the Tree Protection Zone.

3. All supports and bracing should be outside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.

4. No construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.



NOTE:

For excavations perpendicular to the curbing (ie. curbing, sidewalk,water or sewer laterals renewal)

a) when the open cut is within the Critical Root Zone of a tree, the contractor is to pre-cut the earth 300mm wider than the specified trench width to a depth of 300mm.

b) the contractor is to use a trench box to minimize the width of the open cut.

c) when the lateral replacement is within the Tree Protection Zone of a tree, the contractor is to complete the works using trenchless technologies.

Tree Protection Fencing (City of Burlington Std. Drawings)

SCALE: NTS

1
L-1

EXISTING VEGETATION IDENTIFICATION TABLE

Tree #	Species (Common Name)	Species (Botanical Name)	DBH (cm)	Crown Class*	Condition**	Crown Width (m)	Comments	Potential Impacts from Construction	Ownership	Recommendation
1	Balsam Poplar	*Populus balsamifera*	82	D	Fair	12	co-dominant leaders at 1.35m; included bark; leaning	conflict with proposed site grading and building footprint	Public	SAVE
2	Balsam Poplar	*Populus balsamifera*	37,46	C	Fair	8	included bark; dead branches	conflict with proposed access road	Public	SAVE
3	Balsam Poplar	*Populus balsamifera*	62	D	Fair	10	included bark; dead branches & broken branches in canopy;	conflict with proposed access road	Public	SAVE
4	Norway Maple	*Acer platanoides*	21	C	Good	5	corrected sweep; included bark		Public	SAVE
5	Balsam Poplar	*Populus balsamifera*	57	D	Fair	10	broken branches; leaning	conflict with proposed access road	Public	SAVE
6	Balsam Poplar	*Populus balsamifera*	56,58	C	Fair	11		conflict with proposed access road	Public	SAVE
7	Norway Maple	*Acer platanoides*	20,23	C	Good	10	included bark; broken branches; union of multi-stems at 0.5m	conflict with proposed access road	Public	SAVE
8	Balsam Poplar	*Populus balsamifera*	46	C	Fair	7	included bark; dead branches		Public	SAVE
9	Balsam Poplar	*Populus balsamifera*	30	C	Fair	4	included bark; leaning; broken branches in canopy		Public	SAVE
10	Balsam Poplar	*Populus balsamifera*	35,34,46,69	C	Fair	14	watersprouts around base of clump; moderate lean; dead branches in canopy; included bark;	conflict with proposed access road	Public	SAVE
11	Manitoba Maple	*Acer negundo*	28	C	Fair - Poor	8	leaning; epicormic branches; broken branches; dead branches; poor form		Public	SAVE
12	Thornless Honeylocust	*Gleditsia triacanthos var. inermis*	4.5	D	Dying	1.5	bark peeling on upper stem; moderate lean; watersprouts; branch wounds;	conflict with proposed driveway to underground parking structure	Public	REMOVE
13	Thornless Honeylocust	*Gleditsia triacanthos var. inermis*	4.5	D	Dying	1.5	bark peeling with evidence of rot on upper stem; leaning; epicormic branches		Public	SAVE
14	Thornless Honeylocust	*Gleditsia triacanthos var. inermis*	5	D	Dying	1.5	watersprouts; minor areas of included bark; corrected bend in trunk		Public	SAVE
15	Siberian Elm	*Ulmus pumila*	18	C	Fair	5	co-dominant leaders at 5m; sparse canopy	conflict with proposed driveway to underground parking structure	Public	REMOVE

** CROWN CLASS*
Dominant- (D) Emergent canopy (receives full sunlight)
Co-dominant - (C) Not fully emergent (top of canopy receives sunlight)
Intermediate - (I) Sub-canopy tree (receives partial sunlight)

*** CONDITION - consideration of trunk integrity, crown structure and crown vigor*
Good - few or no issues related to trunk integrity, crown structure or crown vigor
Fair - minor issues related to trunk integrity, crown structure (form, some dead or damged branches) or crown vigor (20-80% healthy foliage)
Poor - issues with trunk integrity such as cavities or exposed dead wood, poor crown structure (poor form, no clear leader, significant dead or damaged branches) or poor crown vigor (<20% healthy foliage)

CONDITION OF TREES
The decision to remove or retain a tree is subject to the forecasted development impacts, the structural condition of the tree (e.g. cracks, cavities, decay, weak branching, leaning, hazard potential), the biological condition of the tree (e.g. pest or disease concerns, overall health) and the suitability of the tree in its location (e.g. hardiness, soil conditions, salt tolerance, visual obstruction, available soil volume)

MIGRATORY BIRDS AND NESTS:

1. *The Owner and Contractor must be aware of the Migratory Birds Convention Act, 1994 - specifically:*
   - *No tree removal or construction activity shall contravene the Act.*
   - *Construction activities with the potential to harm migratory birds or their nest should be restricted from March 15 to August 31.*
   - *If work must occur during the migratory bird breeding season, a nest survey should be taken by a qualified avian biologist.*
   - *A mitigation plan (showing active nests and appropriate buffers) may be required for review and approval by the Canadian Wildlife Services.*

REMOVAL OF INVASIVE SPECIES:

1. *One species identified as 'invasive' by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) have been found onsite:*

   Common Buckthorn, Rhamnus cathartica

   OMAFRA recommends the removal of these species in their entirety when found in Southern Ontario.
3. *Common Buckthorn to be mechanically removed. Stumps and roots are to be removed.*
4. *Dispose of all parts (woody, herbaceous, roots, etc) of the invasive species offsite.*
5. *Areas containing invasive plants will be mown on a bi-weekly basis 2-3 years prior to remediation planting.*
6. *The site will be monitored for 2 years post-construction to ensure invasive species do not re-colonize.*

NOTES:

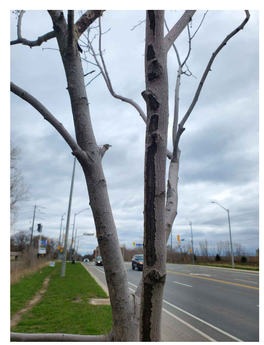
1. *The area within the dripline of all existing trees shall be properly protected with temporary fencing.*
2. *The area within the protective fencing shall remain undisturbed with no construction activity, grade changes, surface treatment, compaction, or excavation. Area shall not be used for the storage of building materials or equipment access/storage or project related garbage.*
3. *Tree protection measures shall be installed prior to any demolition, tree removal or construction and shall remain until the completion of fine grading and sodding or seeding.*
4. *Prune all trees for dead, diseased, weak or hazardous branches only, also trim back branches which will interfere with construction, prune for structural restoration where necessary.*
5. *No stockpiles and/or excavated material shall be placed within the tree preservation area.*
6. *No rigging cable shall be wrapped around or installed to trees.*
7. *Where root systems of protected trees are exposed directly adjacent to or damaged by construction work they are to be root pruned and the area back filled with topsoil to prevent root desiccation.*
8. *Any fine grading within the preservation area is to be done by hand, no heavy equipment is permitted within the preservation zone.*
9. *Sediment accumulations to be removed by subdivider/builder when sediment deposits reach within 150mm of top of filter fabric barrier.*
10. *A copy of the approved and signed Vegetation Management Plan will be on site for the duration of construction and available upon request.*
11. *This detail does not represent any particular tree species.*


Tree #1


Tree #8


Tree #4


Tree #12


Tree #13 - branch wound


Tree #14

KEY MAP - N.T.S.



LEGEND

- property line
- existing tree to remain (minimum tree protection zone)
- 2 — existing tree number (refer to chart)
- tree protection fence

NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

NOTE;
Vegetation inventory undertaken by Carleigh Pope, ISA Certified Arborist (ON-2578A) on April 16th, 2021.

REVISIONS/ SUBMISSIONS

#	DATE	DESCRIPTION
1	2021-05-03	Issued for review
2	2021-06-04	Issued for review
3	2021-06-09	Issued for review
4	2021-06-18	Issued for coordination
5	2021-06-28	Issued for submission
6	2021-11-03	Issued for OPA/ZBA submission

STAMP

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
MARIO PATRUNO
OALA
MEMBER

CLIENT
ADI Developments (Masonry) Inc.

MUNICIPALITY
City of Burlington

PROJECT
Masonry Court Phase 2
101 Masonry Court
Burlington

MUNICIPAL FILE NUMBER

SHEET
Tree Preservation Plan
L-1

adesso design inc.
landscape architecture

218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
t. 905.526.8876
www.adessodesigninc.ca

FILE:P:\proj\ Pro\Projects_2020\20-175 Masonry Court PM\ Burlington\Cad\ Drawings\20-175c.dwg, LAYOUT1, CTP
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project #: 20-175

north

3 1 0 2 4 8
1:200 (m)

N42°46'45"E (P)
N42°47'20"E (MEASURED)

EXISTING STORM WATER MANAGEMENT POND
91.64 (MEASURED)

23.48m³ SOIL VOLUME PER TREE

SODDED BERMS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREES ABOVE SLAB
86.59m³ SOIL VOLUME PER TREE

LARGE CANOPY DECIDUOUS SHADE TREES ALONG EXTENTS OF DEVELOPMENT

INTAKE SHAFT

INTAKE SHAFT

EXIT

BUILDING A

LOBBY & AMENITY

SEATING AREA OUTSIDE OF AMENITY AREA

OVERSIZED SCULPTURAL POTS WITH ORNAMENTAL FLOWERING TREES

VERTICAL WIND SCREENS MIN 50-70% POROSITY

ELEVATED LAWN
45.04m³ SOIL VOLUME PER TREE

17.00 (P.SET)

LOW, WIDE CONCRETE STEPS

OVERSIZED SCULPTURAL POTS WITH ORNAMENTAL FLOWERING TREES

RAISED CONCRETE PLANTERS WITH PERENNIALS

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
39.59m³ SOIL VOLUME PER TREE

GRAVEL WAY

VES.

ELEVATOR LOBBY No. 1

BIKE STORAGE RESIDENTIAL LONG-TERM
123 m2
1325 SQ.FT

BIKE STORAGE
96 UNIT (48 STACKS)

FEATURE PAVING AND PLANTING

MONOLITHIC CONCRETE BENCHES

LOBBY & AMENITY
720.9 m2
7760 SQ.FT

MOVING CORRIDOR
30 m2
322 SQ.FT

VESTIBULE

GARBAGE ROOM
329 m2

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR SMALL CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
30.35m³ SOIL VOLUME PER TREE

SERVICE CORRIDOR

JANITOR
27 m2
292 SQ.FT

CAR SHARE

CAR SHARE

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
48.92m³ SOIL VOLUME PER TREE

VEHICULAR TURNING CIRCLE WITH DEDICATED LAYBY PARKING

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
29.36m³ SOIL VOLUME PER TREE

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREE ABOVE SLAB

POTENTIAL ENTRY FEATURE SIGNAGE

RETAIL

RETAIL

RETAIL

RETAIL

RETAIL

C02 C03 C04 C05 C06

BULK STORAGE
28 m2
297 SQ.FT

LOADING SPACE
3.5m (W) x 12.0m (L) x 7.5m (H) MIN. CLEARANCE

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
13.03m³ SOIL VOLUME PER TREE

EXISTING OFF PROPERTY TREES TO REMAIN

NATIVE, CONIFEROUS TREES TO SLOW WIND WITHIN SITE AS PER WIND STUDY

DOG RUN
WITH FENCE, GATE & SEATING

EXHAUST SHAFT

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
15.70m³ SOIL VOLUME PER TREE

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR LARGE CANOPY DECIDUOUS SHADE TREE ABOVE SLAB - MARCESCENT SPECIES AS PER WIND STUDY
13.03m³ SOIL VOLUME PER TREE

LOBBY & AMENITY
551.06 m2
5932 SQ.FT

BUILDING B

PARKING ENTRANCE

PARKING ENTRANCE

VESTIBULE

ELEVATOR LOBBY No. 2

MOVING ROOM
49.39 m2
532 SQ.FT

VESTIBULE

OVERHEAD SHADE STRUCTURE WITH GROUP SEATING VERTICAL WIND SCREEN ON WEST SIDE MIN 50-70% POROSITY

OVERSIZED SCULPTURAL POTS WITH ORNAMENTAL FLOWERING TREES

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR SMALL CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
13.98m³ SOIL VOLUME PER TREE

RAISED CONCRETE PLANTERS TO CREATE DEPTH FOR SMALL CANOPY DECIDUOUS SHADE TREE ABOVE SLAB
18.55m³ SOIL VOLUME PER TREE

BUILDING C

VESTIBULE

TYPE D

STAGING

RETAIL LOADING/ GARBAGE
45.70 m2
492 SQ.FT

ELEVATOR LOBBY No. 3

TYPE C

SERVICE CORRIDOR

RETAIL
232.80 m2
2506 SQ.FT

OVERSIZED SCULPTURAL POTS WITH ORNAMENTAL FLOWERING TREES

SEATING AREA OUTSIDE OF RETAIL AREA

BIKE RACKS

MONOLITHIC CONCRETE BENCHES

MOVING ROOM
13.19 m2

2ND LOBBY & AMENITY
104.77 m2
1128 SQ.FT

UNIT 20
1B+D
71.17 m2
766 SQ.FT

UNIT 19
1B+D
61.96 m2
667 SQ.FT

UNIT 18
1B+D
61.33 m2
660 SQ.FT

UNIT 17
1B+D
72.46 m2
780 SQ.FT

UNIT 16
1B+D
56.11 m2
604 SQ.FT

UNIT 15
1B+D
54.53 m2
587 SQ.FT

VESTIBULE

UNDERGROUND PARKING ENTRANCE

7.5% SLOPE
3.65m

14.20% SLOPE
23.680m

17.00

BULK STORAGE
28 m2 42SQ.FT

RESIDENTIAL LONG-TERM BIKE STORAGE
84 UNITS(38 STACKED 8 VERTICLE)

BIKE STORAGE
68.36 m2 736 SQ.FT

EXIT EXIT EXIT

EXISTING OFF PROPERTY TREES TO REMAIN

NATIVE, CONIFEROUS TREES TO SLOW WIND WITHIN SITE AS PER WIND STUDY

EXISTING OFF PROPERTY TREES TO REMAIN

GRAVEL WAY

MUNICIPAL CONNECTION TO REMAIN

N42°46'45"E (P)
N42°46'45"E (M)

PHASE 2

PHASE 1

VERTICAL WIND SCREEN AS PER WIND STUDY, MIN 50-70% POROSITY

RESIDENTIAL ENTRANCE INTO SECOND FLOOR OF BUILDING (GRADE CHANGE)

RESIDENTIAL PATIOS FROM SECOND FLOOR OF BUILDING (BECOME RAISED AS GRADE CHANGES)

RAISED CONCRETE PLANTERS TO TIER GRADE ALONG CHANGE IN ELEVATION ON MASONRY COURT

FOUNDATION PLANTING SHRUBS, GRASSES & PERENNIALS

OVERSIZED SCULPTURAL POTS WITH ORNAMENTAL FLOWERING TREES

MASONRY COURT
(BY BY-LAW No. 114-1995, INST. No. 845075)

ELEVATED LAWN



OVERSIZED SCULPTURAL POTS



DOG RUN



OVERHEAD SHADE STRUCTURE



MONOLITHIC CONCRETE BENCHES



OUTDOOR SEATING



KEY MAP - N.T.S.



LEGEND

- property line
- existing tree to remain
- proposed deciduous tree
- proposed shrub
- proposed perennial

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MARIO PATRIZIO
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MUNICIPALITY
City of Burlington

PROJECT
Masonry Court Phase 2
101 Masonry Court
Burlington

MUNICIPAL FILE NUMBER

SHEET
Landscape Master Plan
L-01

adesso design inc.
landscape architecture

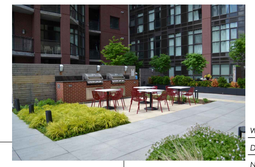
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FILE:Z:\Projects\Work\Phase 2\20-175 - 101 Masonry Court Ph2, Burlington\01 Current Drawings\20-175_dwg, LAYOUT: 01_Landscape
LAST SAVED BY: Stefanovski, September 17, 2021 11:12:24 AM PLOTTED BY: Stefanovski, November 3, 2021 9:56:03 PM

project #: 20-175

north

1 0 1 2 4
1:100 (m)



WOODEN BENCH / PLANTER
DECIDUOUS TREES & PERENNIALS
NO ELEMENT WITHIN 1.1m OF PARAPET WALL TO AVOID CLIMBABILITY

INDOOR AMENITY AREA

FAMILY DINNING TABLE
PRECAST CONCRETE PAVERS MIMICKING WOOD FLOORING ON HIGH PERFORMANCE BEDDING MATERIAL (HPB)

DINNING/BBQ AREA

1.10

ARTIFICIAL TURF

BISTRO LOUNGE SEATING

OUTDOOR MOVIE THEATRE
WIDE WOODEN BENCH THEATRE SEATING

ALUMINUM PLANTERS WITH LARGE DECIDUOUS SHRUBS

LOUNGE AREA WITH FIRE FEATURE

WOODEN BENCHES WITH UNDER LIGHTING
PRECAST CONCRETE PAVERS ON HIGH PERFORMANCE BEDDING MATERIAL (HPB)

ELEVATOR 04
ELEVATOR 01
ELEVATOR 03
ELEVATOR 02

INDOOR AMENITY AREA

RESIDENTIAL UNITS

1.10
NO ELEMENT WITHIN 1.1m OF PARAPET WALL TO AVOID CLIMBABILITY
CANOPY ABOVE

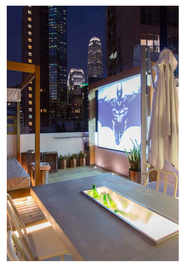
1.10
1.10

WOODEN BENCH / PLANTER
DECIDUOUS TREES & PERENNIALS
NO ELEMENT WITHIN 1.1m OF PARAPET WALL TO AVOID CLIMBABILITY

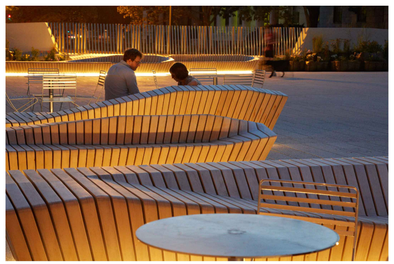
CLIMBING WALL
RUBBERIZED SAFETY SURFACE FOR FALL PROTECTION

OUTDOOR FITNESS AREA

PROPERTY LINE



OUTDOOR MOVIE THEATRE



WOODEN BENCHES WITH UNDER LIGHTING







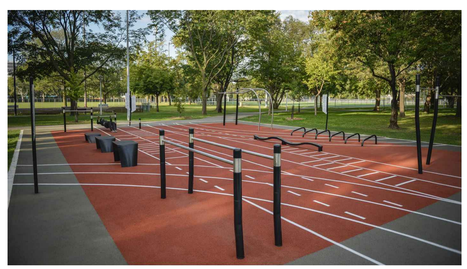
WOODEN BENCHES CREATE RAISED PLANTER TO SUPPORT DECIDUOUS TREES AND PERENNIALS



FAMILY DINNING TABLES WITH PRECAST CONCRETE PAVERS MIMICKING WOOD FLOORING



MOVABLE SEATING



OUTDOOR FITNESS EQUIPMENT



CLIMBING WALL

LANDSCAPE NOTES:

1. All work to be carried out in accordance with by-laws and codes having jurisdiction over site location.
2. Complete all work to the satisfaction of the Landscape Architect.
3. Report any changes, discrepancies or substitutions to the Landscape Architect for review. Obtain approval from the Landscape Architect before proceeding.
4. It is the contractor's responsibility to determine existing service locations.
5. Exact locations of plant material will be determined by placement of site services such as hydro vaults, meters, utilities roof rain water leaders, driveways, light standards, etc.
6. All plant material locations to be staked or marked out and approved by Landscape Architect prior to installation.
7. Supply all plant material in accordance with the Canadian Standards for Nursery Stock (8th ed.).
8. Install plant material according to details shown.
9. Supply and place mulch in accordance with Canadian Landscape Standard (Section 10, Mulching). Disturbed soil areas around trees and shrubs are to be covered with shredded conifer bark mulch such as 'Cedar Bark Mulch' by All Treat Farms or 'Classic Cedar Mulch' by Gro-Bark, or approved equivalent. Alternative mulches must be approved by the Landscape Architect.
10. Contractor to utilize layout dimensions where provided
11. Provide planting bed area as noted on the drawing or to accommodate mature size of plant material.
12. All support systems must be removed by the contractor at time of final acceptance. No extras will be paid to complete this work
13. Supply and place topsoil in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) to a minimum depth of 150mm unless otherwise specified.
14. Supply and place sod in accordance with Canadian Landscape Standard (Section 7, Lawns & Grass and Section 8, Turfgrass Sod)unless otherwise specified.
15. Supply and place seed in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) unless otherwise specified. All 5:1 or greater slopes to be seeded with tacifier. Contractor to provide necessary erosion control protection as required to ensure soil stabilization and proper seed germination.
16. All dimensions in meters unless otherwise noted.
17. If discrepancies arise between plant material count shown on drawing and plant list, the drawing shall be considered correct.
18. Contractor to provide minimum one (1) year warranty (including trees on municipal property) from date accepted on all work unless otherwise specified.
19. Any site plan or grading and servicing shown is for information only. Refer to approved drawings.
20. Not for construction unless stamped, signed and dated by Landscape Architect.
21. Drawings not to be reproduced without written consent from Landscape Architect.
22. Approval of landscape plan to be obtained from municipality.
23. All plant material to be planted a minimum of 1.0m from any swales or ditches.
24. For grading and servicing information refer to the consulting Engineer's drawings.
25. For lighting information and power distribution refer to the electrical consultant's drawings.

KEY MAP - N.T.S.



NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

REVISIONS/ SUBMISSIONS

#	DATE	DESCRIPTION
1	2021-05-03	Issued for review
2	2021-06-04	Issued for review
3	2021-06-09	Issued for review
4	2021-06-18	Issued for coordination
5	2021-06-28	Issued for submission
6	2021-11-03	Issued for OPA/ZBA submission

STAMP

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
MARIO PATRIZIO
MEMBER

CLIENT
ADI Developments (Masonry) Inc.

MUNICIPALITY
City of Burlington

PROJECT
Masonry Court Phase 2
101 Masonry Court
Burlington

MUNICIPAL FILE NUMBER

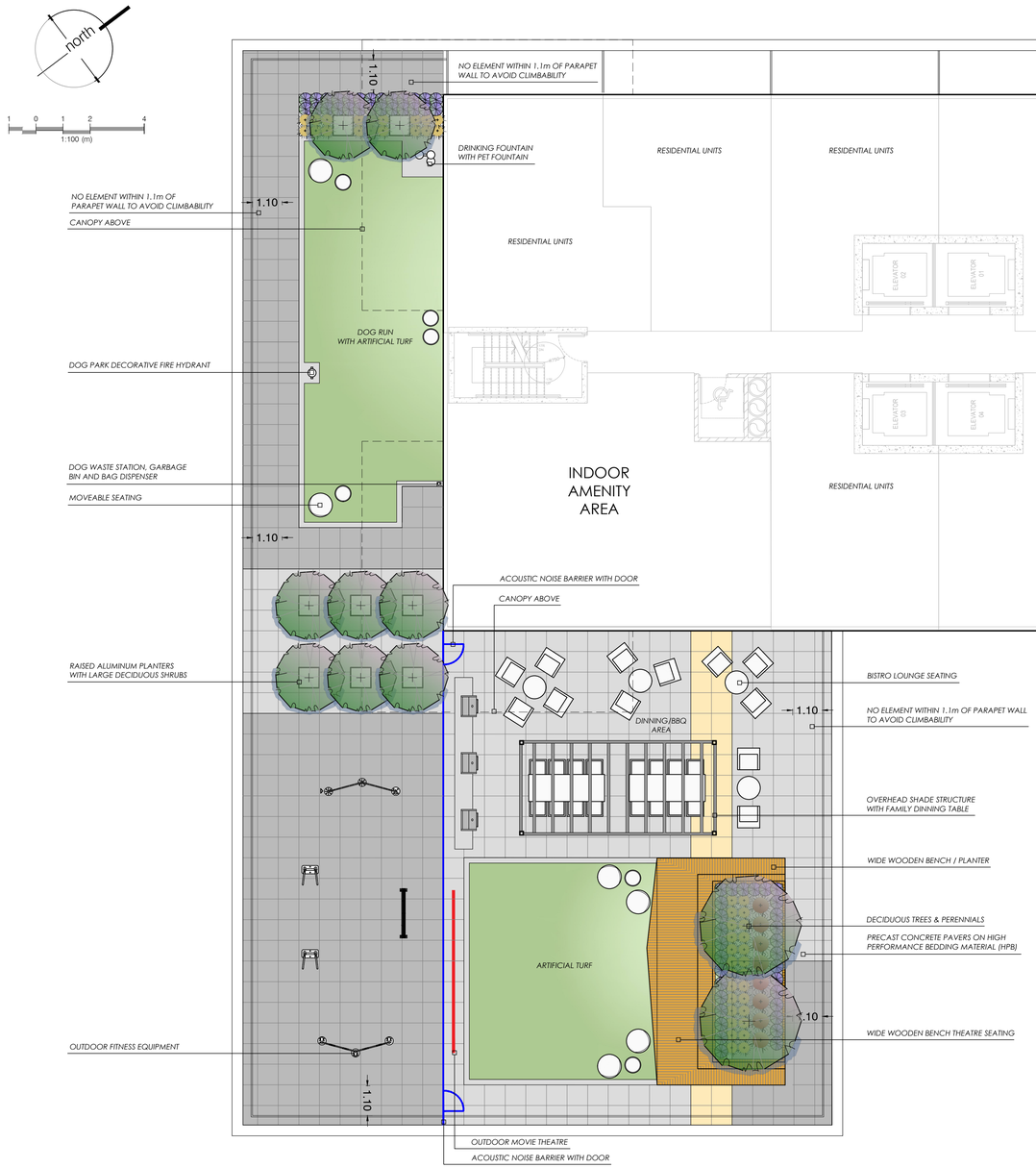
SHEET
Rooftop Amenity Plan - 4th Floor
L-02

adesso design inc.
landscape architecture

218 Locke Street South, 2nd Floor
Hamilton, ON L8P 4B4
t. 905.526.8876
www.adessodesigninc.ca

DEE:P:\Projects\Active Projects\20-175 Masonry Court, Phase 2, Burlington\01 Current Drawings\20-175_Key LAYOUT.dwg, Rooftop
LAST SAVED BY:Bielowski, September 17, 2021 11:12:28 AM PLOTTED BY:Bielowski, November 3, 2021 9:39:47 PM

project #: 20-175



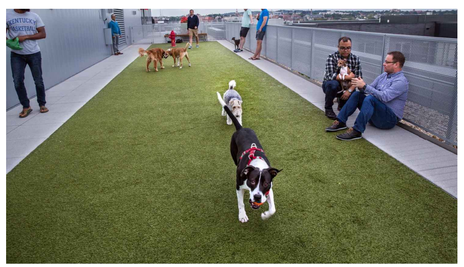
LANDSCAPE NOTES:

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9. *Supply and place mulch in accordance with Canadian Landscape Standard (Section 10, Mulching). Disturbed soil areas around trees and shrubs are to be covered with shredded conifer bark mulch such as 'Cedar Bark Mulch' by All Treat Farms or 'Classic Cedar Mulch' by Gro-Bark, or approved equivalent. Alternative mulches must be approved by the Landscape Architect.*
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13. *Supply and place topsoil in accordance with Canadian Landscape Standard (Section 4, Grading & Drainage and Section 6, Growing Medium) to a minimum depth of 150mm unless otherwise specified.*
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KEY MAP - N.T.S.




OUTDOOR THEATRE

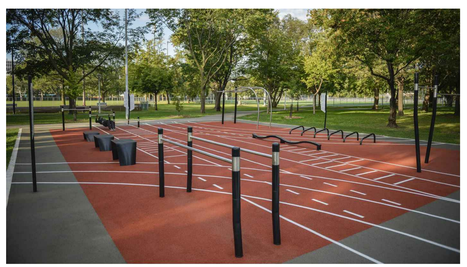

DOG RUN ON ARTIFICIAL TURF


EXAGGERATED WOODEN BENCHES POPULARIZED AT THE HIGHLINE IN NEW YORK


WOODEN BENCHES CREATE RAISED PLANTER TO SUPPORT DECIDUOUS TREES AND PERENNIALS


OPEN AIR METAL TRELLIS WITH FAMILY DINNING TABLES


MOVABLE SEATING


OUTDOOR FITNESS EQUIPMENT

NOT FOR CONSTRUCTION
ISSUED FOR REVIEW & COMMENTS ONLY

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MARIO PATRICIO
OALA
MEMBER

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SHEET
Rooftop Amenity Plan - 5th Floor

L-03

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FILE:S:\Projects\Active Projects\20-175 Masonry Court Phase 2\ADI Burlington\1-Current Drawings\01-170_Site_LAYOUT.03_Rooftop
LAST SAVED BY:Deborah, November 3, 2021 3:07:27 PM PLOTTED BY:Deborah, November 3, 2021 3:08:22 PM

APPENDIX B
Traffic Data and Calculations

Environmental Noise Assessment
1120 Cook Blvd
SLR Project No.: 241.30122.00000

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for 2-sided printing purposes

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Environmental Noise

The *Environmental Noise Assessment by Novus Environmental and dated December 12, 2018*, hereafter referred to as Noise Assessment, indicates that the Table 4 road traffic data is based on 2014 AADT values which were obtained from City of Burlington, as per Table 1A in Appendix B. An updated Noise Assessment, with road traffic data that is based on the following 2017 AADT values, will be required prior to approval of the Official Plan Amendment and Zoning By-law Amendment Applications:

- Masonry Court between Waterdown Road and Cooke Boulevard = 2,315;
- Masonry Court east of Cooke Boulevard = 1,192;
- Waterdown Road north of Masonry Court = 17,669; and
- Waterdown Road south of Masonry Court = 16,112.

[redacted]

[redacted]

[redacted]

TABLE 1A

ROAD TRAFFIC DATA

Roadway	Year	AADT(1)	% Trucks		Speed Limit (kph)	Day/Night Split (%)
			Medium	Heavy		
Masonry Court(2)	2014	1 908	7.5	5.0	50	90/10
Waterdown Road(2)	2014	14 073	9.0	6.0	50	90/10
Highway 403(3)	Ultimate	220 000	2.1	6.4	100	67/33

Notes:

(1) AADT - Annual Average Daily Traffic.
(2) Obtained from the City of Burlington.
(3) Obtained from the MTO. Truck percentage split used was 75%/25% heavy/medium as recommended by MTO for freeways.

TABLE 1B

RAIL TRAFFIC DATA – CN OAKVILLE SUBDIVISION

Period	Train Type	Maximum # of Trains	Maximum # of Cars/Train	Max # of Locos/Train	Maximum Speed (kph)
Daytime (0700 to 2300)	Freight(1)	12 (15.7)	142	4	97
	Way Freight(1)	3 (3.9)	25	2	97
	[illegible](1)	[illegible]	[illegible]	[illegible]	[illegible]
Nighttime (2300 to 0700)	Freight(1)	7 (9.2)	142	4	97
	Way Freight(1)	3 (3.9)	25	2	97
	Passenger(1)	0 (0)	10	2	150
	GO Commuter(2)	73 (74.8)	12	1	150

REVISED

Notes:

(1) Obtained from CN for the year 2015. The data shown in brackets is projected to the year 2026 with a 2.5% growth rate, compounded annually.
(2) Obtained from GO Transit/Metrolinx for the year 2025. The data shown in brackets is projected to the year 2026 with a 2.5% growth rate, compounded annually.

O R N A M E N T - 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)
MasonryCtW_avg_D	Masonry Court	Daytime Impacts	50	16	3351	87.5%	8.3%	4.2%	2932	278	141	0	0.00	**77.1**	**1.4**
MasonryCtW_avg_N	Masonry Court	Nighttime Impacts	50	8	372	87.5%	8.3%	4.2%	326	31	16	0	0.00	**70.6**	**1.4**
MasonryCtE_avg_D	Masonry Court	Daytime Impacts	50	16	1726	87.5%	8.3%	4.2%	1510	143	72	0	0.00	**74.2**	**1.4**
MasonryCtE_avg_N	Masonry Court	Nighttime Impacts	50	8	192	87.5%	8.3%	4.2%	168	16	8	0	0.00	**67.7**	**1.4**
WaterdownRdN_avg_D	Waterdown Road	Daytime Impacts	50	16	25578	85.0%	10.0%	5.0%	21741	2558	1279	0	0.00	**86.6**	**1.5**
WaterdownRdN_avg_N	Waterdown Road	Nighttime Impacts	50	8	2842	85.0%	10.0%	5.0%	2416	284	142	0	0.00	**80.0**	**1.5**
WaterdownRdS_avg_D	Waterdown Road	Daytime Impacts	50	16	23324	85.0%	10.0%	5.0%	19825	2332	1166	0	0.00	**86.2**	**1.5**
WaterdownRdS_avg_N	Waterdown Road	Nighttime Impacts	50	8	2592	85.0%	10.0%	5.0%	2203	259	130	0	0.00	**79.6**	**1.5**
Highway403_avg_D	Highway 403	Daytime Impacts	100	16	98522	91.5%	2.1%	6.4%	90148	2069	6305	0	0.00	**97.9**	**1.6**
Highway403_avg_N	Highway 403	Nighttime Impacts	100	8	17386	91.5%	2.1%	6.4%	15908	365	1113	0	0.00	**93.3**	**1.6**

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for 2-sided printing purposes

Dylan Diebolt

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: May 19, 2021 12:29 PM
To: Dylan Diebolt
Cc: Marcus Li
Subject: RE: Rail Traffic Request - southwest of Aldershot Go station, Burlington

Hi Dylan:

Sorry for the delay. Further to your request dated March 30, 2021, the subject lands (southwest of Aldershot Go station, Burlington) are located within 300 metres of the CN Aldershot Subdivision (which carries Lakeshore West 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 83 trains. The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	2 Diesel Locomotives		1 Diesel Locomotive	2 Diesel Locomotives
Day (0700-2300)	60	11	Night (2300-0700)	8	4

The current track design speed near the subject lands is 80 mph (129 km/h).

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

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.

Regards,

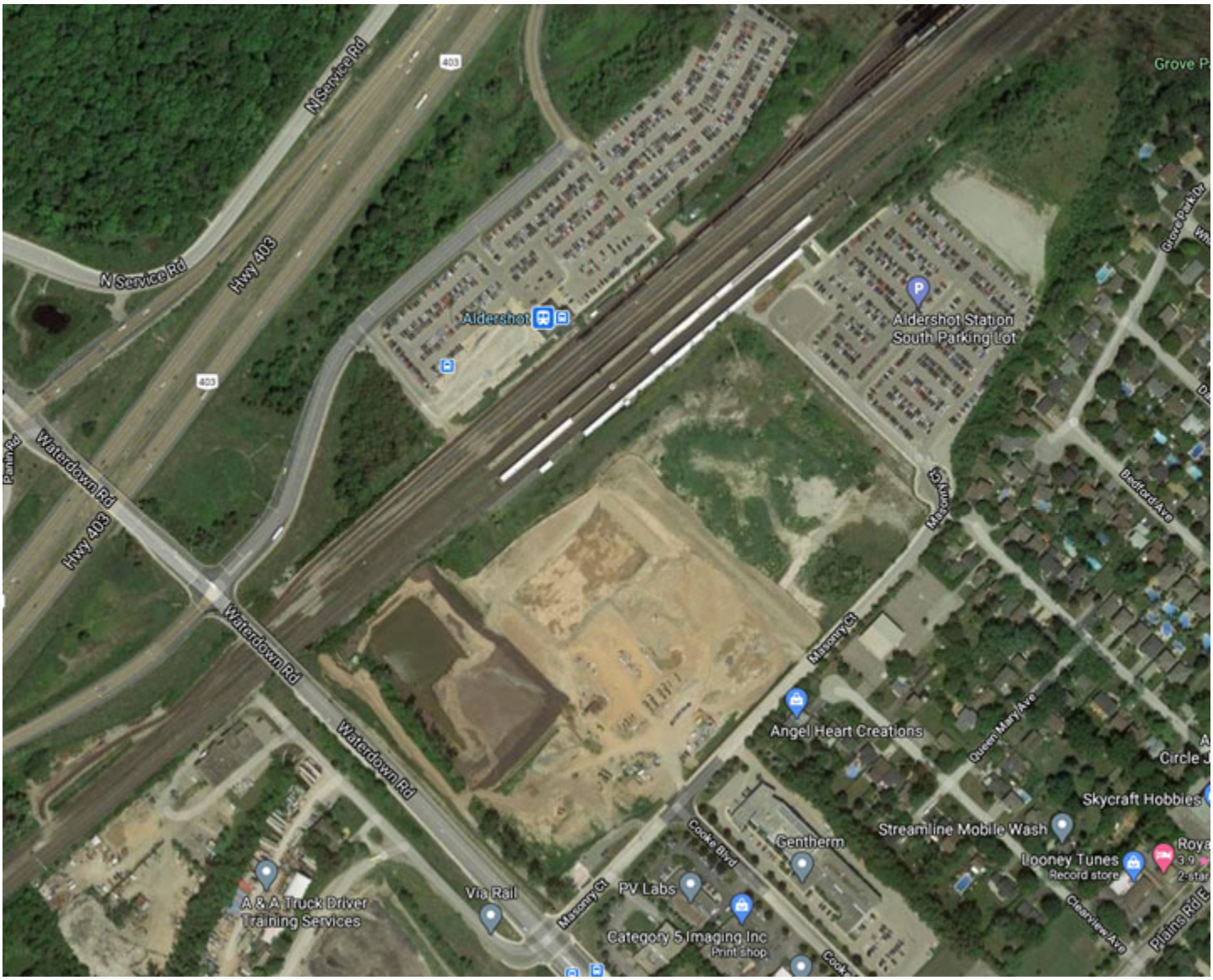
Lyndsy You, B.Eng.
Project Manager
Third Party Projects Review, Capital Projects Group
Metrolinx|30 Wellington St. W |Toronto, Ontario|M5J 2N8
C: 416.399.8284
METROLINX

From: Dylan Diebolt <ddiebolt@slrconsulting.com>
Sent: March 30, 2021 10:45 AM
To: Rail Data Requests <RailDataRequests@metrolinx.com>
Cc: Marcus Li <mli@slrconsulting.com>; Brandon Gaffoor <Brandon.Gaffoor@metrolinx.com>
Subject: Rail Traffic Request - Area around Aldershot Go station, Burlington

EXTERNAL SENDER: Do not click any links or open any attachments unless you trust the sender and know the content is safe.
EXPÉDITEUR EXTERNE: Ne cliquez sur aucun lien et n'ouvrez aucune pièce jointe à moins qu'ils ne proviennent d'un expéditeur fiable, ou que vous ayez l'assurance que le contenu provient d'une source sûre.

Hello to whom reads this,

We are working on a noise study for a development at the intersection of Waterdown Rd and Masonry Ct in Burlington, as identified in the map below. The site is located directly southeast of the Aldershot GO station.
Can you kindly provide the current/projected rail data along this corridor?



Thank you for your time and effort,

Dylan

Dylan Diebolt
Acoustics Noise and Vibration Scientist

System Engineering
Engineering Services

1 Administration Road
Concord, ON, L4K 1B9
T: 905.669.3264
F: 905.760.3406

Train Count Data

TRANSMITTAL

To: *Destinataire :*	Novus Environmental 150 Research Lane, Suite 105, Guelph, ON N1G 4T2	*Project :*	OAK-34.61 – 101 Masonry Court, Burlington, ON
Att'n:	Jafar Al-Khalaf	*Routing:*	jafara@novusenv.com
From: *Expéditeur :*	Michael Vallins	*Date:*	01/31/2018
Cc:	Adjacent Development CN via e-mail		

☐ Urgent ☐ For Your Use ☐ For Review ■ For Your Information ☐ Confidential

Re: Train Traffic Data – CN Oakville Subdivision near Masonry Court in Burlington, 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 905-669-3264.

Sincerely,
CN Design & Construction

Michael Vallins P.Eng
Manager of Public Works
public_works_gld@cn.ca

Dear Jafar Al-Khalaf:

Re: Train Traffic Data – CN Oakville Subdivision near Masonry Court in Burlington, ON

The following is provided in response to Lucas Arnolds 2018/01/29 request for information regarding rail traffic in the vicinity of Masonry Court, Burlington, ON at approximately Mile 34.61 on CN's Oakville 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	60	4
Way Freight	8	25	60	4
Passenger	12	10	95	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	6	140	60	4
Way Freight	3	25	60	4
Passenger	0	10	95	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN's Oakville Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There are no at-grade crossing in the immediate vicinity of the study area at Mile 34.61. 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 double mainline track is considered to be continuously welded rail throughout the study area. The presence of eight (8) switches located at Mile 32.48-32.08 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, Adjacent Development, Canadian National Railway Properties at Proximity@cn.ca should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,

Michael Vallins P.Eng
Manager of Public Works
public_works_gld@cn.ca

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for 2-sided printing purposes

BPN 56 Calculation Procedure - Required Glazing STC Rating (Fixed Veneer) - ROADWAY

Receptor ID	Receptor Description	Sound Levels		Room / Façade Inputs					Source Inputs		Veneer - Glazing -	
		Façade Sound Level: (dBA)	Req'd Indoor Sound Level: (dBA)	Glazing as % of Wall Area	Exp Wall Ht (m)	Exp Wall Length (m)	Room Depth (m)	Room Absorption:	Incident Sound Angle: (deg)	Spectrum type:	Veneer STC (STC)	Req'd Glazing STC (STC)
DAYTIME												
tow_A_Lvg_N	Tower A Living room, North Façade	69	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
tow_A_bdrm_N	Tower A Bedroom, North Façade	69	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**
tow_A_Lvg_E	Tower A Living room, East Façade	66	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**24**
tow_A_bdrm_E	Tower A Bedroom, East Façade	66	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
tow_A_Lvg_S	Tower A Living room, South Façade	62	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**20**
tow_A_bdrm_S	Tower A Bedroom, South Façade	62	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**23**
tow_A_Lvg_W	Tower A Living room, West Façade	69	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
tow_A_bdrm_W	Tower A Bedroom, West Façade	69	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**
Pod_A_lvg_N	Podium A Living Room, North Façade	69	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	69	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**
Pod_A_lvg_E	Podium A Living Room, East Façade	65	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**23**
Pod_A_bdr_E	Podium A bedroom, East façade	65	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**26**
Pod_A_lvg_S	Podium A Living Room, South Façade	62	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**20**
Pod_A_bdr_S	Podium A bedroom, South façade	62	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**23**
Pod_A_lvg_W	Podium A Living Room, West Façade	69	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
Pod_A_bdr_W	Podium A bedroom, West façade	69	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**
tow_B_Lvg_N	Tower B Living room, North Façade	67	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**25**

tow_B_bdrm_N	Tower B Bedroom, North Façade	67	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**28**
tow_B_Lvg_E	Tower B Living room, East Façade	65	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**23**
tow_B_bdrm_E	Tower B Bedroom, East Façade	65	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**26**
tow_B_Lvg_S	Tower B Living room, South Façade	61	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**19**
tow_B_bdrm_S	Tower B Bedroom, South Façade	61	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**22**
tow_B_Lvg_W	Tower B Living room, West Façade	64	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**22**
tow_B_bdrm_W	Tower B Bedroom, West Façade	64	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**25**
Pod_B_lvg_N	Podium B Living Room, North Façade	65	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**23**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	65	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**26**
Pod_B_lvg_E	Podium B Living Room, East Façade	63	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**21**
Pod_B_bdr_E	Podium B bedroom, East façade	63	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**24**
Pod_B_lvg_S	Podium B Living Room, South Façade	65	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**23**
Pod_B_bdr_S	Podium B bedroom, South façade	65	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**26**
Pod_B_lvg_W	Podium B Living Room, West Façade	69	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
Pod_B_bdr_W	Podium B bedroom, West façade	69	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**
tow_C_lvg_N	Tower C Living Room, North Façade	68	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**26**
tow_C_bdrm_N	Tower C Bedroom, North Façade	68	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**29**
tow_C_Lvg_E	Tower C Living room, East Façade	68	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**26**
tow_C_bdrm_E	Tower C Bedroom, East Façade	68	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**29**
tow_C_Lvg_S	Tower C Living room, South Façade	65	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**23**
tow_C_bdrm_S	Tower C Bedroom, South Façade	65	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**26**
tow_C_Lvg_W	Tower C Living room, West Façade	69	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
tow_C_bdrm_W	Tower C Bedroom, West Façade	69	45	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**

NIGHT-TIME

tow_A_Lvg_N	Tower A Living room, North Façade	64	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**22**
tow_A_bdrm_N	Tower A Bedroom, North Façade	64	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**
tow_A_Lvg_E	Tower A Living room, East Façade	61	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**19**
tow_A_bdrm_E	Tower A Bedroom, East Façade	61	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
tow_A_Lvg_S	Tower A Living room, South Façade	55	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**13**
tow_A_bdrm_S	Tower A Bedroom, South Façade	55	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**21**
tow_A_Lvg_W	Tower A Living room, West Façade	63	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**21**
tow_A_bdrm_W	Tower A Bedroom, West Façade	63	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**29**
Pod_A_lvg_N	Podium A Living Room, North Façade	64	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**22**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	64	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**30**
Pod_A_lvg_E	Podium A Living Room, East Façade	61	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**19**
Pod_A_bdr_E	Podium A bedroom, East façade	61	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
Pod_A_lvg_S	Podium A Living Room, South Façade	56	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**14**
Pod_A_bdr_S	Podium A bedroom, South façade	56	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**22**
Pod_A_lvg_W	Podium A Living Room, West Façade	63	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**21**
Pod_A_bdr_W	Podium A bedroom, West façade	63	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**29**
tow_B_Lvg_N	Tower B Living room, North Façade	62	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**20**
tow_B_bdrm_N	Tower B Bedroom, North Façade	62	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**28**
tow_B_Lvg_E	Tower B Living room, East Façade	61	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**19**
tow_B_bdrm_E	Tower B Bedroom, East Façade	61	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**
tow_B_Lvg_S	Tower B Living room, South Façade	54	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**12**

tow_B_bdrm_S	Tower B Bedroom, South Façade	54	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**20**
tow_B_Lvg_W	Tower B Living room, West Façade	59	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**17**
tow_B_bdrm_W	Tower B Bedroom, West Façade	59	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**25**
Pod_B_lvg_N	Podium B Living Room, North Façade	62	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**20**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	62	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**28**
Pod_B_lvg_E	Podium B Living Room, East Façade	59	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**17**
Pod_B_bdr_E	Podium B bedroom, East façade	59	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**25**
Pod_B_lvg_S	Podium B Living Room, South Façade	59	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**17**
Pod_B_bdr_S	Podium B bedroom, South façade	59	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**25**
Pod_B_lvg_W	Podium B Living Room, West Façade	63	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**21**
Pod_B_bdr_W	Podium B bedroom, West façade	63	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**29**
tow_C_lvg_N	Tower C Living Room, North Façade	63	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**21**
tow_C_bdrm_N	Tower C Bedroom, North Façade	63	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**29**
tow_C_Lvg_E	Tower C Living room, East Façade	59	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**17**
tow_C_bdrm_E	Tower C Bedroom, East Façade	59	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**25**
tow_C_Lvg_S	Tower C Living room, South Façade	58	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**16**
tow_C_bdrm_S	Tower C Bedroom, South Façade	58	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**24**
tow_C_Lvg_W	Tower C Living room, West Façade	63	45	70%	2.7	3.0	6.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**21**
tow_C_bdrm_W	Tower C Bedroom, West Façade	63	40	70%	2.7	3.0	3.0	Intermediate	0 - 90	D. mixed road traffic, distant aircraft	45	**27**

BPN 56 Calculation Procedure - Required Glazing STC Rating (Fixed Veneer) - Locomotive

Receptor ID	Receptor Description	Sound Levels		Room / Façade Inputs					Source Inputs		Veneer - C	Glazing - C
		Façade Sound Level: (dBA)	Req'd Indoor Sound Level: (dBA)	Glazing as % of Wall Area	Exp Wall Ht (m)	Exp Wall Length (m)	Room Depth (m)	Room Absorption:	Incident Sound Angle: (deg)	Spectrum type:	Veneer STC (STC)	Req'd Glazing STC (STC)
DAYTIME												
tow_A_Lvg_N	Tower A Living room, North Façade	61	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**26**
tow_A_bdrm_N	Tower A Bedroom, North Façade	61	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**29**
tow_A_Lvg_E	Tower A Living room, East Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
tow_A_bdrm_E	Tower A Bedroom, East Façade	58	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**26**
tow_A_Lvg_S	Tower A Living room, South Façade	47	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**12**
tow_A_bdrm_S	Tower A Bedroom, South Façade	47	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**15**
tow_A_Lvg_W	Tower A Living room, West Façade	59	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**24**
tow_A_bdrm_W	Tower A Bedroom, West Façade	59	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**27**
Pod_A_lvg_N	Podium A Living Room, North Façade	61	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**26**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	61	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**29**
Pod_A_lvg_E	Podium A Living Room, East Façade	55	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**20**
Pod_A_bdr_E	Podium A bedroom, East façade	55	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**23**
Pod_A_lvg_S	Podium A Living Room, South Façade	47	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**12**
Pod_A_bdr_S	Podium A bedroom, South façade	47	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**15**
Pod_A_lvg_W	Podium A Living Room, West Façade	59	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**24**
Pod_A_bdr_W	Podium A bedroom, West façade	59	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**27**

tow_B_Lvg_N	Tower B Living room, North Façade	59	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**24**
tow_B_bdrm_N	Tower B Bedroom, North Façade	59	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**27**
tow_B_Lvg_E	Tower B Living room, East Façade	57	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**22**
tow_B_bdrm_E	Tower B Bedroom, East Façade	57	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**25**
tow_B_Lvg_S	Tower B Living room, South Façade	46	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**11**
tow_B_bdrm_S	Tower B Bedroom, South Façade	46	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**14**
tow_B_Lvg_W	Tower B Living room, West Façade	56	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**21**
tow_B_bdrm_W	Tower B Bedroom, West Façade	56	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**24**
Pod_B_lvg_N	Podium B Living Room, North Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	58	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**26**
Pod_B_lvg_E	Podium B Living Room, East Façade	52	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**17**
Pod_B_bdr_E	Podium B bedroom, East façade	52	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**20**
Pod_B_lvg_S	Podium B Living Room, South Façade	46	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**11**
Pod_B_bdr_S	Podium B bedroom, South façade	46	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**14**
Pod_B_lvg_W	Podium B Living Room, West Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
Pod_B_bdr_W	Podium B bedroom, West façade	58	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**26**
tow_C_lvg_N	Tower C Living Room, North Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
tow_C_bdrm_N	Tower C Bedroom, North Façade	58	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**26**
tow_C_Lvg_E	Tower C Living room, East Façade	56	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**21**
tow_C_bdrm_E	Tower C Bedroom, East Façade	56	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**24**
tow_C_Lvg_S	Tower C Living room, South Façade	45	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**10**
tow_C_bdrm_S	Tower C Bedroom, South Façade	45	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**13**
tow_C_Lvg_W	Tower C Living room, West Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
tow_C_bdrm_W	Tower C Bedroom, West Façade	58	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**26**

NIGHT-TIME

tow_A_Lvg_N	Tower A Living room, North Façade	60	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**25**
tow_A_bdrm_N	Tower A Bedroom, North Façade	60	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**33**
tow_A_Lvg_E	Tower A Living room, East Façade	56	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**21**
tow_A_bdrm_E	Tower A Bedroom, East Façade	56	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**29**
tow_A_Lvg_S	Tower A Living room, South Façade	46	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**11**
tow_A_bdrm_S	Tower A Bedroom, South Façade	46	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**19**
tow_A_Lvg_W	Tower A Living room, West Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
tow_A_bdrm_W	Tower A Bedroom, West Façade	58	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**31**
Pod_A_lvg_N	Podium A Living Room, North Façade	59	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**24**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	59	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**32**
Pod_A_lvg_E	Podium A Living Room, East Façade	53	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**18**
Pod_A_bdr_E	Podium A bedroom, East façade	53	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**26**
Pod_A_lvg_S	Podium A Living Room, South Façade	45	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**10**
Pod_A_bdr_S	Podium A bedroom, South façade	45	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**18**
Pod_A_lvg_W	Podium A Living Room, West Façade	57	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**22**
Pod_A_bdr_W	Podium A bedroom, West façade	57	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**25**
tow_B_Lvg_N	Tower B Living room, North Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
tow_B_bdrm_N	Tower B Bedroom, North Façade	58	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**31**
tow_B_Lvg_E	Tower B Living room, East Façade	55	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**20**
tow_B_bdrm_E	Tower B Bedroom, East Façade	55	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**28**
tow_B_Lvg_S	Tower B Living room, South Façade	44	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**9**

tow_B_bdrm_S	Tower B Bedroom, South Façade	44	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**17**
tow_B_Lvg_W	Tower B Living room, West Façade	54	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**19**
tow_B_bdrm_W	Tower B Bedroom, West Façade	54	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**27**
Pod_B_lvg_N	Podium B Living Room, North Façade	58	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**23**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	58	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**31**
Pod_B_lvg_E	Podium B Living Room, East Façade	50	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**15**
Pod_B_bdr_E	Podium B bedroom, East façade	50	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**23**
Pod_B_lvg_S	Podium B Living Room, South Façade	44	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**9**
Pod_B_bdr_S	Podium B bedroom, South façade	44	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**17**
Pod_B_lvg_W	Podium B Living Room, West Façade	56	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**21**
Pod_B_bdr_W	Podium B bedroom, West façade	56	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**29**
tow_C_lvg_N	Tower C Living Room, North Façade	57	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**22**
tow_C_bdrm_N	Tower C Bedroom, North Façade	57	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**30**
tow_C_Lvg_E	Tower C Living room, East Façade	54	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**19**
tow_C_bdrm_E	Tower C Bedroom, East Façade	54	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**27**
tow_C_Lvg_S	Tower C Living room, South Façade	44	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**9**
tow_C_bdrm_S	Tower C Bedroom, South Façade	44	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**17**
tow_C_Lvg_W	Tower C Living room, West Façade	56	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	F. diesel railway	45	**21**
tow_C_bdrm_W	Tower C Bedroom, West Façade	56	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	F. diesel railway	45	**29**

BPN 56 Calculation Procedure - Required Glazing STC Rating (Fixed Veneer) - WN

Receptor ID	Receptor Description	Sound Levels		Room / Façade Inputs					Source Inputs		Veneer - (	Glazing - (
		Façade Sound Level: (dBA)	Req'd Indoor Sound Level: (dBA)	Glazing as % of Wall Area	Exp Wall Ht (m)	Exp Wall Length (m)	Room Depth (m)	Room Absorption:	Incident Sound Angle: (deg)	Spectrum type:	Veneer STC (STC)	Req'd Glazing STC (STC)
DAYTIME												
tow_A_Lvg_N	Tower A Living room, North Façade	61	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**21**
tow_A_bdrm_N	Tower A Bedroom, North Façade	61	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**24**
tow_A_Lvg_E	Tower A Living room, East Façade	58	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**18**
tow_A_bdrm_E	Tower A Bedroom, East Façade	58	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**21**
tow_A_Lvg_S	Tower A Living room, South Façade	47	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**7**
tow_A_bdrm_S	Tower A Bedroom, South Façade	47	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**10**
tow_A_Lvg_W	Tower A Living room, West Façade	58	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**18**
tow_A_bdrm_W	Tower A Bedroom, West Façade	58	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**21**
Pod_A_lvg_N	Podium A Living Room, North Façade	60	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**20**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	60	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**23**
Pod_A_lvg_E	Podium A Living Room, East Façade	55	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**15**
Pod_A_bdr_E	Podium A bedroom, East façade	55	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**18**
Pod_A_lvg_S	Podium A Living Room, South Façade	47	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**7**
Pod_A_bdr_S	Podium A bedroom, South façade	47	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**10**
Pod_A_lvg_W	Podium A Living Room, West Façade	58	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**18**
Pod_A_bdr_W	Podium A bedroom, West façade	58	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**21**
tow_B_Lvg_N	Tower B Living room, North Façade	59	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**19**

tow_B_bdrm_N	Tower B Bedroom, North Façade	59	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**22**
tow_B_Lvg_E	Tower B Living room, East Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**17**
tow_B_bdrm_E	Tower B Bedroom, East Façade	57	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**20**
tow_B_Lvg_S	Tower B Living room, South Façade	46	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**6**
tow_B_bdrm_S	Tower B Bedroom, South Façade	46	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**9**
tow_B_Lvg_W	Tower B Living room, West Façade	55	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**15**
tow_B_bdrm_W	Tower B Bedroom, West Façade	55	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**18**
Pod_B_lvg_N	Podium B Living Room, North Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**17**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	57	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft, railway	45	**20**
Pod_B_lvg_E	Podium B Living Room, East Façade	52	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**12**
Pod_B_bdr_E	Podium B bedroom, East façade	52	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**15**
Pod_B_lvg_S	Podium B Living Room, South Façade	46	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**6**
Pod_B_bdr_S	Podium B bedroom, South façade	46	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**9**
Pod_B_lvg_W	Podium B Living Room, West Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft, railway	45	**17**
Pod_B_bdr_W	Podium B bedroom, West façade	57	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**20**
tow_C_lvg_N	Tower C Living Room, North Façade	58	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft, railway	45	**18**
tow_C_Lvg_N	Tower C Bedroom, North Façade	58	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**21**
tow_C_Lvg_E	Tower C Living room, East Façade	56	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**16**
tow_C_bdrm_E	Tower C Bedroom, East Façade	56	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**19**
tow_C_Lvg_S	Tower C Living room, South Façade	45	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**5**
tow_C_bdrm_S	Tower C Bedroom, South Façade	45	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**8**
tow_C_Lvg_W	Tower C Living room, West Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**17**
tow_C_bdrm_W	Tower C Bedroom, West Façade	57	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**20**

NIGHT-TIME

tow_A_Lvg_N	Tower A Living room, North Façade	60	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**20**
tow_A_bdrm_N	Tower A Bedroom, North Façade	60	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**28**
tow_A_Lvg_E	Tower A Living room, East Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**17**
tow_A_bdrm_E	Tower A Bedroom, East Façade	57	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**25**
tow_A_Lvg_S	Tower A Living room, South Façade	46	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**6**
tow_A_bdrm_S	Tower A Bedroom, South Façade	46	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**14**
tow_A_Lvg_W	Tower A Living room, West Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**17**
tow_A_bdrm_W	Tower A Bedroom, West Façade	57	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**25**
Pod_A_lvg_N	Podium A Living Room, North Façade	59	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**19**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	59	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**27**
Pod_A_lvg_E	Podium A Living Room, East Façade	54	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**14**
Pod_A_bdr_E	Podium A bedroom, East façade	54	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**22**
Pod_A_lvg_S	Podium A Living Room, South Façade	46	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**6**
Pod_A_bdr_S	Podium A bedroom, South façade	46	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**14**
Pod_A_lvg_W	Podium A Living Room, West Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**17**
Pod_A_bdr_W	Podium A bedroom, West façade	57	40	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**20**
tow_B_Lvg_N	Tower B Living room, North Façade	58	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**18**
tow_B_bdrm_N	Tower B Bedroom, North Façade	58	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**26**
tow_B_Lvg_E	Tower B Living room, East Façade	56	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**16**
tow_B_bdrm_E	Tower B Bedroom, East Façade	56	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**24**
tow_B_Lvg_S	Tower B Living room, South Façade	44	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**4**

tow_B_bdrm_S	Tower B Bedroom, South Façade	44	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**12**
tow_B_Lvg_W	Tower B Living room, West Façade	53	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**13**
tow_B_bdrm_W	Tower B Bedroom, West Façade	53	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**21**
Pod_B_lvg_N	Podium B Living Room, North Façade	56	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**16**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	56	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**24**
Pod_B_lvg_E	Podium B Living Room, East Façade	50	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**10**
Pod_B_bdr_E	Podium B bedroom, East façade	50	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**18**
Pod_B_lvg_S	Podium B Living Room, South Façade	44	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**4**
Pod_B_bdr_S	Podium B bedroom, South façade	44	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**12**
Pod_B_lvg_W	Podium B Living Room, West Façade	55	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**15**
Pod_B_bdr_W	Podium B bedroom, West façade	55	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**23**
tow_C_lvg_N	Tower C Living Room, North Façade	57	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**17**
tow_C_bdrm_N	Tower C Bedroom, North Façade	57	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**25**
tow_C_Lvg_E	Tower C Living room, East Façade	54	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft, railway	45	**14**
tow_C_bdrm_E	Tower C Bedroom, East Façade	54	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**22**
tow_C_Lvg_S	Tower C Living room, South Façade	44	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**4**
tow_C_bdrm_S	Tower C Bedroom, South Façade	44	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**12**
tow_C_Lvg_W	Tower C Living room, West Façade	55	40	70%	2.7	3.0	6.0	ntermediat	0 - 90	B. avg aircraft,	45	**15**
tow_C_bdrm_W	Tower C Bedroom, West Façade	55	35	70%	2.7	3.0	3.0	ntermediat	0 - 90	B. avg aircraft,	45	**23**

BPN 56 Calculation Procedure - Required Glazing STC Rating (Fixed Veneer) - BELLS

Receptor ID	Receptor Description	Sound Levels		Room / Façade Inputs					Source Inputs		Veneer - (	Glazing - (
		Façade Sound Level: (dBA)	Req'd Indoor Sound Level: (dBA)	Glazing as % of Wall Area	Exp Wall Ht (m)	Exp Wall Length (m)	Room Depth (m)	Room Absorption:	Incident Sound Angle: (deg)	Spectrum type:	Veneer STC (STC)	Req'd Glazing STC (STC)
DAYTIME												
tow_A_Lvg_N	Tower A Living room, North Façade	52	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**12**
tow_A_bdrm_N	Tower A Bedroom, North Façade	52	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**15**
tow_A_Lvg_E	Tower A Living room, East Façade	53	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**13**
tow_A_bdrm_E	Tower A Bedroom, East Façade	53	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**16**
tow_A_Lvg_S	Tower A Living room, South Façade	37	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-3**
tow_A_bdrm_S	Tower A Bedroom, South Façade	37	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
tow_A_Lvg_W	Tower A Living room, West Façade	37	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-3**
tow_A_bdrm_W	Tower A Bedroom, West Façade	37	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
Pod_A_lvg_N	Podium A Living Room, North Façade	48	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**8**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	48	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**11**
Pod_A_lvg_E	Podium A Living Room, East Façade	46	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**6**
Pod_A_bdr_E	Podium A bedroom, East façade	46	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**9**
Pod_A_lvg_S	Podium A Living Room, South Façade	37	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-3**
Pod_A_bdr_S	Podium A bedroom, South façade	37	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
Pod_A_lvg_W	Podium A Living Room, West Façade	37	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-3**
Pod_A_bdr_W	Podium A bedroom, West façade	37	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
tow_B_Lvg_N	Tower B Living room, North Façade	53	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**13**

tow_B_bdrm_N	Tower B Bedroom, North Façade	53	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**16**
tow_B_Lvg_E	Tower B Living room, East Façade	53	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**13**
tow_B_bdrm_E	Tower B Bedroom, East Façade	53	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**16**
tow_B_Lvg_S	Tower B Living room, South Façade	37	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-3**
tow_B_bdrm_S	Tower B Bedroom, South Façade	37	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
tow_B_Lvg_W	Tower B Living room, West Façade	37	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-3**
tow_B_bdrm_W	Tower B Bedroom, West Façade	37	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
Pod_B_lvg_N	Podium B Living Room, North Façade	44	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**4**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	44	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**7**
Pod_B_lvg_E	Podium B Living Room, East Façade	43	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**3**
Pod_B_bdr_E	Podium B bedroom, East façade	43	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**6**
Pod_B_lvg_S	Podium B Living Room, South Façade	37	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-3**
Pod_B_bdr_S	Podium B bedroom, South façade	37	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
Pod_B_lvg_W	Podium B Living Room, West Façade	36	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-4**
Pod_B_bdr_W	Podium B bedroom, West façade	36	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**-1**
tow_C_lvg_N	Tower C Living Room, North Façade	51	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**11**
tow_C_Lvg_N	Tower C Bedroom, North Façade	51	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**14**
tow_C_Lvg_E	Tower C Living room, East Façade	51	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**11**
tow_C_bdrm_E	Tower C Bedroom, East Façade	51	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**14**
tow_C_Lvg_S	Tower C Living room, South Façade	36	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-4**
tow_C_bdrm_S	Tower C Bedroom, South Façade	36	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**-1**
tow_C_Lvg_W	Tower C Living room, West Façade	36	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-4**
tow_C_bdrm_W	Tower C Bedroom, West Façade	36	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**-1**

NIGHT-TIME

tow_A_Lvg_N	Tower A Living room, North Façade	48	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**8**
tow_A_bdrm_N	Tower A Bedroom, North Façade	48	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**16**
tow_A_Lvg_E	Tower A Living room, East Façade	48	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**8**
tow_A_bdrm_E	Tower A Bedroom, East Façade	48	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**16**
tow_A_Lvg_S	Tower A Living room, South Façade	32	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-8**
tow_A_bdrm_S	Tower A Bedroom, South Façade	32	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
tow_A_Lvg_W	Tower A Living room, West Façade	32	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-8**
tow_A_bdrm_W	Tower A Bedroom, West Façade	32	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
Pod_A_lvg_N	Podium A Living Room, North Façade	43	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**3**
Pod_A_bdrm_N	Podium A Bedroom, North Façade	43	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**11**
Pod_A_lvg_E	Podium A Living Room, East Façade	42	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**2**
Pod_A_bdr_E	Podium A bedroom, East façade	42	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**10**
Pod_A_lvg_S	Podium A Living Room, South Façade	32	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-8**
Pod_A_bdr_S	Podium A bedroom, South façade	32	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
Pod_A_lvg_W	Podium A Living Room, West Façade	32	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-8**
Pod_A_bdr_W	Podium A bedroom, West façade	32	40	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**-5**
tow_B_Lvg_N	Tower B Living room, North Façade	48	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**8**
tow_B_bdrm_N	Tower B Bedroom, North Façade	48	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**16**
tow_B_Lvg_E	Tower B Living room, East Façade	48	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**8**
tow_B_bdrm_E	Tower B Bedroom, East Façade	48	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**16**
tow_B_Lvg_S	Tower B Living room, South Façade	32	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-8**

tow_B_bdrm_S	Tower B Bedroom, South Façade	32	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
tow_B_Lvg_W	Tower B Living room, West Façade	33	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-7**
tow_B_bdrm_W	Tower B Bedroom, West Façade	33	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**1**
Pod_B_lvg_N	Podium B Living Room, North Façade	39	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-1**
Pod_B_bdrm_N	Podium B Bedroom, North Façade	39	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**7**
Pod_B_lvg_E	Podium B Living Room, East Façade	38	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-2**
Pod_B_bdr_E	Podium B bedroom, East façade	38	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**6**
Pod_B_lvg_S	Podium B Living Room, South Façade	32	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-8**
Pod_B_bdr_S	Podium B bedroom, South façade	32	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**0**
Pod_B_lvg_W	Podium B Living Room, West Façade	31	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-9**
Pod_B_bdr_W	Podium B bedroom, West façade	31	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**-1**
tow_C_lvg_N	Tower C Living Room, North Façade	46	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**6**
tow_C_bdrm_N	Tower C Bedroom, North Façade	46	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**14**
tow_C_Lvg_E	Tower C Living room, East Façade	46	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft, railway	45	**6**
tow_C_bdrm_E	Tower C Bedroom, East Façade	46	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**14**
tow_C_Lvg_S	Tower C Living room, South Façade	31	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-9**
tow_C_bdrm_S	Tower C Bedroom, South Façade	31	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**-1**
tow_C_Lvg_W	Tower C Living room, West Façade	31	40	70%	2.7	3.0	6.0	ntermediate	0 - 90	B. avg aircraft,	45	**-9**
tow_C_bdrm_W	Tower C Bedroom, West Façade	31	35	70%	2.7	3.0	3.0	ntermediate	0 - 90	B. avg aircraft,	45	**-1**

STAMSON 5.0 NORMAL REPORT Date: 18-06-2021 14:47:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 618cook2.te Time Period: 16 hours
Description:

Road data, segment # 1: 403EB

Car traffic volume : 90148 veh/TimePeriod
Medium truck volume : 2069 veh/TimePeriod
Heavy truck volume : 6305 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: 403EB

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 500.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: 403WB

Car traffic volume : 90148 veh/TimePeriod
Medium truck volume : 2069 veh/TimePeriod
Heavy truck volume : 6305 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: 403WB

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 480.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 3: Waterdown

```
--------------------------------
Car traffic volume  : 21741 veh/TimePeriod
Medium truck volume :  2558 veh/TimePeriod
Heavy truck volume  :  1279 veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Waterdown
------------------------------
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  :  41.00 m
Receiver height           :   1.50 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Road data, segment # 4: Masonry
------------------------------
Car traffic volume  :  2932 veh/TimePeriod
Medium truck volume :   278 veh/TimePeriod
Heavy truck volume  :   141 veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 4: Masonry
------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  30.00 m
Receiver height           :   1.50 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: 403EB
--------------------------

Source height = 1.59 m

ROAD (0.00 + 64.56 + 0.00) = 64.56 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  82.79   0.00 -15.23  -3.01   0.00   0.00   0.00  64.56
```

Segment Leq : 64.56 dBA

↟
Results segment # 2: 403WB

Source height = 1.59 m

ROAD (0.00 + 64.73 + 0.00) = 64.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	82.79	0.00	-15.05	-3.01	0.00	0.00	0.00	64.73

Segment Leq : 64.73 dBA

↟
Results segment # 3: Waterdown

Source height = 1.50 m

ROAD (0.00 + 67.13 + 0.00) = 67.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	71.50	0.00	-4.37	0.00	0.00	0.00	0.00	67.13

Segment Leq : 67.13 dBA

↟
Results segment # 4: Masonry

Source height = 1.43 m

ROAD (0.00 + 56.04 + 0.00) = 56.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	62.06	0.00	-3.01	-3.01	0.00	0.00	0.00	56.04

Segment Leq : 56.04 dBA

Total Leq All Segments: 70.57 dBA

↟

TOTAL Leq FROM ALL SOURCES: 70.57



ADI	True North	Scale: 1:5000	METRES	SLR global environmental solutions
1120 COOKE BOULEVARD		Date: MAY 1 2021 Rev 0.0	Figure No. **B-1**	
COMPARISON OF STAMSON TO CADNAA ORNAMENT IMPLEMENTATION		Project No. 241.30122.00000		

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APPENDIX C
Warning Clauses

Environmental Noise Assessment
1120 Cook Blvd
SLR Project No.: 241.30122.00000

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Warning Clauses

The following Warning Clauses should be registered on Title and/or included in all agreements of purchase and sale and/or leases and/or disclosure statements and declarations for the development:

MECP Type B – All units

> “Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic (rail traffic) (air traffic) may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment.”

MECP Type C – South façade units

> "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."

MECP Type D – North, East, West façade units

> "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."

MECP Type E – All units

> “Purchasers are advised that due to the proximity of the adjacent industrial and commercial facilities, sound levels from these facilities may at times be audible.”

MECP Type F – All units

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

Metrolinx – All units

> "Metrolinx, carrying on business as GO Transit, and its assigns and successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that GO Transit or any railway entering into an agreement with GO Transit to use the right-of-way or their 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 dwelling(s). Metrolinx 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."

CN – All units

> "Purchasers are advised that 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."

APPENDIX D
Stationary Source Data

Environmental Noise Assessment
1120 Cook Blvd
SLR Project No.: 241.30122.00000

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Table D.1: Summary of Noise Source Sound Power Levels

Source Description	Maximum Sound Power Levels (1/1 Octave Band Levels)									Total PWL	Notes
	32 (dBA/ dBAI)	63 (dBA/ dBAI)	125 (dBA/ dBAI)	250 (dBA/ dBAI)	500 (dBA/ dBAI)	1000 (dBA/ dBAI)	2000 (dBA/ dBAI)	4000 (dBA/ dBAI)	8000 (dBA/ dBAI)	(dBA/ dBAI)	
Surrounding Commercial											
HVAC (5-ton)	77	80	81	81	80	78	74	70	64	83	- based on SLR historical data - In Continuous Operation during daytime and nighttime
HVAC (10-ton)	80	83	84	84	83	81	77	73	67	86	- based on SLR historical data - In Continuous Operation during daytime and nighttime
HVAC (20-ton)	89	92	93	93	92	90	86	82	76	95	- based on SLR historical data - In Continuous Operation during daytime and nighttime
101 Masonry Court Mechanical Equipment											
Packaged Rooftop System	0	0	94	91	89	89	85	83	82	93	- based on Received Mechanical Report for 101 Masonry Court - In Continuous Operation during daytime with 30-minute duty cycling during nighttime
AGZ-D Air-Cooled Scroll Chiller	0	92	88	89	89	86	82	80	74	91	- based on Received Mechanical Report for 101 Masonry Court - In Continuous Operation during daytime with 30-minute duty cycling during nighttime
Large Emergency Generator	59	72	85	91	92	90	88	84	79	97	- based on Received Mechanical Report for 101 Masonry Court - Only during daytime hours for 30 minutes
100GGHH Rooftop Generator	58	72	88	90	91	91	91	92	90	97	- based on Received Mechanical Report for 101 Masonry Court - Only during daytime hours for 30 minutes
Aberdeen GO Station											
Idling Locomotive - GO Train	117	127	114	110	103	98	97	95	90	108	- based on SLR historical data for MP40 locomotives. - two (2) locomitives included in noise model: - idling during stop (10 min dur., 3 trains/hr during daytime; 10 min dur, 2 trains/hr during night) - idling during refueling (1 hr dur assumed, 1 train/hr, daytime/evening hours only).
Idling Fuel Truck	98	101	101	97	96	96	92	84	78	100	- based on SLR historical data - 1 hr duration assumed - operation during daytime / evening hours only.
Aberdeen GO Station											
Idling Locomotive - GO Train	117	127	114	110	103	98	97	95	90	108	- based on SLR historical data for MP40 locomotives. - two (2) locomitives included in noise model: - idling during stop (10 min dur., 3 trains/hr during daytime; 10 min dur, 2 trains/hr during night) - idling during refueling (1 hr dur assumed, 1 train/hr, daytime/evening hours only).
Idling Fuel Truck	98	101	101	97	96	96	92	84	78	100	- based on SLR historical data - 1 hr duration assumed - operation during daytime / evening hours only.
Aberdeen Rail Yard											
Idling Locomotive - Freight Train	117	113	109	97	103	102	99	92	89	106	- based on historical data for studies completed in the area. - three (3) locomotives assumed to be idling on west side of Rail Yard. - 24/7 operation assumed.
Knuckle Thump (impulse)	-	117	111	109	108	107	104	100	93	111	- based on SLR historical data - 24/7 operation assumed.
KPM Industries											
Crushing Area - Excavator, Front end loader, Grinder	117	122	118	116	111	111	106	100	88	115	- based on historical data for studies completed in the area. - 24/7 operation assumed.
Asphalt Plant	123	125	125	124	111	107	103	101	96	118	- based on SLR historical data - 24/7 operation assumed.

St. Mary's Cement / CBM											
Ready-Mix Plant - Truck Loadout	105	109	108	109	104	101	100	95	87	107	- based on SLR historical data - continuous flow of 7.5 trucks per hour (approx based on historical data) - duration at high idle assessed based on a historical 5 min/truck. - operations assumed during all periods of the day.
Ready-Mix Plant - Truck Wash and Mix	105	109	108	109	104	101	100	95	87	107	- based on SLR historical data - continuous flow of 7.5 trucks per hour (approx based on historical data) - duration at high idle assessed based on a historical 8 min/truck. - operations assumed during all periods of the day
Ready-Mix Plant - Pneumatic Unlaoding of Cement Powder	116	118	111	110	108	107	102	95	86	111	- based on historical SLR data - non-tonal at receptor (approx.750 m) - duration anticipated to be 1 hr or longer - daytime filling only