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Noise Feasibility Study
Proposed Mixed-Use Development
450 Dufferin Street
Toronto, Ontario

Prepared for:

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1 Introduction and Summary

HGC Engineering was retained by Hullmark Asset Management to conduct a noise feasibility study for a land use conversion request for a 15-storey mixed use development to be located at 450 Dufferin Street in the City of Toronto, Ontario. The surrounding lands are a mixture of existing residential and commercial/industrial land uses, a major rail corridor and arterial urban roadways. The study is required by the municipality to support a land use conversion request.

This study has been updated to reflect the latest architectural drawings prepared by SuperKul dated 2022.11.04 issued for ZBA, latest rail traffic data from Metrolinx, updated road traffic data, inclusion of the recommendation for a Class 4 designation for the lands and the responses to previous peer review comments, contained in Appendix F.

Rail traffic data was obtained from Metrolinx personnel. Road traffic data was obtained from the City of Toronto. The data was used to predict future traffic sound levels at the locations of the proposed building facades and in outdoor living areas. The predicted sound levels were compared to the guidelines of the Ministry of the Environment, Conservation and Parks (MECP), GO Transit and the municipality, and used to develop noise control recommendations with regard to traffic noise.

The results of this study indicate that with suitable noise control measures integrated into the design of the building, it is feasible to achieve MECP guideline sound levels. The recommended noise control measures to mitigate transportation noise include appropriate wall and window glazing assemblies, and air-conditioning of suites so that windows can be kept closed. Associated acoustical requirements are specified in this report. Warning clauses are also recommended, to inform future residents of the traffic noise impacts.

As this project is at an early stage of development, a detailed noise study should be completed for the proposed mixed-use/residential building prior to building permit approval, to refine the acoustic recommendations when detailed floor plans and building elevations are available. In addition, an acoustical consultant should review the mechanical drawings and details of demising constructions, when available, to help ensure that the noise impact of the development on the environment, and of the development on itself, are maintained within acceptable levels.

There are a number of commercial/industrial uses in the area. Sound from trucking activities associated with the operations of Riverview Produce immediately to the west of the subject site was identified as potentially significant and a Stationary Noise Study was conducted of those operations. The results indicate that the sound emissions have the potential to exceed the MECP guideline limits at the nearby future residential receptors by a significant amount, and a number of mitigation measures need to be incorporated at the proposed development, but sound levels can be reduced to acceptable levels if the recommended mitigation measures are implemented. To meet Class 1 sound level limits at the proposed residential units on the west façade of the building, the future building will need to be designed such that there will be no windows to sensitive spaces on the west façade and solid acoustic barriers/glass parapets will be constructed on the balconies of dwelling units with westward exposure to shield windows from stationary noise. An additional noise warning clause is recommended to inform future residents of the presence of the neighbouring commercial/industrial facilities and that sound from those facilities may be audible on occasion. Alternatively, a Class 4 designation of the lands, similar to the existing developments to the south, should be sought from the municipality due to the onerous mitigation requirements to meet Class 1 limits. Class 4 designation is the recommended option. Stationary noise sound levels are less than the Class 4 sound levels limits and additional noise mitigation would not be required for the proposed building. Upgraded building and window constructions, a noise warning clause for Class 4, and inclusion of air conditioning for the building are required.

2 Site Description and Noise Sources

Figure 1 is an aerial photo showing the location of the subject site. The site is located at 450 Dufferin Street in the City of Toronto, Ontario. Figure 2a shows a site plan prepared by Superkul dated 2022.11.04 issued for ZBA. Figure 2b indicates the roof plan showing the outdoor amenity area. A 15-storey mixed-use building with ground floor retail uses, residential uses above and a rooftop mechanical penthouse is proposed. Appendix E includes the preliminary floor plans and building elevations.

HGC Engineering personnel visited the site in the month of September 2020 and 2022 to make observations of the acoustical environment. The subject site is relatively flat. The subject site is in a Class 1 acoustical environment, dominated by sounds from traffic noise. A GO Transit/Metrolinx

railway corridor is located to the southwest of the site at approximately 130 m. Since the railway right of way is located more than 75 m from the closest residential façade, ground-borne vibration measurements are not required.

During the site visit, it was observed that road traffic on Dufferin Street and rail traffic on the GO Transit railway corridor are primary sources of transportation noise. There are existing residences to the north and northwest of the site. A new residential/mixed-use development is located to the south along Dufferin Street. To the west of the subject site is Riverview Produce along with a number of smaller contractor yards and storage areas on the west of the Riverview Produce building. Riverview Produce operates a produce warehouse and transfer facility and rents the remainder of the lands to a number of tenants which operate landscaping and construction contracting, storage and other light industrial facilities. Loading bays for the Riverview Produce facility are located on the east side of the building and face the subject site. Figure 3 shows an aerial photo of the area with the adjacent land uses identified. Riverview Produce also owns the lands at the west end of Alma Avenue to the west of the subject site.

3 Criteria for Acceptable Sound Levels

3.1 Traffic Noise Criteria

Guidelines for acceptable levels of road and rail traffic noise impacting residential developments are given in the MECP publication NPC-300 “Environment Noise Guideline Stationary and Transportation sources – Approval and Planning”, release date October 21, 2013, and are listed in Table 1 below. The values in Table 1 are energy equivalent (average) sound levels [L_{EQ}] in units of A weighted decibels [dBA]. As well, a copy of the GO Transit principal mainline requirements is included as Appendix A. The Federation of Canadian Municipalities (FCM) and Railway Association of Canada (RAC) “Guidelines for New Development in Proximity to Railway Operations”, dated May 2013 (RAC/FCM guidelines were also reviewed dated November 2006).

Table 1: Road and Rail Traffic Noise Criteria (dBA)

Area	Daytime L_{EQ} (16 hour) Road/Rail	Nighttime L_{EQ} (8 hour) Road/Rail
Outdoor Living Areas	55 dBA	--
Inside Living/Dining Rooms	45 dBA / 40 dBA	45 dBA / 40 dBA
Inside Bedrooms	45 dBA / 40 dBA	40 dBA / 35 dBA

These criteria apply to rail traffic operating on railway rights of way and vehicular traffic on municipal streets. Daytime refers to the period between 07:00 and 23:00, while nighttime refers to the period between 23:00 and 07:00. The term "Outdoor Living Area" (OLA) is used in reference to an outdoor patio, a backyard, a terrace or other area where passive recreation is expected to occur. Balconies that are less than 4 m in depth are not considered to be outdoor living areas under MECP guidelines.

The guidelines in the MECP publication allow the sound level in an OLA to be exceeded by up to 5 dBA, without mitigation, if warning clauses are placed in the purchase and rental agreements to the property. Where OLA sound levels exceed 60 dBA (road and rail noise combined), physical mitigation is required to reduce the OLA sound level to below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible. Note that not all OLAs necessarily require protection, if there are other protected outdoor areas accessible to the residents.

Indoor guidelines are 5 dBA more stringent for rail noise than for road noise, to account for the low frequency (rumbling) character of locomotive sound, and its greater potential to transmit through exterior wall/window assemblies. Sound attenuating building constructions and the use of warning clauses to notify future residents of possible excesses are also required when nighttime sound levels exceed 55 dBA at the façade due to rail traffic noise and exceed 60 dBA at the façade due to road traffic noise.

Warning clauses to notify future residents of possible excesses are required when nighttime sound levels exceed 50 dBA at the façade and daytime sound levels exceed 55 dBA in the outdoor living area or at the façade due to road and rail traffic. A central air conditioning system is required for

dwellings where future nighttime sound levels outside bedroom/living/dining room windows will exceed 60 dBA or future daytime sound levels exceed 65 dBA.

GO Transit guidelines recommend exterior walls built with a masonry veneer or its acoustical equivalent as a minimum construction for any dwellings which are within 100 m of the right of way of the railway. GO Transit mainline requirements are provided in Appendix A for reference.

4 Traffic Sound Level Assessment

4.1 Rail Traffic Data

Rail traffic data for the GO Transit corridor was obtained from GO Transit personnel and is attached in Appendix B. The rail corridor is used for GO Transit service on the Milton line and Barrie line (the southern tracks), the Kitchener line (the northern tracks) and the Union Pearson ("UP") Express sharing the Kitchener line.

The GO Transit and UP rail data are already expressed as future volumes. The VIA train (passenger) data was projected to 10 years in the future with an assumed growth rate of 2.5% per year. The predicted daytime and nighttime volumes (including the number of locomotives and cars) and provided speeds are presented below in Table 2. Note that the UP is a different vehicle than the GO and VIA trains; it consists of two diesel self-powered passenger vehicles (DMU), for which sound levels are considerably lower than typical locomotives.

Table 2: Rail Traffic Data Projected to Year 2032

Type of Train	Number of Trains Day/ Night	Number of locomotives	Number of cars	Max Speed (KPH)
Kitchener GO*	92 / 22	1	12	121
	36 / 2	2	12	121
Barrie GO*	172 / /36	1	12	121
	24 / 0	2	12	121
Milton GO*	38 / 6	1	12	121
Union Pearson (UP) Express	256 / 72	1	--	121
VIA	6.4 / 0+	2	10	121
Way Freight	1.3 / 0+	4	25	24

Note: All GO passenger trains were assumed to be diesel trains.
* Metrolinx Weston Subdivision carries the Kitchener GO, Milton GO, Barrier GO and UP Express rail service. The GO data provided is forecasted data.
+ Data for VIA and Way Freights has been further projected to the year 2032 using a 2.5% growth rate.

4.2 Road Traffic Data

Road traffic data for Dufferin Street was obtained from the City of Toronto. The data was projected to the year 2032 using a 2.5% growth rate. The data is provided in Appendix C. A commercial vehicle percentage of 6% medium trucks and 9.2% heavy trucks was used for Dufferin Street. A posted speed limit of 50 kph for Dufferin Street was used in the analysis as well as a day-night split of 90%/10%. Table 3 summarizes the traffic volume data used in the analysis.

Table 3: Road Traffic Data Projected to Year 2032

Road Name		Cars	Medium Trucks	Heavy Trucks	Total
Dufferin Street	Daytime	20 409	616	968	21 992
	Night time	2 268	68	108	2 444
	Total	**22 676**	**684**	**1 075**	**24 435**

4.3 Road and Rail Traffic Noise Predictions

To assess the levels of road and rail traffic noise which will impact the site in the future, predictions were made using STAMSON version 5.04, a computer algorithm developed by the MECP. Sample STAMSON output is included in Appendix D. Train whistle noise was not included in the predictions since there are no at-grade crossings in the area. The acoustic requirements may be subject to modifications if the site plan is changed significantly.

Predictions of the traffic sound levels were made at representative façades shown on the proposed ground floor plan, as shown in Figure 2. The distance setbacks indicated on the site plan along with aerial photos were used for the analysis. Tables 4 and 5 summarize the predicted sound levels at each of the sound level prediction locations.

Table 4: Daytime Predicted Future Sound Levels, Without Mitigation, [dBA]

Prediction Location	Description	Daytime – at the Façade $L_{EQ-16\ hr}$		Daytime at Façade Total $L_{EQ-16\ hr}$
		Road	Rail	
[A]	East façade facing Dufferin St	70	--	70
[B]	South façade facing Alma Ave	61	68	68
[C]	West façade with exposure to railway line	--	71	71
[D]	North facade	61	68	68
[E]	Rooftop Outdoor Amenity Area+	<50	55	55

Note: + with a minimum 1.07 mm high solid parapet

Table 5: Nighttime Predicted Future Sound Levels, Without Mitigation, [dBA]

Prediction Location	Description	Night time – at the Façade $L_{EQ-8\ hr}$		Night time at Façade Total $L_{EQ-8\ hr}$
		Road	Rail	
[A]	East façade facing Dufferin St	63	--	63
[B]	South façade facing Alma Ave	54	63	64
[C]	West façade with exposure to railway line	--	66	66
[D]	North facade	54	63	64

These predictions are considered to represent a worst-case scenario of potential traffic noise impact as projected road and rail traffic volumes, maximum train speeds and numbers of cars and locomotives have been considered.

5 Discussion and Recommendations

The predictions indicate that the future traffic sound levels will exceed MECP guidelines at the proposed mixed-use building. Recommendations to address these excesses are discussed below.

5.1 Outdoor Living Areas

The mixed-use building will generally include small balconies and/or terraces less than 4 meters in depth. Private terraces less than 4 m in depth are provided for the 5th floor terrace along with a green roof. These balconies and terraces are not considered as OLA's under MECP guidelines, and therefore are exempt from traffic noise assessment.

The latest drawings indicate a common outdoor amenity area on the roof of the building. The predicted sound level in the roof top outdoor living area is 55 dBA with a minimum solid 1.07 m high parapet. Further mitigation is not required.

5.2 Indoor Living Areas and Ventilation Requirements

The predicted future nighttime sound levels outside the plane of the bedroom/living/dining room windows of all of the façades with exposure to the roadway or railway are greater than 60 dBA. All residential units should be equipped with central air conditioning and will likely be included in any event.

5.3 Building Façade Constructions

Since future sound levels at the facades of the building exposed to the rail corridor and roadway are predicted to exceed criteria, sound attenuating building constructions (windows, doors, and walls) need to be specified.

Calculations have been performed to determine options for building envelope constructions required to maintain indoor sound levels within MECP guidelines. The calculation methods were developed by the National Research Council (NRC), and are based on the predicted outdoor sound levels and the anticipated area of the exposed facade components (walls, windows and doors) relative to the floor area of the adjacent room.

Exterior Wall Construction

For the proposed mixed-use building, MECP and GO Transit guidelines require brick veneer or masonry equivalent construction. A typical brick veneer wall, with an insulated gypsum board partition on the inside, has an estimated sound transmission class (STC) rating of 54 or better. An equivalent to brick veneer construction for high rise buildings in an urban environment is typically achieved by using two layers of 16 mm type X gypsum board on separate framing behind the spandrel panels, with batt insulation in the wall cavity.

Exterior Doors

There may be swing doors or glazed sliding patio doors for entry onto the balconies. The glazing areas on the doors are to be counted as part of the total window glazing area. If exterior swing doors are to be used, they shall be insulated metal doors equipped with head, jamb and threshold weather seals. If sliding patio doors are to be used, they should include seals sufficient to limit air leakage to minimum achievable levels.

Acoustical Requirements for Glazing

Detailed floor plans and building elevations are not yet available. Assuming a typical window to floor area of 50% for the living/dining rooms and bedrooms (40% fixed and 10% operable), the minimum acoustical requirement for the window glazing of the proposed building, including glass in fixed sections, sliding doors, and operable windows. Preliminary STC requirements for the building are included in Table 6 below.

Table 6: Minimum STC Requirements for Glazing at Specific Facades[1]

Prediction Location	Description	Space	Glazing STC[2, 3]
[A]	East façade	Living/Dining	33
		Bedroom	33
[B]	South façade	Living/Dining	33
		Bedroom	33
[C]	West façade	Living/Dining	37
		Bedroom	37
[D]	North facade	Living/Dining	33
		Bedroom	33

Note:
[1] The calculated STC requirements assume insignificant sound transmission through the walls.
[2] Based on 50% window to floor area ratio for living/dining rooms and bedrooms.
[3] STC requirement refers to installed performance, including sound transmitted through mullions in window-wall systems and seals on operable windows and doors. Test data should be provided where available.

In an urban environment such as this, the minimum glazing construction recommended is STC-33. Operable sections including awning windows, and swing or sliding doors to balconies should have tight seals sufficient to achieve similar acoustical performance ratings.

These calculations assume insignificant sound transmission through the walls in comparison with the windows. Exterior walls that are not glazed should have sufficient acoustical insulation value such that the noise transmitted through is negligible in comparison with the windows. These aspects can be verified as part of the detail design of the envelope, as needed.

Sample window assemblies which may achieve the STC requirements are summarized in Table 7 below. Note that acoustic performance varies with manufacturers' construction details, and these are only guidelines to provide some indication of the type of glazing likely to be required; the STC requirements in Table 6 must be met, and should be certified by the supplier as such.

Table 7: Window Constructions Satisfying STC Requirements

STC Requirement	Sample Glazing Configuration (STC)
28 – 30	OBC
33	4(10)4
35/36	6(10)4, 5(16)4
37	6(13)4, 6(20)5

In Table 7, the numbers outside the parentheses indicate minimum pane thicknesses in millimetres and the number in parentheses indicates the minimum inter-pane gap in millimetres. OBC indicates any glazing construction meeting the minimum requirements of the Ontario Building Code.

Further Review

When detailed floor plans and building elevations (indicting sizes of bedrooms/living/dining rooms and windows) are available for the building, a review should be conducted to determine the required glazing STC and building façade constructions based on actual window to floor area ratios.

5.4 Warning Clauses

The MECP guidelines recommend that warning clauses be included in the development agreements and in agreements of purchase and sale (by reference) for all units with anticipated traffic sound level excesses. The following noise warning clauses are required for all the units in the development.

Type A:

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

Type B:

> This dwelling unit has been supplied with a central air conditioning system which allows windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the noise criteria of the Municipality and the Ministry of the Environment, Conservation and Parks.

These clauses are provided as examples only and can be modified as required in consultation with the municipality.

GO Transit's standard warning clause for residential developments located within 300 m of a railway right-of-way (principal main line) is given below.

Type C:

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

The railway companies may also require an environmental easement for operational noise and vibration emissions, registered against the subject property in their favour. The wording of such clauses and conditions should be developed in consultation with GO Transit/Metrolinx.

6 Impact of the Development on the Environment

Sound levels from stationary (non-traffic) sources of noise such as rooftop air-conditioners, cooling towers, exhaust fans, etc. should not exceed the minimum one-hour L_{EQ} ambient (background) sound level from road traffic, at any potentially impacted residential point of reception (on or off site), to comply with City of Toronto Municipal Code 591. Typical minimum ambient sound levels in the area are expected to be up to 55 dBA during the day and about 5 dB less at night, at nearby residential receptors. Thus, any electro mechanical equipment associated with this development (e.g. cooling towers, fresh-air handling equipment, etc.) should be designed such that they do not result in noise impact beyond these ranges. The proposed building will be taller than the existing neighbouring buildings, thus noise from the mechanical equipment on the roof of this building are not expected to substantially impact the neighbouring buildings, provided that reasonable typical control measures are included. Mechanical equipment can be reviewed during the detail design stage to help ensure that any noise radiated to the environment is reasonably limited. Noise from activities in the courtyard and maker spaces are anticipated to be moderate and unlikely to cause a concern

beyond the limits of the development. Further review can be undertaken during the detailed design process once more specific information about the anticipated activities is available.

7 Impact of the Development on Itself

Section 5.8.1.1 of the Ontario Building Code (OBC), released on January 1, 2020, specifies the minimum required sound insulation characteristics for demising partitions of dwelling units, in terms of Sound Transmission Class (STC) or Apparent Sound Transmission Class (ASTC) values. In order to maintain adequate acoustical privacy between separate suites in a multi-tenant building, inter-suite walls must meet or exceed STC-50 or ASTC-47. Suite separation from a refuse chute, or elevator shaft, must meet or exceed STC-55. In addition, it is recommended that the floor/ceiling constructions separating suites from any amenity, commercial or other mechanical spaces also meet or exceed STC-55. Tables 1 and 2 in Section SB-3 of the Supplementary Guideline to the OBC provide a comprehensive list of constructions that will meet the above requirements.

The loading bay on the ground floor of the buildings is enclosed, and is therefore not expected to be a significant noise concern.

Tarion's Builder Bulletin B19R requires the internal design of condominium projects to integrate suitable acoustic features to insulate the suites from noise from each other and amenities in accordance with the OBC, and limit the potential intrusions of mechanical and electrical services in the development on its residents. If B19R certification is needed, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising constructions and mechanical/electrical equipment, when available, to help ensure that the noise impact of the development on itself is maintained within acceptable levels.

8 Assessment of Existing Stationary Sources of Sound

Industrial and commercial sources of sound are assessed separately from traffic sources under MECP Guidelines.

8.1 Description of the Riverview Produce Facility

Numerous site visits were performed in September 2020 and 2022 to investigate the sound levels at the subject site and near the industry to note any potentially significant sources of industrial sound and to note any beneficial acoustical shielding, for use in the acoustical modelling. To the west of the proposed development is an industrial/commercial site which is owned by Riverview Produce. The site includes one main building with a number of loading bays and a parking lot. This building includes a retail business that sells garden supply materials including plants and soil to the general public. The Riverview Produce building operates and houses a produce warehouse and transfer business. Riverview Produce also leases small outdoor parcels at the west of their site along the rail line to a variety of landscape and construction contractors for storage of materials and equipment.

The only significant noise source associated with Riverview Produce with the potential to impact the proposed residential development is the trucking activity. Trucks enter the site from Alma Avenue to access the loading bays and includes both retail traffic and produce trucks through a large access gate at the end of Alma Avenue. There is a separate gate for access for the various tenants at the west of the site. These gates are locked during the nighttime hours when the site/facility is closed for business. The truck routes are shown on Figure 5. It is understood on a typical busy day, there could be 10 loads per day. In a typically busiest hour, there could be one tractor trailer and two medium trucks accessing the facility. Only three of the loading bays were observed to be in use. Trucks do not idle for significant periods of time, respecting the City of Toronto anti-idling bylaw. Some of the trucks were equipped with refrigeration units, but none were observed to be operating at any time during the site visits. There are two small outdoor condenser units at the rear of the Riverview Produce building used to support an indoor cold storage area. These are shielded from the subject site by the Riverview Produce building and were found not to be significant. An office air conditioning unit is located on the roof of the west end of the Riverview Produce Building.

Riverview Produce uses electric forklifts to load and unload the produce in and out of the trucks. Back up beepers associated with these were audible at the development site, but were not measurable. Impulsive sound from the loading activities was barely audible and not measurable on the development site and is not considered significant.

8.2 Definitions

The following definitions are reproduced from NPC-300.

Class 1 area"

- *means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum."*

"Class 4 area" means an area or specific site that would otherwise be defined as Class 1 or 2 and which:

- *is an area intended for development with new noise sensitive land use(s) that are not yet built;*
- *is in proximity to existing, lawfully established stationary source(s); and*
- *has formal confirmation from the land use planning authority with the Class 4*
- *area classification which is determined during the land use planning process.*

Additionally, areas with existing noise sensitive land use(s) cannot be classified as Class 4 areas.

"Noise control measure" means a physical measure which can be used to achieve compatibility for the specific land use or activity with respect to noise from transportation sources and/or stationary sources. The noise control measure for a stationary source should be permanent in the context of the operation of the stationary source and not be readily removable or alterable by the future occupants. Temporary noise control measures are only acceptable when the noise from the source is temporary, for example, a portable concrete crusher or portable tub grinder. Noise control measures may include, but are not limited to, the following:

- *Source based noise control measures*
  - *noise control measures applied directly to the noise source, or within the property of the noise source, for example, a silencer, muffler, acoustical louvre, acoustic barrier, acoustical absorption, etc.*
- *Receptor based outdoor noise control measures*
  - *noise control measures implemented on the property of the receptor but not directly on a building, for example, ground (or berm) mounted acoustic barriers suitable for transportation noise sources or for stationary sources.*
- *Receptor based "on building" noise control measures noise control measures*
  - *implemented on the property of the receptor, directly on the building, for example, inoperable windows, enclosed noise buffers, parapets, acoustic barriers, etc. attached to the receptor building.*
- *Receptor based site configuration noise control measures*
  - *orientation of buildings and outdoor living areas (OLAs) with respect to noise sources and spatial separation, for example, the insertion of noise insensitive land uses between source and receptor, appropriate setback distances, the use of intervening service roads.*
- *Receptor based site construction and architectural noise control measures*
  - *building construction, for example, enhanced window glazing, cavity walls, resiliently suspended sound isolation channels, special acoustical materials, other sound isolation details; and*
  - *architectural design, for example, room and corridor arrangement, blank walls, windows, balconies, courtyards, building height.*

Additional guidance concerning noise control measures is included in Part B and Part C of this guideline.

"Noise sensitive space" means the living and sleeping quarters of dwellings, and sleeping quarters of noise sensitive commercial or institutional land uses. Examples include, but are not limited to: bedrooms, sleeping quarters such as patient rooms, living/dining rooms, eat-in kitchens, dens,

lounges, classrooms, therapy or treatment rooms, assembly spaces for worship, sleeping quarters of detention centres.

(5) Sources not considered as stationary sources

The following are examples of sources, activities, equipment or facilities that are not considered as stationary sources in the context of Part B and Part C of this guideline:

- *temporary construction activities;*
- *transportation corridors, i.e., railways and roadways (including off-site haul routes);*
- *residential air conditioning devices including air conditioners and heat pumps;*
- *gas stations;*
- *auditory warning devices required or authorized by law or in accordance with good safety practices;*
- *'back up beepers' on construction equipment or other vehicles; occasional movement of vehicles on the property such as delivery of goods to and the removal of goods/refuse from convenience stores, fast food restaurants and similar commercial facilities, etc.; and*
- *parking lots for private passenger vehicles at offices or commercial facilities such as retail stores, plazas or shopping malls, or employee parking lots at industries and commuter parking lots.*

The following are examples of sources, activities, equipment or facilities that are not considered as stationary sources in the context of Part B and Part C of this guideline and that are normally addressed in a qualitative manner in municipal noise by-laws:

- *the operation of auditory signaling devices, including but not limited to the ringing of bells or gongs and the blowing of horns or sirens or whistles, or the production, reproduction or amplification of any similar sounds by electronic means;*
- *noise produced by animals kept as domestic pets such as dogs barking;*
- *tools and devices used by occupants for domestic purposes such as domestic power tools, radios and televisions, etc., or activities associated with domestic situations such as domestic quarrels, noisy parties, etc.;*

- *noise resulting from gathering of people at facilities such as restaurants, fairs and parks; and*
- *activities related to essential services and maintenance of public facilities such as, but not limited to, roadways, parks and sewers, snow removal, road cleaning, road repair and maintenance, lawn mowing and maintenance, sewage removal, garbage collection.*

(6) Sources not requiring noise impact assessment

Noise sources, equipment, activities or facilities connected with emergency measures undertaken for:

- *the immediate health, safety or welfare of inhabitants; and*
- *the preservation or restoration of property; unless such noise is clearly of a longer duration or nature more disturbing than is reasonably necessary for the accomplishment of such emergency purpose;*

are exempt from the application of the limits in Part B and Part C of this guideline.

8.3 Criteria for Stationary (Industrial) Sources of Sound

8.3.1 D1 – D6 Guidelines for Land Use Compatibility

The MECP D1-D6 Series of Guidelines for Land Use Compatibility were prepared to address issues of compatibility between industrial and noise sensitive land uses in relation to land use changes.

For planning purposes for Greenfield sites, the potential zone of influence of a Class I industrial use is 75 m and the minimum recommended distance setback is 20 m. For infill projects or projects located in transitional areas the recommended minimum distance setbacks can be reduced, based on the results of technical studies such as this study. In this case, the lands occupied by the existing industrial/commercial uses are currently zoned as employment uses. The proposed mixed use/residential development proposes retail on a portion of the ground floor which is compatible with the existing uses in the area. The upper floors of the subject site are proposed to be residential uses. It should also be noted that the surrounding area is primarily existing residential uses to the south, north and northwest.

The Riverview Produce lands include the Riverview Produce facility located to the west of the subject site. This facility primarily exhibits the characteristics of Class I industry and currently houses a retail (garden centre) and indoor produce warehousing and transfer facility operation.

Typically, the recommended minimum distance setbacks apply between the property lines of the facilities, but exceptions can be made if portions of the residential or industrial lands are reserved for non-noise related uses, such as driveways or parking lots. In this case, there is a parking area, storage and access area between the subject site which is more than 20 m. Alma Avenue is located to the south of the subject site and also provides a distance setback.

The remainder of the Riverview Produce lands further to the west along and in parallel to the railway line are occupied by small parcel tenancies primarily used for outdoor storage of construction and landscaping materials.

8.3.2 MECP Guideline NPC-300 Noise Criteria

Under MECP guidelines, the acoustical environment in this area is classified as “urban” or “Class 1, as background sound levels are set by volumes of road traffic on surrounding roadways and the railway during daytime and evening hours and are low during the evening and nighttime hours.

Stationary sources of sound are collectively defined as all sources that emit sound within a commercial or industrial facility boundary. The facility to the west is therefore classified as a stationary source of sound. The following MECP guidelines and criteria apply in this case.

Stationary Source (Steady Sound)

NPC-300 is intended for use in the planning of both residential and commercial/industrial land uses and provides the acceptability limits for sound due to commercial operations in that regard. The facade of a residence (i.e., in the plane of a window), or any associated usable outdoor area is considered a sensitive point of reception (within 30 m of a dwelling façade). NPC-300 stipulates that the exclusionary sound level limit for a stationary noise source in urban Class 1 area is taken to be 50 dBA during daytime and evening hours (07:00 to 19:00 and 19:00 to 23:00), and 45 dBA during nighttime hours (23:00 to 07:00) at the outside plane of the windows of noise sensitive spaces. For outdoor living areas, 50 dBA applies from 07:00 to 23:00. NPC-300 stipulates that the exclusionary

sound level limit for a stationary noise source in urban Class 4 area is taken to be 60 dBA during daytime and evening hours (07:00 to 19:00 and 19:00 to 23:00), and 55 dBA during nighttime hours (23:00 to 07:00) at the outside plane of the windows of noise sensitive spaces. For outdoor living areas, 55 dBA applies from 07:00 to 23:00. If the background sound levels due to road traffic exceed the exclusionary limits, then that background sound level becomes the criterion. The background sound level is defined as the sound level that occurs when the source under consideration is not operating, and may include traffic noise and natural sounds.

Commercial activities such as the occasional movement of customer/employee vehicles, deliveries to conveniences stores and restaurants and garbage collection are not of themselves considered to be significant noise sources in the MECP guidelines. Accordingly, these sources have not been considered in this study.

8.3.3 Background Sound Levels

Since the west facades are located away from road and rail traffic, the MECP minimum exclusionary limits were used. Minimum background sound levels were calculated using the basic road element included in Cadna/A, which follows the German guideline RLS-90 for road traffic noise predictions. Hourly daytime traffic data was interpolated from available data obtained from the City of Toronto. The minimum daytime traffic volume occurs at 10 am to 11 am. The minimum nighttime traffic was interpolated using the data provided by the City of Toronto road traffic data and AADT traffic curve provided by the U.S. Federal Highway Administration, occurring at 3 am to 4 am. A commercial vehicle percentage of 5.3% heavy trucks along with a posted speed limit of 50 km/h was applied. The minimum background sound levels due to Dufferin Street were calculated using Cadna/A. The sound level limits as summarized in Table 8 are therefore used in the following sections of this report as the applicable criteria for east and south facades of the proposed mixed-use/residential building.

Table 8: Applicable Sound Level Limits, L_{EQ} (dBA)

Receptor	Sound Level Limits	
	Daytime/Evening (7:00 to 23:00)	Nighttime (23:00 to 7:00)
West facade	50	45
Interior west façade	50	45
North facade	55	45
South façade	54	45
East facade	68	58

Note: The above sound level limits are for Class 1 areas. For a Class 4 area, the minimum exclusionary limit is 60 dBA in the daytime, 55 dBA in the nighttime and 55 dBA for OLA's in the daytime hours.

Since the Riverview Produce facility does not operate at night, only the daytime criteria will be used. Compliance with MECP criteria generally results in acceptable levels of sound at residential receptors although there may be residual audibility during periods of low background sound.

8.4 Stationary Source Assessment

The potential for noise from Riverview Produce operations to impact the subject site was assessed based on a typical worst case (busiest hour) activity scenario, as per the requirements of NPC-300. Since Riverview Produce operates during the daytime hours only (from 7 am to 6 pm), the daytime criterion of 50 dBA was used in the assessment. Based on our discussions with Riverview Produce personnel and site observations, the following busiest hour operating scenario was assumed.

- Two tractor trailers and two medium trucks maneuvering on site to access the loading areas.
- Engines idling for 1 minute (City of Toronto has an idling control by-law).
- Truck mounted refrigeration units operating with a 50% duty cycle. Note that refrigeration units are not currently in use at the site, but have included to account for the possibility that different forms of produce may be handled in the future should this business remain in operation.
- One dump truck movement in the outer laneway associated with Spring Valley Landscaping.

The source sound levels and site geometry were used as input to a predictive computer model Cadna/A Cadna-A version 2022, build: 189.5221 in order to estimate the offsite sound levels at the proposed residences to the east. Cadna/A is a computer implementation of ISO Standard 9613-2 "Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation," which takes into account attenuation due to distance (geometrical spreading), shielding by intervening structures (such as buildings and bush), air attenuation and ground absorption. The operating times outlined were assumed in determining the one-hour equivalent sound level, LEQ, for a predictable worst-case daytime and nighttime hour.

The sound levels were predicted at various facades of the proposed mixed-use/residential building, as listed in Table 9. Sound level contours are also provided in Figure 5.

Table 9: Predicted Sound Levels due to the Existing Commercial/Industrial Uses at the Proposed Mixed-Use/Residential Building [dBA]

Description	Daytime Criteria Class 1	Daytime Criteria Class 4	Predicted Sound Level
West facade	50	60	58
Interior west interior facade	50	60	55
North facade	55	60	41
South façade	54	60	54
East facade	68	68	31

Note:
Where predicted background sound levels are less than the minimum exclusionary limit, the limit was used as the criteria.

These results indicate that sound levels from the Riverview Produce facility are expected to meet the MECP Guideline limits for a Class 1 at most of the dwelling units in the development especially at the north, south and east facades. There are sound level excesses at the west façade closest to Riverview Produce. These excesses are primarily due to the potential operation of trucks and mounted refrigeration units. If the subject lands are designated as a Class 4 area, there are no sound level excesses. Discussion and recommendations are provided in section below.

8.5 Discussion and Recommendations with Regard to Commercial/Industrial Noise Sources

NPC-300 encourages noise mitigation at the source if possible. In this case, source mitigation at Riverview Produce is limited. On site mitigation for ground level points of reception is generally implemented through the provision of property line noise barriers which can be quite effective for those locations along the western boundary. Noise barriers are generally ineffective however at the upper storey windows due to their height however and in this case a sufficiently high property line barrier to shield upper story windows (on the order of 20 m) is not considered to be feasible.

While the MECP does not generally accept central air conditioning or mechanical ventilation as mitigation measures for stationary noise sources per se, it is noted that in this case such measures will be provided for the residential units so that the windows can remain closed against both traffic and stationary noise.

8.5.1 Option 1 – Class 4 Designation of the Subject Lands

Request the City of Toronto to designate the subject lands as a Class 4 area. This designation provides relaxed (higher) daytime and nighttime sound level limits from that otherwise permitted in an urban area, for both indoor and outdoor areas, may be considered. A Class 4 Area permits receptor-based noise control measures (noise walls, specific construction techniques and materials, etc) to be used within a proposed new sensitive land use within the vicinity of an industrial use. Class 4 areas require formal recognition of the classification by the land use planning authority.

A Class 4 designation for selected lands on the proposed site is recommended since the mitigation measures are onerous for future dwellings facing Riverview Produce to meet Class 1 sound level limits. Mitigation to meet Class 1 limits would include high acoustic barriers for a potential outdoor living area along the west façade and no windows to sensitive spaces on the west façade and use of solid balcony parapets to shield windows to noise sensitive spaces. The lands to the south of the 450 Dufferin specifically 440 Dufferin Street have been designated as Class 4 lands.

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

1) The building and site which have been granted a Class 4 designation will require air

conditioning.

2) An additional warning clause is required to be included in the property and tenancy agreements and offers of purchase and sale for all dwelling units with a Class 4 designation:

   Type D:

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

3) Additionally, upgraded building and glazing constructions are recommended for all dwellings with a Class 4 designation. A minimum STC-35 rating for all windows into sensitive spaces along the west façade to further protect the interior spaces of the dwellings with a Class 4 designation.

With the above mitigation measures in place and a Class 4 designation for the building, the predicted sound levels due to the surrounding stationary noise sources under a worst-case operational scenario will meet or be below the Class 4 criteria at the proposed residential receptors.

8.5.2 Option 2 - Mitigation to Achieve Class 1 Limits

If a Class 4 designation is not granted by the municipality, the mitigation measures to meet Class 1 criteria are described here and are as follows.

Since at-the-source mitigation is not feasible, noise mitigation in the form of architectural design features will need to be implemented for the mixed-use/residential building. The following are the recommendations to be implemented into the design of the building.

- The west façade of the building closest to Riverview Produce would need to be redesigned to have no windows.
- If windows are expected to be located along the west façade, these windows will need to be shielded by solid glass balcony parapets. The solid glass parapet wall heights may range in height from 1.6 m on lower floors 2 to 6 and 1.4 m on the upper floors 7 to 15.

With the above mitigation measures in place, the predicted sound levels due to the surrounding stationary noise sources under a worst-case operational scenario will meet the Class 1 criteria at the proposed residential receptors.

In addition to the identified mitigation measures, the presence of the neighbouring industrial and commercial uses should be addressed through the implementation of noise warning clauses in the offers of purchase and sale and tenancy agreements for the residential units. A typical wording is as follows:

Type E:

"Purchasers and/or tenants are advised of the proximity of adjacent industrial and commercial facilities, the sound levels from the facilities may at times be audible."

Further Work

When detailed floor plans and building elevations are available, the drawings should be reviewed to ensure the architectural features for noise control to achieve Class 1 limits are included.

9 Summary

The following list and Table 10 summarize the recommendations made in this report.

Transportation Noise

1) Central air conditioning systems will be required for the proposed mixed-use/residential building.

2) Upgraded glazing constructions will be required for all the façades of the proposed building as included in Section 5.3.

3) Exterior walls of the building should be brick veneer or a masonry equivalent. Spandrel panels with an interior double-layer drywall partition behind are generally considered to be acoustically equivalent.

4) Noise warning clauses are required in the condominium documents. Some recommended clauses are provided herein.

5) A detailed noise study should be performed when detailed floor plans and elevations (indicting sizes of bedrooms/living/dining rooms and windows) are available to refine glazing requirements based on actual window to floor area ratios.

6) Tarion Builders Bulletin B19R requires that the internal design of condominium projects integrates suitable acoustic features to insulate the suites from noise from each other and amenities in accordance with the OBC, and limit the potential intrusions of mechanical and electrical services of the buildings on its residents. If B19R certification is to be sought, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising constructions, when available, to help ensure that the noise impact of the development on itself is maintained within acceptable levels.

Stationary Noise

7) To mitigation stationary noise, there are two options.

   a) Option 1: Class 4 designation is recommended for the subject site. This is the recommended option. Air conditioning and upgraded glazing construction is required for the dwellings facing the industry.

      A warning clause should be included in the property and tenancy agreements and offers of purchase and sale for the dwellings units to inform the future/occupants that the dwellings have been designated as Class 4.

   b) Option 2 Mitigation Measures to achieve Class 1 Criteria if Class 4 designation is not granted. Acoustic barriers such as solid parapet walls are recommended for the balconies of all units with western exposure. The balconies will require a solid glass parapet wall ranging in height from 1.6 m on lower floors 2 to 6 and 1.4 m on the upper floors 7 to 15.

      When detailed floor plans and building elevations are available, the noise mitigation in the form of acoustic screens for balconies, no windows along the west façade and acoustic screen for the outdoor amenity area on the second floor should be verified on the drawings.

8) Warning clauses should be included in the property and tenancy agreements and offers of purchase and sale for the dwelling units in the proposed building to inform the future

owners/occupants of the noise issues and the presence of the roadways, railway corridor and the nearby commercial/industrial uses.

The following table summarizes the recommendations made in this report.

Table 10: Summary of Noise Control Requirements and Noise Warning Clauses

Description	Acoustic Barrier	*Ventilation Requirements	Type of Warning Clause	**Upgraded Glazing Constructions (LR/BR)	Brick or Masonry Equivalent Exterior Construction	Stationary Noise+ For Class 1	Stationary Noise+ For Class 4
East facade	--	Central A/C	A, B, C, D	STC-33	--	--	--
South facade	--	Central A/C	A, B, C, D	STC-33	--	--	
West façade	1.07 m high solid parapet for rooftop outdoor amenity area	Central A/C	A, B, C, D	STC-37	✓	Architectural Design: -No windows along West Façade -solid glass parapet on balconies exposed to Riverview Produce, 1.6 m on lower floors 2 to 6 and 1.4 m on the upper floors 7 to 15	Noise warning Clause for Class 4, air conditioning of dwelling units and upgraded glazing along the west façade, STC-35.
North facade	--	Central A/C	A, B, C, D	STC-33	--	--	--

Notes:
✓ See Section 5.3
* The location, installation and sound rating of the air conditioning condensers must be compliant with MECP Guideline NPC-300, as applicable.
** Based on preliminary assumptions see Section 5.3
-- no specific requirement
OBC – Ontario Building Code Requirements
+ Stationary mitigation requirements are outlined in Section 8.5

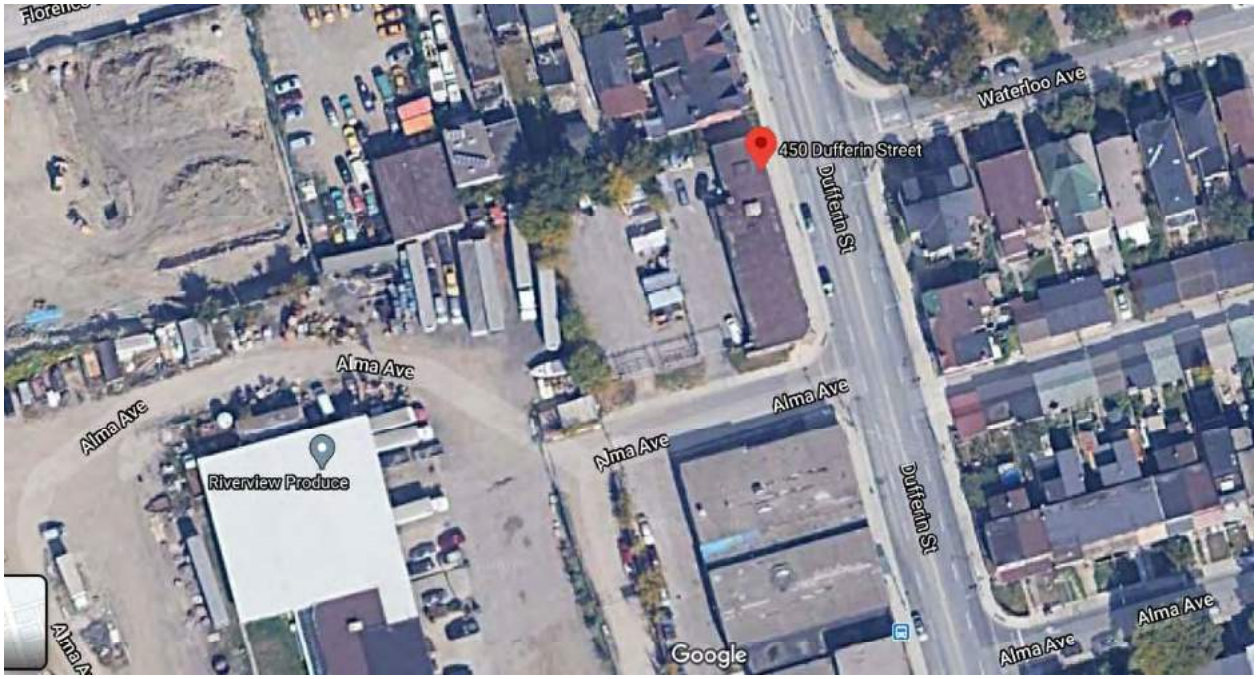
The reader is referred to the previous sections of this report where these recommendations are discussed in more detail.

9.1 Implementation

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

1. When detailed floor plans and building elevations are available, a detailed noise study should be performed to refine glazing requirements based on actual window to floor area ratios and the noise mitigation depending on the classification of the lands.

2. Prior to the issuance of occupancy permits for this development, the City's building inspector or a Professional Engineer qualified to provide acoustical engineering services in the Province of Ontario should certify that the noise control measures for the development have been properly installed and constructed.


Waterloo Ave
450 Dufferin Street
Dufferin St
Alma Ave
Alma Ave
Alma Ave
Alma Ave
Riverview Produce
Dufferin St
Alma Ave
Alma Ave
Google

NOTES:

SITE PLAN NOTES

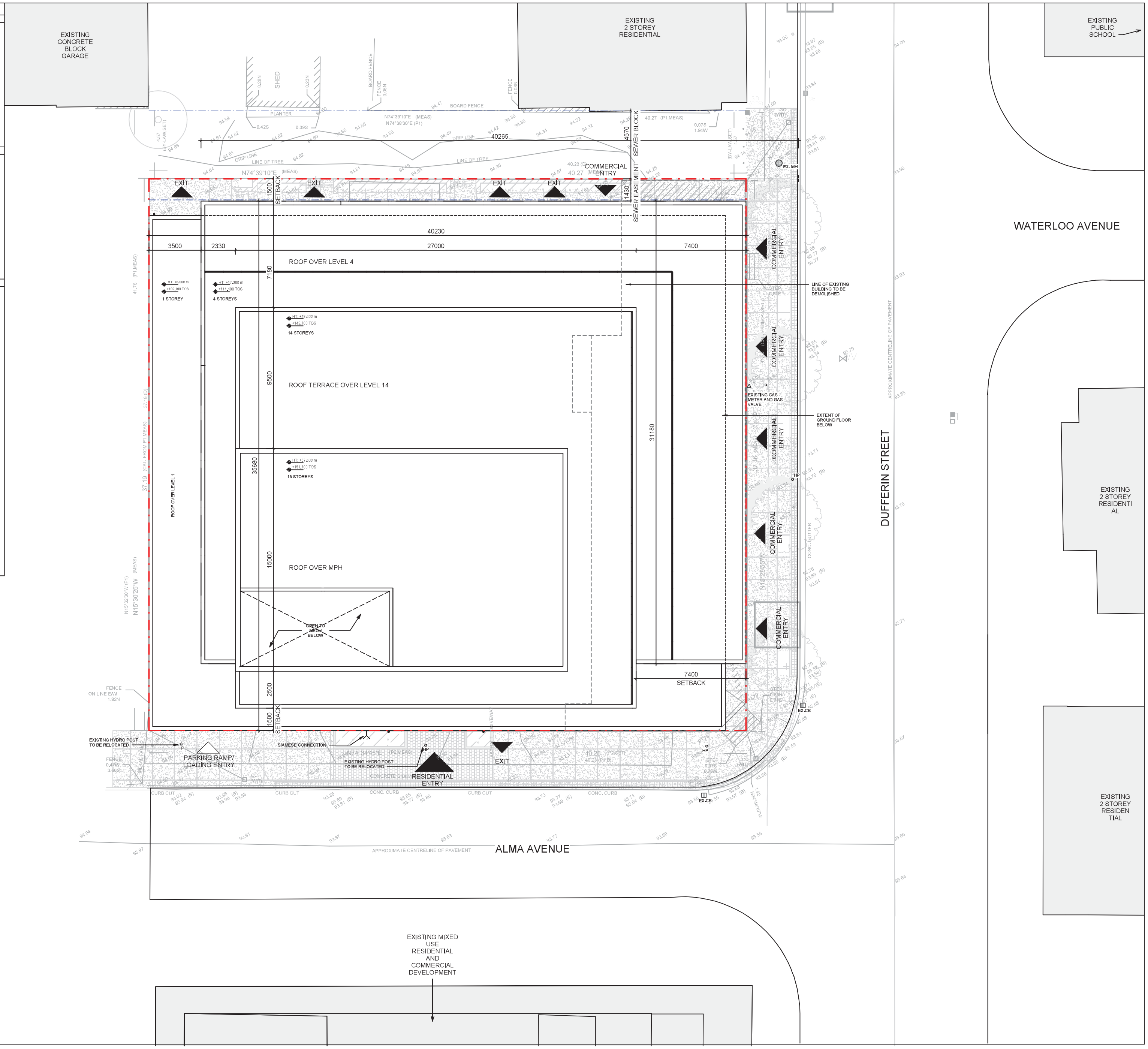
1. THE BUILDING IS TO BE SPRINKLERED.
2. RESIDENTIAL VISITOR PARKING SPACES WILL BE INDIVIDUALLY SIGNED AT THE FRONT OF EACH SPACE FOR THE USE OF RESIDENTIAL VISITORS. BUILDING MANAGEMENT SHALL PROVIDE ENFORCEMENT OF THIS ARRANGEMENT.
3. SIDEWALKS AND BOULEVARDS WITHIN THE RIGHT OF WAY TO HAVE A MINIMUM 1% AND MAXIMUM 4% SLOPE TOWARDS THE ROADWAY.
4. REFER TO SITE SERVICING DOCUMENTS FOR SEWER AND WATER SERVICE INFORMATION.
5. ANY RETAINING WALLS ARE TO BE PROFESSIONALLY ENGINEERED.
6. ALL EXISTING ACCESSES, CURB CUTS, TRAFFIC CONTROL SIGNS, ETC. ALONG THE DEVELOPMENT SITE FRONTAGES THAT ARE NO LONGER REQUIRED ARE TO BE REMOVED. THE BOULEVARD WITHIN THE PUBLIC RIGHT OF WAY, IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES ARE TO BE REINSTATED.
7. PROPOSED ACCESS TO THE RIGHT-OF-WAY/LANEWAY FOR THIS PROJECT TO BE DESIGNED IN ACCORDANCE WITH CITY STANDARD NO. T310-050-1 FOR COMBINED CURB AND SIDEWALK VEHICULAR ENTRANCES.
8. NO SPEED BUMPS SHALL BE INSTALLED ON ANY DESIGNATED FIRE ROUTE.
9. MAX. POROSITY OF ALL GROUND LEVEL VENTILATION GRATES MUST BE 20mm X 20mm PER TORONTO GREEN STANDARDS.
10. ALL EXTERIOR LIGHT FIXTURES TO BE 'DARK SKY' COMPLIANT.

UTILITY/SERVICES NOTES

1. THE METHOD OF INSTALLATION FOR THE PROPOSED SERVICE CONNECTIONS WILL BE AT THE DISCRETION OF TORONTO WATER.
2. EXISTING CONNECTIONS NO LONGER IN USE SHALL BE DISCONNECTED BY TORONTO WATER AT THE OWNER'S COST.
3. THE LOCATION OF THE WATER METER SHALL BE TO TORONTO WATER'S SATISFACTION."
4. THE OWNER IS REQUIRED TO INSTALL AND MAINTAIN A PREMISE ISOLATION DEVICE FOR ALL APPLICABLE WATER SERVICES IN ACCORDANCE WITH THE TORONTO MUNICIPAL CODE, CHAPTER 851 WATER SUPPLY, THE BUILDING CODE AND CSA B64 SERIES STANDARDS.
5. THE BUILDING'S STORM AND SANITARY SYSTEM MUST BE DESIGNED TO BE ABLE TO OPERATE UNDER MUNICIPAL SURCHARGE CONDITIONS.
6. BE ADVISED THAT SHOULD ANY PARTY, INCLUDING THE APPLICANT OR ANY SUBSEQUENT OWNER, APPLY FOR MORE THAN ONE CONDOMINIUM CORPORATION ENCOMPASSING ANY OR ALL OF THIS DEVELOPMENT OR MAKE AN APPLICATION THAT RESULTS IN A LAND DIVISION, STAFF MAY REQUIRE LEGAL ASSURANCES, INCLUDING BUT NOT LIMITED TO EASEMENTS, WITH RESPECT TO THE APPROVED SERVICES. SUCH ASSURANCES WILL BE DETERMINED AT THE TIME OF APPLICATION FOR CONDOMINIUM APPROVAL.

LOADING NOTES

1. TYPE G LOADING SPACE AND ADJACENT STAGING PAD HAVE VERTICAL CLEARANCE OF MIN 6.1 METERS, OVERHEAD DOOR TO LOADING SPACE WILL HAVE MIN 4.4 METER HEIGHT. 2.1M DEEP STAGING AREA DIRECTLY IN FRONT OF THE LOADING AREA TO HAVE MIN. VERTICAL CLEARANCE OF 6.1M.
2. TYPE G LOADING SPACE WILL BE SHARED BETWEEN RESIDENTIAL AND NON-RESIDENTIAL USES. NON-RESIDENTIAL COMPONENT WILL ONLY SCHEDULE USE OF THE TYPE G LOADING SPACE ON DIFFERENT DAYS FROM THE COLLECTION DAYS OF THE RESIDENTIAL COMPONENT TO ENSURE THAT THE TYPE G LOADING SPACE WILL BE VACANT FOR CITY WASTE COLLECTION.
3. NON-RESIDENTIAL WASTE WILL BE LABELLED AND STORED SEPARATELY FROM THE BINS FOR RESIDENTIAL WASTE.
4. TYPE G LOADING SPACE WILL BE LEVEL (+/- 2%) AND CONSTRUCTED WITH MIN 200mm THICK CONCERETE SLAB
5. A WARNING SYSTEM WILL BE PROVIDED, ALERTING DRIVERS WHEN EXITING THE UNDERGROUND PARKING GARAGE THAT LARGE TRUCKS ARE MANOEUVRING WITHIN THE PUBLIC LANE;
6. ALL ACCESS DRIVEWAYS TO BE USED BY THE GARBAGE COLLECTION VEHICLE WILL HAVE:
   a) MAXIMUM GRADIENT OF 8%;
   b) MINIMUM VERTICAL CLEARANCE OF 4.4 METRES THROUGHOUT;
   c) MINIMUM WIDTH OF 4.5 METRES THROUGHOUT; AND,
   d) 6 METRES WIDE AT POINT OF INGRESS AND EGRESS.
7. 'NO PARKING' SIGNS TO BE PROVIDED AND MAINTAINED ADJACENT TO THE LOADING SPACE.
8. CONSTRUCT ANY TYPE G LOADING SPACE AND ALL DRIVEWAYS AND PASSAGEWAYS PROVIDING ACCESS THERETO, TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, INCLUDING ALLOWANCE FOR CITY OF TORONTO BULK LIFT AND REAR BIN LOADING WITH IMPACT FACTORS WHERE THEY ARE TO BE BUILT AS SUPPORTED STRUCTURES.
9. THE RESIDENTIAL SOLID WASTE ROOM WILL ACCOMMODATE GARBAGE, RECYCLING AND ORGANICS FOR THE RESIDENTIAL COMPONENT OF THE BUILDING VIA USE OF A TRISORTER.
10. BULK WASTE HAS $10m^2$ DESIGNATED FLOOR AREA.
11. "COLLECTION OF WASTE MATERIALS FOR THIS DEVELOPMENT WILL TAKE PLACE IN A PARTIALLY ENCLOSED LOADING BAY. AN ON-SITE STAFF PERSON IS RESPONSIBLE FOR MOVING THE BINS FROM THE GARBAGE STORAGE SPACE TO THE COLLECTION POINT AND PROVIDE VEHICULAR DIRECTIVES TO THE COLLECTION VEHICLE OPERATOR AS REQUIRED."
12. THIS BUILDING IS DESIGNED WITH A TYPE G LOADING SPACE. A FLASHING WARNING LIGHT SYSTEM AND / OR APPROPRIATE SIGNAGE ADJACENT TO THE SPACE, AT NO COST TO THE CITY, WILL BE IN PLACE AND ACTIVATED DURING COLLECTION AND REMAIN ACTIVE UNTIL THE VEHICLE EXITS THE SITE. REFER TO TRAFFIC CONSULTANT REPORT FOR SWEPT PATH.
13. SOLID WASTE MANAGEMENT TO BE NOTIFIED UPON COMPLETION OF THE DEVELOPMENT AND SHOULD PUBLIC WASTE COLLECTION BE USED, ALL NECESSARY APPLICATION AND WAIVER FORMS TO BE COMPLETED PRIOR TO COMMENCEMENT OF CITY REFUSE COLLECTION.
14. NON-RESIDENTIAL GARBAGE WILL BE COLLECTED BY LISCENSED PRIVATE WASTE MANAGEMENT COMPANY.
15. REFUSE GENERATED BY THE NON-RESIDENTIAL USE MUST BE STORED ON SITE, IN RODENT PROOF CONTAINERS IN ACCORDANCE WITH CHAPTER 841 OF THE MUNICIPAL CODE, "WASTE COLLECTION, COMMERCIAL PROPERTIES".



Prior to commencement of the Work the Contractor shall verify all drawing dimensions, datums, and levels with the Contract Documents and with the conditions on site; ascertain any discrepancies between the site and the Contract Documents, and bring these items to the attention of the Architect for clarification.

superkul
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LEGEND

▲	PRINCIPAL ENTRY
▽△	VEHICULAR ENTRY/EXIT
EX. MH	EXISTING MANHOLE
EX. CB	EXISTING CATCH BASIN
MH	MANHOLE
CB	CATCH BASIN
HP	EXISTING HYROPOLE
HLP	EXISTING HYRO LIGHT POLE
86.95	GEODETIC ELEVATION (ESTABLISHED GRADE = XX.XX)
78.20	EXISTING GRADE ELEVATION
	SIAMESE CONNECTION
	FIRE HYDRANT
	BARRIER FREE TURNING RADIUS
	PROPERTY LINE
FFE	FINISHED FLOOR ELEVATION
TOP	TOP OF PARAPET
TOR	TOP OF ROOF
TOS	TOP OF STRUCTURE
TOFF	TOP OF FINISHED PAVER
TGS	TORONTO GREEN STANDARDS
TPZ	TREE PROTECTION ZONE

NOTES:

SURVEY INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF PART OF LOT 8 REGISTERED PLAN 294 YORK, CITY OF TORONTO"

BY R. AVIS SURVEYING INC.

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

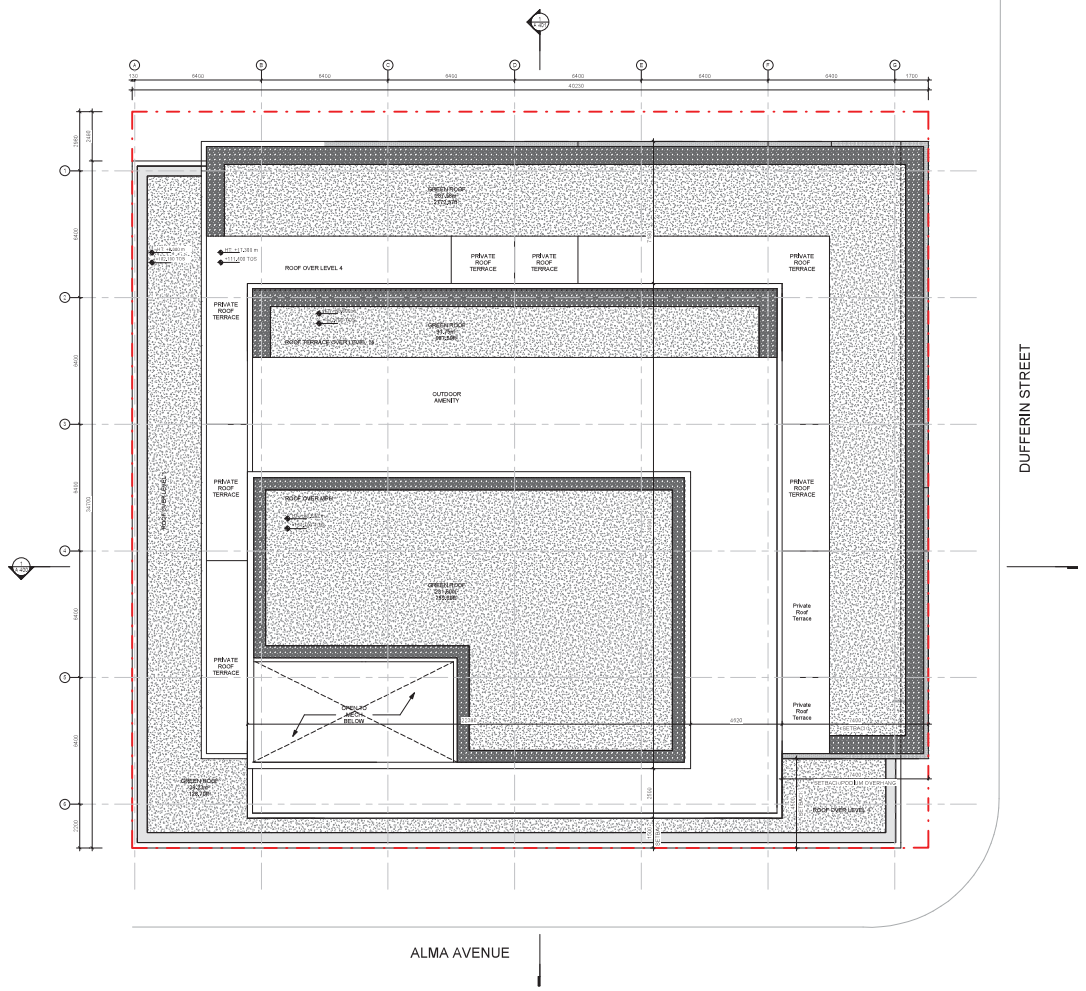
450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
SITE PLAN

Project No. 2214 | Scale 1 : 100

Drawing No.
A 100

2022-11-04 4:05:28 PM
C:\Users\laura\Documents\2214_450 Dufferin_new_lauraJ4QW8.rvt



superkul

101 – 35 Golden Avenue
Toronto, ON M6R 2J5

t> 416.596.0700
f> 416.533.6966
www.superkul.ca

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:

ROOF PLAN

Project No. 2214 | Scale 1 : 100

Drawing No.

A 210

2022-11-04 12:09:00 PM
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Figure 4: Background Sound Levels

Figure 5: Stationary Noise Sources and Daytime Noise Contours

APPENDIX A

GO Transit Principal Mainline Requirements

PRINCIPAL MAIN LINE REQUIREMENTS FOR NEW DEVELOPMENT

A. Safety setback of dwellings from the railway rights-of-way to be a minimum of 30 metres in conjunction with a safety berm. The safety berm shall be adjoining and parallel to the railway rights-of-way with returns at the ends, 2.5 metres above grade at the property line, with side slopes not steeper than 2.5 to 1.

B. Noise attenuation barrier shall be adjoining and parallel to the railway rights-of-way, having returns at the ends, and a minimum total height of 5.5 metres above top-of-rail. Acoustic fence to be constructed without openings and of a durable material weighing not less than 20 kg. per square metre of surface area. Subject to the review of the noise report, GO Transit may consider other measures recommended by an approved Noise Consultant.

C. Ground-borne vibration transmission to be evaluated in a report through site testing to determine if dwellings within 75 metres of the railway rights-of-way will be impacted by vibration conditions in excess of 0.14 mm/sec RMS between 4 Hz and 200 Hz. The monitoring system should be capable of measuring frequencies between 4 Hz and 200 Hz, $\pm$ 3 dB with an RMS averaging time constant of 1 second. If in excess, isolation measures will be required to ensure living areas do not exceed 0.14 mm/sec RMS on and above the first floor of the dwelling.

D. The Owner shall install and maintain a chain link fence of minimum 1.83 metre height along the mutual property line.

E. The following clause should be inserted in all development agreements, offers to purchase, and agreements of Purchase and Sale or Lease of each dwelling unit within 300m of the railway right-of-way.

> **Warning:** 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.

F. Any proposed alterations to the existing drainage pattern affecting the railway right-of-way must receive prior concurrence from GO Transit and be substantiated by a drainage report to the satisfaction of GO Transit.

G. The Owner shall through restrictive covenants to be registered on title and all agreements of purchase and sale or lease provide notice to the public that the safety berm, fencing and vibration isolation measures implemented are not to be tampered with or altered and further that the Owner shall have sole responsibility for and shall maintain these measures to the satisfaction of GO Transit.

H. The Owner enter into an Agreement stipulating how GO Transit's concerns will be resolved and will pay GO Transit's reasonable costs in preparing and negotiating the agreement.

I. The Owner may be required to grant GO Transit an environmental easement for operational emissions, registered on title against the subject property in favour of GO.

APPENDIX B

Rail Traffic Data

Sheeba Paul

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: October 12, 2022 12:53 PM
To: Sheeba Paul
Subject: RE: rail data confirmation

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sheeba,

Further to your request dated October 12, 2022, The subject lands (Queen St and Dufferin St in Toronto) are located within 300 metres of the Metrolinx Weston Subdivision (which carries Kitchener GO, Milton GO, Barrie GO and UP Express rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and 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 756 trains. The planned detailed trip breakdown is listed below:

Kitchener GO Service

	1 Diesel Locomotive	2 Diesel Locomotives		1 Diesel Locomotive	2 Diesel Locomotives
Day (0700-2300)	92	36	Night (2300-0700)	22	2

Barrie GO Service

	1 Electric Locomotive	2 Electric Locomotives		1 Electric Locomotive	2 Electric Locomotives
Day (0700-2300)	172	24	Night (2300-0700)	36	0

Milton GO Service

	1 Diesel Locomotive		1 Diesel Locomotive
Day (0700-2300)	38	Night (2300-0700)	6

It's anticipated that UP Express rail service at this location will be electrified and comprised of up to three (3) passenger cars. The planned detailed trip breakdown is listed below:

UP Express

	1 Electric Locomotive		1 Electric Locomotive
Day (0700-2300)	256	Night (2300-0700)	72

The current track design speed near the subject lands is 75 mph (121 km/h).

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

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

submitted their bids to Infrastructure Ontario and Metrolinx for evaluation and contract award. GO Expansion construction will get underway in late 2022 or 2023.
However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel- track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.
Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.
Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

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

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

Regards,
Tara

Tara Kamal Ahmadi
Junior Analyst
Third Party Projects Review, Capital Projects Group
Metrolinx | 20 Bay Street | Suite 600 | Toronto | Ontario | M5J 2W3

METROLINX

From: Sheeba Paul <spaul@hgcengineering.com>
Sent: October 12, 2022 11:19 AM
To: Rail Data Requests <RailDataRequests@metrolinx.com>
Subject: re: rail data confirmation

Hello

I am looking for the latest Metrolinx data near Queen St and Dufferin Street in Toronto. I have the attached data in our files.
Is the data still current? If it is not current, please provide updated rail data.

Thank you.

Ms. Sheeba Paul, MEng, PEng
Senior Associate

HGC Engineering NOISE | VIBRATION | ACOUSTICS
Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044 e: spaul@hgcengineering.com
Visit our website – www.hgcengineering.com **Follow Us –** LinkedIn | Twitter | YouTube

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 :*	HGC Engineering 2000 Argentia Rd Plaza, Suite 203 Mississauga ON L5N 1P7	*Project :*	WTN-2.46- Queen Street W, Toronto ON
Att'n:	Bryan Kurzman	*Routing:*	bkurzman@hgcengineering.com
From: *Expéditeur :*	Umair Naveed	*Date:*	2022/05/13
Cc:	Adjacent Development CN via e-mail		

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

Re: Train Traffic Data – CN Weston Subdivision near Queen Street West in Toronto, 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 permits.gld@cn.ca.

Sincerely,

Umair Naveed

Umair Naveed
Project Officer Public Works - Eastern Canada
Permits.gld@cn.ca

Dear Bryan:

Re: Train Traffic Data – CN Weston Subdivision near Queen St in Toronto, ON

The following is provided in response to Bryan's 2022/04/11 request for information regarding rail traffic in the vicinity of Queen St. in Toronto at approximately Mile 2.46 on CN's Weston 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	0	140	15	4
Way Freight	1	25	15	4
Passenger	5	10	75	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	0	140	15	4
Way Freight	0	25	15	4
Passenger	0	10	75	2

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

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There is one (1) at-grade crossing in the immediate vicinity of the study area at Mile 1.59 (Strachan Ave). Anti-whistling bylaws are 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 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,

Umair Naveed
Project Officer Public Works - Eastern Canada
Permits.gld@cn.ca

APPENDIX C

Road Traffic Data

City of Toronto - Traffic Safety Unit

Turning Movement Count Summary Report

DUFFERIN ST AT QUEEN ST (PX 1329)

Survey Date: 2020-Feb-19 (Wednesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	NORTHBOUND Exits	Left	Thru	Right	Total	EASTBOUND Exits	Left	Thru	Right	Total	SOUTHBOUND Exits	Left	Thru	Right	Total	WESTBOUND Exits	Left	Thru	Right	Total		Peds	Bike	Other
08:15-09:15	CAR	309	23	246	81	350	589	48	473	74	595	567	35	342	25	402	292	151	244	15	410	N	132	7	0
	TRK	55	1	35	20	56	96	19	63	8	90	78	13	57	4	74	22	13	17	1	31	S	176	0	0
AM PEAK	BUS	19	1	18	1	20	15	1	14	1	16	19	0	15	0	15	17	3	16	0	19	E	6	1	0
																						W	175	29	0
	TOTAL:	**383**	**25**	**299**	**102**	**426**	**700**	**68**	**550**	**83**	**701**	**664**	**48**	**414**	**29**	**491**	**331**	**167**	**277**	**16**	**460**				
17:00-18:00	CAR	648	39	557	137	733	490	63	308	62	433	487	45	308	45	398	469	117	385	28	530	N	290	6	0
	TRK	41	3	36	9	48	32	4	22	4	30	37	1	23	5	29	39	10	31	1	42	S	286	4	0
PM PEAK	BUS	14	0	14	0	14	9	0	9	0	9	12	0	12	1	13	13	0	12	0	12	E	159	15	0
																						W	189	12	0
	TOTAL:	**703**	**42**	**607**	**146**	**795**	**531**	**67**	**339**	**66**	**472**	**536**	**46**	**343**	**51**	**440**	**521**	**127**	**428**	**29**	**584**				
OFF HR AVG	CAR	366	32	312	95	439	331	35	209	52	296	432	27	257	34	318	245	123	179	19	321	N	150	5	0
	TRK	75	5	58	16	79	55	11	32	10	53	80	7	52	5	64	40	18	30	6	54	S	172	2	0
	BUS	18	0	18	0	18	9	0	9	0	9	18	0	18	0	18	9	0	9	0	9	E	41	4	0
																						W	118	12	0
	TOTAL:	**459**	**37**	**388**	**111**	**536**	**395**	**46**	**250**	**62**	**358**	**530**	**34**	**327**	**39**	**400**	**294**	**141**	**218**	**25**	**384**				
07:30-09:30	CAR	630	42	494	175	711	1,068	97	829	125	1,051	1,107	64	677	48	789	518	305	428	39	772	N	223	10	0
	TRK	103	3	70	38	111	175	29	120	19	168	142	17	99	11	127	49	24	35	4	63	S	291	2	0
2 HR AM	BUS	36	1	35	3	39	29	1	25	1	27	40	1	36	1	38	31	3	29	0	32	E	10	2	0
																						W	268	48	0
	TOTAL:	**769**	**46**	**599**	**216**	**861**	**1,272**	**127**	**974**	**145**	**1,246**	**1,289**	**82**	**812**	**60**	**954**	**598**	**332**	**492**	**43**	**867**				
16:00-18:00	CAR	1,159	66	1,002	259	1,327	876	109	549	118	776	942	68	612	86	766	848	212	696	48	956	N	480	13	0
	TRK	89	7	74	16	97	63	12	42	10	64	83	5	51	5	61	79	22	67	3	92	S	530	4	0
2 HR PM	BUS	29	0	29	0	29	25	0	24	1	25	30	1	28	1	30	23	1	22	0	23	E	234	21	0
																						W	337	19	0
	TOTAL:	**1,277**	**73**	**1,105**	**275**	**1,453**	**964**	**121**	**615**	**129**	**865**	**1,055**	**74**	**691**	**92**	**857**	**950**	**235**	**785**	**51**	**1,071**				
07:30-18:00	CAR	3,253	234	2,743	814	3,791	3,268	346	2,215	449	3,010	3,774	239	2,315	271	2,825	2,343	1,010	1,838	164	3,012	N	1,303	42	0
	TRK	490	29	377	119	525	457	84	288	70	442	544	50	357	36	443	287	117	222	29	368	S	1,507	14	0
8 HR SUM	BUS	137	1	136	4	141	90	1	84	3	88	141	2	134	2	138	91	4	88	0	92	E	409	38	0
																						W	1,076	113	0
	TOTAL:	**3,880**	**264**	**3,256**	**937**	**4,457**	**3,815**	**431**	**2,587**	**522**	**3,540**	**4,459**	**291**	**2,806**	**309**	**3,406**	**2,721**	**1,131**	**2,148**	**193**	**3,472**				

Total 8 Hour Vehicle Volume: 14,875

Total 8 Hour Bicycle Volume: 207

Total 8 Hour Intersection Volume: 15,082

Comment:

Printed On: 10 Jul, 2020 2:53:57PM

City of Toronto - Traffic Safety Unit

Intersection Detailed 15 Minutes Movement Report

DUFFERIN ST AT QUEEN ST (PX 1329) **Survey Date:** Feb-19-2020 (Wednesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
07:45	CARS	67	25	2	66	4	14	88	0	7	48	4	36
	DUALS	5	5	1	16	4	0	10	0	3	6	1	4
	BUSES	3	0	0	2	0	0	4	0	1	3	0	0
	BIKE (OTHER)		0	(0)		3	(0)		1	(0)	0	(0)	
	PEDS	**North Side**		16	**East Side**		2	**South Side**		15	**West Side**		16
08:00	CARS	59	30	1	88	14	7	84	3	6	48	9	51
	DUALS	8	1	0	12	5	4	7	1	0	6	0	0
	BUSES	5	0	0	4	0	0	5	1	0	3	0	0
	BIKE (OTHER)		1	(0)		7	(0)		0	(0)	1	(0)	
	PEDS	**North Side**		25	**East Side**		0	**South Side**		36	**West Side**		26
08:15	CARS	56	13	7	101	17	15	85	6	5	52	7	41
	DUALS	7	7	0	12	1	3	13	3	0	3	1	2
	BUSES	4	2	0	3	0	0	7	0	0	3	0	0
	BIKE (OTHER)		1	(0)		6	(0)		0	(0)	0	(0)	
	PEDS	**North Side**		21	**East Side**		1	**South Side**		32	**West Side**		20
08:30	CARS	58	11	10	107	14	12	85	4	5	67	7	37
	DUALS	9	7	0	14	1	8	11	0	1	5	0	4
	BUSES	6	0	1	5	1	0	3	0	0	4	0	2
	BIKE (OTHER)		0	(0)		8	(0)		1	(0)	0	(0)	
	PEDS	**North Side**		22	**East Side**		3	**South Side**		48	**West Side**		32
08:45	CARS	67	25	6	98	12	18	88	7	13	70	2	35
	DUALS	9	7	0	18	1	6	11	1	5	3	1	4
	BUSES	4	1	0	3	0	0	4	0	0	3	0	1
	BIKE (OTHER)		0	(0)		9	(0)		2	(0)	1	(0)	
	PEDS	**North Side**		45	**East Side**		0	**South Side**		48	**West Side**		53
09:00	CARS	56	26	6	136	20	9	82	4	13	52	4	38
	DUALS	6	4	0	17	2	3	16	1	3	5	0	1
	BUSES	6	0	0	2	0	0	3	0	0	3	0	0
	BIKE (OTHER)		0	(0)		3	(0)		2	(0)	0	(0)	
	PEDS	**North Side**		35	**East Side**		2	**South Side**		41	**West Side**		36
09:15	CARS	65	19	1	132	28	9	87	10	4	55	2	41
	DUALS	11	2	1	14	4	2	19	2	4	4	0	4
	BUSES	2	0	0	4	0	1	5	0	0	6	0	0
	BIKE (OTHER)		0	(0)		9	(0)		2	(0)	0	(0)	
	PEDS	**North Side**		30	**East Side**		1	**South Side**		39	**West Side**		54

Printed On: 10 Jul, 2020 2:54:51PM

Intersection Detailed 15 Minutes Movement Report

DUFFERIN ST AT QUEEN ST (PX 1329) **Survey Date:** Feb-19-2020 (Wednesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
09:30	CARS	66	26	9	101	16	13	78	14	11	36	4	26
	DUALS	15	5	1	17	1	3	12	3	1	3	1	5
	BUSES	5	0	0	2	0	0	5	0	0	4	0	0
	BIKE (OTHER)		0	(0)		3	(0)		2	(0)	0	(0)	
	PEDS	**North Side**		29	**East Side**		1	**South Side**		32	**West Side**		31
10:15	CARS	70	16	9	67	16	12	74	8	5	45	2	33
	DUALS	11	4	0	10	4	3	8	3	5	6	1	3
	BUSES	5	0	0	3	0	0	7	0	0	4	0	0
	BIKE (OTHER)		0	(0)		5	(0)		0	(0)	1	(0)	
	PEDS	**North Side**		21	**East Side**		0	**South Side**		37	**West Side**		18
10:30	CARS	75	21	1	49	14	13	70	6	10	31	3	21
	DUALS	11	4	4	8	3	2	18	1	1	5	1	2
	BUSES	4	0	0	2	0	0	4	0	0	2	0	0
	BIKE (OTHER)		0	(0)		3	(0)		1	(0)	0	(0)	
	PEDS	**North Side**		31	**East Side**		0	**South Side**		33	**West Side**		33
10:45	CARS	68	14	8	71	16	13	56	11	9	41	4	50
	DUALS	22	1	0	9	1	4	12	2	0	7	1	2
	BUSES	6	0	0	2	0	0	5	0	0	3	0	0
	BIKE (OTHER)		0	(0)		3	(0)		0	(0)	1	(0)	
	PEDS	**North Side**		30	**East Side**		0	**South Side**		39	**West Side**		28
11:00	CARS	67	25	4	50	9	6	50	8	9	42	6	43
	DUALS	19	5	3	7	3	0	10	0	3	6	2	6
	BUSES	3	0	0	2	0	0	3	0	0	2	0	0
	BIKE (OTHER)		1	(0)		3	(0)		1	(0)	1	(0)	
	PEDS	**North Side**		35	**East Side**		5	**South Side**		30	**West Side**		33
11:15	CARS	83	24	17	62	15	6	63	8	6	36	4	24
	DUALS	15	4	1	9	4	7	11	0	1	11	0	6
	BUSES	3	1	0	1	0	0	3	0	0	2	0	0
	BIKE (OTHER)		0	(0)		2	(0)		1	(0)	0	(0)	
	PEDS	**North Side**		31	**East Side**		8	**South Side**		32	**West Side**		25
11:30	CARS	85	25	5	43	10	5	74	8	4	48	1	26
	DUALS	12	4	1	11	2	4	7	0	1	12	4	4
	BUSES	5	0	0	1	0	0	4	0	0	2	0	0
	BIKE (OTHER)		0	(0)		3	(0)		1	(0)	1	(0)	
	PEDS	**North Side**		38	**East Side**		12	**South Side**		30	**West Side**		23

Intersection Detailed 15 Minutes Movement Report

DUFFERIN ST AT QUEEN ST (PX 1329) **Survey Date:** Feb-19-2020 (Wednesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
11:45	CARS	68	24	5	60	14	4	73	11	9	33	7	20
	DUALS	13	5	1	5	2	3	12	2	3	6	1	3
	BUSES	3	0	0	7	0	0	4	0	0	1	0	0
	BIKE (OTHER)		0	(0)		5	(0)		2	(0)	0	(0)	
	PEDS	**North Side**		36	**East Side**		9	**South Side**		46	**West Side**		27
12:00	CARS	73	26	11	46	11	10	65	8	9	45	8	30
	DUALS	17	6	1	12	4	3	18	2	3	9	2	3
	BUSES	3	0	0	0	0	0	3	0	0	3	0	0
	BIKE (OTHER)		0	(0)		3	(0)		1	(0)	2	(0)	
	PEDS	**North Side**		27	**East Side**		6	**South Side**		30	**West Side**		32
13:15	CARS	68	22	6	46	12	16	76	4	6	47	3	22
	DUALS	16	6	0	15	3	2	20	1	0	9	2	6
	BUSES	3	0	0	1	0	0	4	0	0	2	0	0
	BIKE (OTHER)		0	(0)		3	(0)		2	(0)	1	(0)	
	PEDS	**North Side**		40	**East Side**		14	**South Side**		68	**West Side**		40
13:30	CARS	80	30	10	68	13	13	64	10	5	40	4	25
	DUALS	12	5	0	10	2	3	17	1	1	7	2	5
	BUSES	5	0	0	3	0	0	5	0	0	2	0	0
	BIKE (OTHER)		1	(0)		3	(0)		2	(0)	0	(0)	
	PEDS	**North Side**		35	**East Side**		20	**South Side**		57	**West Side**		21
13:45	CARS	66	23	8	34	17	8	67	3	4	34	8	32
	DUALS	21	5	1	5	4	4	13	0	1	7	0	4
	BUSES	3	0	0	1	0	0	6	0	0	3	0	0
	BIKE (OTHER)		1	(0)		4	(0)		2	(0)	2	(0)	
	PEDS	**North Side**		51	**East Side**		19	**South Side**		53	**West Side**		51
14:00	CARS	80	30	8	48	15	4	66	13	3	57	4	29
	DUALS	11	1	0	6	2	2	14	1	0	7	3	6
	BUSES	6	0	0	4	0	0	4	0	0	1	0	0
	BIKE (OTHER)		2	(0)		1	(0)		1	(0)	1	(0)	
	PEDS	**North Side**		48	**East Side**		19	**South Side**		35	**West Side**		34
14:15	CARS	78	28	8	49	9	8	62	11	8	57	8	28
	DUALS	17	3	4	6	1	1	14	1	2	8	1	8
	BUSES	7	0	0	2	0	0	3	0	0	2	0	0
	BIKE (OTHER)		1	(0)		1	(0)		1	(0)	1	(0)	
	PEDS	**North Side**		40	**East Side**		10	**South Side**		47	**West Side**		20

Intersection Detailed 15 Minutes Movement Report

DUFFERIN ST AT QUEEN ST (PX 1329) **Survey Date:** Feb-19-2020 (Wednesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
14:30	CARS	81	25	12	47	14	3	59	11	4	39	6	29
	DUALS	12	3	1	2	3	1	13	2	1	8	1	7
	BUSES	4	0	0	2	0	0	5	0	0	3	0	0
	BIKE (OTHER)		0	(0)		2	(0)		0	(0)	0	(0)	
	PEDS	**North Side**		55	**East Side**		12	**South Side**		46	**West Side**		34
14:45	CARS	92	25	7	45	7	10	58	11	7	61	4	43
	DUALS	13	6	1	7	1	2	11	2	5	4	0	5
	BUSES	5	0	0	2	0	0	7	0	0	3	0	0
	BIKE (OTHER)		1	(0)		3	(0)		1	(0)	3	(0)	
	PEDS	**North Side**		41	**East Side**		18	**South Side**		63	**West Side**		27
15:00	CARS	113	22	7	52	14	9	49	6	9	58	5	38
	DUALS	11	3	1	4	2	2	9	2	1	8	1	1
	BUSES	7	0	0	2	1	0	3	0	0	2	0	0
	BIKE (OTHER)		1	(0)		2	(0)		3	(0)	1	(0)	
	PEDS	**North Side**		41	**East Side**		13	**South Side**		40	**West Side**		25
16:15	CARS	104	28	5	46	19	13	93	9	4	70	4	26
	DUALS	13	2	0	4	1	0	12	0	1	10	1	3
	BUSES	3	0	0	6	0	0	4	0	1	3	0	0
	BIKE (OTHER)		0	(0)		2	(0)		2	(0)	1	(0)	
	PEDS	**North Side**		42	**East Side**		18	**South Side**		69	**West Side**		33
16:30	CARS	101	27	8	68	12	11	72	11	8	85	6	20
	DUALS	7	2	2	7	3	3	7	0	2	12	0	4
	BUSES	3	0	0	2	0	0	4	0	0	2	0	1
	BIKE (OTHER)		0	(0)		0	(0)		2	(0)	0	(0)	
	PEDS	**North Side**		61	**East Side**		27	**South Side**		64	**West Side**		21
16:45	CARS	126	33	9	60	13	6	67	12	6	76	7	28
	DUALS	10	2	1	5	0	4	3	0	1	5	1	3
	BUSES	5	0	0	3	0	0	6	0	0	1	0	0
	BIKE (OTHER)		0	(0)		1	(0)		2	(0)	3	(0)	
	PEDS	**North Side**		49	**East Side**		16	**South Side**		51	**West Side**		46
17:00	CARS	114	34	5	67	12	16	72	9	5	80	3	21
	DUALS	8	1	1	4	2	1	6	0	0	9	0	2
	BUSES	4	0	0	4	1	0	2	0	0	4	0	0
	BIKE (OTHER)		0	(0)		4	(0)		1	(0)	2	(0)	
	PEDS	**North Side**		38	**East Side**		14	**South Side**		60	**West Side**		48

City of Toronto - Traffic Safety Unit

Intersection Detailed 15 Minutes Movement Report

DUFFERIN ST AT QUEEN ST (PX 1329) **Survey Date:** Feb-19-2020 (Wednesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
17:15	CARS	160	31	11	72	9	12	80	12	9	100	5	23
	DUALS	13	2	1	5	1	1	7	3	0	11	0	3
	BUSES	3	0	0	3	0	0	3	0	0	1	0	0
	BIKE (OTHER)		1	(0)		3	(0)		2	(0)	3	(0)	
	PEDS	**North Side**		55	**East Side**		28	**South Side**		67	**West Side**		42
17:30	CARS	142	39	6	86	18	15	83	12	9	111	6	49
	DUALS	7	4	1	7	0	1	4	1	0	9	1	3
	BUSES	4	0	0	2	0	0	3	1	0	2	0	0
	BIKE (OTHER)		0	(0)		4	(0)		2	(0)	2	(0)	
	PEDS	**North Side**		100	**East Side**		40	**South Side**		69	**West Side**		59
17:45	CARS	131	33	12	73	21	14	76	8	12	82	12	18
	DUALS	9	1	0	4	2	1	4	1	1	5	0	3
	BUSES	3	0	0	2	0	0	3	0	0	5	0	0
	BIKE (OTHER)		3	(0)		2	(0)		0	(0)	4	(0)	
	PEDS	**North Side**		59	**East Side**		41	**South Side**		83	**West Side**		46
18:00	CARS	124	34	10	77	14	22	69	13	15	92	5	27
	DUALS	7	2	1	6	1	1	8	0	0	6	0	1
	BUSES	4	0	0	2	0	0	3	0	0	4	0	0
	BIKE (OTHER)		0	(0)		3	(0)		2	(0)	6	(0)	
	PEDS	**North Side**		76	**East Side**		50	**South Side**		67	**West Side**		42

APPENDIX D

Sample Stamson 5.04 Output

```
STAMSON 5.0        NORMAL REPORT        Date: 14-11-2022 10:38:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: east.te              Time Period: Day/Night 16/8 hours
Description:   Daytime and nighttime sound levels at East façade facing
Dufferin St

Road data, segment # 1: Dufferin (day/night)
-----------------------------------------------
Car traffic volume  : 20409/2268  veh/TimePeriod  *
Medium truck volume :   616/68    veh/TimePeriod  *
Heavy truck volume  :   968/108   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  17726
    Percentage of Annual Growth        :   2.50
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   2.80
    Heavy Truck  % of Total Volume     :   4.40
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Dufferin (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  45.00 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Dufferin (day)
-----------------------------------

Source height = 1.45 m

ROAD (0.00 + 69.60 + 0.00) = 69.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     90   0.00  69.60   0.00   0.00   0.00   0.00   0.00   0.00
69.60
-------------------------------------------------------------------------
---

Segment Leq : 69.60 dBA

Total Leq All Segments: 69.60 dBA
```

```
Results segment # 1: Dufferin (night)
-------------------------------------

Source height = 1.45 m

ROAD (0.00 + 63.08 + 0.00) = 63.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     90   0.00  63.08   0.00   0.00   0.00   0.00   0.00   0.00
63.08
-------------------------------------------------------------------------
---

Segment Leq : 63.08 dBA

Total Leq All Segments: 63.08 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.60
                           (NIGHT): 63.08
```

```
STAMSON 5.0        NORMAL REPORT        Date: 14-11-2022 10:37:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: southr.te            Time Period: Day/Night 16/8 hours
Description:  Daytime and nighttime sound levels at the South façade
facing Alma Ave

Rail data, segment # 1: GO (day/night)
---------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. KitchGO_1   !  92.0/22.0  ! 121.0 !  1.0 ! 12.0 !Diesel! Yes
  2. KitchGO_2   !  36.0/2.0   ! 121.0 !  2.0 ! 12.0 !Diesel! Yes
  3. BarrieGO_1  ! 172.0/36.0  ! 121.0 !  1.0 ! 12.0 !Diesel! Yes
  4. BarrieGO_2  !  24.0/0.0   ! 121.0 !  2.0 ! 12.0 !Diesel! Yes
  5. MiltonGO    !  38.0/6.0   ! 121.0 !  1.0 ! 12.0 !Diesel! Yes
  6. UP          ! 256.0/72.0  ! 121.0 !  1.0 !  0.0 !Diesel! Yes
  7. VIA         !   6.4/0.0   ! 121.0 !  2.0 ! 10.0 !Diesel! Yes
  8. WF          !   1.3/0.0   !  24.0 !  4.0 ! 25.0 !Diesel! Yes

Data for Segment # 1: GO (day/night)
------------------------------------
Angle1   Angle2           : -45.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 170.00 / 170.00 m
Receiver height           :  45.00 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: GO (day)
-----------------------------

LOCOMOTIVE (0.00 + 66.95 + 0.00) = 66.95 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -45      0   0.00  83.51 -10.54  -6.02   0.00   0.00   0.00  66.95
-------------------------------------------------------------------------

WHEEL (0.00 + 58.07 + 0.00) = 58.07 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -45      0   0.00  74.64 -10.54  -6.02   0.00   0.00   0.00  58.07
-------------------------------------------------------------------------

Segment Leq : 67.48 dBA

Total Leq All Segments: 67.48 dBA
```

```
Results segment # 1: GO (night)
-------------------------------

LOCOMOTIVE (0.00 + 62.92 + 0.00) = 62.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -45      0   0.00  79.49 -10.54  -6.02   0.00   0.00   0.00  62.92
-------------------------------------------------------------------------

WHEEL (0.00 + 53.70 + 0.00) = 53.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -45      0   0.00  70.27 -10.54  -6.02   0.00   0.00   0.00  53.70
-------------------------------------------------------------------------

Segment Leq : 63.41 dBA

Total Leq All Segments: 63.41 dBA

Road data, segment # 1: Dufferin (day/night)
--------------------------------------------
Car traffic volume  : 20409/2268  veh/TimePeriod  *
Medium truck volume :   616/68    veh/TimePeriod  *
Heavy truck volume  :   968/108   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  17726
    Percentage of Annual Growth        :   2.50
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   2.80
    Heavy Truck  % of Total Volume     :   4.40
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Dufferin (day/night)
------------------------------------------
Angle1   Angle2           : -45.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  30.00 / 30.00  m
Receiver height           :  45.00 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Dufferin (day)
-----------------------------------

Source height = 1.45 m

ROAD (0.00 + 60.57 + 0.00) = 60.57 dBA
```

```
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -45      0   0.00  69.60   0.00  -3.01  -6.02   0.00   0.00   0.00
60.57
-------------------------------------------------------------------------
---

Segment Leq : 60.57 dBA

Total Leq All Segments: 60.57 dBA

Results segment # 1: Dufferin (night)
-------------------------------------

Source height = 1.45 m

ROAD (0.00 + 54.05 + 0.00) = 54.05 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -45      0   0.00  63.08   0.00  -3.01  -6.02   0.00   0.00   0.00
54.05
-------------------------------------------------------------------------
---

Segment Leq : 54.05 dBA

Total Leq All Segments: 54.05 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.29
                           (NIGHT): 63.89
```

```
STAMSON 5.0        NORMAL REPORT        Date: 14-11-2022 10:37:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: northr.te            Time Period: Day/Night 16/8 hours
Description:  Daytime and nighttime sound levels at the North facade

Rail data, segment # 1: GO (day/night)
-----------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. KitchGO_1   !  92.0/22.0  ! 121.0 !  1.0 ! 12.0 !Diesel! Yes
  2. KitchGO_2   !  36.0/2.0   ! 121.0 !  2.0 ! 12.0 !Diesel! Yes
  3. BarrieGO_1  ! 172.0/36.0  ! 121.0 !  1.0 ! 12.0 !Diesel! Yes
  4. BarrieGO_2  !  24.0/0.0   ! 121.0 !  2.0 ! 12.0 !Diesel! Yes
  5. MiltonGO    !  38.0/6.0   ! 121.0 !  1.0 ! 12.0 !Diesel! Yes
  6. UP          ! 256.0/72.0  ! 121.0 !  1.0 !  0.0 !Diesel! Yes
  7. VIA         !   6.4/0.0   ! 121.0 !  2.0 ! 10.0 !Diesel! Yes
  8. WF          !   1.3/0.0   !  24.0 !  4.0 ! 25.0 !Diesel! Yes

Data for Segment # 1: GO (day/night)
------------------------------------
Angle1   Angle2           : -45.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 170.00 / 170.00 m
Receiver height           :  45.00 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: GO (day)
-----------------------------

LOCOMOTIVE (0.00 + 66.95 + 0.00) = 66.95 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -45      0   0.00  83.51 -10.54  -6.02   0.00   0.00   0.00  66.95
-------------------------------------------------------------------------

WHEEL (0.00 + 58.07 + 0.00) = 58.07 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -45      0   0.00  74.64 -10.54  -6.02   0.00   0.00   0.00  58.07
-------------------------------------------------------------------------

Segment Leq : 67.48 dBA

Total Leq All Segments: 67.48 dBA
```

```
Results segment # 1: GO (night)
-------------------------------

LOCOMOTIVE (0.00 + 62.92 + 0.00) = 62.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----------------------------------------------------------------------
   -45      0   0.00  79.49 -10.54  -6.02   0.00   0.00   0.00  62.92
-----------------------------------------------------------------------

WHEEL (0.00 + 53.70 + 0.00) = 53.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----------------------------------------------------------------------
   -45      0   0.00  70.27 -10.54  -6.02   0.00   0.00   0.00  53.70
-----------------------------------------------------------------------

Segment Leq : 63.41 dBA

Total Leq All Segments: 63.41 dBA

Road data, segment # 1: Dufferin (day/night)
--------------------------------------------
Car traffic volume  : 20409/2268  veh/TimePeriod  *
Medium truck volume :   616/68    veh/TimePeriod  *
Heavy truck volume  :   968/108   veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  17726
    Percentage of Annual Growth        :   2.50
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   2.80
    Heavy Truck  % of Total Volume     :   4.40
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Dufferin (day/night)
------------------------------------------
Angle1   Angle2           : -45.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  30.00 / 30.00  m
Receiver height           :  45.00 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Results segment # 1: Dufferin (day)
-----------------------------------

Source height = 1.45 m

ROAD (0.00 + 60.57 + 0.00) = 60.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -45      0   0.00  69.60   0.00  -3.01  -6.02   0.00   0.00   0.00
60.57
-------------------------------------------------------------------------
---

Segment Leq : 60.57 dBA

Total Leq All Segments: 60.57 dBA

Results segment # 1: Dufferin (night)
-------------------------------------

Source height = 1.45 m

ROAD (0.00 + 54.05 + 0.00) = 54.05 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -45      0   0.00  63.08   0.00  -3.01  -6.02   0.00   0.00   0.00
54.05
-------------------------------------------------------------------------
---

Segment Leq : 54.05 dBA

Total Leq All Segments: 54.05 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.29
                           (NIGHT): 63.89
```

STAMSON 5.0 NORMAL REPORT Date: 14-11-2022 10:38:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: west.te Time Period: Day/Night 16/8 hours
Description: ***Daytime and nighttime sound levels at the West façade with exposure to railway line***

Rail data, segment # 1: GO (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars/Train	Eng type	Cont weld
1. KitchGO_1	92.0/22.0	121.0	1.0	12.0	Diesel	Yes
2. KitchGO_2	36.0/2.0	121.0	2.0	12.0	Diesel	Yes
3. BarrieGO_1	172.0/36.0	121.0	1.0	12.0	Diesel	Yes
4. BarrieGO_2	24.0/0.0	121.0	2.0	12.0	Diesel	Yes
5. MiltonGO	38.0/6.0	121.0	1.0	12.0	Diesel	Yes
6. UP	256.0/72.0	121.0	1.0	0.0	Diesel	Yes
7. VIA	6.4/0.0	121.0	2.0	10.0	Diesel	Yes
8. WF	1.3/0.0	24.0	4.0	25.0	Diesel	Yes

Data for Segment # 1: GO (day/night)

```
Angle1   Angle2           : -45.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 170.00 / 170.00 m
Receiver height           :  30.00 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00
```

Results segment # 1: GO (day)

LOCOMOTIVE (0.00 + 69.96 + 0.00) = 69.96 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	45	0.00	83.51	-10.54	-3.01	0.00	0.00	0.00	69.96

WHEEL (0.00 + 61.08 + 0.00) = 61.08 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	45	0.00	74.64	-10.54	-3.01	0.00	0.00	0.00	61.08

Segment Leq : 70.49 dBA

Total Leq All Segments: 70.49 dBA

```
Results segment # 1: GO (night)
-------------------------------

LOCOMOTIVE (0.00 + 65.94 + 0.00) = 65.94 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----------------------------------------------------------------------
   -45     45   0.00  79.49 -10.54  -3.01   0.00   0.00   0.00  65.94
-----------------------------------------------------------------------

WHEEL (0.00 + 56.71 + 0.00) = 56.71 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----------------------------------------------------------------------
   -45     45   0.00  70.27 -10.54  -3.01   0.00   0.00   0.00  56.71
-----------------------------------------------------------------------

Segment Leq : 66.43 dBA

Total Leq All Segments: 66.43 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.49
                           (NIGHT): 66.43
```

STAMSON 5.0 NORMAL REPORT Date: 14-11-2022 11:39:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: olaroof.te Time Period: 16 hours
Description: ***Daytime sound levels in the rooftop OLA***

Rail data, segment # 1: GO

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1. KitchGO_1	92.0/22.0	121.0	1.0	12.0	Diesel	Yes
2. KitchGO_2	36.0/2.0	121.0	2.0	12.0	Diesel	Yes
3. BarrieGO_1	172.0/36.0	121.0	1.0	12.0	Diesel	Yes
4. BarrieGO_2	24.0/0.0	121.0	2.0	12.0	Diesel	Yes
5. MiltonGO	38.0/6.0	121.0	1.0	12.0	Diesel	Yes
6. UP	256.0/72.0	121.0	1.0	0.0	Diesel	Yes
7. VIA	6.4/0.0	121.0	2.0	10.0	Diesel	Yes
8. WF	1.3/0.0	24.0	4.0	25.0	Diesel	Yes

Data for Segment # 1: GO

Angle1 Angle2 : -35.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 170.00 m
Receiver height : 1.50 m
Topography : 4 (Elevated; with barrier)
No Whistle
Barrier angle1 : -35.00 deg Angle2 : 0.00 deg
Barrier height : 1.07 m
Elevation : 45.00 m
Barrier receiver distance : 13.00 m
Source elevation : 0.00 m
Receiver elevation : 45.00 m
Barrier elevation : 45.00 m
Reference angle : 0.00

Results segment # 1: GO

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	-1.75	43.25
0.50	1.50	-2.02	42.98

LOCOMOTIVE (0.00 + 53.38 + 0.00) = 53.38 dBA

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

```
   -35      0   0.00  83.51 -10.54  -7.11   0.00   0.00 -12.48  53.38
-------------------------------------------------------------------------

WHEEL (0.00 + 43.81 + 0.00) = 43.81 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -35      0   0.00  74.64 -10.54  -7.11   0.00   0.00 -13.17  43.81
-------------------------------------------------------------------------

Segment Leq : 53.83 dBA

Total Leq All Segments: 53.83 dBA

Road data, segment # 1: Dufferin
-------------------------------
Car traffic volume  : 20409 veh/TimePeriod  *
Medium truck volume :   616 veh/TimePeriod  *
Heavy truck volume  :   968 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: Dufferin
-------------------------------
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  :  30.00 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   1.07 m
Elevation                 :  45.00 m
Barrier receiver distance :  13.00 m
Source elevation          :   0.00 m
Receiver elevation        :  45.00 m
Barrier elevation         :  45.00 m
Reference angle           :   0.00

Results segment # 1: Dufferin
-------------------------------

Source height = 1.45 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.45 !        1.50 !      -18.02 !        26.98

ROAD (0.00 + 45.28 + 0.00) = 45.28 dBA
```

```
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90      0   0.00  69.60   0.00  -3.01  -3.01   0.00   0.00 -18.31
45.28
-------------------------------------------------------------------------
---

Segment Leq : 45.28 dBA

Total Leq All Segments: 45.28 dBA

TOTAL Leq FROM ALL SOURCES:       54.40
```

APPENDIX E

Supporting Drawings

450 DUFFERIN

ISSUED FOR ZBA ON NOVEMBER 4, 2022

CLIENT

HM RK (450 DUFFERIN) LTD
474 WELLINGTON STREET, WEST
TORONTO, ONTARIO
M5V 1E3

PROJECT ADDRESS

450 DUFFERIN STREET
TORONTO, ONTARIO
M6K 3A5

CONSULTANTS

ARCHITECT
SUPERKUL INC.
101- 35 GOLDEN AVENUE
TORONTO, ON M6R 2J5
(T) 416.596.0700

STRUCTURAL ENGINEER
NAME.
STREET ADDRESS
TORONTO, ON M#X XXX
(T) 416.XXX.XXXX

LANDSCAPE ARCHITECT
PMA LANDSCAPE ARCHITECTS
359 KEELE ST.
TORONTO, ON M6P 2K6
(T) 416.239.5818

GEOTECHNICAL ENGINEER
TERRAPEX ENVIRONMENTAL LTD.
99 SCARSDALE RD.
TORONTO, ON M3B 2R7
(T) 416.249.2011

MECHANICAL ENGINEER
SMITH + ANDERSEN
100 SHEPPARD AVENUE EAST
TORONTO, ON M2N 6N5
(T) 416.487.8151

ELECTRICAL ENGINEER
SMITH + ANDERSEN
100 SHEPPARD AVENUE EAST
TORONTO, ON M2N 6N5
(T) 416.487.8151

CIVIL ENGINEER
R.V. ANDERSON & ASSOCIATES
300-2001 SHEPPARD AVENUE EAST
TORONTO, ON M2J 4Z8
(T) 416.497.8500

CODE CONSULTANT
VORTEX FIRE CONSULTING INC.
200-63 ATLANTIC AVENUE
TORONTO, ON M6K 1X9
(T) 416.551.2001

PLANNING CONSULTANT
URBAN STRATEGIES
197 SPADINA AVENUE
TORONTO, ON M5T 2C8
(T) 416.340.9004

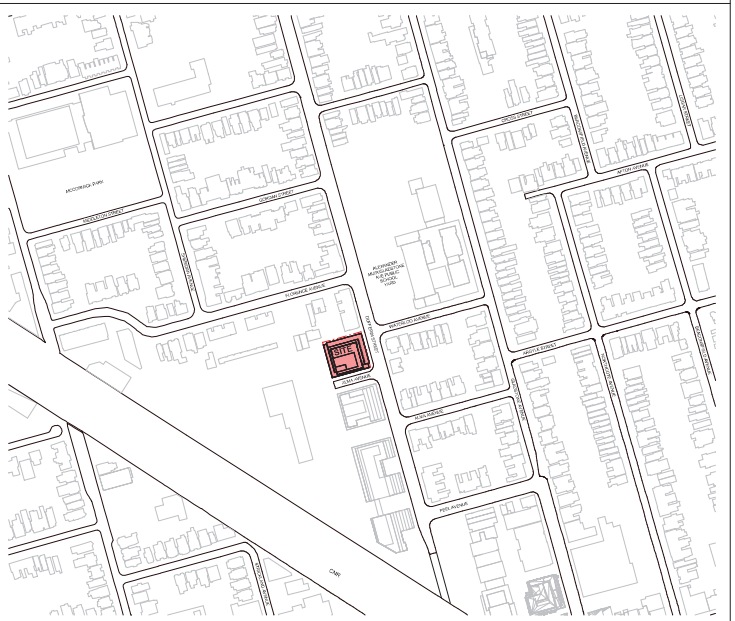
TRANSPORTATION CONSULTANT
BA GROUP
45 ST. CLAIR AVENUE WEST
TORONTO, ON M4V 1K9
(T) 416.961.7110

WIND CONSULTANT
GRADIENT WIND ENGINEERING INC.
127 WALGREEN ROAD
CARP, ON K0A 1L0
(T) 613.836.0934

ACOUSTIC CONSULTANT
HGC ENGINEERING
300-2000 ARGENTIA RD. 1
TORONTO, ON L5N 1P7
(T) 905.826.4044

ENERGY CONSULTANT
EQ BUILDING PERFORMANCE INC.
1500-35 ADELAIDE STREET EAST
TORONTO, ON M5C 3A1
(T) 416.445.1186

SHEET LIST



1 CONTEXT PLAN
1 : 2000

superkul

101 – 35 Golden Avenue
Toronto, ON M6R 2J5

t> 416.596.0700
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www.superkul.ca

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
COVER SHEET & DRAWING LIST

Project No. 2214 | Scale 1 : 2000

Drawing No.
A 000

2022-11-04 11:00:45 AM
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ZONING BY-LAW PROJECT STATISTICS

	GROSS CONSTRUCTION AREA		ZBL 569-2013 EXCLUSIONS		CITY WIDE BY-LAW 569-2013 GROSS FLOOR AREA							
					GFA (RESIDENTIAL)		GFA (Commercial)		Amenity Floor Area		TOTAL GROSS FLOOR AREA	
Level	Area (m²)	Area (sq ft)	Area (m²)	Area (sq ft)	Area (m²)	Area (sq ft)	Area (m²)	Area (sq ft)	Area (m²)	Area (sq ft)	Area (m²)	Area (sq ft)
P2	1371,7 m²	14765 ft²	1349,4 m²	14525 ft²	22,3 m²	240 ft²					22,3 m²	240 ft²
P1	1371,8 m²	14766 ft²	1331,8 m²	14336 ft²	25,8 m²	277 ft²	14,2 m²	153 ft²			40,0 m²	430 ft²
GROUND LEVEL	1342,3 m²	14449 ft²	657,8 m²	7081 ft²	122,0 m²	1313 ft²	562,5 m²	6055 ft²			684,5 m²	7368 ft²
MEZZANINE	439,4 m²	4730 ft²	86,2 m²	928 ft²			353,2 m²	3802 ft²			353,2 m²	3802 ft²
LEVEL 2	1226,2 m²	13199 ft²	78,5 m²	845 ft²	1147,7 m²	12354 ft²					1147,7 m²	12354 ft²
LEVEL 3	1226,2 m²	13199 ft²	72,0 m²	775 ft²	1154,2 m²	12424 ft²					1154,2 m²	12424 ft²
LEVEL 4	1226,2 m²	13199 ft²	72,0 m²	775 ft²	1154,2 m²	12424 ft²					1154,2 m²	12424 ft²
LEVEL 5	729,0 m²	7847 ft²	46,9 m²	505 ft²	682,1 m²	7342 ft²					682,1 m²	7342 ft²
LEVEL 6	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 7	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 8	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 9	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 10	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 11	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 12	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 13	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 14	729,0 m²	7847 ft²	64,9 m²	699 ft²	664,1 m²	7148 ft²					664,1 m²	7148 ft²
LEVEL 15	333,8 m²	3593 ft²	333,8 m²	3593 ft²					289,6 m²	3117 ft²		
MPH	333,8 m²	3593 ft²	333,8 m²	3593 ft²								
TOTAL	16161,6 m²	173962 ft²	4946,9 m²	53248 ft²	10284,8 m²	110705 ft²	929,9 m²	10009 ft²	289,6 m²	3117 ft²	11214,7 m²	120714 ft²

NOTES:

In the Residential Apartment Zone category, the gross floor area of an apartment building is reduced by the area in the building used for:
(A) parking, loading and bicycle parking below established grade;
(B) required loading spaces and required bicycle parking spaces at or above established grade;
(C) storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms in the basement;
(D) shower and change facilities required by this By-law for required bicycle parking spaces;
(E) indoor amenity space required by this By-law;
(F) elevator shafts;
(G) garbage shafts;
(H) mechanical penthouse; and
(I) exit stairwells in the building.

PROJECT STATISTIC SUMMARY

SITE STATISTICS

450 DUFFERIN STREET
TORONTO, ONTARIO M6K 2A5

ZONING DESIGNATION

ZBL 438-86 (EXISTING)	I1 D2
ZBL 569-2013 (PROPOSED)	CR 8.0 (c1.0; r7.5) SS1 (x####)

SITE DENSITY

EXISTING LOT AREA:	1495.0 m² (16,092 sf)
SITE FSI:	7.50
BUILDING HEIGHT:	53,1m (174,2ft)
# OF STORIES (ABOVE GRADE):	15

UNIT STATISTICS

TOTAL RESIDENTIAL SUITES: 143

SUITE BREAKDOWN:

# OF BEDROOMS	COUNT	PERCENTAGE	AVERAGE (SM)	AVERAGE (SF)
STUDIO	50	35,0%	41,27 m²	444,2 m²
1 BD	46	32,2%	60,96 m²	656,1 m²
2 BD	32	22,4%	79,46 m²	855,2 m²
3 BD	15	10,5%	102,67 m²	1105,1 m²

COMMERCIAL SPACE	REQUIRED*	PROVIDED
	897,1 9657,1	897,8 m² 9664 ft²

NOTES:
*Required commercial space @ 8% of GFA (m² / ft²). Provided Commercial space excludes Commercial Elevator Lobbies on P1, GF and Mezzanine.

AMENITY SPACE

REQUIRED AMENITY SPACE PER ZBL 569-2013
15.10.40.50 Decks, Platforms and Amenities
(1) Amenity Space for an Apartment Building in the RA zone, an apartment building with 20 or more dwelling units must provide amenity space at a **minimum rate of 4.0 square metres** for each dwelling unit, of which:
(A) at least 2.0 square metres for each dwelling unit is indoor amenity space located at or above established grade; [By-law: 1353-2015]
(B) at least 40.0 square metres is outdoor amenity space in a location adjoining or directly accessible to the indoor amenity space; and
(C) no more than 25% of the outdoor component may be a green roof.

	REQUIRED	PROVIDED
INDOOR AMENITY SPACE	286 m² 3079 ft²	289,6 m² 3117 ft²
OUTDOOR AMENITY SPACE	286 m² 3079 ft²	286,5 m² 3084 ft²

PARKING SPACE

	PROVIDED	
	Rate	Spaces
RESIDENTIAL PARKING	0.16/unit	22
VISITOR (RESIDENTIAL) PARKING	0.09/unit	12
COMMERCIAL PARKING**	0	0
TOTAL		34

NOTES:
* of 34 parking spots provided 6 will be BF.
** No exclusive commercial parking but will be shared with visitor (residential) parking
*** All residential parking spaces (22 spaces) and 25% of non-residential parking spaces (3 spaces) to include an energized outlet capable of providing level 2 charging or higher to the parking space.

BIKE PARKING SPACES

	REQUIRED		PROVIDED	
	Rate	Spaces	Rate	Spaces
SHORT TERM BIKE PARKING	0.2/unit	29	0.2/unit	29
LONG TERM BIKE PARKING	0.9/unit	129	0.9/unit	129
TOTAL		158		158

NOTES
1. As per the new Toronto Green Standard V4.0, 15% of the residential long-term spaces must be electric spaces, 20 of the Long Term spaces are electric bicycle spaces (see floor plans).
2. Assumes double decker bike rack system for all non-electric bikes.

STORAGE LOCKERS

	PROVIDED	
	Rate	Spaces
STORAGE LOCKERS	1.0/unit	143
TOTAL		143

LOADING TYPE

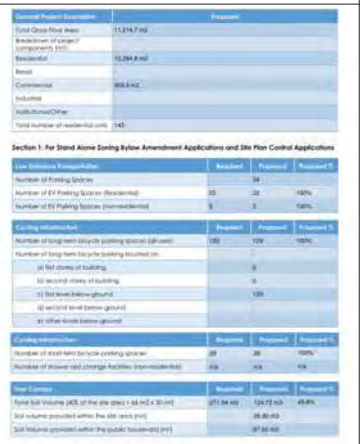
1 - TYPE "G"

UNIT BREAKDOWN (PER FLOOR)

Level	# of Bedrooms	Area
LEVEL 2		
LEVEL 2	1 BD	66,4 m²
LEVEL 2	1 BD	82,4 m²
LEVEL 2	1 BD	67,0 m²
LEVEL 2	2 BD	85,7 m²
LEVEL 2	2 BD	70,3 m²
LEVEL 2	2 BD	70,3 m²
LEVEL 2	3 BD	94,2 m²
LEVEL 2	3 BD	95,4 m²
LEVEL 2	3 BD	117,3 m²
LEVEL 2	3 BD	107,1 m²
LEVEL 2	3 BD	99,7 m²
LEVEL 3		
LEVEL 3	1 BD	66,4 m²
LEVEL 3	1 BD	67,4 m²
LEVEL 3	2 BD	85,7 m²
LEVEL 3	2 BD	70,0 m²
LEVEL 3	2 BD	70,3 m²
LEVEL 3	2 BD	69,7 m²
LEVEL 3	3 BD	94,2 m²
LEVEL 3	3 BD	94,5 m²
LEVEL 3	3 BD	117,3 m²
LEVEL 3	3 BD	107,1 m²
LEVEL 3	3 BD	100,0 m²
LEVEL 4		
LEVEL 4	1 BD	66,4 m²
LEVEL 4	1 BD	67,4 m²
LEVEL 4	2 BD	85,7 m²
LEVEL 4	2 BD	70,0 m²
LEVEL 4	2 BD	70,3 m²
LEVEL 4	2 BD	69,7 m²
LEVEL 4	3 BD	94,2 m²
LEVEL 4	3 BD	94,5 m²
LEVEL 4	3 BD	117,3 m²
LEVEL 4	3 BD	107,1 m²
LEVEL 4	3 BD	100,0 m²
LEVEL 5		
LEVEL 5	1 BD	56,2 m²
LEVEL 5	1 BD	50,5 m²
LEVEL 5	1 BD	67,2 m²
LEVEL 5	2 BD	84,8 m²
LEVEL 5	2 BD	84,7 m²
LEVEL 5	2 BD	73,7 m²
LEVEL 5	STUDIO	44,0 m²
LEVEL 5	STUDIO	42,2 m²
LEVEL 5	STUDIO	37,6 m²
LEVEL 5	STUDIO	39,7 m²
LEVEL 5	STUDIO	43,0 m²
LEVEL 6		
LEVEL 6	1 BD	51,5 m²
LEVEL 6	1 BD	50,5 m²
LEVEL 6	1 BD	67,4 m²
LEVEL 6	1 BD	69,0 m²
LEVEL 6	2 BD	80,1 m²
LEVEL 6	2 BD	80,1 m²
LEVEL 6	STUDIO	44,0 m²
LEVEL 6	STUDIO	42,2 m²
LEVEL 6	STUDIO	39,5 m²
LEVEL 6	STUDIO	37,6 m²
LEVEL 6	STUDIO	43,1 m²
LEVEL 7		
LEVEL 7	1 BD	51,5 m²
LEVEL 7	1 BD	50,5 m²
LEVEL 7	1 BD	67,4 m²
LEVEL 7	1 BD	69,0 m²
LEVEL 7	2 BD	80,1 m²
LEVEL 7	2 BD	80,1 m²
LEVEL 7	STUDIO	44,0 m²
LEVEL 7	STUDIO	42,2 m²
LEVEL 7	STUDIO	39,5 m²
LEVEL 7	STUDIO	37,6 m²
LEVEL 7	STUDIO	43,1 m²
LEVEL 8		
LEVEL 8	1 BD	51,5 m²
LEVEL 8	1 BD	50,5 m²
LEVEL 8	1 BD	67,4 m²
LEVEL 8	1 BD	69,0 m²
LEVEL 8	2 BD	80,1 m²
LEVEL 8	2 BD	80,1 m²
LEVEL 8	STUDIO	44,0 m²
LEVEL 8	STUDIO	42,2 m²
LEVEL 8	STUDIO	39,5 m²
LEVEL 8	STUDIO	37,6 m²
LEVEL 8	STUDIO	43,1 m²

Level	# of Bedrooms	Area
LEVEL 9		
LEVEL 9	1 BD	51,5 m²
LEVEL 9	1 BD	50,5 m²
LEVEL 9	1 BD	67,4 m²
LEVEL 9	1 BD	69,0 m²
LEVEL 9	2 BD	80,1 m²
LEVEL 9	2 BD	80,1 m²
LEVEL 9	STUDIO	44,0 m²
LEVEL 9	STUDIO	42,2 m²
LEVEL 9	STUDIO	39,5 m²
LEVEL 9	STUDIO	37,6 m²
LEVEL 9	STUDIO	43,1 m²
LEVEL 10		
LEVEL 10	1 BD	51,5 m²
LEVEL 10	1 BD	50,5 m²
LEVEL 10	1 BD	67,4 m²
LEVEL 10	1 BD	69,0 m²
LEVEL 10	2 BD	80,1 m²
LEVEL 10	2 BD	80,1 m²
LEVEL 10	STUDIO	44,0 m²
LEVEL 10	STUDIO	42,2 m²
LEVEL 10	STUDIO	39,5 m²
LEVEL 10	STUDIO	37,6 m²
LEVEL 10	STUDIO	43,1 m²
LEVEL 11		
LEVEL 11	1 BD	51,5 m²
LEVEL 11	1 BD	50,5 m²
LEVEL 11	1 BD	67,4 m²
LEVEL 11	1 BD	69,0 m²
LEVEL 11	2 BD	80,1 m²
LEVEL 11	2 BD	80,1 m²
LEVEL 11	STUDIO	44,0 m²
LEVEL 11	STUDIO	42,2 m²
LEVEL 11	STUDIO	39,5 m²
LEVEL 11	STUDIO	37,6 m²
LEVEL 11	STUDIO	43,1 m²
LEVEL 12		
LEVEL 12	1 BD	51,5 m²
LEVEL 12	1 BD	50,5 m²
LEVEL 12	1 BD	67,4 m²
LEVEL 12	1 BD	69,0 m²
LEVEL 12	2 BD	80,1 m²
LEVEL 12	2 BD	80,1 m²
LEVEL 12	STUDIO	44,0 m²
LEVEL 12	STUDIO	42,2 m²
LEVEL 12	STUDIO	39,5 m²
LEVEL 12	STUDIO	37,6 m²
LEVEL 12	STUDIO	43,1 m²
LEVEL 13		
LEVEL 13	1 BD	51,5 m²
LEVEL 13	1 BD	50,5 m²
LEVEL 13	1 BD	67,4 m²
LEVEL 13	1 BD	69,0 m²
LEVEL 13	2 BD	80,1 m²
LEVEL 13	2 BD	80,1 m²
LEVEL 13	STUDIO	44,0 m²
LEVEL 13	STUDIO	42,2 m²
LEVEL 13	STUDIO	39,5 m²
LEVEL 13	STUDIO	37,6 m²
LEVEL 13	STUDIO	43,1 m²
LEVEL 14		
LEVEL 14	1 BD	51,5 m²
LEVEL 14	1 BD	50,5 m²
LEVEL 14	1 BD	67,4 m²
LEVEL 14	1 BD	69,0 m²
LEVEL 14	2 BD	80,1 m²
LEVEL 14	2 BD	80,1 m²
LEVEL 14	STUDIO	44,0 m²
LEVEL 14	STUDIO	42,2 m²
LEVEL 14	STUDIO	39,5 m²
LEVEL 14	STUDIO	37,6 m²
LEVEL 14	STUDIO	43,1 m²

TORONTO GREEN STANDARD (VERSION 4.0)



Section 1: For Stand Alone Zoning Bylaw Amendment Applications and Site Plan Control Applications

superkül
101 - 35 Golden Avenue
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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
PROJECT STATISTICS

Project No. 2214 | Scale

Drawing No.
A 010

2022-11-04 11:00:49 AM
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f> 416.533.6966
www.superkul.ca

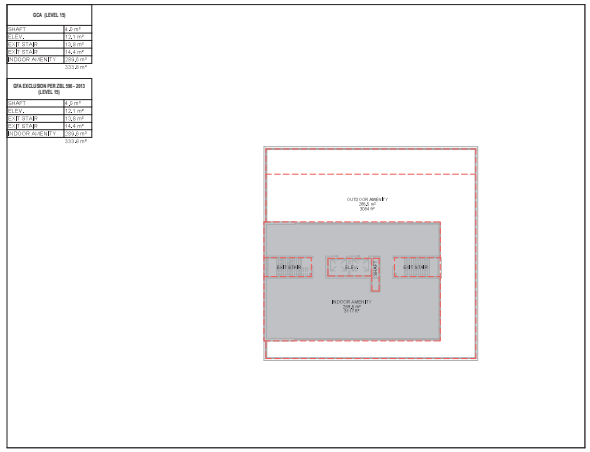
NOTES:

In the Residential Apartment Zone category, the gross floor area of an apartment building is reduced by the area in the building used for:

(A) parking, loading and bicycle parkingbelow established grade;
(B) required loading spaces and required bicycle parking spaces at or above established grade;
(C) storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms in the basement;
(D) shower and change facilities required by this Bylaw for required bicycle parking spaces;
(E) indoor amenity space required by this Bylaw;
(F) elevator shafts;
(G) garbage shafts;
(H) mechanical penthouse; and
(I) exit stairwells in the building.

569-2013 exclusions

Gross Floor Area



9 GFA DIAGRAM - LEVEL 15
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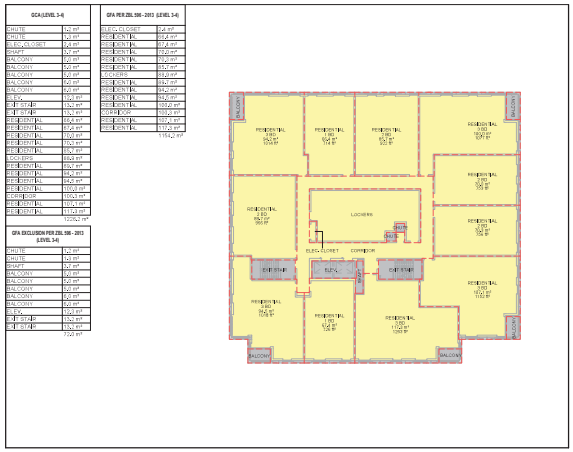

8 GFA DIAGRAM - TYP. LEVEL 3-14
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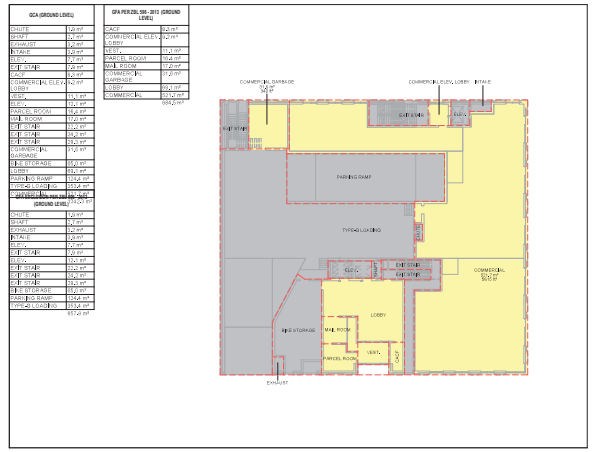

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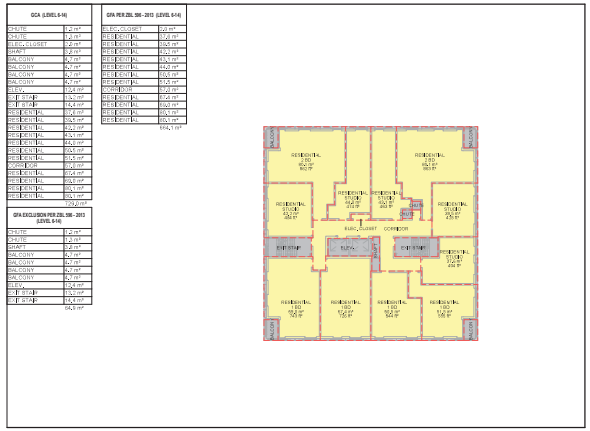

6 GFA DIAGRAM - TYP. LEVEL 6-14
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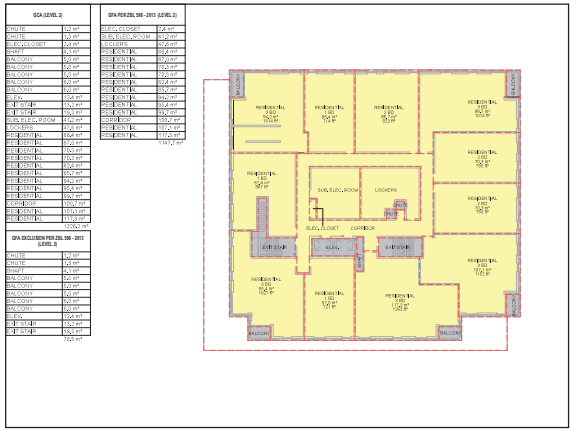

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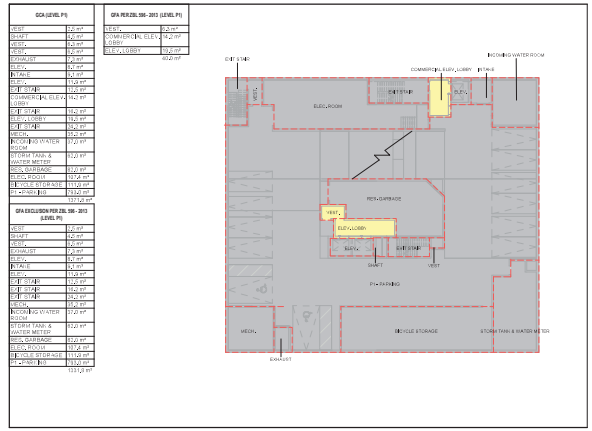

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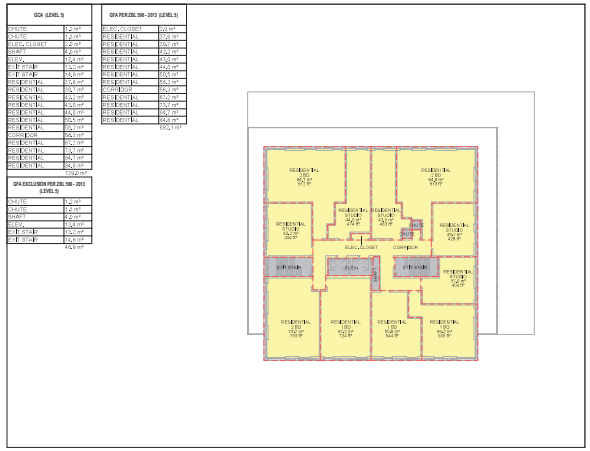

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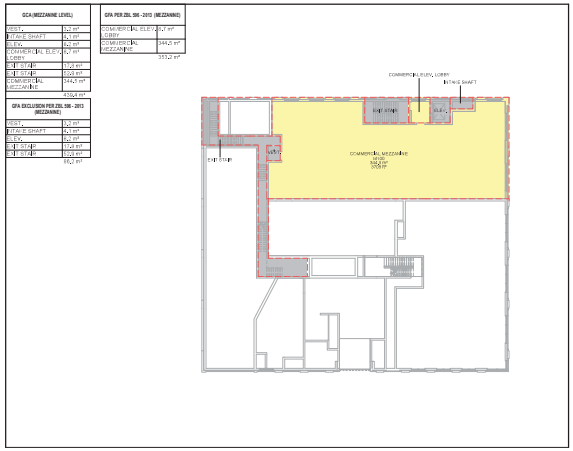

4 GFA DIAGRAM - MEZZANINE LEVEL
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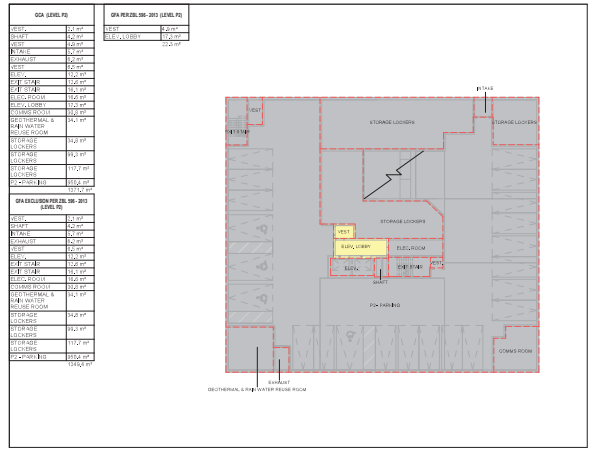

1 GFA DIAGRAM - P2 FLOOR
1 : 250

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
GFA DIAGRAMS PER 569-2013

Project No. 2214	Scale As indicated

Drawing No.

A 020

2022-11-04 4:05:23 PM
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superkul

101 – 35 Golden Avenue
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f> 416.533.6966
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AERIAL VIEW LOOKING NORTH-WEST

VIEW FROM DUFFERIN LOOKING SOUTH-WEST

VIEW OF EAST FACADE FROM DUFFERIN

VIEW FROM DUFFERIN LOOKING NORTH-WEST

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
PERSPECTIVE VIEWS

Project No. 2214 | Scale

Drawing No.

A 031

2022-11-04 11:01:04 AM
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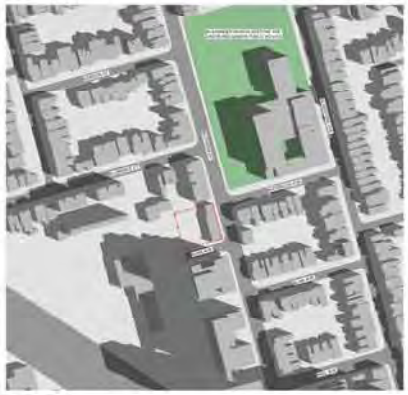

1 March 21 9:18am Existing
1 : 2000

2 March 21 9:18am Proposed
1 : 2000

3 March 21 10:18am Existing
1 : 2000

4 March 21 10:18am Proposed
1 : 2000

5 March 21 11:18am Existing
1 : 2000

6 March 21 11:18am Proposed
1 : 2000

7 March 21 12:18pm Existing
1 : 2000

8 March 21 12:18pm Proposed
1 : 2000

9 March 21 1:18pm Existing
1 : 2000

10 March 21 1:18pm Proposed
1 : 2000

11 March 21 2:18pm Existing
1 : 2000

12 March 21 2:18pm Proposed
1 : 2000

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LEGEND

- SUBJECT SITE
- PROPOSED DEVELOPMENT
- SHADOWS CAST BY PROPOSED DEVELOPMENT
- SHADOWS CAST BY A.O.R MASSING (-1AM PER BY-LAW 438-86, 11.0.2)
- EXISTING BUILDINGS
- SHADOWS CAST BY EXISTING BUILDINGS
- CURBS
- SCHOOL YARD

NOTE:
SHADOW STUDIES ARE BASED ON DAYLIGHT SAVING TIME

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
SHADOW STUDIES
MARCH 21

Project No. 2214 | Scale As indicated

Drawing No.

A 040

2022-11-03 3:50:27 PM
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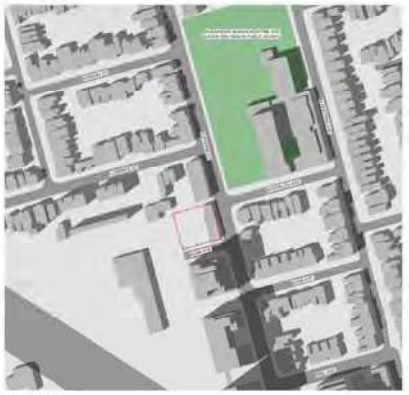
1 : 2000

2 March 21 9:18pm Proposed
1 : 2000



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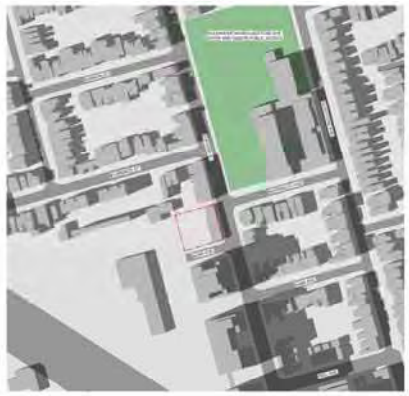
1 : 2000

4 March 21 4:18pm Proposed
1 : 2000



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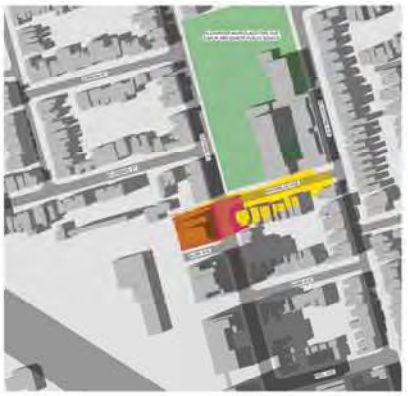

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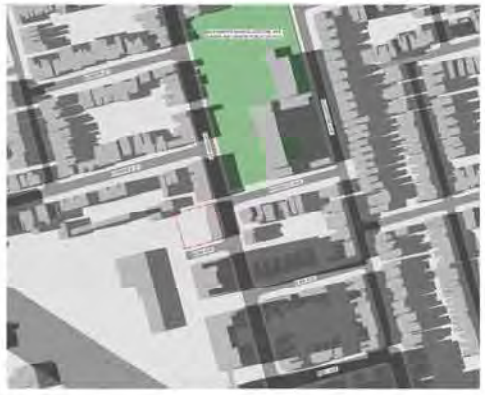
1 : 2000



7 Mar 21 9:18am Existing
1 : 2000

8 March 21 9:18am Proposed
1 : 2000

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LEGEND

- SUBJECT SITE
- PROPOSED DEVELOPMENT
- SHADOWS CAST BY PROPOSED DEVELOPMENT
- SHADOWS CAST BY A.O.R MASSING (1AM PER BY-LAW 438-86, 11.0)
- EXISTING BUILDINGS
- SHADOWS CAST BY EXISTING BUILDINGS
- CURBS
- SCHOOL YARD

NOTE:
SHADOW STUDIES ARE BASED ON DAYLIGHT SAVING TIME

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:

SHADOW STUDIES MARCH 21

Project No. 2214	Scale	As indicated

Drawing No.

A 041

1 June 21 9:18am Existing
1 : 2000

2 June 21 9:18am Proposed
1 : 2000

3 June 21 10:18am Existing
1 : 2000

4 June 21 10:18am Proposed
1 : 2000

5 June 21 11:18am Existing
1 : 2000

6 June 21 11:18am Proposed
1 : 2000

7 June 21 12:18pm Existing
1 : 2000

8 June 21 12:18pm Proposed
1 : 2000

9 June 21 1:18pm Existing
1 : 2000

10 June 21 1:18pm Proposed
1 : 2000

11 June 21 2:18pm Existing
1 : 2000

12 June 21 2:18pm Proposed
1 : 2000

Prior to commencement of the Work the Contractor shall verify all drawing dimensions, datums, and levels with the Contract Documents and with the conditions on site; ascertain any discrepancies between the site and the Contract Documents, and bring these items to the attention of the Architect for clarification.

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LEGEND

- SUBJECT SITE
- PROPOSED DEVELOPMENT
- SHADOWS CAST BY PROPOSED DEVELOPMENT
- SHADOWS CAST BY A.O.R MASSING (14M PER BY-LAW 438-86, I1 D2)
- EXISTING BUILDINGS
- SHADOWS CAST BY EXISITING BUILDINGS
- CURBS
- SCHOOL YARD

NOTE:
SHADOW STUDIES ARE BASED ON DAYLIGHT SAVING TIME

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
SHADOW STUDIES JUNE 21

Project No. 2214 | Scale As indicated

Drawing No.
A 042

1 June 21 3.15pm Existing
1 : 2000

2 June 21 3.15pm Proposed
1 : 2000

3 June 21 4.15pm Existing
1 : 2000

4 June 21 4.15pm Proposed
1 : 2000

5 June 21 5.15pm Existing
1 : 2000

6 June 21 5.15pm Proposed
1 : 2000

7 June 21 6.15pm Existing
1 : 2000

8 June 21 6.15pm Proposed
1 : 2000

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LEGEND

- SUBJECT SITE
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- CURBS
- SCHOOL YARD

NOTE:
SHADOW STUDIES ARE BASED ON DAYLIGHT SAVING TIME

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
SHADOW STUDIES
JUNE 21

Project No. 2214 | Scale As indicated

Drawing No.

A 043

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1 : 2000

2 Sept 21 9:18am Proposed
1 : 2000

3 Sept 21 10:18am Existing
1 : 2000

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1 : 2000

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9 Sept 21 1:18pm Existing
1 : 2000

10 Sept 21 1:18pm Proposed
1 : 2000

11 Sept 21 2:18pm Existing
1 : 2000

12 Sept 21 2:18pm Proposed
1 : 2000

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LEGEND

- SUBJECT SITE
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- SHADOWS CAST BY PROPOSED DEVELOPMENT
- SHADOWS CAST BY AJOR MASSING (1AM PER BY-LAW 438-86, 11.02)
- EXISTING BUILDINGS
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- CURBS
- SCHOOL YARD

NOTE:
SHADOW STUDIES ARE BASED ON DAYLIGHT SAVING TIME

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
SHADOW STUDIES
SEPTEMBER 21

Project No. 2214 | Scale As indicated

Drawing No.

A 044

2022-11-03 3:50:43 PM
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1 : 2000

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1 : 2000

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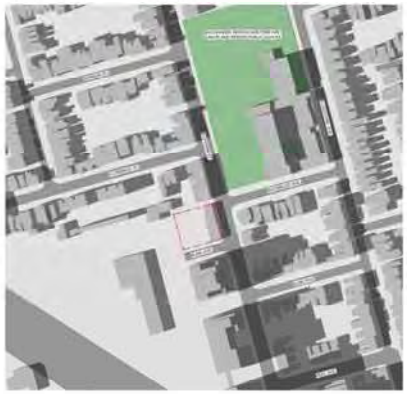

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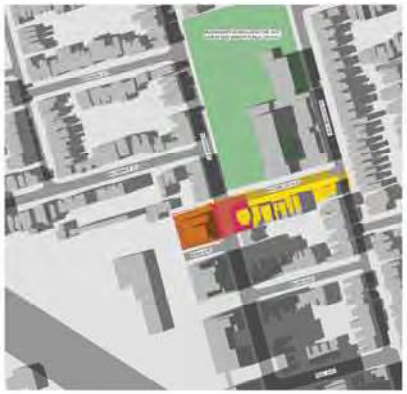

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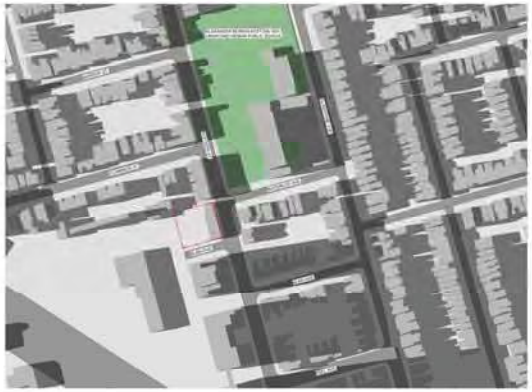

7 Sept 21 6:18pm Existing
1 : 2000

8 Sept 21 6:18pm Proposed
1 : 2000

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LEGEND

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NOTE:
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No.	Date	Issue/Revision
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450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:

SHADOW STUDIES
SEPTEMBER 21

Project No. 2214 | Scale As indicated

Drawing No.

A 045

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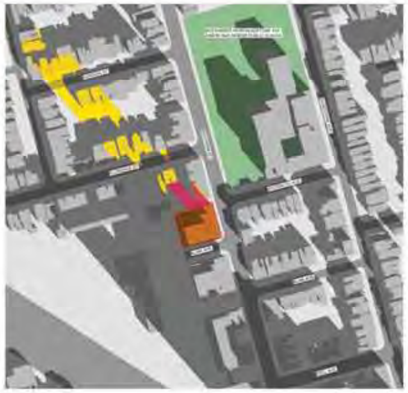

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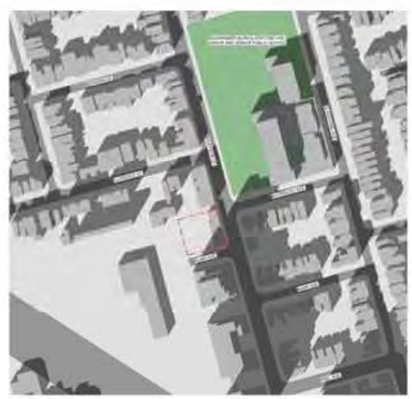

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LEGEND

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NOTE:
SHADOW STUDIES ARE BASED ON DAYLIGHT SAVING TIME

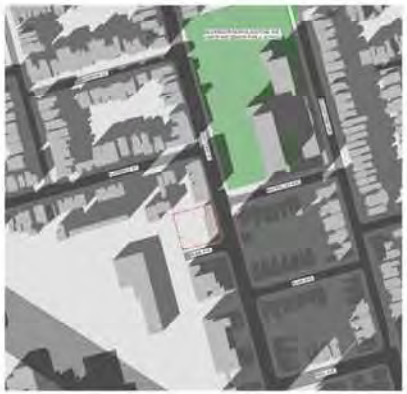
No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
SHADOW STUDIES
DECEMBER 21

Project No. 2214 | Scale As indicated

Drawing No.
A 046



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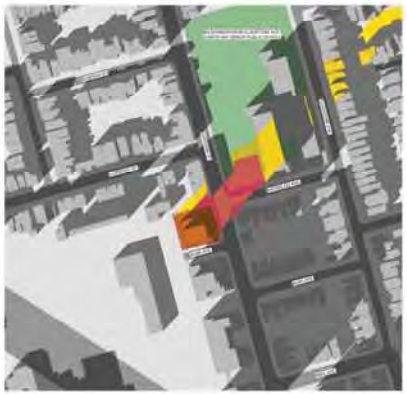

2 Dec 21 3.18pm Proposed
1 : 2000

3 Dec 21 4.18pm Existing
1 : 2000

4 Dec 21 4.18pm Proposed
1 : 2000

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LEGEND

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NOTE:
SHADOW STUDIES ARE BASED ON DAYLIGHT SAVING TIME

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
SHADOW STUDIES
DECEMBER 21

Project No. 2214	Scale	As indicated

Drawing No.

A 047

2022-11-03 3:50:55 PM
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NOTES:

SITE PLAN NOTES

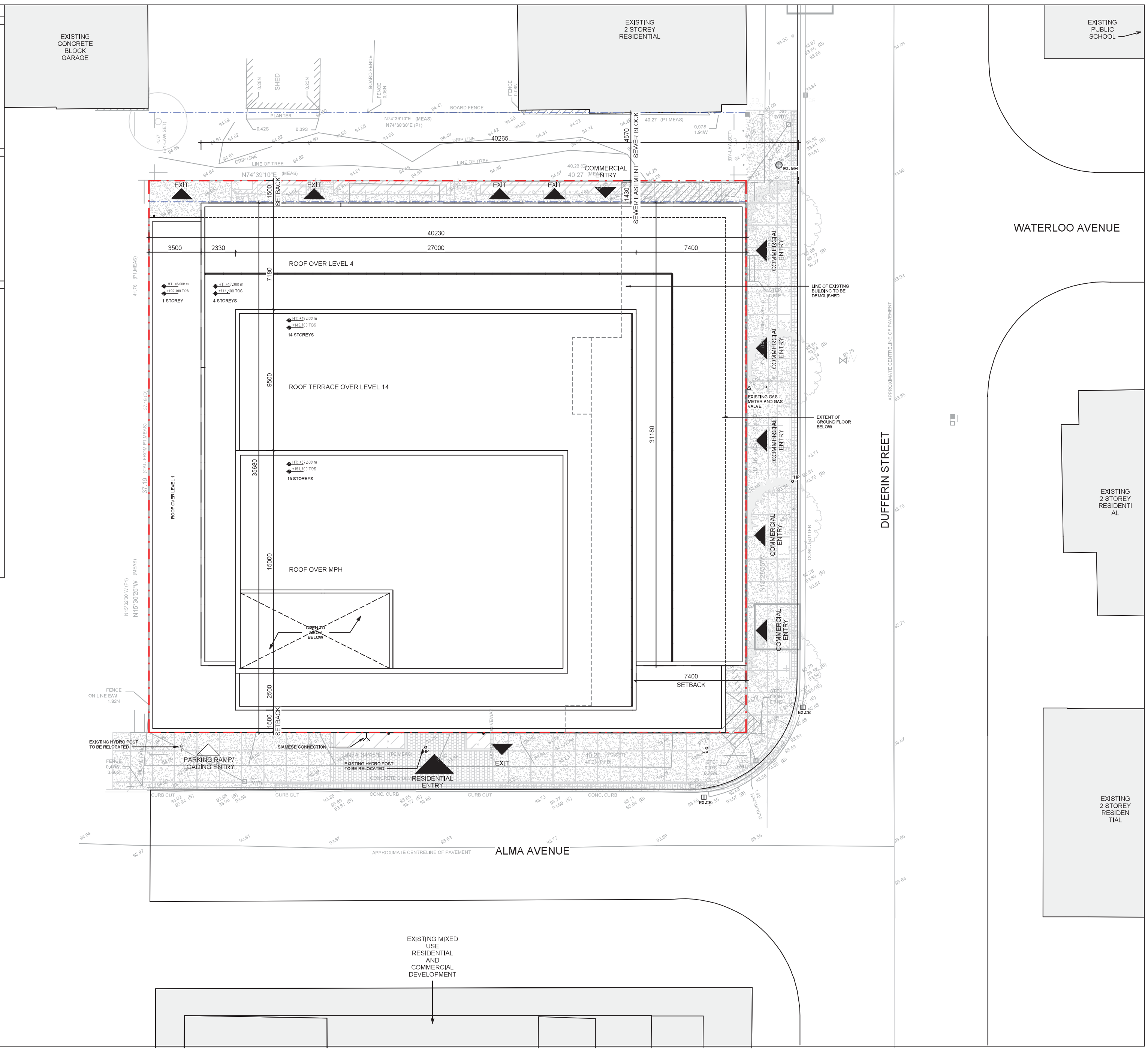
1. THE BUILDING IS TO BE SPRINKLERED.
2. RESIDENTIAL VISITOR PARKING SPACES WILL BE INDIVIDUALLY SIGNED AT THE FRONT OF EACH SPACE FOR THE USE OF RESIDENTIAL VISITORS. BUILDING MANAGEMENT SHALL PROVIDE ENFORCEMENT OF THIS ARRANGEMENT.
3. SIDEWALKS AND BOULEVARDS WITHIN THE RIGHT OF WAY TO HAVE A MINIMUM 1% AND MAXIMUM 4% SLOPE TOWARDS THE ROADWAY.
4. REFER TO SITE SERVICING DOCUMENTS FOR SEWER AND WATER SERVICE INFORMATION.
5. ANY RETAINING WALLS ARE TO BE PROFESSIONALLY ENGINEERED.
6. ALL EXISTING ACCESSES, CURB CUTS, TRAFFIC CONTROL SIGNS, ETC. ALONG THE DEVELOPMENT SITE FRONTAGES THAT ARE NO LONGER REQUIRED ARE TO BE REMOVED. THE BOULEVARD WITHIN THE PUBLIC RIGHT OF WAY, IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES ARE TO BE REINSTATED.
7. PROPOSED ACCESS TO THE RIGHT-OF-WAY/LANEWAY FOR THIS PROJECT TO BE DESIGNED IN ACCORDANCE WITH CITY STANDARD NO. T310-050-1 FOR COMBINED CURB AND SIDEWALK VEHICULAR ENTRANCES.
8. NO SPEED BUMPS SHALL BE INSTALLED ON ANY DESIGNATED FIRE ROUTE.
9. MAX. POROSITY OF ALL GROUND LEVEL VENTILATION GRATES MUST BE 20mm X 20mm PER TORONTO GREEN STANDARDS.
10. ALL EXTERIOR LIGHT FIXTURES TO BE 'DARK SKY' COMPLIANT.

UTILITY/SERVICES NOTES

1. THE METHOD OF INSTALLATION FOR THE PROPOSED SERVICE CONNECTIONS WILL BE AT THE DISCRETION OF TORONTO WATER.
2. EXISTING CONNECTIONS NO LONGER IN USE SHALL BE DISCONNECTED BY TORONTO WATER AT THE OWNER'S COST.
3. THE LOCATION OF THE WATER METER SHALL BE TO TORONTO WATER'S SATISFACTION."
4. THE OWNER IS REQUIRED TO INSTALL AND MAINTAIN A PREMISE ISOLATION DEVICE FOR ALL APPLICABLE WATER SERVICES IN ACCORDANCE WITH THE TORONTO MUNICIPAL CODE, CHAPTER 851 WATER SUPPLY, THE BUILDING CODE AND CSA B64 SERIES STANDARDS.
5. THE BUILDING'S STORM AND SANITARY SYSTEM MUST BE DESIGNED TO BE ABLE TO OPERATE UNDER MUNICIPAL SURCHARGE CONDITIONS.
6. BE ADVISED THAT SHOULD ANY PARTY, INCLUDING THE APPLICANT OR ANY SUBSEQUENT OWNER, APPLY FOR MORE THAN ONE CONDOMINIUM CORPORATION ENCOMPASSING ANY OR ALL OF THIS DEVELOPMENT OR MAKE AN APPLICATION THAT RESULTS IN A LAND DIVISION, STAFF MAY REQUIRE LEGAL ASSURANCES, INCLUDING BUT NOT LIMITED TO EASEMENTS, WITH RESPECT TO THE APPROVED SERVICES. SUCH ASSURANCES WILL BE DETERMINED AT THE TIME OF APPLICATION FOR CONDOMINIUM APPROVAL.

LOADING NOTES

1. TYPE G LOADING SPACE AND ADJACENT STAGING PAD HAVE VERTICAL CLEARANCE OF MIN 6.1 METERS, OVERHEAD DOOR TO LOADING SPACE WILL HAVE MIN 4.4 METER HEIGHT. 2.1M DEEP STAGING AREA DIRECTLY IN FRONT OF THE LOADING AREA TO HAVE MIN. VERTICAL CLEARANCE OF 6.1M.
2. TYPE G LOADING SPACE WILL BE SHARED BETWEEN RESIDENTIAL AND NON-RESIDENTIAL USES. NON-RESIDENTIAL COMPONENT WILL ONLY SCHEDULE USE OF THE TYPE G LOADING SPACE ON DIFFERENT DAYS FROM THE COLLECTION DAYS OF THE RESIDENTIAL COMPONENT TO ENSURE THAT THE TYPE G LOADING SPACE WILL BE VACANT FOR CITY WASTE COLLECTION.
3. NON-RESIDENTIAL WASTE WILL BE LABELLED AND STORED SEPARATELY FROM THE BINS FOR RESIDENTIAL WASTE.
4. TYPE G LOADING SPACE WILL BE LEVEL (+/- 2%) AND CONSTRUCTED WITH MIN 200mm THICK CONCERETE SLAB
5. A WARNING SYSTEM WILL BE PROVIDED, ALERTING DRIVERS WHEN EXITING THE UNDERGROUND PARKING GARAGE THAT LARGE TRUCKS ARE MANOEUVRING WITHIN THE PUBLIC LANE;
6. ALL ACCESS DRIVEWAYS TO BE USED BY THE GARBAGE COLLECTION VEHICLE WILL HAVE:
   a) MAXIMUM GRADIENT OF 8%;
   b) MINIMUM VERTICAL CLEARANCE OF 4.4 METRES THROUGHOUT;
   c) MINIMUM WIDTH OF 4.5 METRES THROUGHOUT; AND,
   d) 6 METRES WIDE AT POINT OF INGRESS AND EGRESS.
7. 'NO PARKING' SIGNS TO BE PROVIDED AND MAINTAINED ADJACENT TO THE LOADING SPACE.
8. CONSTRUCT ANY TYPE G LOADING SPACE AND ALL DRIVEWAYS AND PASSAGEWAYS PROVIDING ACCESS THERETO, TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, INCLUDING ALLOWANCE FOR CITY OF TORONTO BULK LIFT AND REAR BIN LOADING WITH IMPACT FACTORS WHERE THEY ARE TO BE BUILT AS SUPPORTED STRUCTURES.
9. THE RESIDENTIAL SOLID WASTE ROOM WILL ACCOMMODATE GARBAGE, RECYCLING AND ORGANICS FOR THE RESIDENTIAL COMPONENT OF THE BUILDING VIA USE OF A TRISORTER.
10. BULK WASTE HAS $10m^2$ DESIGNATED FLOOR AREA.
11. "COLLECTION OF WASTE MATERIALS FOR THIS DEVELOPMENT WILL TAKE PLACE IN A PARTIALLY ENCLOSED LOADING BAY. AN ON-SITE STAFF PERSON IS RESPONSIBLE FOR MOVING THE BINS FROM THE GARBAGE STORAGE SPACE TO THE COLLECTION POINT AND PROVIDE VEHICULAR DIRECTIVES TO THE COLLECTION VEHICLE OPERATOR AS REQUIRED."
12. THIS BUILDING IS DESIGNED WITH A TYPE G LOADING SPACE. A FLASHING WARNING LIGHT SYSTEM AND / OR APPROPRIATE SIGNAGE ADJACENT TO THE SPACE, AT NO COST TO THE CITY, WILL BE IN PLACE AND ACTIVATED DURING COLLECTION AND REMAIN ACTIVE UNTIL THE VEHICLE EXITS THE SITE. REFER TO TRAFFIC CONSULTANT REPORT FOR SWEPT PATH.
13. SOLID WASTE MANAGEMENT TO BE NOTIFIED UPON COMPLETION OF THE DEVELOPMENT AND SHOULD PUBLIC WASTE COLLECTION BE USED, ALL NECESSARY APPLICATION AND WAIVER FORMS TO BE COMPLETED PRIOR TO COMMENCEMENT OF CITY REFUSE COLLECTION.
14. NON-RESIDENTIAL GARBAGE WILL BE COLLECTED BY LISCENSED PRIVATE WASTE MANAGEMENT COMPANY.
15. REFUSE GENERATED BY THE NON-RESIDENTIAL USE MUST BE STORED ON SITE, IN RODENT PROOF CONTAINERS IN ACCORDANCE WITH CHAPTER 841 OF THE MUNICIPAL CODE, "WASTE COLLECTION, COMMERCIAL PROPERTIES".



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LEGEND

- PRINCIPAL ENTRY
- VEHICULAR ENTRY/EXIT
- SIAMESE CONNECTION
- FIRE HYDRANT
- EX. MH — EXISTING MANHOLE
- EX. CB — EXISTING CATCH BASIN
- MH — MANHOLE
- CB — CATCH BASIN
- HP — EXISTING HYROPOLE
- HLP — EXISTING HYRO LIGHT POLE
- 86.95 — GEODETIC ELEVATION (ESTABLISHED GRADE = XX.XX)
- 78.20 — EXISTING GRADE ELEVATION
- BARRIER FREE TURNING RADIUS
- PROPERTY LINE
- FFE — FINISHED FLOOR ELEVATION
- TOP — TOP OF PARAPET
- TOR — TOP OF ROOF
- TOS — TOP OF STRUCTURE
- TOFF — TOP OF FINISHED PAVER
- TGS — TORONTO GREEN STANDARDS
- TPZ — TREE PROTECTION ZONE

NOTES:

SURVEY INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF PART OF LOT 8 REGISTERED PLAN 294 YORK, CITY OF TORONTO"

BY R. AVIS SURVEYING INC.

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

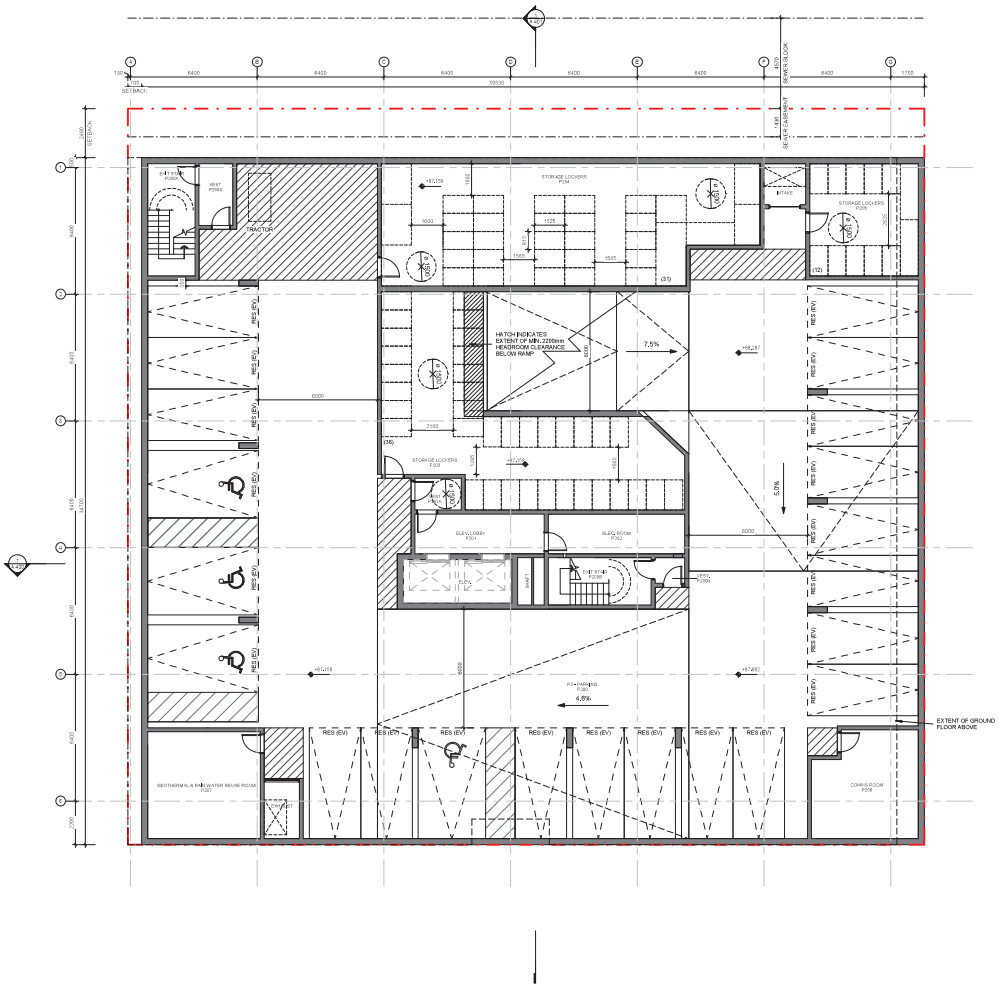
Title: SITE PLAN

Project No. 2214 | Scale 1 : 100

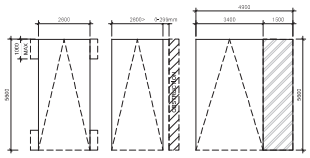
Drawing No.

A 100

2022-11-04 4:05:28 PM
C:\Users\laura\Documents\2214_450 Dufferin_new_lauraJ4QW8.rvt



VEHICLE PARKING DIMENSIONS



TYPICAL PARKING SPACE | TYPICAL OBSTRUCTED PARKING SPACE | TYPICAL BARRIER FREE PARKING SPACE PER 559-2017

PARKING LEGEND

RES	RESIDENTIAL
COM	COMMERCIAL
VIS	VISITOR
EV	ELETTRICAL VEHICLE CHARGING STATIONS (WHERE INDICATED ON PLANS. PROVIDE EV CHARGING STATIONS AT PARKING SPACES. PROVIDE ROUGHIN (CONDUIT ONLY) FOR EV CHARGING AT ALL REMAINING SPACES.

NOTE:

1) MIRRORS AND TRAFFIC CONTROL SIGNS ARE TO BE MOUNTED SO THAT THE BOTTOM OF THE SIGNS AND/OR MIRRORS ARE 2.10 METRES ABOVE CURB OR GRADE EXCEPT WHERE RESTRICTED BY OVERHEAD STRUCTURE/UTILITIES IN WHICH CASE THE DISTANCE BETWEEN BOTTOM OF SIGNS AND FLOOR SHALL BE MAXIMIZED. SIGNS RUNNING PARALLEL AND PERPENDICULAR TO THE CURB FACE, SHOULD BE PLACED SUCH THAT THE OUTER EDGE OF THE SIGN WILL NOT PROJECT BEYOND THE CURB INTO THE TRAFFIC LANE.

2) MAINTAIN MIN. 2100MM CLEAR HEADROOM IN ALL LOCKERS.

3) MAINTAIN MIN. 2100MM CLEAR HEADROOM THROUGHOUT.

4) THE SLOPE OF ALL DRIVE AISLES (EXCEPT RAMPS WITH NOTED SLOPES) DOES NOT EXCEED THE MAXIMUM OF 5%. THE WIDTH OF ALL DRIVE AISLES TO BE A MINIMUM OF 7000MM UNLESS OTHERWISE NOTED.

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
PARKING LEVEL P2

Project No. 2214 | Scale 1 : 100

Drawing No.
A 200

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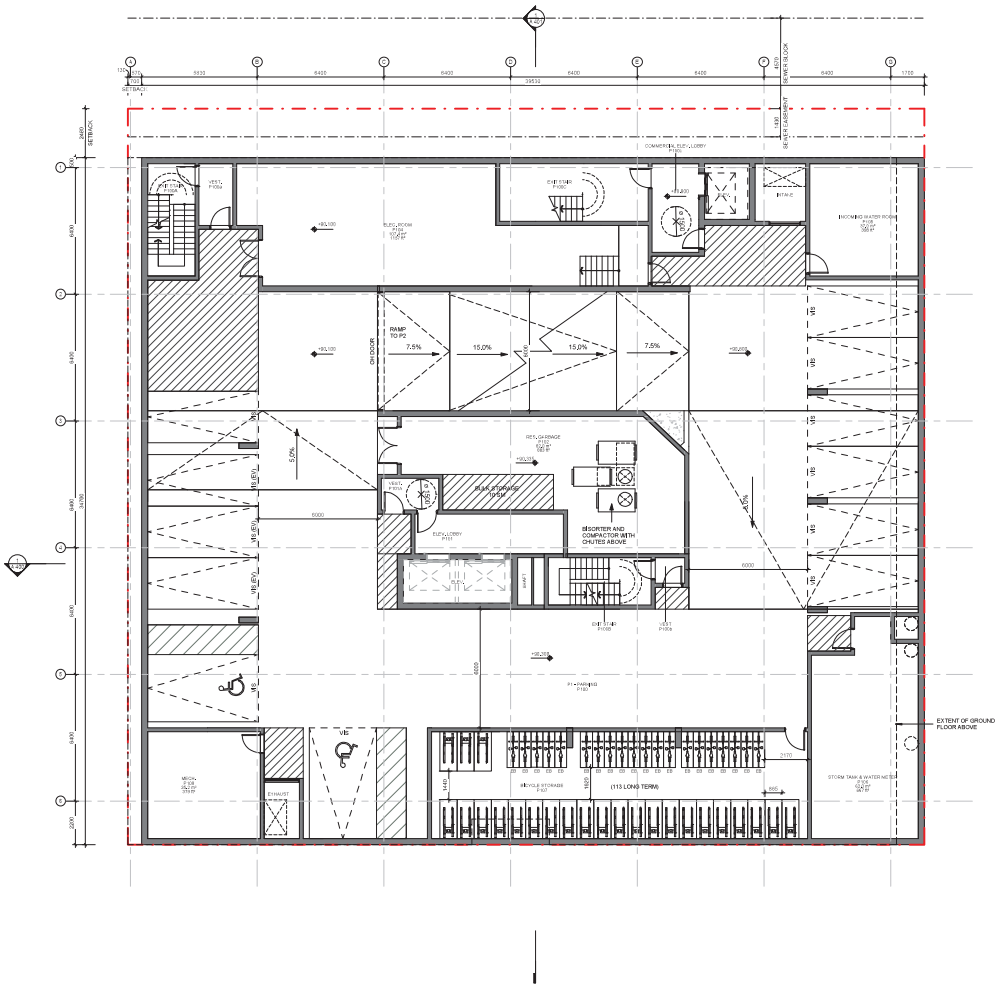
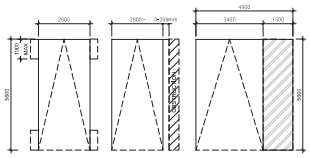


VEHICLE PARKING DIMENSIONS



TYPICAL PARKING SPACE

TYPICAL OBSTRUCTED PARKING SPACE

TYPICAL BARRIER FREE PARKING SPACE PER 568-2017

PARKING LEGEND

RES	RESIDENTIAL
COM	COMMERCIAL
VIS	VISITOR
EV	ELETRICAL VEHICLE CHARGING STATIONS (WHERE INDICATED ON PLANS. PROVIDE EV CHARGING STATIONS AT PARKING SPACES. PROVIDE ROUGHIN (CONDUIT ONLY) FOR EV CHARGING AT ALL REMAINING SPACES.

NOTE:

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2) MAINTAIN MIN. 2100MM CLEAR HEADROOM IN ALL LOCKERS.

3) MAINTAIN MIN. 2100MM CLEAR HEADROOM THROUGHOUT.

4) THE SLOPE OF ALL DRIVE AISLES (EXCEPT RAMPS WITH NOTED SLOPES) DOES NOT EXCEED THE MAXIMUM OF 5%. THE WIDTH OF ALL DRIVE AISLES TO BE A MINIMUM OF 7000MM UNLESS OTHERWISE NOTED.

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
PARKING LEVEL P1

Project No. 2214 | Scale 1 : 100

Drawing No.
A 201

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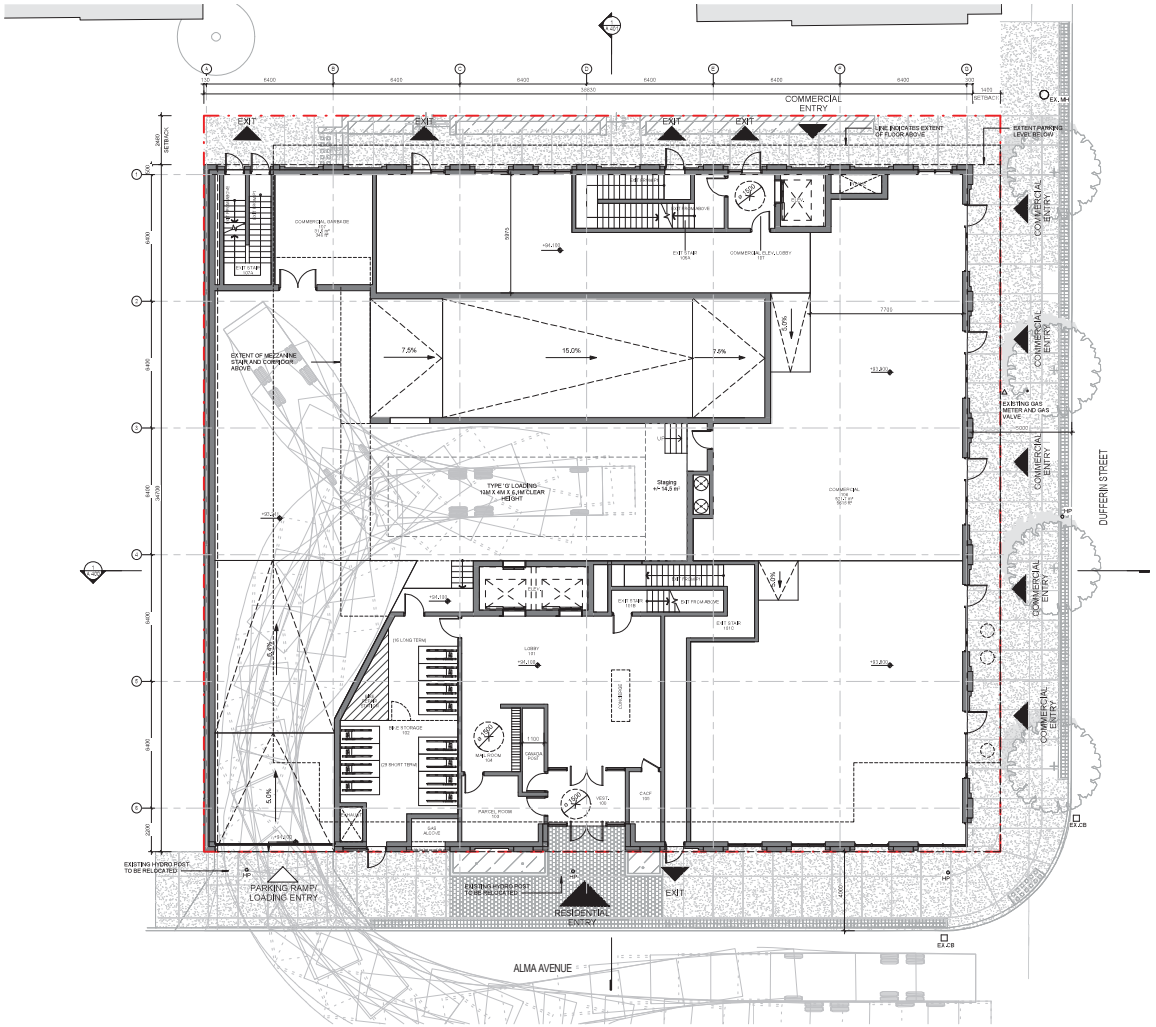

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LEGEND

- PRINCIPAL ENTRY
- VEHICULAR ENTRY/EXIT
- SIAMESE CONNECTION
- FIRE HYDRANT
- EX MH — EXISTING MANHOLE
- EX CB — EXISTING CATCH BASIN
- MH — MANHOLE
- CB — CATCH BASIN
- EXISTING HYDROPOLE
- EXISTING HYDRO LIGHT POLE
- 84.95 — GEODETIC ELEVATION (ESTABLISHED GRADE = XX.XX)
- 78.20 — EXISTING GRADE ELEVATION
- BARRIER FREE TURNING RADIUS
- PROPERTY LINE
- FFE — FINISHED FLOOR ELEVATION
- TOP — TOP OF PARAPET
- TOR — TOP OF ROOF
- TOS — TOP OF STRUCTURE
- TOFF — TOP OF FINISHED PAVER
- TGS — TORONTO GREEN STANDARDS
- TPZ — TREE PROTECTION ZONE

NOTES:

SURVEY INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF PART OF LOT 8 REGISTERED PLAN 284 YORK, CITY OF TORONTO"

BY R. AVIS SURVEYING INC.

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
GROUND FLOOR PLAN

Project No. 2214 | Scale 1 : 100

Drawing No.

A 202

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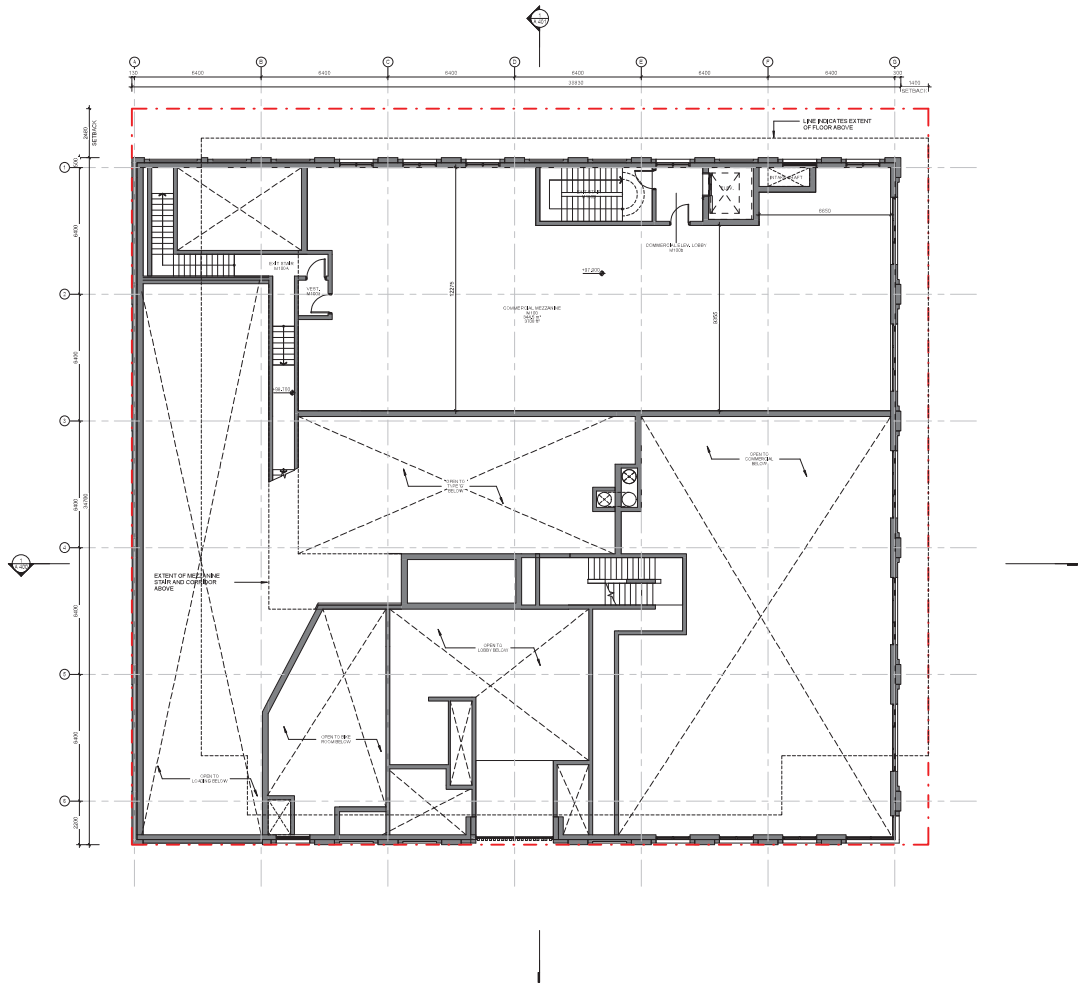

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
MEZZANINE FLOOR PLAN

Project No. 2214 | Scale 1 : 100

Drawing No.

A 203

2022-11-04 4:05:30 PM
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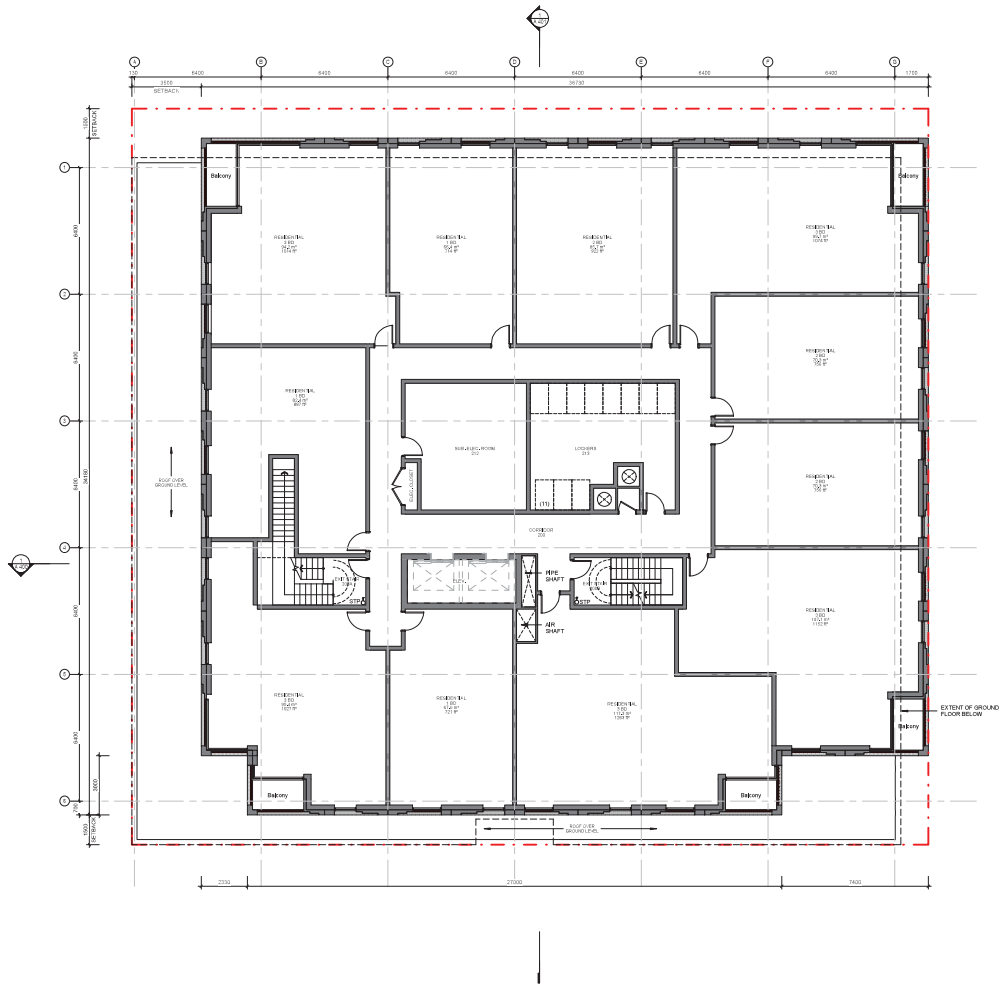

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
FLOOR PLAN - LEVEL 2

Project No. 2214 | Scale 1 : 100

Drawing No.

A 204

2022-11-04 4:05:32 PM
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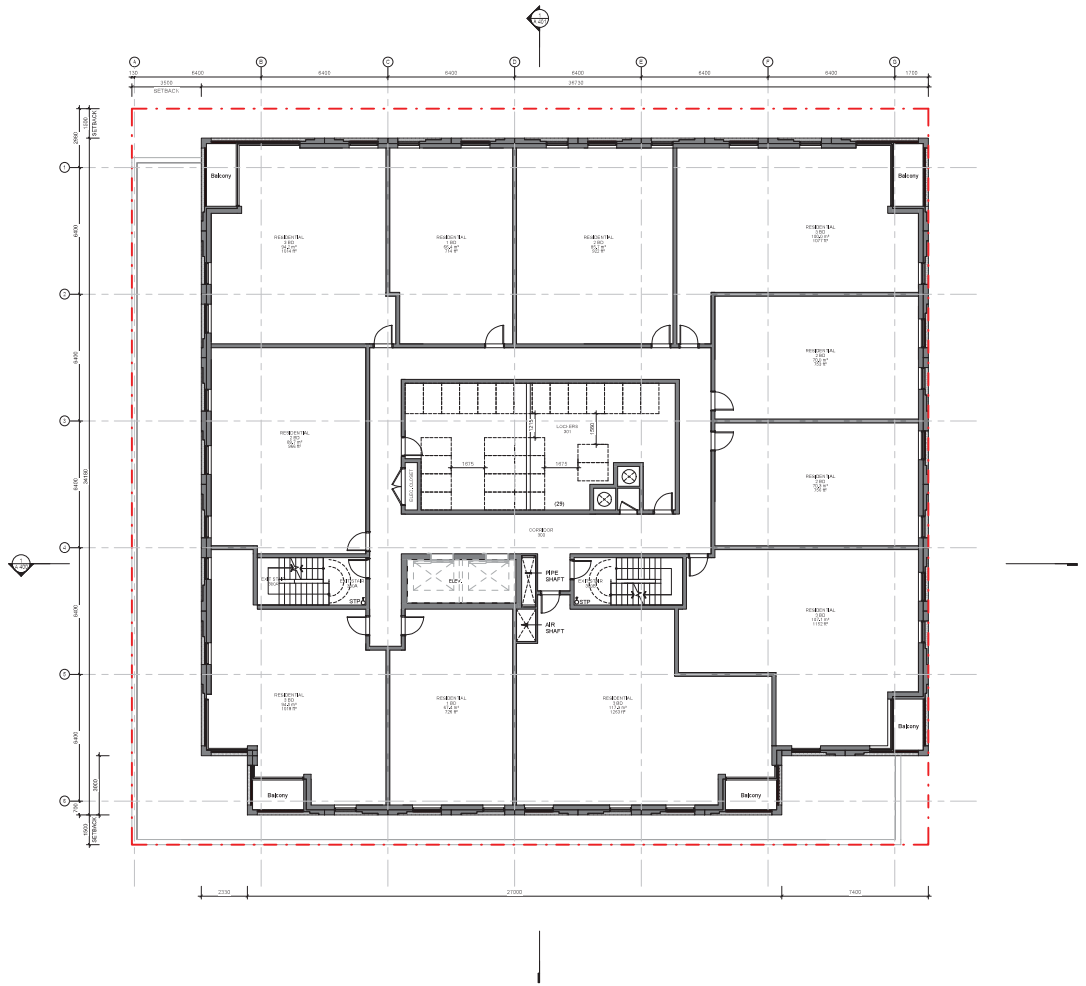

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
FLOOR PLAN - TYP.
LEVEL 3-4

Project No. 2214 | Scale 1 : 100

Drawing No.

A 205

2022-11-04 4:05:35 PM
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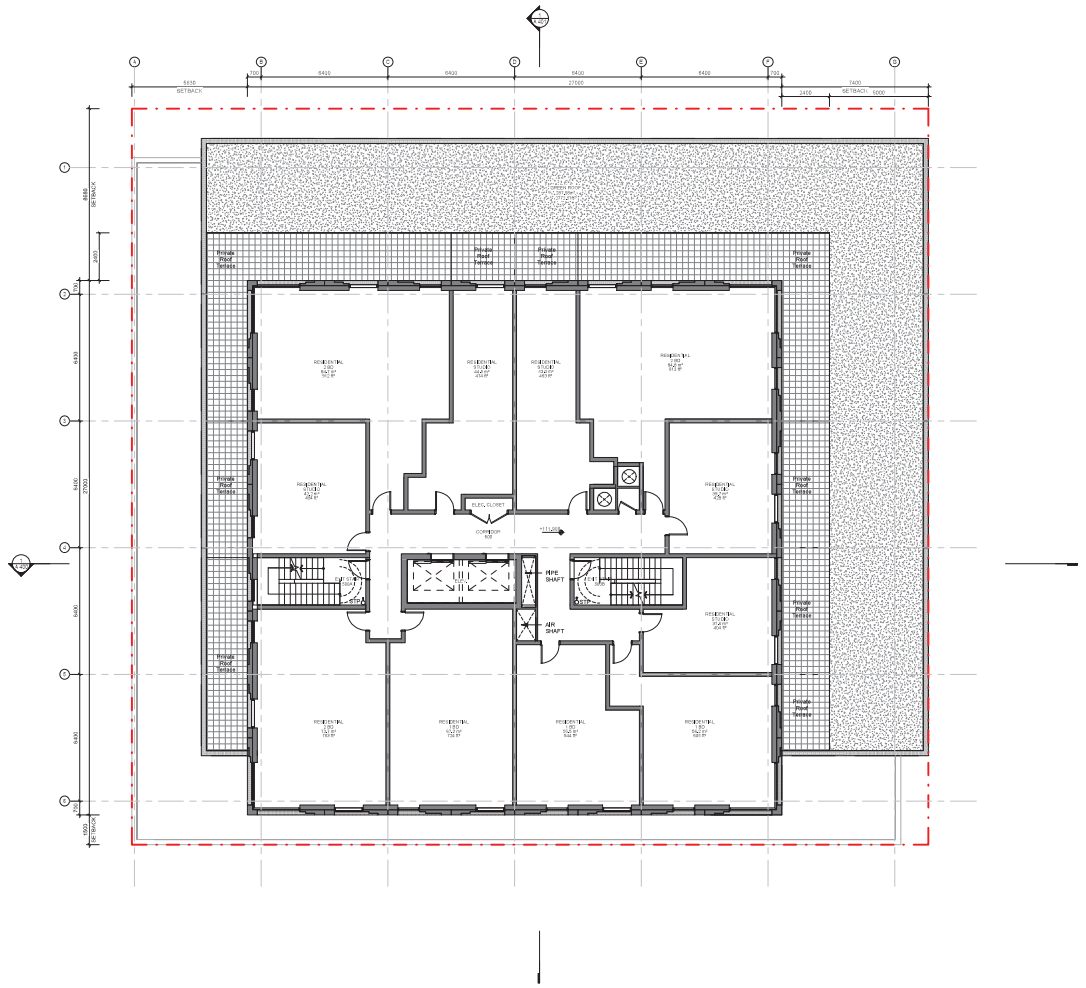

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
FLOOR PLAN - LEVEL 5

Project No. 2214 | Scale 1 : 100

Drawing No.

A 206

2022-11-04 4:05:37 PM
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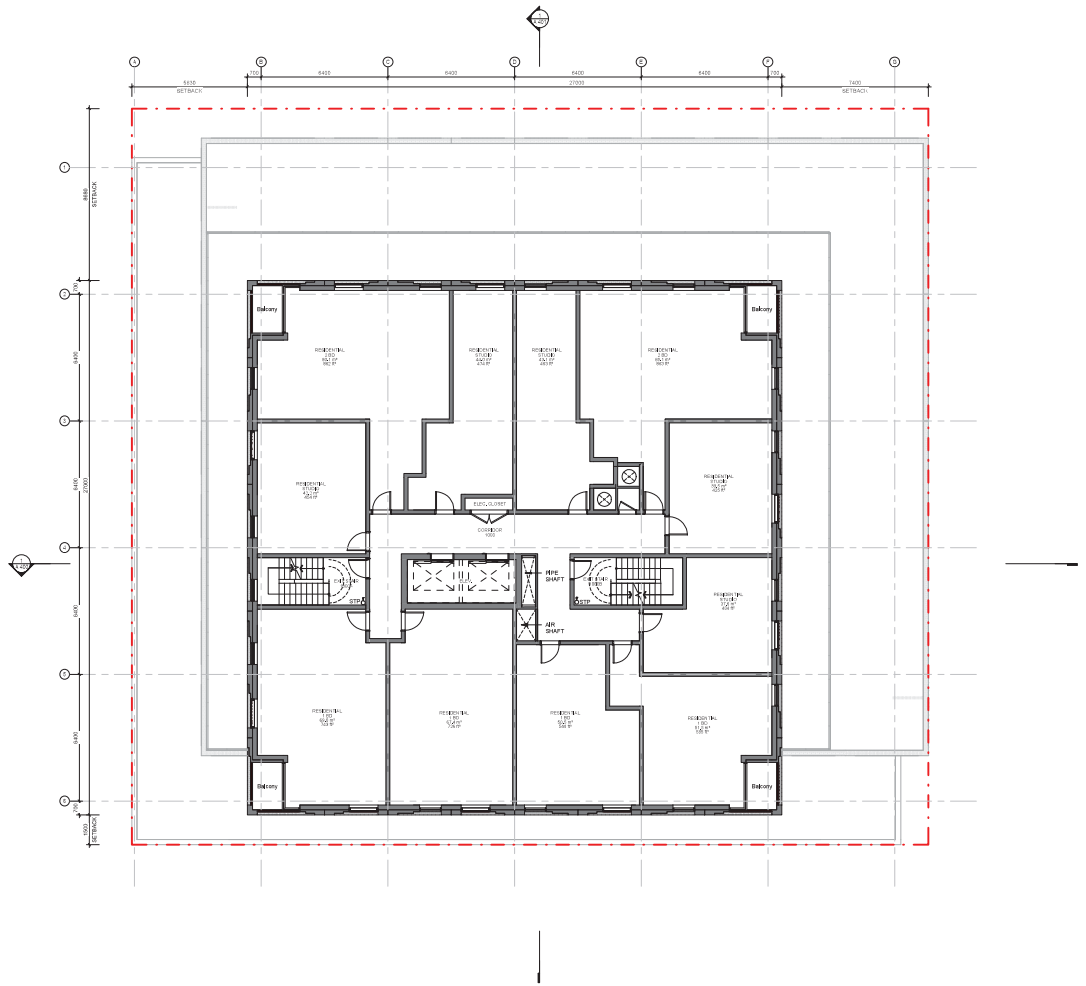

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
FLOOR PLAN - TYP.
LEVEL 6-14

Project No. 2214 | Scale 1 : 100

Drawing No.

A 207

2022-11-04 4:05:40 PM
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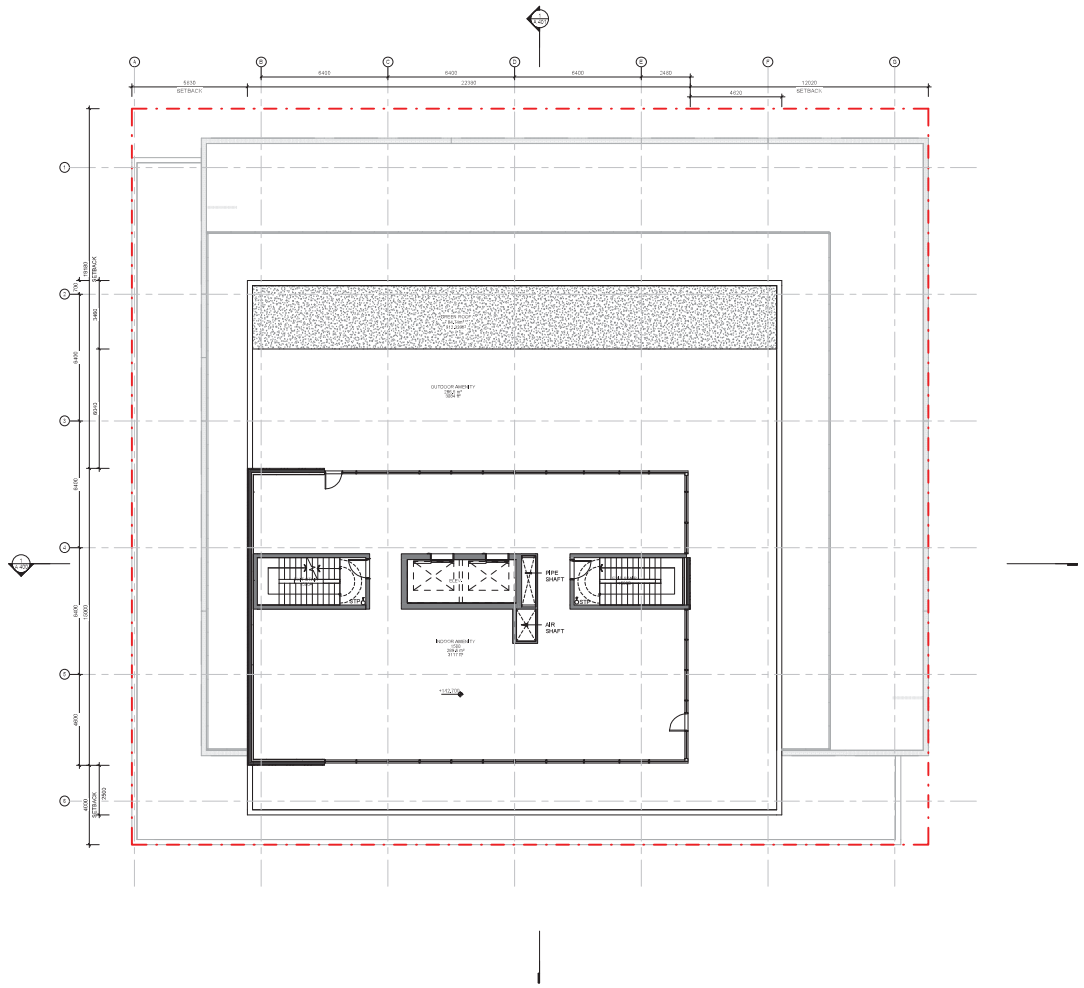

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
FLOOR PLAN - LEVEL 15

Project No. 2214 | Scale 1 : 100

Drawing No.

A 208

2022-11-04 4:05:42 PM
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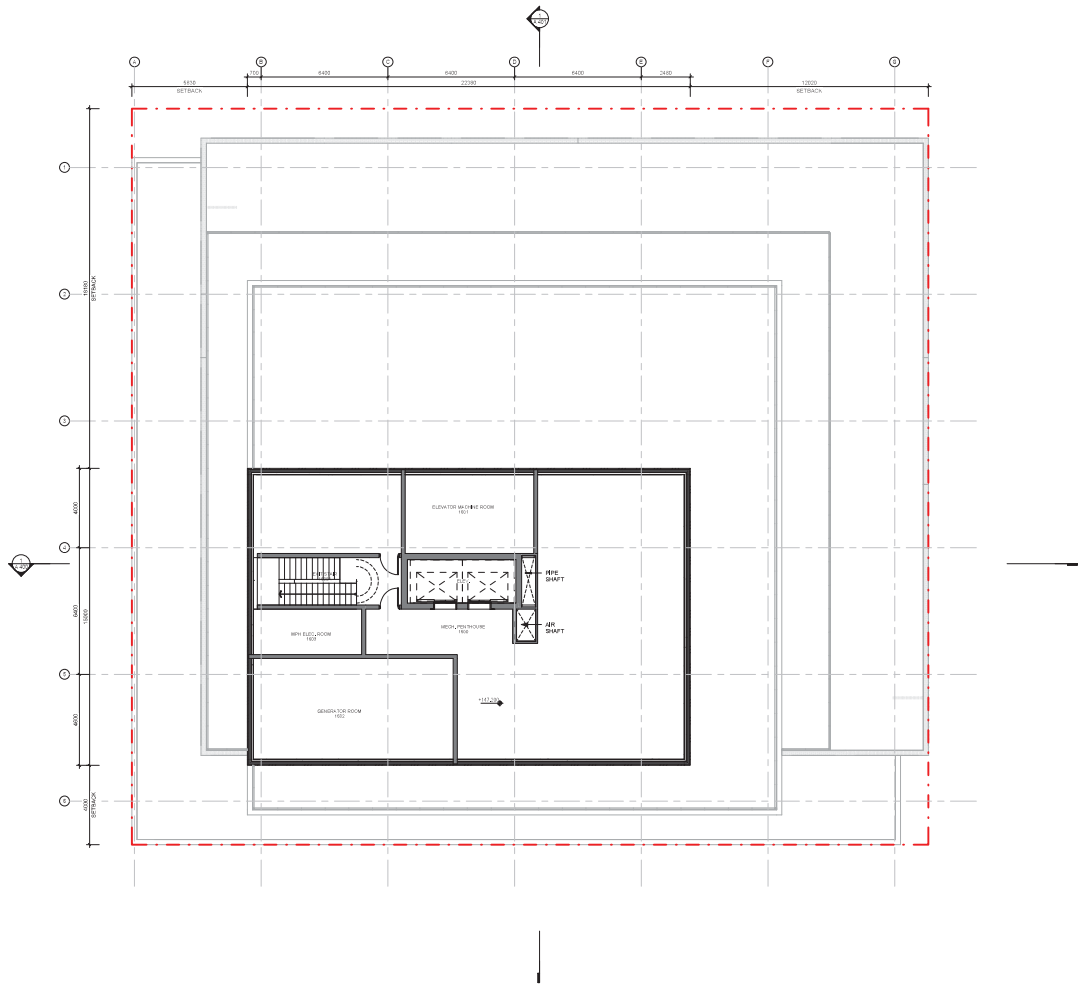

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
FLOOR PLAN - MPH

Project No. 2214 | Scale 1 : 100

Drawing No.

A 209

2022-11-04 4:05:43 PM
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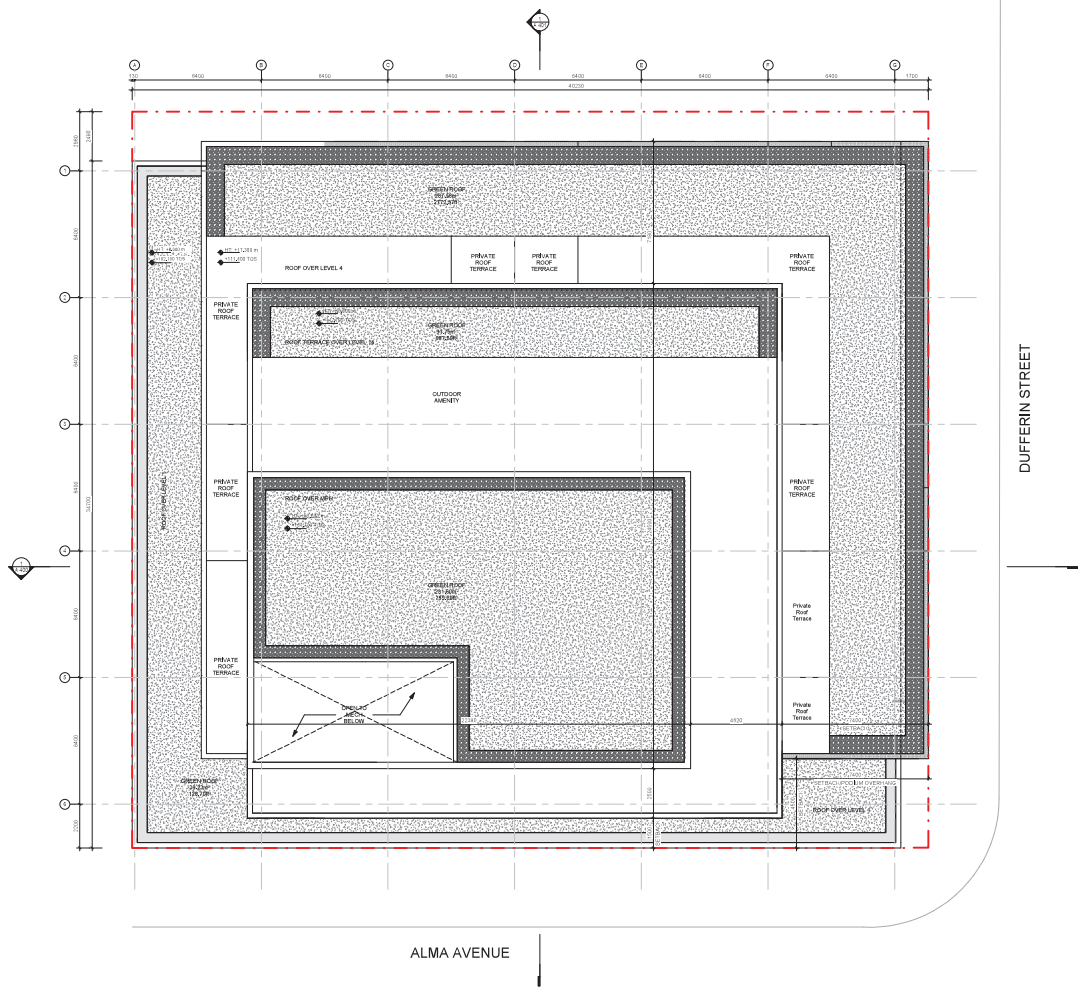

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:

ROOF PLAN

Project No. 2214 | Scale 1 : 100

Drawing No.

A 210

2022-11-04 12:09:00 PM
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MATERIAL LEGEND

- MAS-1 MASONRY CLADDING (LIGHT BEIGE)
- PC-1 PRECAST (SANDBLAST FINISH)
- STL-1 PREFIN. STEEL CLADDING SYSTEM (GREY)
- GL-1 CLEAR GLASS
- GL-2 TINTED GLASS (LIGHT GREY)
- LVR-1 LOUVRES (DARK BRONZE)
- G-1 GUARDRAIL 1 (CLEAR GLASS)
- G-2 GUARDRAIL 2 (METAL IN DARK BRONZE)
- G-3 GUARDRAIL 3 (JULIET, METAL IN DARK BRONZE)

TYP. BIRD FRIENDLY FRIT PATTERN

NOTES:

1) ALL EXTERIOR LIGHT FIXTURES WILL BE DARK SKY COMPLIANT, DIRECTED DOWNWARD, AND DESIGNED TO PREVENT GLARE AND LIGHT TRESPASS ONTO NEIGHBOURING PROPERTIES

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
ELEVATION - EAST

Project No. 2214 | Scale 1 : 100

Drawing No.
A 300

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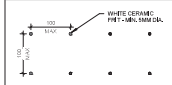
MATERIAL LEGEND

- **MAS-1** MASONRY CLADDING (LIGHT BEIGE)
- **PC-1** PRECAST (SANDBLAST FINISH)
- **STL-1** PREFIN. STEEL CLADDING SYSTEM (GREY)
- **GL-1** CLEAR GLASS
- **GL-2** TINTED GLASS (LIGHT GREY)
- **LV-1** LOUVRES (DARK BRONZE)
- **G-1** GUARDRAIL 1 (CLEAR GLASS)
- **G-2** GUARDRAIL 2 (METAL IN DARK BRONZE)
- **G-3** GUARDRAIL 3 (JULIET, METAL IN DARK BRONZE)

TYP. BIRD FRIENDLY FRIT PATTERN



NOTES:

1) ALL EXTERIOR LIGHT FIXTURES WILL BE DARK SKY COMPLIANT, DIRECTED DOWNWARD, AND DESIGNED TO PREVENT GLARE AND LIGHT TRESPASS ONTO NEIGHBOURING PROPERTIES

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:

ELEVATON - SOUTH

Project No. 2214 | Scale 1 : 100

Drawing No.

A 301

2022-11-04 12:03:43 PM
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Prior to commencement of the Work the Contractor shall verify all drawing dimensions, datums, and levels with the Contract Documents and with the conditions on site; ascertain any discrepancies between the site and the Contract Documents, and bring these items to the attention of the Architect for clarification.

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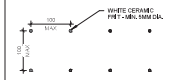
MATERIAL LEGEND

- **MAS-1** MASONRY CLADDING (LIGHT BEIGE)
- **PC-1** PRECAST (SANDBLAST FINISH)
- **STL-1** PREFIN. STEEL CLADDING SYSTEM (GREY)
- **GL-1** CLEAR GLASS
- **GL-2** TINTED GLASS (LIGHT GREY)
- **LVR-1** LOUVRES (DARK BRONZE)
- **G-1** GUARDRAIL 1 (CLEAR GLASS)
- **G-2** GUARDRAIL 2 (METAL IN DARK BRONZE)
- **G-3** GUARDRAIL 3 (JULIET, METAL IN DARK BRONZE)

TYP. BIRD FRIENDLY FRIT PATTERN



NOTES:

1) ALL EXTERIOR LIGHT FIXTURES WILL BE DARK SKY COMPLIANT, DIRECTED DOWNWARD, AND DESIGNED TO PREVENT GLARE AND LIGHT TRESPASS ONTO NEIGHBOURING PROPERTIES

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
ELEVATION - WEST

Project No. 2214 | Scale 1 : 100

Drawing No.
A 302

2022-11-04 12:04:40 PM
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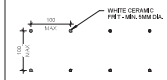
MATERIAL LEGEND

- MAS-1 MASONRY CLADDING (LIGHT BEIGE)
- PC-1 PRECAST (SANDBLAST FINISH)
- STL-1 PREFIN. STEEL CLADDING SYSTEM (GREY)
- GL-1 CLEAR GLASS
- GL-2 TINTED GLASS (LIGHT GREY)
- LVR-1 LOUVRES (DARK BRONZE)
- G-1 GUARDRAIL 1 (CLEAR GLASS)
- G-2 GUARDRAIL 2 (METAL IN DARK BRONZE)
- G-3 GUARDRAIL 3 (JULIET, METAL IN DARK BRONZE)

TYP. BIRD FRIENDLY FRIT PATTERN



NOTES:

1) ALL EXTERIOR LIGHT FIXTURES WILL BE DARK SKY COMPLIANT, DIRECTED DOWNWARD, AND DESIGNED TO PREVENT GLARE AND LIGHT TRESPASS ONTO NEIGHBOURING PROPERTIES

No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN

450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:

ELEVATION - NORTH

Project No. 2214 | Scale 1 : 100

Drawing No.

A 303

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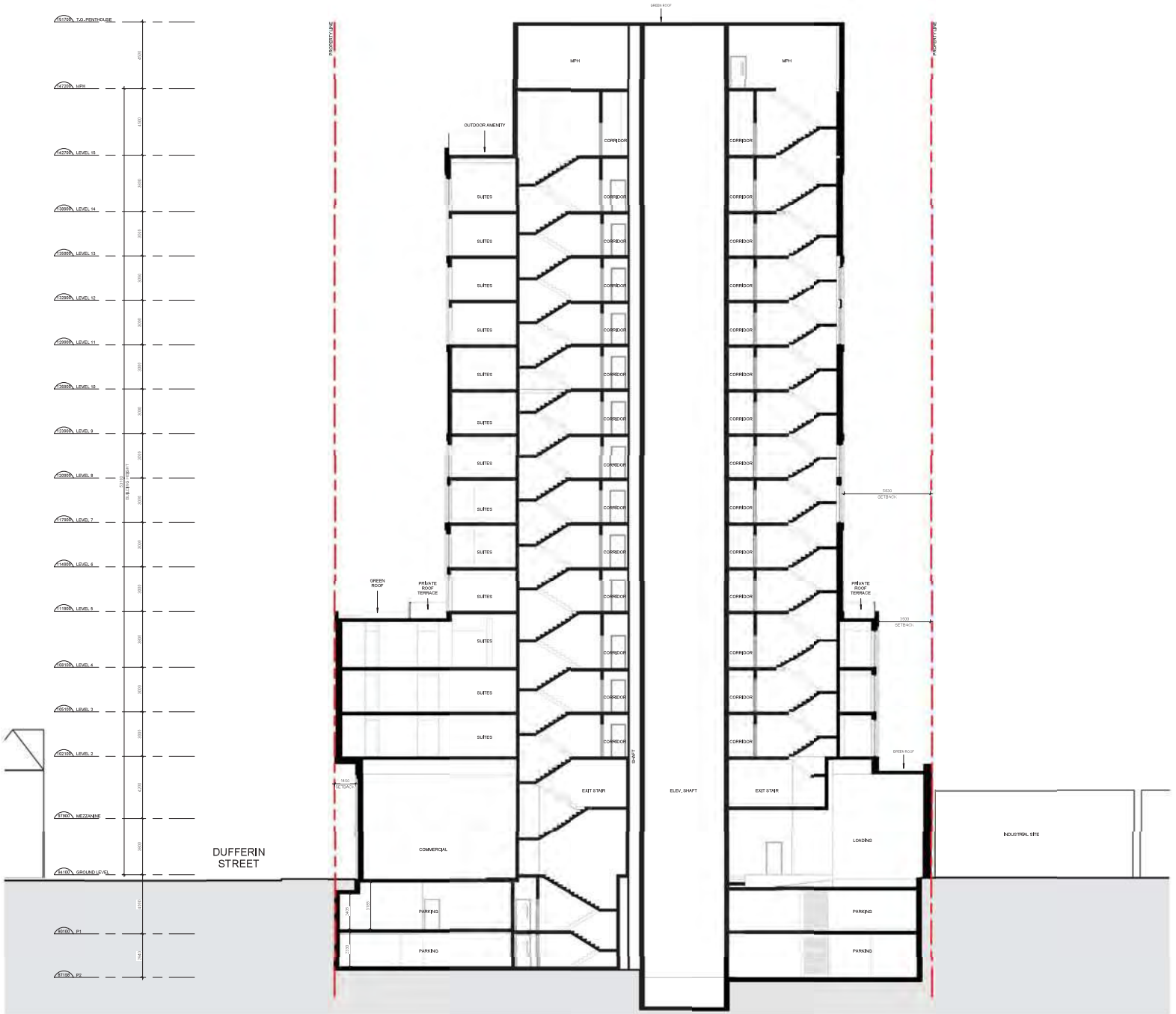

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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

ONTARIO ASSOCIATION OF ARCHITECTS

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
BUILDING SECTION - EAST-WEST

Project No. 2214 | Scale 1 : 100

Drawing No.
A 400

2022-11-04 12:05:55 PM
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No.	Date	Issue/Revision
1	2022.11.04	ISSUED FOR ZBA

450 DUFFERIN
450 DUFFERIN STREET
TORONTO, ON, M6K 2A5

Title:
BUILDING SECTION - NORTH-SOUTH

Project No. 2214 | Scale 1 : 100

Drawing No.
A 401

2022-11-04 12:05:59 PM
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APPENDIX F

Peer Review Comments and HGC Engineering Responses

HGC ENGINEERING

Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203
Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044

May 27, 2022

Via email to: charles@hullmark.ca and cglass@hullmark.ca

Charles Arbez, PMP
m: 647.381.2162

Re: Responses to May 3, 2022 Peer Review Comments by Arcadis Canada Inc.
Noise Feasibility Study, Proposed Mixed-Use Development,
450 Dufferin Street,
Toronto, Ontario
HGC Project No. 02000547

Dear Charles,

As requested, we have reviewed the peer review comments provided by Arcadis Canada Inc. dated May 3, 2022 with regard to our latest Noise Feasibility Study dated November 2, 2020 for the above referenced site. Our responses are below and follow the same order as the comments (in *italics*) outlined in their letter.

In addition, the Site is abutting the Riverview Produce Inc. facility to the west. HGC Engineering identified the facility as a potential "industrial" facility of interest from a noise perspective. Given its nature of activities, Arcadis is in agreement with HGC's classification of the facility as "Class 1 – Industrial".

Noted.

Transportation Sources of Sound considered in the HGC study included the roadway noise from Dufferin Street on the east side of the site and train traffic along the Metrolinx's Galt, Newmarket Weston line, and Pearson Subdivisions located on the west side of the site separated by the Industrial facility (The Riverview Produce). According to a desktop review of the aerial photography using Google Maps, Arcadis is in agreement with the transportation noise sources identified by HGC.

Noted.

MECP Publication NPC-300 guideline sections are correctly referenced in the Study.

Noted.

ARCADIS FINDINGS AND RECOMMENDATIONS
As a result of our review of the noise and vibration component, Arcadis generally agrees with the methodology and the justifications of the following:
1) the methodology and approach undertaken in the noise study is appropriate;
2) the methodology and approach undertaken to dismiss the vibration assessment requirement based on the appropriate guidelines is agreeable;
3) the recommended noise mitigation measures are in compliance with the Ontario Ministry of the Environment, Conservation and Parks (MECP) regulatory standards for noise as set out in all applicable legislations, regulations and guidelines. Implementation of the recommendations allow for adjacent Employment Areas to continue to operate without having an adverse effect on the Site;
4) it is our professional opinion that the proposed mitigation measures for the proposed land conversion meet or are equivalent to the generally accepted "industry best practices" to ensure no adverse effect will be impacting the proposed land conversion on the current, reasonable future and potential operations and activities of the nearby Employment Areas and/or major facilities; and
5) the recommended mitigation measures demonstrate that there are no compatibility issues due to the possibility of any adverse effects.

Noted.

However, the following should be addressed:
N&V Finding # 1: The rail traffic data (No. of Cars and No. of Locomotives of VIA Trains) in Table 2 of the Study is not consistent with the inputs from STAMSON printout. Also, Years of Growth for VIA trains considered in the assessment is 4. HGC to provide justification to use 4 years to obtain forecasted traffic data.

N&V Recommendation # 1: The input into Table 2 or STAMSON model should be confirmed and corrected as necessary. Also, Years of Growth for VIA trains considered in the assessment should be 10 in accordance to the ORNAMENT and MECP Publication NPC-300.

Noted. When the noise study is revised with the detailed floor plans and budling elevations, the numbers in Table 2 and the Stamsons will be revised and new rail data will be obtained.

Due to the low volume of VIA trains and the significant number of GO Trains, a minor change to the VIA trains numbers is not expected to change the results of the study.

N&V Finding # 2: The STC requirement is based on preliminary assumptions. Arcadis agrees that appropriate Ventilation requirements and Warning Clauses are provided based on the calculated sound levels.

N&V Recommendation # 2: As noted by HGC, the STC values and requirements of the windows should be confirmed once the actual floor and elevation plans are available.

Noted.

N&V Finding # 3: The land use compatibility (current and proposed use) scenarios as identified by the applicant do not seem appropriate as the "New Choice Excavating and All Type Disposal" facility located at 50 Alma Avenue are not considered in the Study.

N&V Recommendation # 3: The facility located at 50 Alma Avenue should be reviewed for compatibility against MECP D6 Guidelines.

HGC personnel communicated with Riverview Produce (owners of the building at 50 Alma Avenue). Riverview Produce personnel indicated that "New Choice Excavating and All Type Disposal" are not tenants and left the building a number of years ago. This explains their ECA dated 2016 on the MECP website.

N&V Finding # 4: The desktop review of the proposed land conversion considered the location of the Site relative to nearby Employment Areas (the Riverview Produce Inc.) and/or major facilities (Metrolinx Galt, Newmarket Weston line, and Pearson Subdivisions Railway) located within 300 metres of the subject site were conducted. Upon review of the Employment Land Conversion Rationale, it is apparent, however, that the stationary noise associated with the operations of "New Choice Excavating and All Type Disposal" facility located at 50 Alma Avenue was not addressed in the Study. It is noted that the "Methodology for Compatibility/Mitigation Study" by Goodman LLP mentioned that this facility has an ECA for waste management, nevertheless an evaluation of the facility from a stationary noise perspective is not addressed.

N&V Recommendation # 4: The operations of the "New Choice Excavating and All Type Disposal" facility are to be investigated and assessed.

Please see note above. This company is not in business at the 50 Alma Avenue location and therefore does not need to be considered further.

N&V Finding # 5: The Study has mentioned that a study area of 1000 metres was established in the vicinity of the Site to assess the potential impact related to surrounding facilities. Arcadis believes that there are facilities with ECA/EASR registrations within a 1000 metre distance from the Site that are not mentioned in the Study. Some examples are listed below:
• Lakeside Services Corp. located at 49 Beaconsfield Avenue, Toronto ON M6J 3J1 (ECA registration number R-004-9112920643, dated February 10, 2021)
• Silver Lynx Developments Inc. located at 51 Florence Street, Toronto, ON M6K 1P4 (Registration number 1506-A6HQXK, dated January 29, 2016)

N&V Recommendation # 5: Arcadis recommends that all facilities with ECA/EASR registration within a 1000 metre boundary of the Site to be identified and their impact evaluated in the Study.

The company, Lakeside Services Corp. is located 49 Beaconsfield Ave, Toronto. This business is not in close proximity to the subject site at 450 Dufferin Street.

The company (Silver Lynx Developments Inc.) is listed at an address that is currently a residence. The ECA is from 2016 prior to the new residences being constructed along Florence Street.

N&V Finding # 6: A review of the Development's Application portal of the City shows that there are future developments located in the proximity of the Site. The Study did not acknowledge or assess the impact of these developments on the future sensitive land uses within the Site.

N&V Recommendation # 6: The Study should be updated to evaluate potential impacts of these

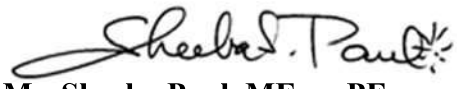
developments on the Site, and vise versa.

There are some developments at a significant distance from the subject site. There is a cooling tower in a well at the existing building to the south. The proposed building is at the same number of storeys (10-storeys). Sound level exceedances are not expected from this cooling tower due to the distance and the elevated sound levels in the area.

At the time of the study, the preliminary design of the future building was in its initial stages, and the mechanical systems had not yet been developed. At a later date, an acoustical consultant should review the design of the mechanical building systems and the equipment selections when they have been determined, to help ensure that the noise levels emitted by the development to the environment are likely to meet the City of Toronto bylaw requirements.

We trust that this is sufficient information for your present needs. Please do not hesitate to call if you have any further questions or require additional information.

Yours truly,
HOWE GASTMEIER CHAPNIK LIMITED



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