

# **Noise Feasibility Study**

## **Proposed Mixed-Use/Residential Development**

### **217 – 227 Cross Avenue and 571 – 587 Argus Road**

### **Oakville, Ontario**

Prepared for:

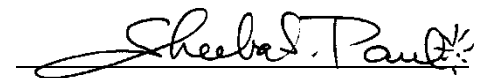
Oakville Argus Cross LP  
1-90 Wingold Avenue  
North York, Ontario, M6B 1P5

Prepared by



Victor Garcia, PEng

and



Sheeba Paul, MEng, PEng

May 30, 2022

HGC Project No. 02100093

# Table of Contents

1	Introduction and Summary .....	1
2	Site Descriptions and Sources of Sound .....	2
3	Sound Level Criteria .....	2
3.1	Road and Rail Traffic Noise .....	2
4	Traffic Noise Predictions .....	4
4.1	Road Traffic Data .....	4
4.2	Rail Traffic .....	5
4.3	Traffic Noise Predictions .....	6
5	Traffic Noise Recommendations .....	9
5.1	Outdoor Living Areas .....	9
5.2	Indoor Living Areas and Ventilation Requirements .....	10
5.3	Building Façade Constructions .....	10
5.4	Warning Clauses .....	13
5.5	Impact of the Development on Itself .....	15
5.6	Impact of the Development on the Environment .....	15
6	Assessment of Stationary Sources of Sound at the Proposed Residential Units .....	16
6.1	Noise Source Description .....	16
6.2	Criteria for Acceptable Sound Levels .....	16
6.2.1	Stationary Noise Criteria .....	16
6.3	Stationary Source Assessment .....	20
6.4	Results .....	22
7	Summary and Recommendations .....	23
8	Conclusions .....	24

**Figure 1: Key Plan**

**Figure 2: Proposed Site Plan**

**Figure 3: Aerial Photo Showing Surrounding Land Uses**

**Figure 4: Aerial Photo Showing Source and Receptor Locations**

**Figure 5: Sound Levels Due to Steady Stationary Noise Sources, Daytime**

**Figure 6: Sound Levels Due to Steady Stationary Noise Sources, Nighttime**

**Appendix A: Road Traffic Data**

**Appendix B: Rail Traffic Data**

**Appendix C: Preliminary Drawings**



ACOUSTICS



NOISE



VIBRATION

# 1 Introduction and Summary

HGC Engineering was retained by Oakville Argus Cross LP to conduct a noise feasibility study for a proposed mixed-use/residential development located at 217 – 227 Cross Avenue and 571 – 587 Argus Road in Oakville, Ontario. The study is required by the municipality as part of the approvals process.

The primary sources of noise are road traffic on the Queen Elizabeth Way (QEW), Trafalgar Road, and Cross Avenue, as well as rail traffic on the Canadian National (CN) railway to the south of the site. Road traffic data was obtained from the Ministry of Transportation (MTO), Region of Halton, and the Town of Oakville. Rail traffic data was obtained from Metrolinx and CN personnel. Traffic data was used to predict future traffic sound levels at the proposed buildings. The predicted sound levels were evaluated with respect to the guidelines of the Ministry of the Environment, Conservation and Parks (MECP), Region and Town.

The study finds that the traffic noise exceeds the MECP sound level criteria during daytime and nighttime hours at the proposed development. Central air conditioning is required for the proposed buildings. Upgraded building and glazing constructions are required for the proposed buildings. When detailed floor plans and building elevations are available for the proposed buildings, the window glazing requirements should be refined based on actual window to floor area ratios.

Sound level impacts from the existing neighbouring commercial/retail uses were also investigated and were determined to be below the relevant MECP criteria. Detailed noise studies are recommended for each building as the development proposal proceeds.

Associated acoustical requirements are specified in this report. Warning clauses are recommended to inform future residents of the traffic noise impacts, the presence of the neighbouring commercial facilities and to address sound level excesses.



## 2 Site Descriptions and Sources of Sound

An aerial photo showing a key plan is attached as Figure 1 also showing the surrounding land uses. A site plan dated April 19, 2022 prepared by BDP Quadrangle and is included as Figure 2. The proposed development will consist of three residential towers: 58-storeys (Tower A) and 49-storeys (Tower B) connected by a 6-storey podium; and 44-storeys (Tower C) with a 7-storey podium. Six levels of underground parking are expected to be provided beneath the towers with commercial/retail space provided on the ground floors.

The site is located at 217 – 227 Cross Avenue and 571 – 587 Argus Road in Oakville, Ontario. Currently the subject site includes various commercial/office buildings which are to be removed. Figure 3 shows an aerial photo showing the surrounding land uses. The remaining surrounding lands are primarily existing commercial/industrial land uses including: Holiday Inn Oakville and the Animal Hospital of Oakville to the north; All Fix Automotive, Grandeur Motors, KidLogic, a car wash and various commercial facilities to the west; various commercial buildings to the northeast; the Oakville GO Station and Avis Car Rental to the south. There are proposed mixed-use developments in the area and this is an area in transition. A site visit was conducted to investigate the noise sources associated with the surrounding uses and is further discussed in Section 6.0.

## 3 Sound Level Criteria

### 3.1 Road and Rail Traffic Noise

Guidelines for acceptable levels of road and rail traffic noise applicable to residential developments are given in the MECP publication NPC-300, “Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning”, release date October 21, 2013 and are listed in Table 1 below. 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). The values in Table 1 are energy equivalent (average) sound levels [ $L_{EQ}$ ] in units of A-weighted decibels [dBA].



**Table 1: MECP Road and Rail Traffic Noise Criteria [dBA]**

Space	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

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, 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.

Indoor guidelines for rail noise are 5 dBA more stringent 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.

A central air conditioning system as an alternative means of ventilation to open windows is required for all dwellings where nighttime sound levels outside bedroom/living/dining room windows exceed 60 dBA or daytime sound levels outside bedroom/living/dining room windows exceed 65 dBA.

Forced-air ventilation with ducts sized to accommodate the future installation of air conditioning is required when nighttime sound levels at bedroom/living/dining room windows are in the range of 51 to 60 dBA or when daytime sound levels at bedroom/living/dining room windows are in the range of 56 to 65 dBA.

Building components such as walls, windows and doors must be designed to achieve indoor sound level criteria when the plane of bedroom/living/dining room window sound level is greater than 55 dBA due to nighttime and greater than 60 dBA during the daytime hours due to rail traffic noise.

Warning clauses are required to notify future residents of possible excesses when nighttime sound levels exceed 50 dBA at the plane of the bedroom/living/dining room window and daytime sound levels exceed 55 dBA in the outdoor living area and at the plane of the bedroom/living/dining room window due to rail traffic.

## 4 Traffic Noise Predictions

### 4.1 Road Traffic Data

Road traffic data for the QEW was obtained from the MTO in the form of summer average daily traffic (SADT) for the year 2016 and is provided in Appendix B. The data was projected to the year 2032 using a 2.5%/year growth rate. A daytime commercial vehicle percentage of 14% was split into 5.4% medium trucks and 8.6% heavy trucks, was used in the analysis. A day/night split of 67%/13% and a posted speed limit of 100 km/h were used in the analysis.

Road traffic data for Cross Avenue was obtained from the Town of Oakville. The data was provided in the form of peak hour turning movement counts for the year 2020 and is provided in Appendix B. The traffic data was projected to the year 2032 using a 2.5% growth rate. A commercial vehicle percentage for Cross Avenue of 5.4% was provided and split into 2.1% medium trucks and 3.3% heavy trucks. A day/night split of 90%/10% was assumed in the analysis. A posted speed limit of 50 km/h was used for Cross Avenue.

Road traffic data for Argus Road was obtained from the Town of Oakville. The data was provided in the form of peak hour turning movement counts for the year 2020 and is provided in Appendix B. The traffic data was projected to the year 2032 using a 2.5% growth rate. A commercial vehicle percentage for Argus Road of 7.8% was provided and split into 3.0% medium trucks and 4.8% heavy trucks. A day/night split of 90%/10% was assumed in the analysis. A posted speed limit of 50 km/h was used for Argus Road.

Ultimate road traffic information for Trafalgar Road was obtained from Region of Halton personnel and is provided in Appendix A. A posted speed limit of 50 km/h was used for Trafalgar Road. An existing commercial vehicle percentage of 2.7% was obtained from the Region of Halton, split into



1.5% medium trucks and 1.2% heavy trucks was also used in the analysis, along with a day-night split of 90%/10%. Table 2 summarizes the road traffic data used in the analysis.

**Table 2: Road Traffic Data**

Road Name		Cars	Medium Trucks	Heavy Trucks	Total
<b>QEW</b> <i>Projected to 2032</i>	Daytime	202 296	12 702	20 230	235 228
	Nighttime	99 638	6 256	9 964	115 858
	<b>Total</b>	<b>301 934</b>	<b>18 958</b>	<b>30 194</b>	<b>351 086</b>
<b>Cross Avenue</b> <i>Projected to 2032</i>	Daytime	16 979	377	592	17 948
	Nighttime	1 887	42	66	1 995
	<b>Total</b>	<b>18 866</b>	<b>419</b>	<b>658</b>	<b>19 943</b>
<b>Argus Road</b> <i>Projected to 2032</i>	Daytime	2 589	84	135	2 808
	Nighttime	288	9	15	312
	<b>Total</b>	<b>2 844</b>	<b>93</b>	<b>150</b>	<b>3 120</b>
<b>Trafalgar Road</b> <i>Ultimate</i>	Daytime	48 164	742	594	49 500
	Nighttime	5 352	82	66	5 500
	<b>Total</b>	<b>53 516</b>	<b>824</b>	<b>660</b>	<b>55 000</b>

## 4.2 Rail Traffic

Rail traffic data for the CN Oakville Subdivision was obtained from CN railway and Metrolinx/GO Transit personnel and is attached in Appendix B. This line is used for way freight and passenger operations and is classified as a principal main line. The maximum permissible train speed for way freight trains in the area of the site is 97 kph (60 mph), 129 kph (80 mph) for passenger, and 153 kph (95 mph) for GO trains. In conformance with CN and GO Transit assessment requirements, the maximum speeds, maximum number of cars and locomotives per train were used in the traffic noise analysis to yield a worst-case estimate of train noise. The data was projected to the year 2032 using a 2.5% per year growth rate. Table 3 summarises the Metrolinx and CN rail traffic data used in the analysis.

**Table 3: Rail Traffic Data Projected to the Year 2032**

Type of Train	Number of Trains Day/ Night	Number of locomotives	Number of cars	Max Speed (KPH)
Way Freight	5.6 / 2.9	4	25	56
Passenger	18.3 / 0.0	2	10	56
GO	165 / 29.7	1	12	129
GO	54.3 / 12.3	2	12	129

Note: All GO trains are modelled as diesel, as per Metrolinx requirements

### 4.3 Traffic Noise Predictions

To assess the levels of traffic noise which will impact the site in the future, predictions were made using a numerical computer modeling package (*Cadna-A version 2021 MR2 build 187.5163*) due to the complexity of the site. The model is based on the methods from ISO Standard 9613-2.2, “*Acoustics - Attenuation of Sound During Propagation Outdoors*”, which accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures.

The road and rail noise sources have been included in the model as line sources included in *Cadna/A* which have been calibrated to Stamson. Our experience suggests that road and rail sound levels predicted by *Cadna* are reasonably accurate. The model road traffic values have been qualified to be within 1 – 2 dBA of those predicted in STAMSON 5.04, a computer algorithm developed by the MECP.

Predictions of overall sound levels from all road and rail sources were made at various representative façade locations throughout the site. The predicted sound levels from road and rail traffic impacting the proposed development are summarized in the following tables at each façade. Appendix C shows the figures indicating the predicted sound level from road and rail traffic along each façade of the proposed buildings.



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

Building	Façade	Daytime - at Façade L <sub>EQ(16)</sub>		Daytime - at Façade Total L <sub>EQ(16)</sub>
		Road	Rail	
Tower A 58-Storey	Northwest	74	<55	74
	Northeast	71	59	71
	Southeast	61	60	63
	Southwest	74	59	74
Tower B 49-Storey	Northwest	71	<55	71
	Northeast	69	60	70
	Southeast	63	63	66
	Southwest	70	62	71
6-Storey Podium	Northwest	73	<55	73
	Northeast	69	58	69
	Interior Southeast	60	58	62
	Interior Northeast	67	59	68
	Southeast	60	63	65
	Southwest	72	61	72
	7 <sup>th</sup> Floor OLA	--	--	67*
Tower C 44-Storey	Northwest	70	<55	70
	Northeast	68	63	69
	Southeast	62	65	67
	Southwest	65	62	67
7-Storey Podium	Northwest	70	<55	70
	Northeast	69	64	70
	Southeast	65	65	68
	Southwest	66	64	68
	Interior Northwest	65	<55	65
	Interior Southwest	64	57	65
	7 <sup>th</sup> Floor OLA North	--	--	66*

Note: \*With a minimum 1.07 m solid parapet wall

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

Building	Façade	Nighttime - at Façade $L_{EQ(8)}$		Nighttime - at Façade Total $L_{EQ(8)}$
		Road	Rail	
Tower A 58-Storey	Northwest	74	<50	74
	Northeast	71	55	71
	Southeast	58	56	60
	Southwest	73	55	73
Tower B 49-Storey	Northwest	71	<50	71
	Northeast	69	56	69
	Southeast	56	59	61
	Southwest	70	59	70
6-Storey Podium	Northwest	73	<50	73
	Northeast	71	54	71
	Interior Southeast	59	53	60
	Interior Northeast	67	52	67
	Southeast	56	59	61
	Southwest	71	57	71
Tower C 44-Storey	Northwest	70	<50	70
	Northeast	68	59	69
	Southeast	57	61	62
	Southwest	65	58	66
7-Storey Podium	Northwest	70	<50	70
	Northeast	69	60	70
	Southeast	62	61	65
	Southwest	64	60	65
	Interior Northwest	64	<50	64
	Interior Southwest	64	53	64

## 5 Traffic Noise Recommendations

The predictions indicate that traffic sound levels exceed MECP limits during daytime and nighttime hours at the proposed façades of the buildings. The following recommendations are provided.

### 5.1 Outdoor Living Areas

There are two outdoor amenity spaces indicated on the drawings located on the 7<sup>th</sup> floors of the podium connecting towers A and B and on the podium for Tower C. The predicted sound level on all of the common outdoor amenity terraces were predicted with a minimum 1.07 m high solid parapet wall.

The maximum predicted sound level on the proposed terraces on the 7<sup>th</sup> floor of Podium connecting Towers A and B, and the 7<sup>th</sup> floor of Podium C is up to 67 dBA, well in excess of the MECP limit of 55 dBA. Acoustic barrier on these terraces would need to range from 4.3 to 4.7 m in height in order to reduce sound levels to below 60 dBA, which is not considered feasible technically or economically for the project. Consideration could be given in detail design to integrating some smaller structures, screens or landscaping features to create quieter pockets or zones on this terrace. A unique warning clause is suggested below to advise tenants that noise levels on this terrace will be high.

As a general note, the wall component of the barrier should be of a solid construction with a surface density of no less than 20 kg/m<sup>2</sup>. The walls may be constructed from a variety of materials such as wood, brick, pre-cast concrete or other concrete/wood composite systems or transparent materials provided that it is free of gaps or cracks within or below its extent.

The dwelling units may have balconies that are less than 4 m in depth. These balconies are not considered outdoor living areas and do not need to be assessed under MECP guidelines.



## 5.2 Indoor Living Areas and Ventilation Requirements

### Central Air Conditioning

The predicted nighttime sound levels at the proposed buildings will exceed 65 dBA during the daytime hours and 60 dBA during the nighttime hours, and thus air conditioning systems are required so that windows may remain closed.

Window or through-the-wall air conditioning units (similar to motel style) are not recommended for any residential units because of the noise they produce and because the units penetrate through the exterior wall which degrades the overall noise insulating properties of the envelope. This can be achieved if the heating and cooling within each unit is housed in its own closet with an access door for maintenance. The location, installation and sound ratings of the outdoor air conditioning devices should minimize noise impacts and comply with criteria of MECP publication NPC-300, as applicable.

## 5.3 Building Façade Constructions

Future sound levels at the proposed buildings will exceed 65 dBA during the day and 60 dBA during the night due to road and rail traffic noise. MECP guidelines recommend that the windows, walls and doors be designed so that the indoor sound levels comply with MECP noise criteria.

Detailed glazing requirements for different facades and spaces could be considered in value engineering, if required, when detailed floor plans and building elevations are available.

### **Exterior Wall Constructions**

The exterior walls of the proposed buildings may include precast/masonry panel portions, as well as spandrel glass panels within an aluminum window system. In this analysis, it has been assumed that sound transmitted through elements other than the glazing elements is negligible in comparison. For this assumption to be true, spandrel or metal panel sections must have an insulated drywall partition on separate framing behind.



## **Exterior Doors**

There may be swing doors and some glazed sliding patio doors for entry onto the balconies from living/dining/bedrooms and some bedrooms. 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.

## **Acoustical Requirements for Glazing**

At the time of this report, detailed floor plans and elevations are under development. Assuming a typical window to floor area of 80% (60% fixed and 20% operable) for the living/dining rooms and bedrooms, the minimum acoustical requirement for the basic window glazing, including glass in fixed sections, swing or sliding doors, and operable windows, is provided in Table 6.



**Table 6: Required Minimum Glazing STC Proposed Building**

Building	Façade	Preliminary Glazing STC <sup>1, 2</sup>
Tower A 58-Storeys	Northwest	STC-42
	Northeast	STC-39
	Southeast	STC-33
	Southwest	STC-41
Tower B 49-Storeys	Northwest	STC-39
	Northeast	STC-38
	Southeast	STC-33
	Southwest	STC-39
6-Storey Podium	Northwest	STC-41
	Northeast	STC-39
	Interior Southeast	STC-33
	Interior Northeast	STC-36
	Southeast	STC-33
Tower C 44-Storeys	Southwest	STC-40
	Northwest	STC-38
	Northeast	STC-38
	Southeast	STC-35
7-Storey Podium	Southwest	STC-35
	Northwest	STC-38
	Northeast	STC-39
	Southeast	STC-36
	Southwest	STC-36
	Interior Northwest	STC-33
Interior Southwest	STC-33	

Note:

<sup>1</sup> Based on 80% window to floor area ratio for living/dining rooms and bedrooms.

<sup>2</sup> STC requirement refers to fixed glazing. Small leaks through operable doors and windows are assumed, however, tight weather seals should be provided to reduce such leakage to the extent feasible.  
 OBC – Ontario Building Code

The northwest, northeast, and southeast façades of Tower A and the 6-storey podium below it, have significant STC requirements. It is suggested that the window to floor area ratios be minimized as much as possible along these façades. Sliding patio doors should not be included into bedrooms, swing doors are more suitable for suites with exposure to the QEW.

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.

Note that acoustic performance varies with manufacturer's construction details, and these are only guidelines to provide some indication of the type of glazing likely to be required. Acoustical test data for the selected assemblies should be requested from the suppliers, to ensure that the stated acoustic performance levels will be achieved by their assemblies.

### **Further Review**

When detailed floor plans and building elevations are available for the buildings, the glazing requirements should be refined based on actual window to floor area ratios.

## **5.4 Warning Clauses**

The guidelines recommend that warning clauses be included in the development agreements, purchase and tenancy agreements and offers of the purchase and sale for the dwelling units. These are provided below.

Suitable wording for future dwellings with minor sound level excesses is given below.

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 continue to be of concern, occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality's and the Ministry of the Environment, Conservation and Parks' noise criteria.

Suggested wording for future dwellings requiring central air conditioning systems is given below.

Type B:

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

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



Suggested wording for future dwellings where terraces cannot be sufficiently mitigated against traffic noise.

Type C:

Due to site constraints, an acoustical barrier to shield the outdoor amenity terrace from the road and rail traffic could not be accommodated. Noise levels on this terrace are expected to be well above the sound level limits of the Ministry of the Environment, Conservation and Parks.

CN requires a standard warning clause as this development is located near a principal mainline. The following sample clause is typical of those included in agreements of purchase and sale or lease on the Lands that are within 300 meters of the railway right-of-way.

Type D:

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

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 E:

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.





## 5.5 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, 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 or commercial 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.

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 of the buildings on its residents. If B19R certification is needed, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising construction and mechanical/electrical equipment, when available, to help ensure that the noise impact of the development on itself is maintained within acceptable levels.

## 5.6 Impact of the Development on the Environment

Sound levels from noise sources 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. Based on the levels observed during our site visit, the typical minimum ambient sound levels in the area are expected to be 50 dBA or more during the day and 45 dBA or more at night. Thus, any electro-mechanical equipment associated with this development (e.g. emergency generator testing, fresh-air handling equipment, etc.) should be designed such that they do not result in noise impact beyond these ranges.



## **6 Assessment of Stationary Sources of Sound at the Proposed Residential Units**

### **6.1 Noise Source Description**

There are existing commercial facilities surrounding the site including: Holiday Inn Oakville and the Animal Hospital of Oakville to the north; All Fix Automotive, Grandeur Motors, KidLogic, a car wash and various commercial facilities to the west; among other commercial buildings to the northeast; the Oakville GO Station and Avis Car Rental to the south.

The rooftop mechanical equipment (air conditioning units), automotive repair shops bay doors, car wash bays, are potentially significant stationary sources of sound. A site visit was conducted in January 2022 to investigate the acoustical environment. Sensitive receptor locations were taken at the façades of the proposed buildings.

At the Oakville GO Station, when trains were operated in reverse and when the train is about to leave the station, a warning bell is operated. Communications with GO transit staff indicate that these bells are safety devices used for warning purposes only, and are thus exempt from noise assessment under MECP guidelines. Other occasional noises emitted from this station (such as occasional announcements over the outdoor PA system) are not anticipated to be an issue.

### **6.2 Criteria for Acceptable Sound Levels**

#### **6.2.1 Stationary Noise Criteria**

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

Stationary sources of sound are collectively defined as all sources that emit sound within a commercial or industrial facility boundary. The facilities to the north, northwest and west are therefore classified as a stationary sources of sound.



MECP Guideline NPC-300 is the applicable guideline for use in investigating Land Use Compatibility issues with regard to noise. A commercial facility is classified in NPC-300 as a stationary source of sound (as compared to sources such as traffic or construction, for example) for noise assessment purposes. A stationary noise source encompasses the noise from all the activities and equipment within the property boundary of a facility including regular on-site truck traffic for deliveries, material handling and mechanical equipment. In terms of background sound, the development is located in an urban acoustical environment which is characterized by an acoustical environment dominated by road traffic and human activity.

#### *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 and 2 areas are 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 plane of the windows of noise sensitive spaces. 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.

Hourly daytime traffic data was obtained for the QEW from the MTO and for Trafalgar Road from the Region of Halton. Hourly daytime traffic data was not available for Cross Avenue. Using the current traffic volumes obtained from the Town, the traffic data was applied to a generic 24 hour traffic pattern developed by the US Department of Transportation, Federal Highways Administration contained in the report titled “Summary of National and Regional Travel Trends 1970 – 1995” dated



May 1996. The traffic volumes were then used to predict sound levels at the residential receptors during the day/nighttime hours to determine the minimum hour background sound levels at those locations due to the traffic on the public roadways.

The minimum hour traffic volumes used in the analysis are summarized in the following table.

**Table 7: Minimum Hourly Traffic Volumes on Surrounding Roadways**

Roadway	Hourly Data		Commercial Vehicle %
	Day	Night	
QEW	3 921	922	14
Trafalgar Rd	1 099	59	2.7
Cross Ave	395	91	5.4

The predicted quietest daytime hour and nighttime hour sound levels at the facades of the proposed residences, which will be exposed to the commercial facilities are found to be higher than the MECP exclusionary limits in the daytime hours for the majority of facades with exposure to the QEW and Cross Avenue. As such, the sound level limits as summarized in Table 8 are therefore used in the following sections of this report as the applicable criteria for each façade of the proposed residential buildings.

**Table 8: Applicable Sound Level Limits, L<sub>EQ</sub> (dBA) for Class I Areas**

Building	Façade	Sound Level Limits	
		Daytime (07:00 to 23:00)	Nighttime (23:00 to 07:00)
Tower A 58-Storeys	Northwest	61	54
	Northeast	58	49
	Southeast	50	46
	Southwest	64	58
Tower B 49-Storeys	Northwest	62	56
	Northeast	61	54
	Southeast	50	45
	Southwest	61	54
6-Storey Podium	Northwest	66	60
	Northeast	64	57
	Interior Southeast	50	45
	Interior Northeast	50	46
	Southeast	54	48
	Southwest	56	50
	7 <sup>th</sup> Floor OLA South	61*	--
Tower C 44-Storeys	Northwest	57	50
	Northeast	57	50
	Southeast	51	45
	Southwest	53	46
7-Storey Podium	Northwest	63	56
	Northeast	59	47
	Southeast	58	47
	Southwest	57	51
	Interior Northwest	55	48
	Interior Southwest	53	47
	7 <sup>th</sup> Floor OLA North	59*	--

Note: \*With a minimum 1.07 m solid parapet wall

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.

### 6.3 Stationary Source Assessment

Predictive noise modelling was used to assess the potential sound impact of the nearby land uses at the closest sensitive receptors. The noise prediction model was based on sound emission levels for the nearby noise sources, assumed operational profiles (during the day and night), and established engineering methods for the prediction of outdoor sound propagation. These methods include the effects of distance, air absorption, and acoustical screening by barrier obstacles.

Sound emission data for the rooftop equipment was obtained from HGC Engineering project files for typical commercial facilities. The source levels associated used in the analysis is listed in Table 11 below.

**Table 11: Source Sound Power Levels [dB re 10-12 W]**

Source	Octave Band Centre Frequency [Hz]							
	63	125	250	500	1k	2k	4k	8k
Exhaust Fan	84	88	86	85	80	80	76	74
Car Wash Bay	85	76	75	77	76	79	81	83
Vacuum	86	74	87	82	84	89	90	88
Condenser Fans	84	79	78	77	76	70	63	59
Tractor Trailer Acceleration	101	100	94	96	97	95	91	86
Medium Truck Acceleration	108	90	92	90	94	91	84	77
Medium Truck Reefer	82	77	78	67	67	64	58	50
Medium Truck Idle	72	68	70	65	72	69	60	52
Restaurant Exhaust Fan	86	74	87	82	84	89	90	88
Lennox KG060 (A-Weighted)	--	67	72	77	76	73	68	61
Lennox KG120 (A-Weighted)	--	76	79	84	83	79	73	66
Lennox KG150 (A-Weighted)	--	77	80	85	84	79	74	66
Lennox KG240 (A-Weighted)	--	79	84	88	89	85	82	73
Cooling Tower	95	91	86	86	84	85	86	85

The above outlined sound levels and site features were used as input to a predictive computer model. The software used for this purpose (*Cadna-A Version 2021 build: 187.5163*) is a computer implementation of ISO Standard 9613-2.2 “Acoustics - Attenuation of Sound During Propagation Outdoors.” The ISO method accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures such as barriers.

The following information and assumptions were used in the analysis.

### Commercial Buildings

- The rooftop units were assumed to be located as shown in Figure 4. The majority of rooftop units were assumed to be 1 m to 2.5 m tall with the exception of the condenser fans which were 4.0 m in height.
- Lines indicate truck movements.
- Typical hours of operation for the majority of the commercial buildings are daytime only (07:00 to 23:00).

### Receptors

- Façades of proposed residential development.

### ***Assumed daytime worst-case scenario:***

- All rooftop HVAC equipment operating for 60 minutes in an hour;
- Two medium trucks arriving for deliveries at the Famijoy idling for 10 minutes each, with one truck with a “reefer” operating for 20 minutes in an hour;
- All car wash bays (coin operated) operating for 30 minutes each;
- All vacuums operating for 15 minutes each at the car wash;

### ***Assumed night-time worst-case scenario:***

- All rooftop HVAC equipment operating for 30 minutes in an hour;
- All car wash bays (coin operated) operating for 10 minutes each;
- All vacuums operating for 10 minutes each at the car wash;



## 6.4 Results

The calculations consider the acoustical effects of distance and shielding by the buildings. The sound levels due to the rooftop mechanical equipment at the façades of the proposed buildings are summarized in the following table and Figures 5 and 6.

**Table 12: Predicted Stationary Source Sound Levels at the Proposed Residential Buildings [dBA]**

Building	Façade	Criteria Day/Night	Daytime	Nighttime
Tower A 58-Storeys	Northwest	61 / 54	48	45
	Northeast	58 / 49	42	39
	Southeast	50 / 46	50	46
	Southwest	64 / 58	51	47
Tower B 49-Storeys	Northwest	62 / 56	47	44
	Northeast	61 / 54	45	37
	Southeast	50 / 45	49	41
	Southwest	61 / 54	51	47
6-Storey Podium	Northwest	66 / 60	47	44
	Northeast	64 / 57	42	39
	Interior Southeast	50 / 45	39	35
	Interior Northeast	50 / 46	45	34
	Southeast	54 / 48	49	45
	Southwest	56 / 50	53	48
	7 <sup>th</sup> Floor OLA	61* / --	36*	--
Tower C 44-Storeys	Northwest	57 / 50	51	39
	Northeast	57 / 50	51	41
	Southeast	51 / 45	46	39
	Southwest	53 / 46	44	40
7-Storey Podium	Northwest	63 / 56	43	38
	Northeast	59 / 47	53	42
	Southeast	58 / 47	47	40
	Southwest	57 / 51	51	47
	Interior Northwest	55 / 48	47	42
	Interior Southwest	53 / 47	44	39
	7 <sup>th</sup> Floor OLA	59* / --	38*	--

Note: \*With a minimum 1.07 m solid parapet wall

The results of this analysis indicate that the predicted steady sound levels due to the surrounding commercial facilities are expected to be below the relevant MECP criteria considering a worst-case operational scenario.



A warning clause should be included in purchase and tenancy agreements to inform future occupants of the existing commercial facilities. Suggested wording is included below:

Type F:

Purchasers/tenants are advised that due to the proximity of nearby commercial facilities, sound from those facilities may at times be audible.

## 7 Summary and Recommendations

The following recommendations are provided with regard to noise control. Please refer to previous sections of this report where these recommendations are discussed in more detail.

1. Central air conditioning is required for all of the proposed buildings.
2. Upgraded building constructions are required for the façades of the proposed buildings as indicated in Section 5.3.
3. Warning clauses should be included in the property and tenancy agreements and offers of purchase and sale to inform the future owners/residents of the presence of the roadways and railway and the nearby commercial operations.
4. When detailed drawings are available, at SPA or as a condition, a detailed noise study should be conducted to refine the glazing constructions based on actual window to floor area ratios. It is suggested that the window to floor area ratios be minimized as much as possible along the façades with exposure to the QEW. Sliding patio doors should not be included into bedrooms, swing doors are more suitable for suites with exposure to the QEW.
5. Tarion's Builder 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 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 are maintained within acceptable levels. Outdoor sound emissions should also be checked to ensure compliance with the Town's by-law.

## 8 Conclusions

Based on the assessment presented herein, the conceptual development proposal is considered to be feasible from a noise impact perspective. Preliminary noise modelling of the nearby existing commercial facilities indicates results to be within criteria at residential facades. Detailed noise studies are recommended for each building as the development proposal proceeds.



ACOUSTICS



NOISE



VIBRATION

## Limitations

This document was prepared solely for the addressed party and titled project or named part thereof, and should not be relied upon or used for any other project without obtaining prior written authorization from HGC Engineering. HGC Engineering accepts no responsibility or liability for any consequence of this document being used for a purpose other than for which it was commissioned. Any person or party using or relying on the document for such other purpose agrees, and will by such use or reliance be taken to confirm their agreement to indemnify HGC Engineering for all loss or damage resulting therefrom. HGC Engineering accepts no responsibility or liability for this document to any person or party other than the party by whom it was commissioned.

Any conclusions and/or recommendations herein reflect the judgment of HGC Engineering based on information available at the time of preparation, and were developed in good faith on information provided by others, as noted in the report, which has been assumed to be factual and accurate. Changed conditions or information occurring or becoming known after the date of this report could affect the results and conclusions presented.



ACOUSTICS



NOISE



VIBRATION

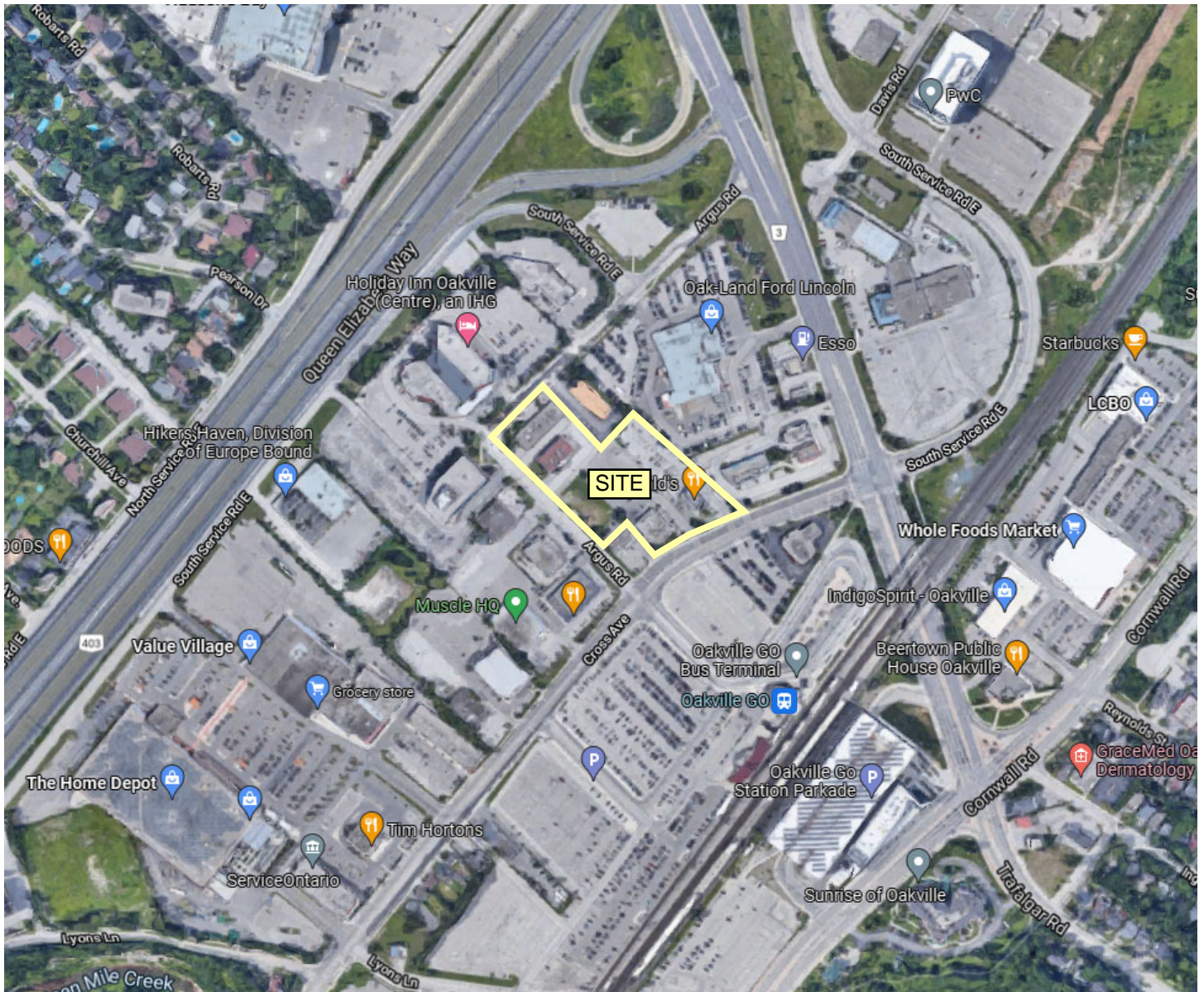
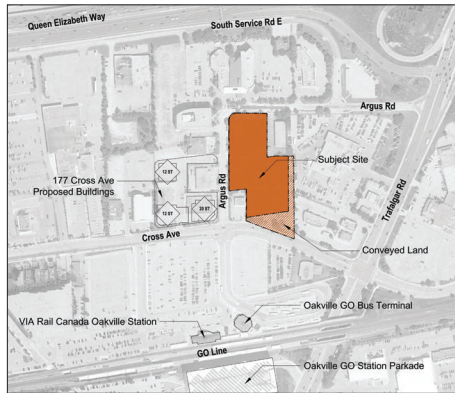


Figure 1 - Key Plan



3 CONTEXT PLAN  
A101.5



2 KEY PLAN  
A101.5

217-227 Cross Ave and 571-587 Argus Rd   District Developments												
Zoning		217-227 Cross Ave and 571-587 Argus Rd   District Developments										
Height Limit:		1,291.7 sm										
Lot Size:		135809.388 sf										
Floor	Floor Area/Typ. Floor (sm)	No. Typ. Floors	Floor Area By-Law 2014-014*		Floor Area, Net (sm)**	Residential (sm)	Interior Amenity (sm)	Exterior Amenity (sm)	Net Rentable Retail (sm)	Net Office Space (sm)	No. of Units	
			sm	sf								
Building A	MPH	743	1	743	7,998	0	0	0	0	0	0	
	Level 34-38	743	25	18,575	199,841	16,775	0	0	0	0	250	
	Level 8-33	810	26	21,060	226,690	19,198	0	0	0	0	260	
Building B	MPH	741	1	741	7,976	0	0	0	0	0	0	
	Level 30-39	741	20	14,820	159,522	13,380	0	0	0	0	240	
	Level 8-29	801	22	17,822	189,683	16,038	0	0	0	0	264	
Building A & B	Level 7	825	1	825	8,890	753	0	753	1,457	0	0	
	Level 3-6	2817	4	11,268	121,289	10,420	0	0	0	0	162	
	Level 2	2817	1	2,817	30,322	2,605	2,095	510	116.58	0	30	
Building A & B Total	Ground	3333	1	3,323	35,769	2,160	590	0	0	1,570	0	
				<b>92,804</b>	<b>996,789</b>	<b>82,857</b>	<b>76,486</b>	<b>2,001</b>	<b>1,574</b>	<b>1,570</b>	<b>1,196</b>	
Floor	Floor Area/Typ. Floor (sm)	No. Typ. Floors	Floor Area By-Law 2014-014*		Floor Area, Net (sm)**	Residential (sm)	Interior Amenity (sm)	Exterior Amenity (sm)	Net Rentable Retail (sm)	Net Office Space (sm)	No. of Units	
			sm	sf								
Building C	MPH	736	1	736	7,822	0	0	0	0	0	0	
	Level 28-44	736	19	13,984	150,524	12,635	0	0	0	0	228	
	Level 8-25	796	18	14,328	154,227	13,050	0	0	0	0	216	
Building C	Level 7	1297	1	1,297	13,961	1,159	0	1,159	1,013	0	0	
	Level 3-6	2008	4	8,832	95,968	8,200	0	0	0	0	108	
	Level 2	2308	1	2,308	24,843	2,190	0	0	0	2,190	0	
Building C Total	Ground	2629	1	2,629	28,259	1,492	167	0	0	1,246	79	
				<b>44,114</b>	<b>474,843</b>	<b>38,746</b>	<b>34,072</b>	<b>1,159</b>	<b>1,013</b>	<b>1,246</b>	<b>2,269</b>	
Total Floor Area			<b>136,718 sm</b>									<b>± 1,471,633 sf</b>
Total Floor Area, Net			<b>120,803 sm</b>									<b>± 1,300,323 sf</b>
Total No. of Units												<b>± 1,748</b>
Proposed Height, FSI:			58 Storeys, ±179 m (excl. mech penthouse)									
Proposed Height, FSI:			9.6									
Parking (S.T.A.6)												
Resident				876								
Non-Resident				409								
TOTAL RECOMMENDED				1285								
Non-Resident (P1)				190						351		
Non-Resident (P2)				220						34		
Resident (P3)				220						25		
Resident (P4)				220						410		
Resident (P5)				216						876		
Resident (P6)				216						410		
TOTAL PROVIDED				1288						876		
Residential Amenity												
Interior Amenity				3160								
Exterior Amenity				2587								
TOTALS (sm)				5747								
Bicycle Requirements (S.7.7v, Maximum of 200 spaces required)												
Long Term				1317								
Short Term				437								
TOTALS				1754								

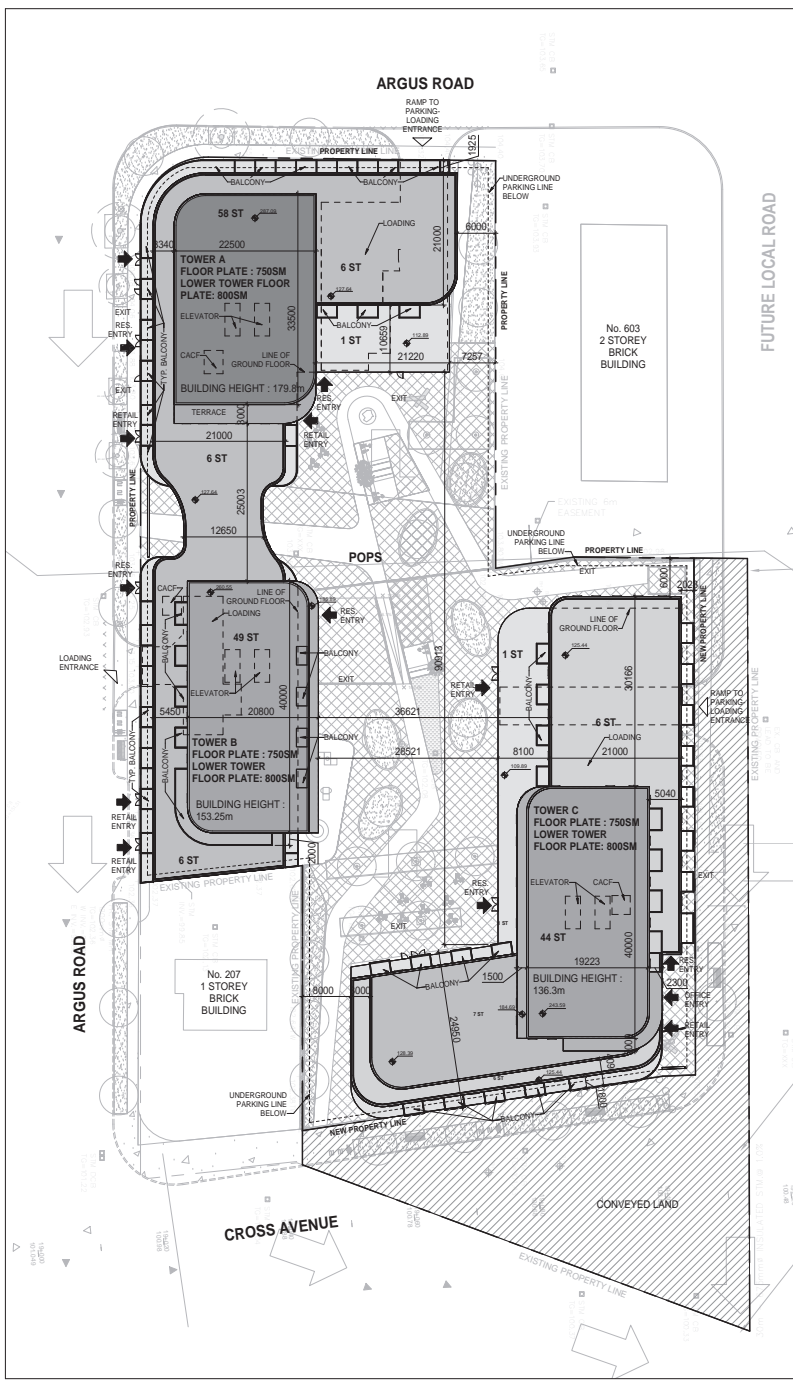
All calculations are preliminary

Total Lot Area	12,817	sm
Usable Lot Area with Road Conveyances	10,337	sm
FSI	9.57	

Approx. Unit Mix				
No. of Units	1B (675-600 sf)	2B (700-725 sf)	3B (875-990 sf)	
1,748	1,223	455	70	
100%	70%	26%	4%	

\* Floor Area Definition By-Law 2014-014: Means the aggregate area of a building contained within the exterior walls, but does not include attic or basement space unless otherwise specified by this By-law.  
 \*\* Floor Area, Net Definition By-Law 2015-018: Means the total area of all floors of a building measured from the interior faces of the exterior walls or demising walls, but does not include the area of stair walls, elevators, escalators, ventilating shafts, attics, concourses, warehouses, attached enclosed and covered loading docks and related enclosed corridors used for loading purposes, above and below grade parking structures, storage rooms, rooms for garbage containment, and mechanical rooms.

STATISTIC



1 SITE PLAN  
A101.5 SCALE 1:300

**SITE PLAN LEGEND**

- PROPERTY LINE
- LINE OF UNDERGROUND PARKING BELOW
- MAIN BUILDING ENTRANCE
- RETAIL ENTRANCE
- EXIT
- VEHICLE LOADING ENTRANCE/EXIT
- FIRE ESCAPE
- SMOKE CONNECTION
- MANHOLE COVER
- AREA DRAIN
- CATCH BASIN
- FLOOR DRAIN/PARKING SLAB
- FLOOR DRAIN (INTERIOR)
- EXISTING LIGHT
- TYPICAL PARKING SPACE
- TYPICAL S.F. PARKING SPACE
- F.F.S. FINISH FLOOR ELEVATION
- EXISTING ELEVATION
- PROPOSED ELEVATION
- TOP OF ROOF
- BUILDING ENVELOPE
- FIRE ACCESS ROUTE HEAVY DUTY PARKING AREAS TO BE DESIGNED TO MEET THE LOADS IMPOSED BY FIRE FIGHTING EQUIPMENT.
- GREEN ROOF
- TERRACE FINISHES

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD



**BDP. Quadrangle**

Quadrangle Architects Limited  
 800 King Street West, Suite 1000, Toronto, ON M5V 3K5  
 416.598.1240 www.bdpquadrangle.com

217-227 Cross Avenue and 571-587 Argus Road  
 2022-04-19 Issued for Rezoning for District Developments

19072 1:300 AR\_KVE  
 PROJECT SCALE DRAWN BY: BDP

Site plan and Statistics

**A101.S**

Note: This drawing is the property of the Architect and shall remain confidential. It shall not be used for any other purpose without the written consent of the Architect. The Architect shall not be responsible for the accuracy of the information provided by the client. The Architect shall not be responsible for the accuracy of the information provided by the client.

Figure 2 - Proposed Site Plan

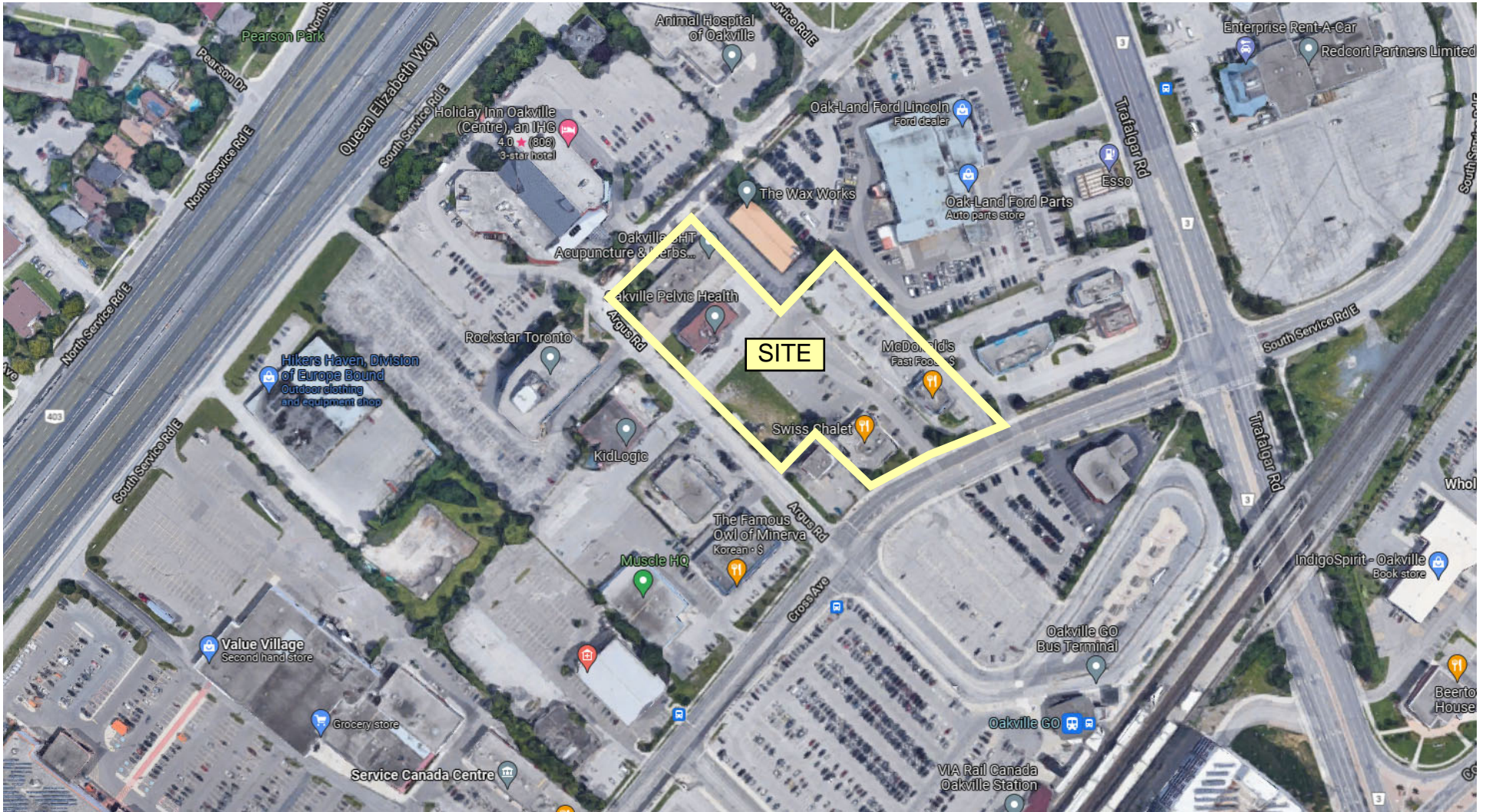


Figure 3 - Aerial Photo Showing Surrounding Land Uses



ACOUSTICS



NOISE



VIBRATION

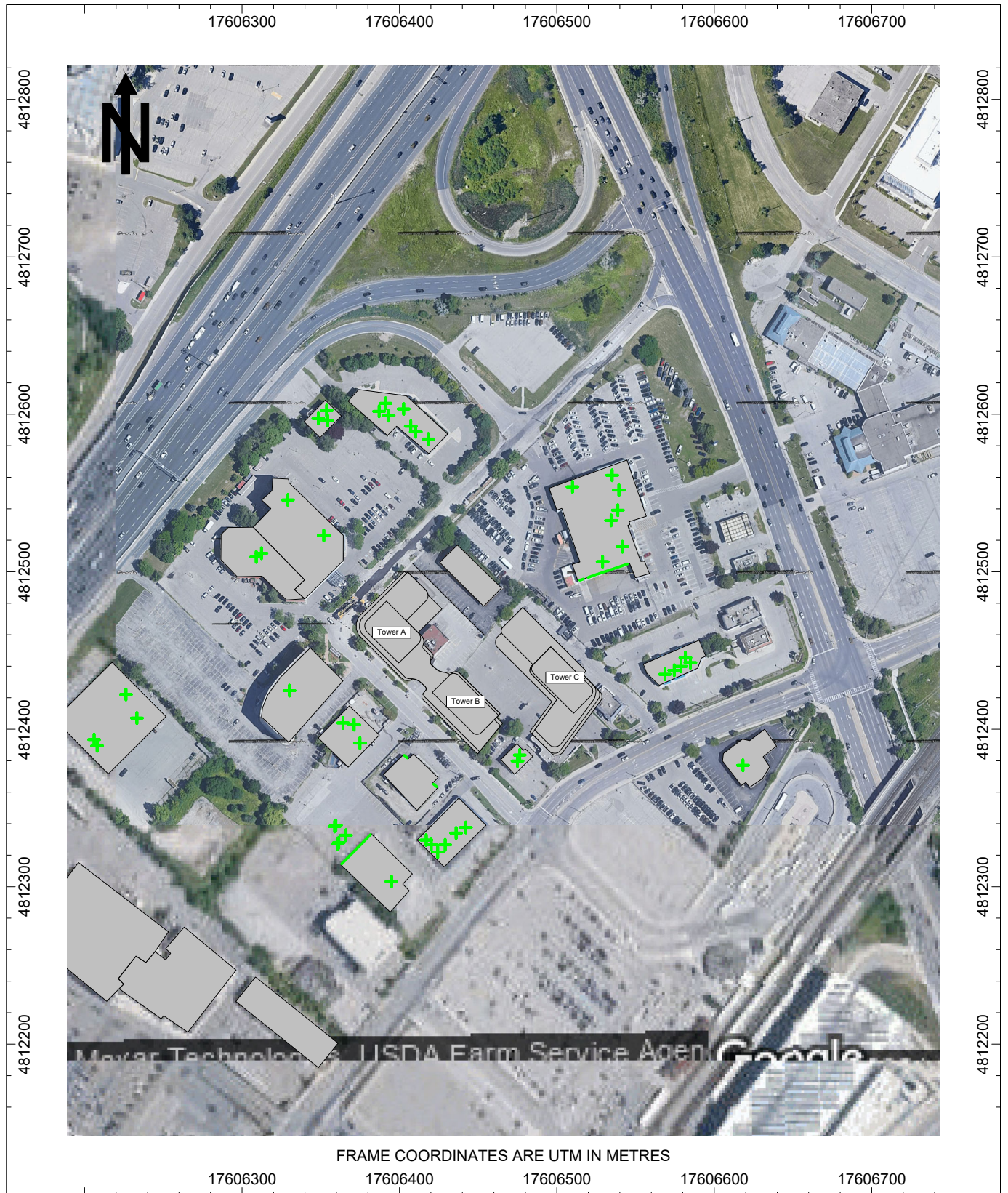


Figure 4: Aerial Photo Showing Source and Receptor Locations

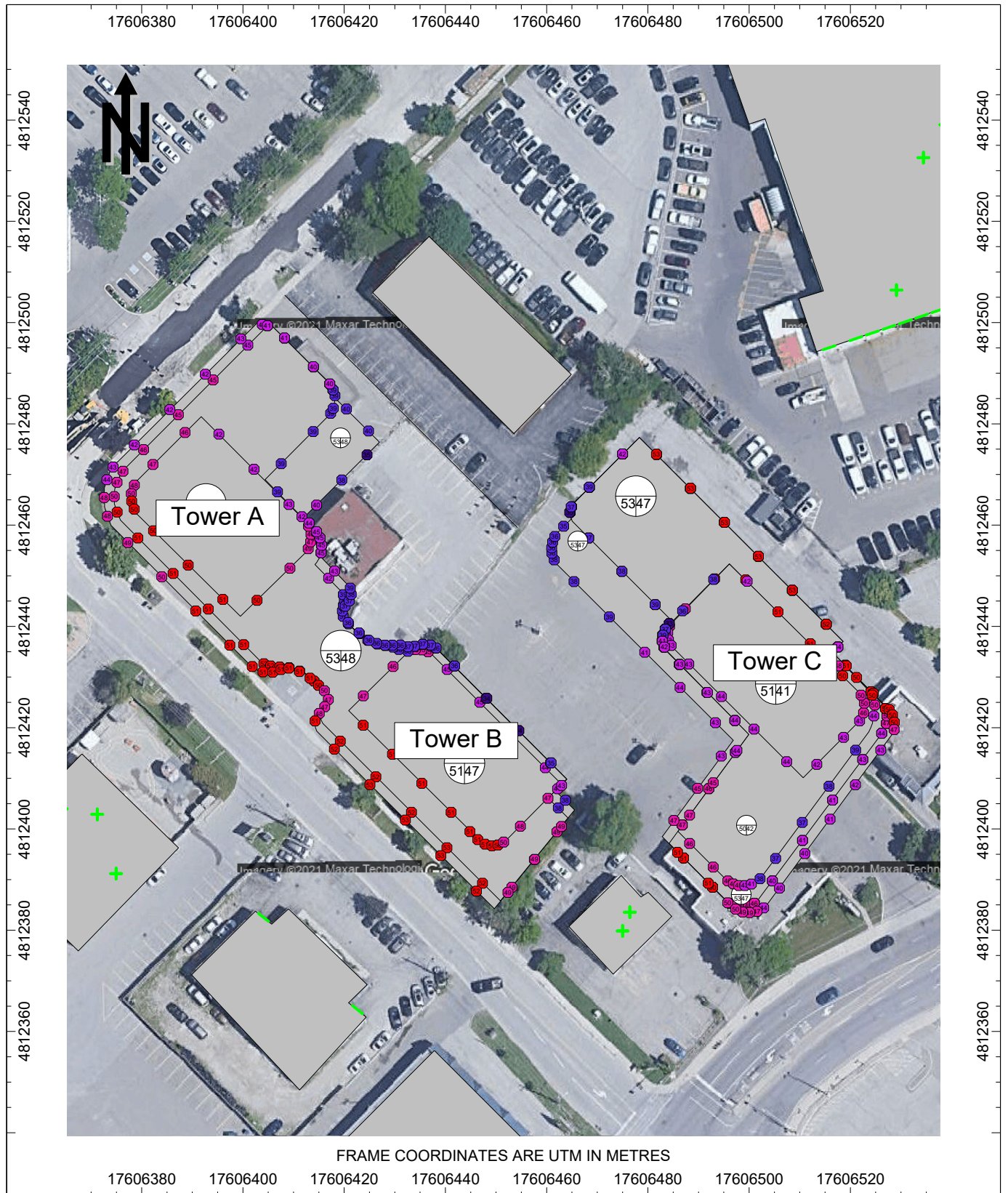


Figure 5: Sound Levels, dBA, Due to Steady Stationary Noise Sources, Daytime



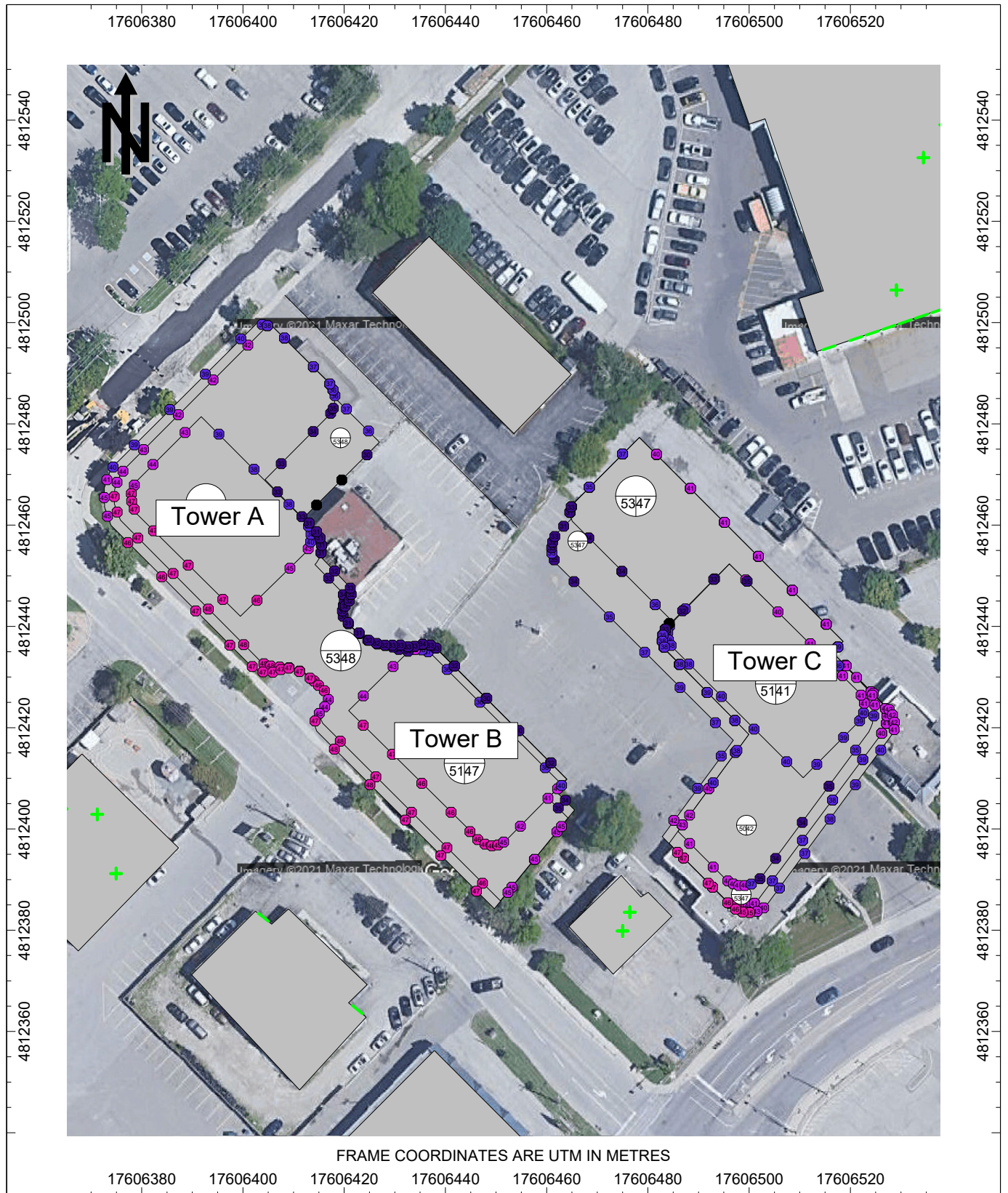


Figure 6: Sound Levels, dBA, Due to Steady Stationary Noise Sources, Nighttime

# APPENDIX A

Road Traffic Data



ACOUSTICS



NOISE



VIBRATION

Highway	Location Description	Dist. (KM)	Year	Pattern Type	AADT	SADT	SAWDT	WADT	AR
			1995	C	134,500	145,300	150,600	123,700	0.9
			1996	C	137,500	154,700	156,800	123,900	0.8
			1997	C	140,600	158,200	160,300	126,700	0.9
			1998	C	143,600	161,600	162,100	129,400	0.8
			1999	C	144,400	163,200	163,000	130,100	1.3
			2000	C	147,500	165,900	166,500	132,900	1.4
			2001	C	150,700	170,300	170,300	135,600	1.2
			2002	C	153,800	172,200	173,600	138,400	1.0
			2003	C	157,000	175,800	177,400	141,300	0.9
			2004	C	159,200	177,800	179,000	143,700	1.1
			2005	C	161,900	180,300	181,800	145,400	1.2
			2006	C	164,700	183,000	184,400	148,200	1.1
			2007	C	167,400	186,000	188,600	150,400	1.0
			2008	C	170,100	187,700	185,100	152,600	0.9
			2009	C	172,900	190,800	192,700	155,600	0.8
			2010	C	175,600	193,500	195,300	158,100	0.6
			2011	C	178,400	196,200	198,000	160,500	N/A
			2012	C	181,100	199,200	195,600	163,000	N/A
			2013	C	187,000	205,700	203,800	168,300	N/A
			2014	C	206,000	226,600	220,400	185,400	N/A
			2015	C	210,000	231,000	224,700	189,000	N/A
			2016	C	215,000	236,500	230,100	193,500	N/A
QEW	TRAFALGAR RD IC-118	1.3	1988	C	111,500	123,700	123,700	100,300	0.8
			1989	C	115,300	127,900	129,100	103,700	1.3
			1990	C	120,100	133,300	133,300	108,000	1.1
			1991	C	121,300	133,400	134,600	110,300	1.3
			1992	C	123,300	133,100	136,800	114,600	1.0
			1993	C	129,500	139,800	143,700	119,100	1.5
			1994	C	130,800	142,600	146,500	117,700	1.3
			1995	C	133,800	144,500	149,900	123,100	1.1
			1996	C	136,800	153,900	156,000	123,300	0.9
			1997	C	139,800	157,300	159,400	126,000	1.4
			1998	C	142,700	160,500	161,100	128,600	1.1

Highway	Location Description	Dist. (KM)	Year	Pattern Type	AADT	SADT	SAWDT	WADT	AR
			1999	C	143,400	162,000	161,900	129,200	1.7
			2000	C	146,500	164,800	165,400	132,000	1.3
			2001	C	149,700	169,200	169,200	134,700	1.2
			2002	C	152,800	171,100	172,400	137,500	1.0
			2003	C	156,000	174,700	176,300	140,400	1.0
			2004	C	158,100	176,600	177,800	142,700	1.4
			2005	C	160,800	179,000	180,500	144,400	1.3
			2006	C	163,500	181,700	183,100	147,100	1.5
			2007	C	166,200	184,700	187,200	149,300	1.1
			2008	C	168,900	186,400	183,800	151,500	1.4
			2009	C	171,600	189,400	191,200	154,400	1.0
			2010	C	174,300	192,100	193,800	156,900	0.8
			2011	C	177,000	194,700	196,500	159,300	N/A
			2012	C	179,700	197,700	194,100	161,700	N/A
			2013	C	195,000	214,500	212,600	175,500	N/A
			2014	C	200,000	220,000	214,000	180,000	N/A
			2015	C	210,000	231,000	224,700	189,000	N/A
			2016	C	215,000	236,500	230,100	193,500	N/A
QEW	ROYAL WINDSOR DR(WBL)IC-119	3.0	1988	C	96,000	106,500	106,500	86,300	0.8
			1989	C	99,300	110,100	111,100	89,300	0.8
			1990	C	103,200	114,500	114,500	92,800	0.5
			1991	C	103,900	114,200	115,300	94,500	0.4
			1992	C	105,400	113,800	116,900	98,000	0.5
			1993	C	106,000	114,400	117,600	97,500	0.6
			1994	C	109,600	119,500	122,800	98,600	0.6
			1995	C	111,800	120,700	125,200	102,900	0.5
			1996	C	113,900	128,100	129,800	102,600	0.6
			1997	C	116,100	130,600	132,400	104,600	0.9
			1998	C	118,200	133,000	133,400	106,500	0.6
			1999	C	136,900	154,700	154,600	123,300	0.4
			2000	C	140,000	157,500	158,100	126,100	0.8
			2001	C	143,200	161,800	161,800	128,900	0.5
			2002	C	146,300	163,800	165,100	131,700	0.6

Highway	QEW	Direction	FORT ERIE	Descriptor	WEST OF R	Highway	QEW	Direction	TORONTO	Descriptor					
VDS	Stator	LHRS	OS	VDS	Stator	LHRS	OS	Date	Time	VDS1	Volur	VDS2	Volur	Total	Volun
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	1:00	1393	980	2373					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	2:00	779	629	1408					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	3:00	635	546	1181					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	4:00	991	661	1652					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	5:00	825	1552	2377					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	6:00	1924	5898	7822					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	7:00	4837	7597	12434					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	8:00	6373	7750	14123					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	9:00	5980	7466	13446					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	10:00	6466	6269	12735					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	11:00	5989	6433	12422					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	12:00	6066	6798	12864					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	13:00	6374	6347	12721					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	14:00	6383	6487	12870					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	15:00	6307	6662	12969					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	16:00	5659	7046	12705					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	17:00	6180	7186	13366					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	18:00	6806	7166	13972					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	19:00	7014	6598	13612					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	20:00	6333	5460	11793					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	21:00	4817	4486	9303					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	22:00	4270	3922	8192					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	23:00	3488	3048	6536					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	23:59	2386	1795	4181					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	1:00	1463	1006	2469					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	2:00	839	726	1565					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	3:00	646	574	1220					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	4:00	1009	706	1715					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	5:00	813	1528	2341					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	6:00	1820	5913	7733					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	7:00	4817	7672	12489					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	8:00	6599	8013	14612					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	9:00	6522	7594	14116					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	10:00	6167	6693	12860					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	11:00	5930	6596	12526					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	12:00	6293	6646	12939					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	13:00	6298	6515	12813					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	14:00	6498	6509	13007					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	15:00	6533	6784	13317					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	16:00	6016	7231	13247					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	17:00	6072	7056	13128					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	18:00	5992	6540	12532					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	19:00	6312	6102	12414					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	20:00	6158	4986	11144					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	21:00	4834	4071	8905					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	22:00	4263	3641	7904					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	23:00	3514	2885	6399					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/09/2019	23:59	2604	1988	4592					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	1:00	1569	1114	2683					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	2:00	899	765	1664					

QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	3:00	772	662	1434
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	4:00	944	759	1703
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	5:00	855	1429	2284
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	6:00	1762	5332	7094
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	7:00	4201	6950	11151
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	8:00	6309	7534	13843
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	9:00	5770	7404	13174
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	10:00	6345	6360	12705
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	11:00	6233	6860	13093
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	12:00	6543	6908	13451
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	13:00	6773	7295	14068
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	14:00	6612	7050	13662
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	15:00	6774	7364	14138
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	16:00	6379	7588	13967
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	17:00	6797	7336	14133
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	18:00	7107	7193	14300
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	19:00	7263	6637	13900
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	20:00	6735	6032	12767
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	21:00	5423	4916	10339
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	22:00	4665	3900	8565
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	23:00	3920	3391	7311
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/10/2019	23:59	3485	2519	6004
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	1:00	2658	1655	4313
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	2:00	1323	1050	2373
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	3:00	927	781	1708
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	4:00	702	675	1377
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	5:00	599	766	1365
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	6:00	919	1649	2568
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	7:00	2120	2620	4740
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	8:00	3716	3828	7544
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	9:00	5592	5159	10751
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	10:00	7124	6334	13458
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	11:00	7061	7014	14075
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	12:00	7067	7559	14626
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	13:00	6709	7419	14128
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	14:00	7021	7600	14621
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	15:00	7252	7395	14647
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	16:00	7164	7321	14485
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	17:00	7255	7377	14632
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	18:00	7060	7463	14523
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	19:00	6558	7506	14064
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	20:00	6232	6254	12486
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	21:00	5250	5209	10459
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	22:00	4719	4662	9381
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	23:00	4187	4206	8393
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/11/2019	23:59	3526	3199	6725
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	1:00	2487	2081	4568
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	2:00	1593	1346	2939
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	3:00	1055	812	1867
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	4:00	616	660	1276
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	5:00	466	596	1062
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	6:00	622	1094	1716

QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	7:00	1146	1652	2798
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	8:00	2013	1908	3921
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	9:00	2988	2751	5739
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	10:00	4379	4500	8879
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	11:00	5841	6042	11883
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	12:00	6811	7056	13867
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	13:00	6925	7194	14119
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	14:00	6747	7024	13771
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	15:00	6520	6847	13367
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	16:00	6327	6524	12851
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	17:00	6537	6669	13206
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	18:00	6222	6545	12767
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	19:00	6169	6622	12791
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	20:00	5891	6198	12089
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	21:00	4871	5292	10163
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	22:00	3646	3758	7404
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	23:00	3776	3427	7203
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/12/2019	23:59	2059	2001	4060
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	1:00	1087	904	1991
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	2:00	591	551	1142
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	3:00	430	492	922
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	4:00	441	633	1074
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	5:00	707	1503	2210
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	6:00	1891	5725	7616
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	7:00	4375	7080	11455
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	8:00	6071	7191	13262
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	9:00	5743	6977	12720
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	10:00	5739	6008	11747
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	11:00	5549	5764	11313
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	12:00	5689	6173	11862
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	13:00	5989	6087	12076
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	14:00	5948	6060	12008
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	15:00	6068	6051	12119
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	16:00	6048	6791	12839
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	17:00	6347	6989	13336
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	18:00	6604	6847	13451
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	19:00	6316	5472	11788
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	20:00	5718	4666	10384
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	21:00	4215	3749	7964
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	22:00	3423	3226	6649
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	23:00	2740	2356	5096
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/13/2019	23:59	1989	1727	3716
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	1:00	1252	919	2171
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	2:00	660	631	1291
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	3:00	581	513	1094
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	4:00	928	609	1537
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	5:00	831	1511	2342
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	6:00	1972	5743	7715
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	7:00	4645	7425	12070
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	8:00	6506	7471	13977
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	9:00	5412	7288	12700
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	10:00	6040	6360	12400

QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	11:00	5921	6774	12695
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	12:00	6170	6527	12697
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	13:00	6242	6266	12508
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	14:00	6482	6368	12850
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	15:00	6652	6623	13275
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	16:00	6124	7126	13250
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	17:00	6667	7626	14293
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	18:00	7009	7364	14373
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	19:00	7159	5855	13014
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	20:00	5958	5044	11002
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	21:00	4546	4324	8870
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	22:00	4171	3757	7928
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	23:00	3161	2746	5907
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	23:59	2318	1806	4124



## Victor Garcia

---

**From:** Bee, Christopher (MTO) <Christopher.Bee@ontario.ca>  
**Sent:** February 17, 2021 2:24 PM  
**To:** Victor Garcia  
**Cc:** Bee, Christopher (MTO)  
**Subject:** RE: Commercial Vehicle % for QEW at Trafalgar Rd

To Victor Garcia, HGC Engineering

This location's major intersection is QEW and Trafalgar Road.  
The % commercial vehicle at QEW near Trafalgar was 14% steady every year from 2007 to 2016 ( 10 yrs).  
2016 is the latest year of official MTO data.

"% commercial" includes large long trucks, small short trucks, vans, cars with trailer, buses, and specials, but  
DOES NOT INCLUDE REGULAR CARS.

There is no further breakdown details within these classes.

Christopher Bee  
MTO Central Region Traffic Office  
Safety Traffic Information and Roadwork Coordination Section (STIRCS)

---

**From:** Victor Garcia <vgarcia@hgcengineering.com>  
**Sent:** February-16-21 11:41 AM  
**To:** Bee, Christopher (MTO) <Christopher.Bee@ontario.ca>  
**Subject:** Commercial Vehicle % for QEW at Trafalgar Rd

**CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.**

Good morning,

HGC Engineering is conducting a noise feasibility study for a proposed residential development located at 157 – 165  
Cross Avenue in Oakville, Ontario. A google link is included for your reference:

<https://goo.gl/maps/7G5T3Uj5vL8GTjAc6>

Do you have commercial vehicle percentages available for the QEW in the vicinity of this site?

Thanks,

**Victor Garcia**, P.Eng  
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: [vgarcia@hgcengineering.com](mailto:vgarcia@hgcengineering.com)  
Visit our website – [www.hgcengineering.com](http://www.hgcengineering.com) Follow Us – [LinkedIn](#) | [Twitter](#) | [YouTube](#)

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal.

## Victor Garcia

---

**From:** Krusto, Matt <Matt.Krusto@halton.ca>  
**Sent:** March 2, 2021 9:44 AM  
**To:** Victor Garcia  
**Subject:** RE: Road Traffic Data Request  
**Attachments:** 100323 - nb & sb volume.xls

Hi Victor,

Thanks for checking. I have attached a 2019 24 hour 2-way count on Trafalgar north of Cross. It is 47,400. Therefore, to consider the existing Trafalgar at-capacity, please use 55,000.

The Trafalgar volumes likely won't significantly impact the site at 157 Cross, as it is +300m to the west.

Matt

---

**From:** Victor Garcia <vgarcia@hgcengineering.com>  
**Sent:** Tuesday, March 2, 2021 9:07 AM  
**To:** Krusto, Matt <Matt.Krusto@halton.ca>  
**Subject:** RE: Road Traffic Data Request

**CAUTION:** This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. If you are unsure or need assistance please contact the IT Service Desk.

Hi Matt,

We received the truck percentages from the email listed below, do you still provide ultimate traffic volumes for Trafalgar Rd or should we be projecting the volumes obtained from the TMC?

Thanks,

**Victor Garcia**, P.Eng  
HGC Engineering **NOISE | VIBRATION | ACOUSTICS**  
Howe Gastmeier Chapnik Limited  
t: 905.826.4044

---

**From:** Krusto, Matt <[Matt.Krusto@halton.ca](mailto:Matt.Krusto@halton.ca)>  
**Sent:** February 16, 2021 11:50 AM  
**To:** Victor Garcia <[vgarcia@hgcengineering.com](mailto:vgarcia@hgcengineering.com)>  
**Subject:** RE: Road Traffic Data Request

Hi Victor,

Any requests for turning movement counts go to [trafficdatarequests@halton.ca](mailto:trafficdatarequests@halton.ca) Cornwall traffic data, other than at the Trafalgar Road intersection, must be obtained from the Town of Oakville.

Truck percentages must be based on existing truck percentages from the data you receive.

Master Station	Description	Count date	Total vol	lampk.cnt	lampk.vol	off pk.cnt	offpk.vol	pm.pk.cnt	pkhr.vol	8hr.vol	12hr.vol	pm10 speed (km)	50% speed (km)	avg (km)	85Percent	Variance	exceeding (%)	accs	# and trk	# med trk/hrs	# hvy trk	Seatax	%normal trk	% med trk/hrs	% hvy trk	headway max (sec)	headway min (sec)	Temp min (C)	Temp max (C)	surface
10000	Trafalgar Road - between QEW WB Off-Ramp and Leighland/Isques	12-Sep-19	45,085	8-45	3,422	13-00	2,944	18-00	3,562	24,146	36,231	60	50	54	66.67	8.67	28.20%	43,237	343	692	540	96.5%	0.8%	1.5%	1.2%	0.93	64.29	19	29 Dry	

Prepared For: Halton Region  
 Prepared By: *PYRAMID* Traffic Inc.  
 Location: REG. RD. #3 200m north of Cross Ave  
 Start Date: Thursday Sep 12, 2019

Site ID: 100323  
 Interval: 15 min.

Period Ending	Channel 1 NB	Channel 2 SB	Hourly Summary
0:15	153	44	
0:30	68	37	
0:45	76	29	
1:00	35	28	470
1:15	27	5	305
1:30	15	24	239
1:45	32	10	176
2:00	14	11	138
2:15	23	12	141
2:30	20	6	128
2:45	7	15	108
3:00	8	7	98
3:15	12	6	81
3:30	7	3	65
3:45	9	7	59
4:00	9	7	60
4:15	11	9	62
4:30	12	15	79
4:45	17	22	102
5:00	19	47	152
5:15	32	33	197
5:30	33	56	259
5:45	49	73	342
6:00	67	103	446
6:15	72	89	542
6:30	97	158	708
6:45	154	235	975
7:00	164	280	1249
7:15	200	295	1583
7:30	255	381	1964
7:45	283	389	2247
8:00	326	449	2578
8:15	343	452	2878
8:30	446	496	3184
8:45	437	406	3355
9:00	339	453	3372
9:15	328	376	3281
9:30	301	324	2964
9:45	314	340	2775
10:00	341	340	2664
10:15	325	276	2561
10:30	363	284	2583
10:45	336	305	2570
11:00	354	301	2544
11:15	369	305	2617
11:30	399	338	2707
11:45	372	345	2783
12:00	414	379	2921

Period Ending	Channel 1 NB	Channel 2 SB	Hourly Summary
12:15	466	357	3070
12:30	419	326	3078
12:45	421	353	3135
13:00	428	368	3138
13:15	415	325	3055
13:30	438	298	3046
13:45	405	315	2992
14:00	438	315	2949
14:15	416	305	2930
14:30	458	278	2930
14:45	433	325	2968
15:00	435	343	2993
15:15	496	350	3118
15:30	501	324	3207
15:45	478	371	3298
16:00	483	331	3334
16:15	550	319	3357
16:30	518	337	3387
16:45	569	319	3426
17:00	467	316	3395
17:15	640	375	3541
17:30	635	343	3664
17:45	628	310	3714
18:00	492	323	3746
18:15	663	319	3713
18:30	436	312	3483
18:45	506	322	3373
19:00	348	305	3211
19:15	480	296	3005
19:30	349	266	2872
19:45	336	243	2623
20:00	349	217	2536
20:15	357	208	2325
20:30	294	221	2225
20:45	310	195	2151
21:00	235	200	2020
21:15	293	156	1904
21:30	219	145	1753
21:45	258	124	1630
22:00	188	116	1499
22:15	206	105	1361
22:30	191	84	1272
22:45	194	78	1162
23:00	140	104	1102
23:15	178	90	1059
23:30	100	75	959
23:45	144	55	886
0:00	64	87	793

AM Peak: 3372

PM Peak: 3746

24 HR VOLUME: 47408



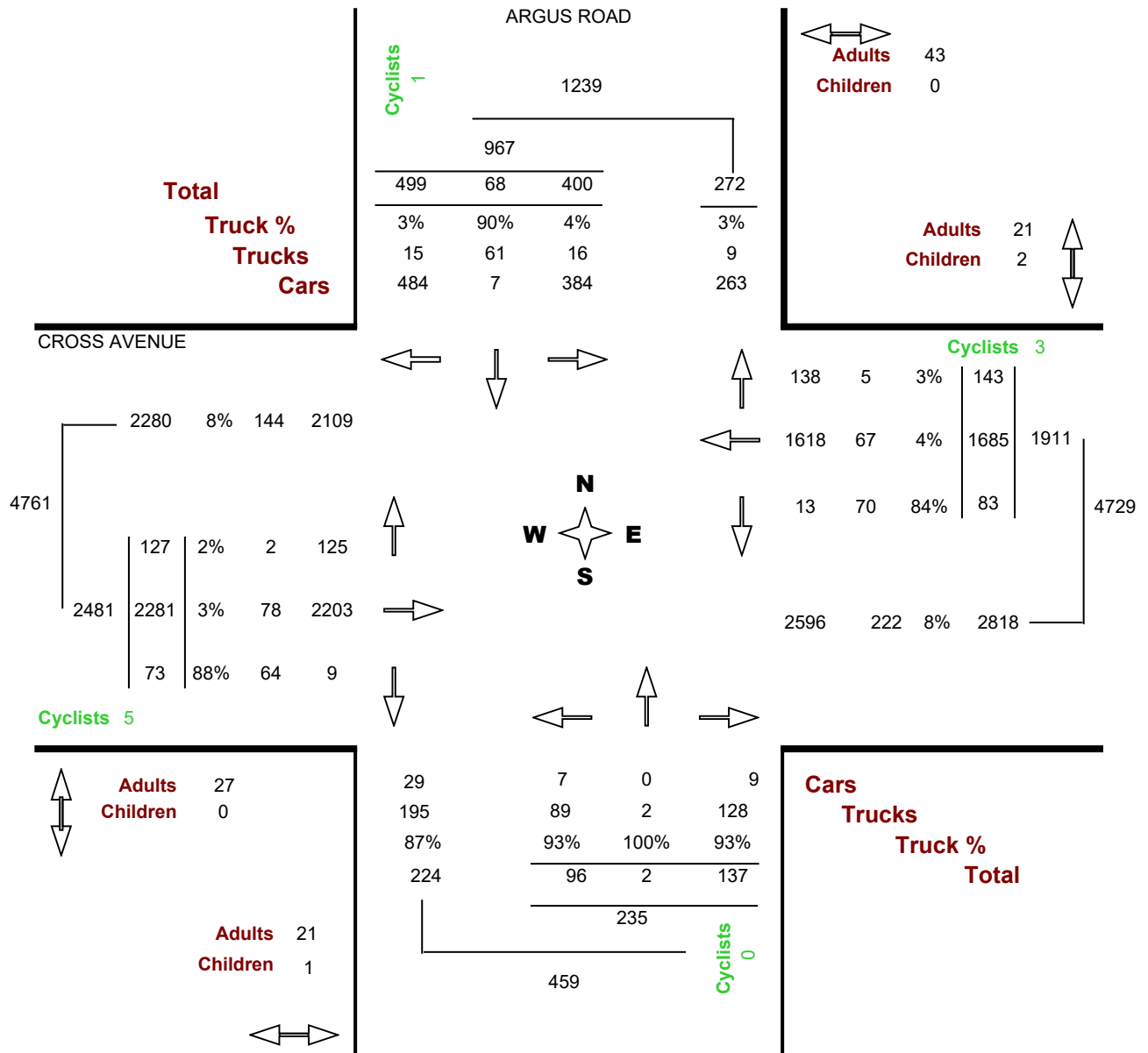
# Turning Movements Count - Full Study Report

**Location.....** CROSS AVENUE @ ARGUS ROAD

**Municipality.....** OAKVILLE

**GeoID.....** 30151301

**Count Date.....** Wednesday, 30 September, 2020





# Turning Movements Report - AM Period

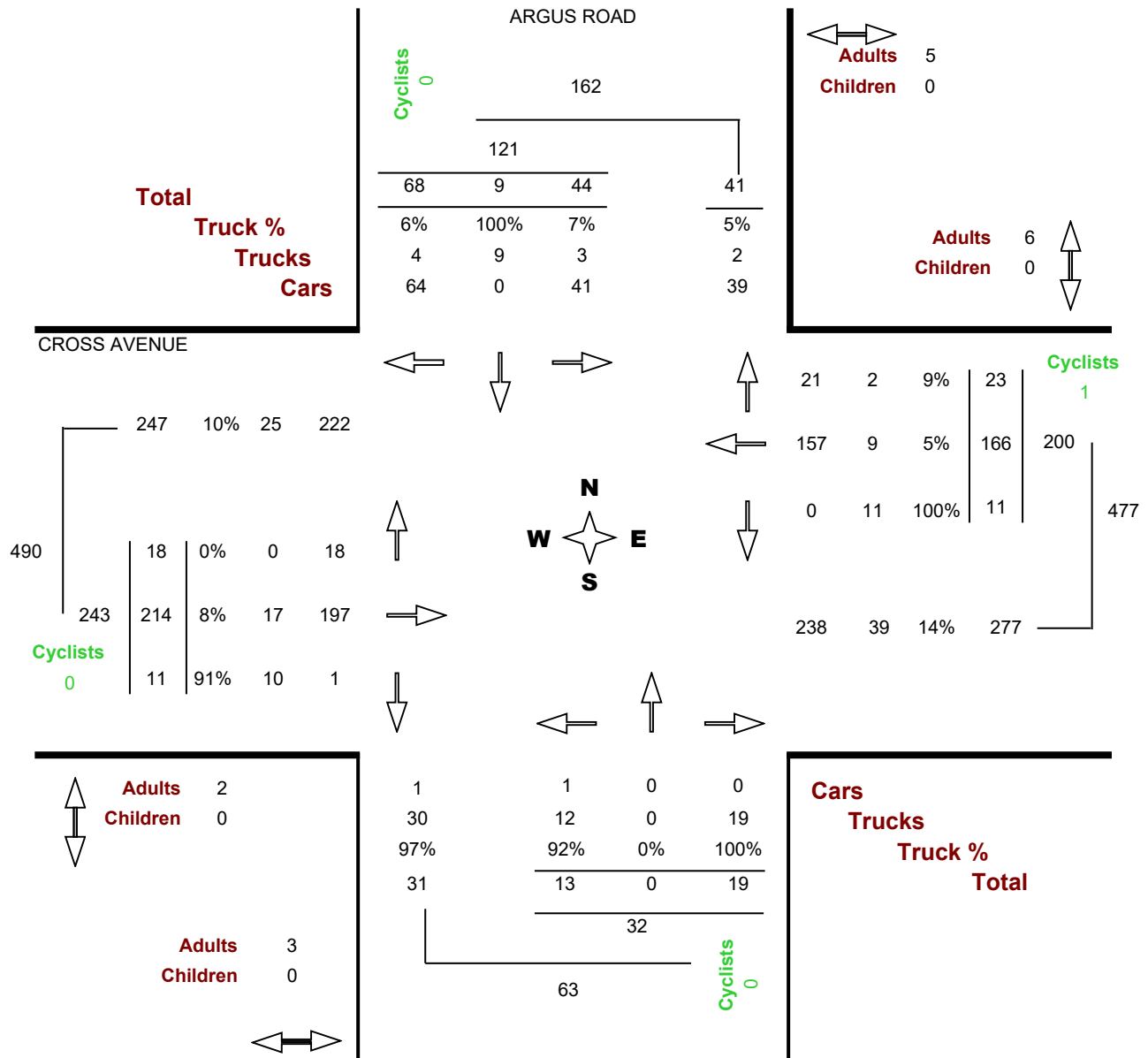
**Location.....** CROSS AVENUE @ ARGUS ROAD

**Municipality.....** OAKVILLE

**GeoID.....** 30151301

**Count Date.....** Wednesday, 30 September, 2020

**Peak Hour.....** 08:00 AM — 09:00 AM



THIS INFORMATION IS SUPPLIED FROM OUR RECORDS AND IS NOT GUARANTEED TO BE CORRECT. WE RECOMMEND FIELD CHECKING TO VERIFY THE INFORMATION SHOWN.

In all counts dated before 2018 - Adult pedestrian numbers include seniors, and the senior count = 0



# Turning Movements Report - MD Period

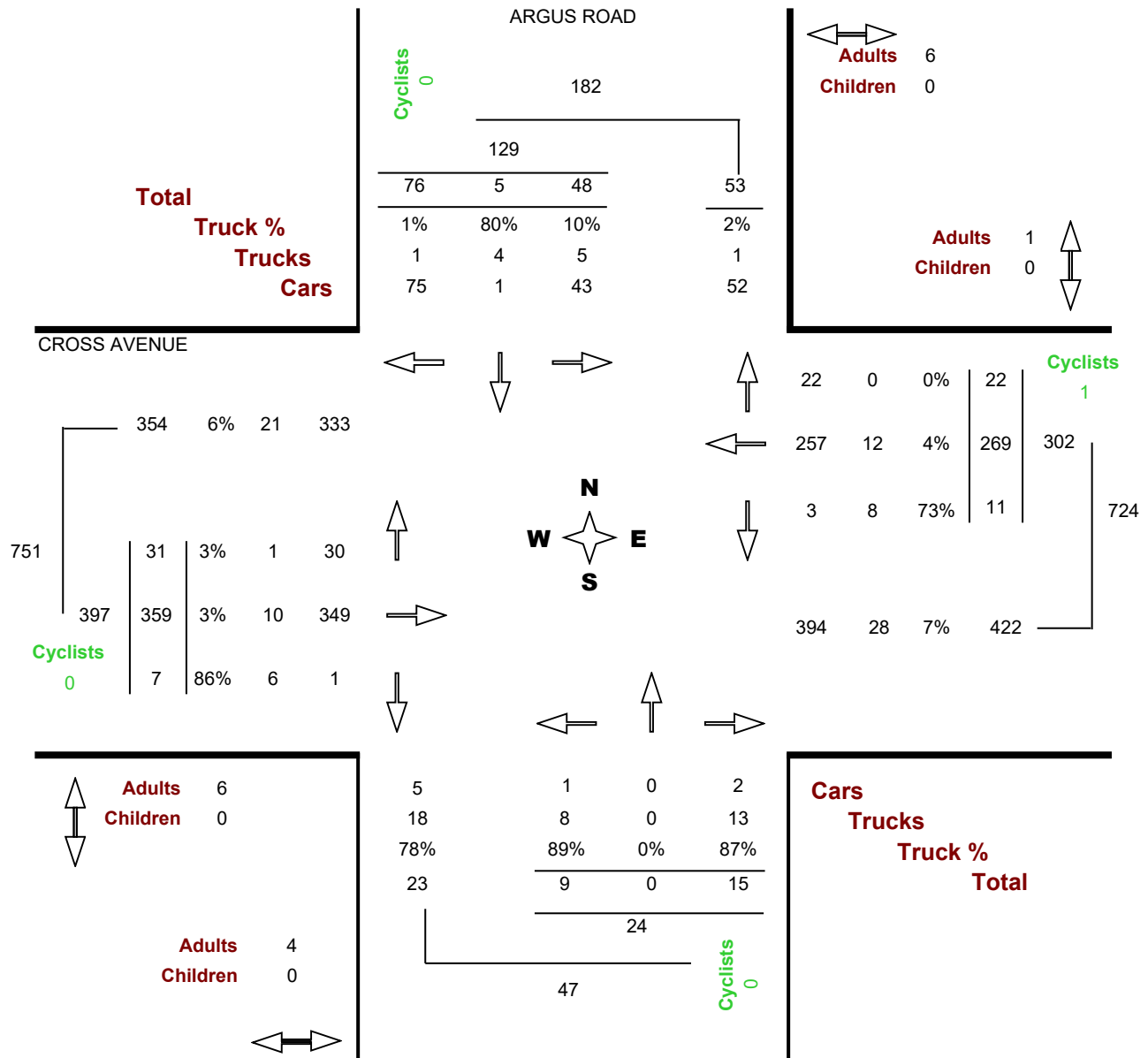
**Location.....** CROSS AVENUE @ ARGUS ROAD

**Municipality.....** OAKVILLE

**GeoID.....** 30151301

**Count Date.....** Wednesday, 30 September, 2020

**Peak Hour.....** 01:00 PM — 02:00 PM



THIS INFORMATION IS SUPPLIED FROM OUR RECORDS AND IS NOT GUARANTEED TO BE CORRECT. WE RECOMMEND FIELD CHECKING TO VERIFY THE INFORMATION SHOWN.

In all counts dated before 2018 - Adult pedestrian numbers include seniors, and the senior count = 0



# Turning Movements Report - PM Period

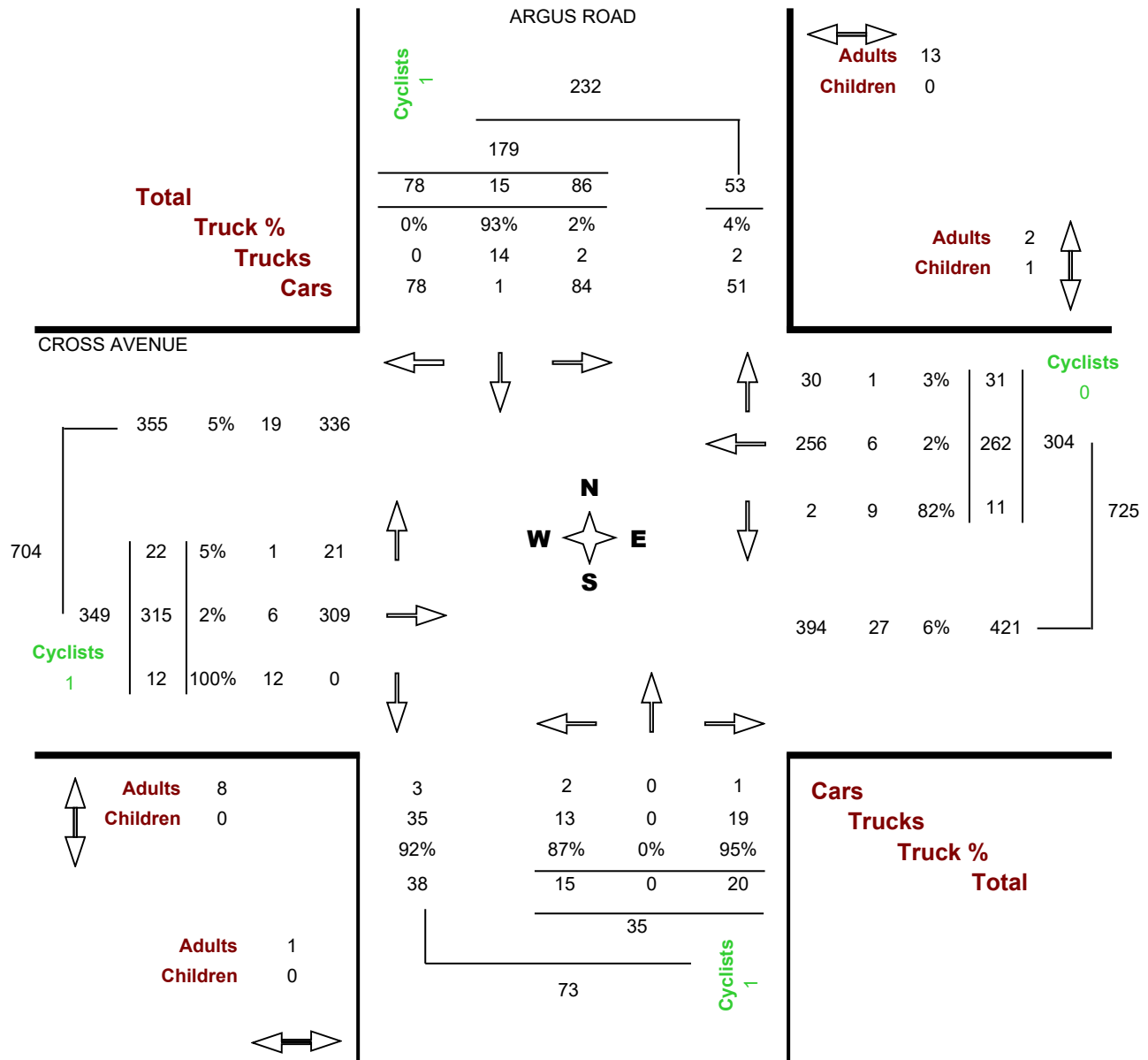
**Location.....** CROSS AVENUE @ ARGUS ROAD

**Municipality.....** OAKVILLE

**GeoID.....** 30151301

**Count Date.....** Wednesday, 30 September, 2020

**Peak Hour.....** 03:15 PM — 04:15 PM



THIS INFORMATION IS SUPPLIED FROM OUR RECORDS AND IS NOT GUARANTEED TO BE CORRECT. WE RECOMMEND FIELD CHECKING TO VERIFY THE INFORMATION SHOWN.

In all counts dated before 2018 - Adult pedestrian numbers include seniors, and the senior count = 0





# Turning Movement Count - Details Report

**Location.....** CROSS AVENUE @ ARGUS ROAD  
**Municipality.....** OAKVILLE  
**Count Date.....** Wednesday, September 30, 2020

		ARGUS ROAD										CROSS AVENUE									
		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	Cyclists	Ped	LT	TH	RT	Cyclists	Ped	LT	TH	RT	Cyclists	Ped	LT	TH	RT	Cyclists	Ped
07:00	07:15	3	4	9	0	1	6	0	7	0	1	4	29	1	0	0	1	19	3	0	0
07:15	07:30	3	1	12	0	0	1	0	1	0	0	1	31	3	0	2	4	41	2	0	1
07:30	07:45	3	3	7	0	0	5	0	8	0	0	6	36	1	0	0	2	37	4	0	1
07:45	08:00	6	1	18	0	4	0	0	3	0	0	2	29	3	0	2	1	40	1	0	0
Hourly Total		15	9	46	0	5	12	0	19	0	1	13	125	8	0	4	8	137	10	0	2
08:00	08:15	4	1	21	0	1	7	0	8	0	3	6	34	3	0	1	2	61	5	0	2
08:15	08:30	16	1	9	0	0	0	0	1	0	0	1	37	11	0	0	3	42	1	0	0
08:30	08:45	13	6	17	0	3	5	0	8	0	0	3	36	6	0	1	7	53	3	0	0
08:45	09:00	11	1	21	0	1	1	0	2	0	0	1	59	3	1	4	6	58	2	0	0
Hourly Total		44	9	68	0	5	13	0	19	0	3	11	166	23	1	6	18	214	11	0	2
11:00	11:15	4	0	4	0	0	6	0	6	0	0	1	28	3	0	0	1	41	1	0	0
11:15	11:30	10	0	23	0	1	2	1	1	0	1	1	64	2	0	0	5	84	1	3	0
11:30	11:45	14	2	24	0	0	2	0	3	0	0	2	79	7	0	1	3	91	1	1	3
11:45	12:00	7	0	8	0	0	3	1	3	0	0	4	56	4	0	0	3	95	0	0	1
Hourly Total		35	2	59	0	1	13	2	13	0	1	8	227	16	0	1	12	311	3	4	4
12:00	12:15	21	2	20	0	3	4	0	3	0	0	3	58	8	1	0	3	77	3	0	0
12:15	12:30	6	2	12	0	0	1	0	3	0	4	2	53	4	0	0	4	96	2	0	0
12:30	12:45	13	2	17	0	0	6	0	4	0	3	8	58	4	0	0	1	91	2	0	0
12:45	13:00	15	0	20	0	2	0	0	3	0	2	2	71	6	0	0	5	93	2	0	2
Hourly Total		55	6	69	0	5	11	0	13	0	9	15	240	22	1	0	13	357	9	0	2
13:00	13:15	15	4	23	0	0	5	0	4	0	1	4	66	3	1	0	2	95	2	0	0
13:15	13:30	8	0	16	0	0	0	0	3	0	1	0	71	6	0	0	6	94	2	0	3
13:30	13:45	12	0	18	0	3	3	0	4	0	1	4	55	6	0	1	5	82	2	0	2
13:45	14:00	13	1	19	0	3	1	0	4	0	1	3	77	7	0	0	18	88	1	0	1
Hourly Total		48	5	76	0	6	9	0	15	0	4	11	269	22	1	1	31	359	7	0	6
15:00	15:15	6	2	9	0	2	6	0	7	0	0	5	42	2	0	0	4	50	2	0	0
15:15	15:30	21	3	27	0	3	2	0	3	0	0	2	71	16	0	0	6	85	1	1	1
15:30	15:45	19	5	14	0	6	3	0	6	0	0	3	70	8	0	2	8	63	4	0	7
15:45	16:00	23	2	19	1	2	3	0	3	0	1	2	54	3	0	1	4	81	1	0	0
Hourly Total		69	12	69	1	13	14	0	19	0	1	12	237	29	0	3	22	279	8	1	8
16:00	16:15	23	5	18	0	2	7	0	8	0	0	4	67	4	0	0	4	86	6	0	0
16:15	16:30	6	1	13	0	2	1	0	4	0	0	0	55	5	0	2	4	89	3	0	0
16:30	16:45	17	6	15	0	2	4	0	6	0	0	3	57	2	0	4	3	72	5	0	0
16:45	17:00	19	1	23	0	0	1	0	3	0	0	1	58	3	0	1	4	94	1	0	0
Hourly Total		65	13	69	0	6	13	0	21	0	0	8	237	14	0	7	15	341	15	0	0
17:00	17:15	31	3	11	0	0	3	0	7	0	1	3	43	0	0	1	2	88	3	0	1
17:15	17:30	15	0	15	0	2	2	0	3	0	2	1	57	4	0	0	1	72	1	0	2
17:30	17:45	14	8	12	0	0	5	0	7	0	0	1	47	5	0	0	3	65	4	0	0
17:45	18:00	9	1	5	0	0	1	0	1	0	0	0	37	0	0	0	2	58	2	0	0
Hourly Total		69	12	43	0	2	11	0	18	0	3	5	184	9	0	1	8	283	10	0	3
Grand Total		400	68	499	1	43	96	2	137	0	22	83	1685	143	3	23	127	2281	73	5	27
Truck %		4%	90%	3%			93%	100%	93%			84%	4%	3%			2%	3%	88%		

# APPENDIX B

Rail Traffic Data



ACOUSTICS



NOISE



VIBRATION



# Train Count Data

## TRANSMITTAL

*To:* HGC Engineering      *Project :* OAK – 21.20 – Cornwall Rd, Oakville ON  
*Destinataire :* 2000 Argentia Rd  
Plaza, Suite 203  
Mississauga ON  
L5N 1P7

*Att'n:* Victor Garcia      *Routing:* vgarcia@hgcengineering.com

*From:* Michael Vallins      *Date:* 2021/04/26  
*Expéditeur :*

*Cc:* Adjacent Development  
CN via e-mail

---

Urgent    For Your Use    For Review    For Your Information    Confidential

---

**Re: Train Traffic Data – CN Oakville Subdivision near Cornwall Rd in Oakville, 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](mailto:permits.gld@cn.ca).

Sincerely,  
CN Design & Construction

Michael Vallins P.Eng  
Manager Public Works- Eastern Canada  
[Permits.gld@cn.ca](mailto:Permits.gld@cn.ca)

Date: 2021/04/26

Project Number: OAK – 21.20 – Cornwall Rd, Oakville ON

Dear Victor:

**Re: Train Traffic Data – CN Oakville Subdivision near Cornwall Rd in Oakville, ON**

The following is provided in response to Victor’s 2021/02/16 request for information regarding rail traffic in the vicinity of Cornwall Rd in Oakville at approximately Mile 21.20 on CN’s Oakville Subdivision.

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

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

**\*Maximum train speed is given in Miles per Hour**

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	2	140	60	4
Way Freight	0	25	60	4
Passenger	12	10	95	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	2	140	60	4
Way Freight	0	25	60	4
Passenger	1	10	95	2

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

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There is one (1) at-grade crossing in the immediate vicinity of the study area at Mile 21.97 Kerr St. 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 four mainline tracks are considered to be continuously welded rail throughout the study area. The presence of four (4) switches located at Mile 21.85, 21.99, 22.07, and 22.20 may exacerbate the noise and vibration caused by train movements.

The Canadian National Railway continues to be strongly opposed to locating developments near railway facilities and rights-of-way due to potential safety and environmental conflicts. Development adjacent to the Railway Right-of-Way is not appropriate without sound impact mitigation measures to reduce the incompatibility. For confirmation of the applicable rail noise, vibration and safety standards, Adjacent Development, Canadian National Railway Properties at [Proximity@cn.ca](mailto:Proximity@cn.ca) should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Michael Vallins P.Eng', with a long horizontal flourish extending to the right.

Michael Vallins P.Eng  
Manager Public Works- Eastern Canada  
[Permits.gld@cn.ca](mailto:Permits.gld@cn.ca)

**Yvonne Lo**

---

**From:** Rail Data Requests <RailDataRequests@metrolinx.com>  
**Sent:** February 23, 2021 4:26 PM  
**To:** Victor Garcia  
**Subject:** RE: Rail Traffic Data Requests-157-165 Cross Ave, Oakville

Hi Victor:

Further to your request dated February 16, 2021, the subject lands (157-165 Cross Ave, Oakville) are located within 300 metres of the Metrolinx Oakville Subdivision (which carries Lakeshore West GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and electric trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 12 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 255 trains. The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives		1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives
Day (0700-2300)	60	11	101	42	Night (2300-0700)	8	4	21	8

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

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 are currently completing the bids that will close in 2021. GO Expansion construction will get underway in 2022.

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.

There are anti-whistling by-laws in affect at Kerr St and Chartwell Rd at-grade crossings.

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,

# APPENDIX C

Preliminary Drawings



ACOUSTICS



NOISE



VIBRATION

# BDP. Quadrangle

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
t 416 598 1240 www.bdpquadrangle.com



## 217-227 Cross Avenue and 571-587 Argus Road

2022-04-19 Issued for OPA and Rezoning

for  
Distrikt Developments

Project No. 19072

Issued for OPA and Rezoning Application

### ARCHITECTURAL DRAWINGS

A000.S	Cover Page
A101.S	Site plan and Statistics
A102.S	Circulation Site Plan
A151.S	P1 and P2 Underground Plans
A152.S	P3-P5 and P6 Underground Plans
A201.S	Ground and Second floor plans
A202.S	Typical Third to Sixth and Seventh floor plans
A203.S	Typical Lower Tower and Upper Tower plans
A204.S	Mechanical Penthouse and Roof plans
A401.S	Building A and B - East and North Elevations
A402.S	Building A and B - West and South Elevations
A403.S	Building C - East and North Elevations
A404.S	Building C - West and South Elevations
A451.S	Building A and B Sections
A462.S	Building B and C Sections

#### PLANNING CONSULTANT

Rousfields Inc.  
3 Church Street, Suite 200  
Toronto, ON M5E 1M2  
T (416) 947-9744

#### CIVIL CONSULTANT

Trafalgar Engineering Ltd.  
1-481 Morden Rd  
Oakville, ON L6K 3W6  
T (905) 338-3366

#### URBAN DESIGN & LANDSCAPE ARCHITECT

Janet Rosenberg & Studio Inc.  
148 Kenwood Ave  
York, ON M6C 2S3  
T (416) 656-6665

#### TRAFFIC CONSULTANT 1

BA Consulting Group Ltd  
45 St Clair Ave W  
Toronto, ON M4V 1K9  
T (416) 961-7110

#### TRAFFIC CONSULTANT 2

Paradigm Transportation Solutions Ltd  
150 Pinelush Rd #5A  
Cambridge, ON N1R 8J8  
T (519) 896-3163





3 CONTEXT PLAN  
A101.S

2 KEY PLAN  
A101.S

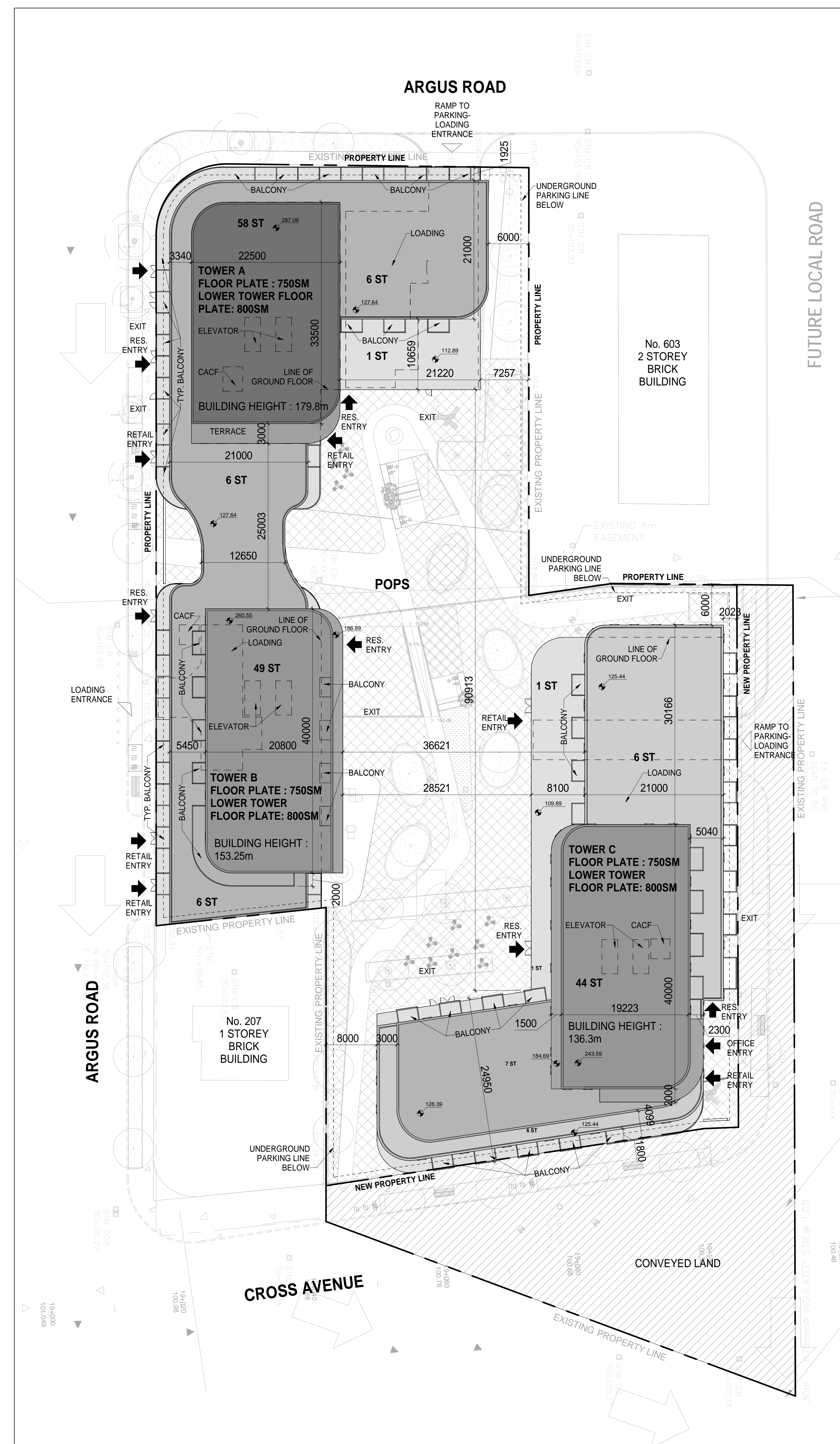
217-227 Cross Ave and 571-587 Argus Rd   Distrikt Developments													
Zoning:				12617 sm		135809.388 sf							
Height Limit:													
Lot Size:													
BUILDING A & B 58 & 49 STOREY	Proposed Residential												
	Floor	Floor Area/Typ. Floor (sm)	No. Typ. Floors	Floor Area By-Law 2014-014* sm	sf	Floor Area, Net (sm)**	Net Residential (sm)	Interior Amenity (sm)	Exterior Amenity (sm)	Net Rentable Retail (sm)	Net Office Space (sm)	No. of Units	
	Building A	MPH	743	1	743	7,998	0	0	0	0	0	0	0
		Level 34-58	743	25	18,575	199,941	16,775	16,775	0	0	0	0	250
		Level 8-33	810	26	21,060	226,690	19,188	19,188	0	0	0	0	260
	Level 7	810	1	810	8,719	738	0	738	0	0	0	0	
	Building B	MPH	741	1	741	7,976	0	0	0	0	0	0	0
		Level 30-49	741	20	14,820	159,522	13,380	13,380	0	0	0	0	240
		Level 8-29	801	22	17,622	189,683	16,038	16,038	0	0	0	0	264
	Level 7	825	1	825	8,889	753	0	753	1,457	0	0	0	
Building A & B	Level 3-6	2817	4	11,268	121,289	10,420	10,420	0	0	0	0	152	
	Level 2	2817	1	2,817	30,322	2,605	2,095	510	116.58	0	0	30	
	Ground	3323	1	3,323	35,769	2,160	590	0	1,570	0	0	0	
<b>Building A &amp; B Total</b>				<b>92,604</b>	<b>996,789</b>	<b>82,057</b>	<b>78,486</b>	<b>2,001</b>	<b>1,574</b>	<b>1,570</b>	<b>0</b>	<b>1,196</b>	
											100%		
BUILDING C 44 STOREY	Proposed Residential												
	Floor	Floor Area/Typ. Floor (sm)	No. Typ. Floors	Floor Area By-Law 2014-014* sm	sf	Floor Area, Net (sm)**	Net Residential (sm)	Interior Amenity (sm)	Exterior Amenity (sm)	Net Rentable Retail (sm)	Net Office Space (sm)	No. of Units	
	MPH	736	1	736	7,922	0	0	0	0	0	0	0	0
		Level 26-44	736	19	13,984	150,524	12,635	12,635	0	0	0	0	228
		Level 8-25	796	18	14,328	154,227	13,050	13,050	0	0	0	0	216
	Level 7	1297	1	1,297	13,961	1,159	0	1,159	1,013	0	0	0	
	Level 3-6	2208	4	8,832	95,068	8,220	8,220	0	0	0	0	108	
	Level 2	2308	1	2,308	24,843	2,190	0	0	0	0	2,190	0	
	Ground	2629	1	2,629	28,299	1,492	167	0	0	1,246	79	0	
	<b>Building C Total</b>				<b>44,114</b>	<b>474,843</b>	<b>36,746</b>	<b>34,072</b>	<b>1,159</b>	<b>1,013</b>	<b>1,246</b>	<b>2,269</b>	<b>552</b>
											100%		
<b>Total Floor Area</b>				<b>136,718 sm</b>								<b>± 1,471,633 sf</b>	
<b>Total Floor Area, Net</b>				<b>120,803 sm</b>								<b>± 1,300,323 sf</b>	
<b>Total No. of Units</b>												<b>± 1,748</b>	
<b>Proposed Height, FSI:</b>				58 Storeys, ±179 m (excl. mech penthouse)								<b>9.6</b>	
<b>Parking (5.1A.4)</b>													
Resident					876								
Non-Resident					409								
<b>TOTAL RECOMMENDED</b>					<b>1285</b>								
Non-Resident (P1)					190		Visitor				351		
Non-Resident (P2)					220		Retail / Daycare				34		
Resident (P3)					220		Office				25		
Resident (P4)					220								
Resident (P5)					220								
Resident (P6)					216						410		
<b>TOTAL PROVIDED</b>					<b>1286</b>						<b>876</b>		
<b>Residential Amenity</b>													
Interior Amenity					3160		Provided (sm)						
Exterior Amenity					2587								
<b>TOTALS (sm)</b>					<b>5747</b>								
<b>Bicycle Requirements (5.7.k.; Maximum of 200 spaces required)</b>													
Long Term					1317		Required				1317		
Short Term					437						437		
<b>TOTALS</b>					<b>1754</b>						<b>1754</b>		

All calculations are preliminary

± Total Lot Area	12,617	sm
± Usable Lot Area with Road Conveyances	10,337	sm
± FSI	9.57	

No. of Units	Approx. Unit Mix		
	1B (575-600 sf)	2B (700-725 sf)	3B (975-990 sf)
1,748	1,223	455	70
100%	70%	26%	4%

\* **Floor Area Definition By-Law 2014-014:** Means the aggregate area of a building contained within the exterior walls, but does not include attic or basement space unless otherwise specified by this By-law.  
 \*\* **Floor Area, Net Definition By-Law 2015-018:** Means the total area of all floors of a building measured from the interior faces of the exterior walls or demising walls, but does not include the area of stair wells, elevators, escalators, ventilating shafts, attics, concourses, washrooms, attached enclosed and covered loading docks and related enclosed corridors used for loading purposes, above and below grade parking structures, storage rooms, rooms for garbage containment, and mechanical rooms.



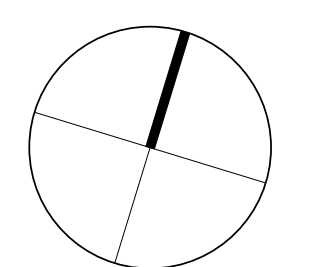
1 SITE PLAN  
SCALE: 1:300

SITE PLAN LEGEND	
	PROPERTY LINE
	LINE OF UNDER GROUND GARAGE BELOW
	MAIN BUILDING ENTRANCE
	RETAIL ENTRANCE
	EXIT
	VEHICLE/LOADING ENTRANCE/EXIT
	FIRE HYDRANT
	SIAMESE CONNECTION
	MANHOLE COVER
	AREA DRAIN
	CATCH BASIN
	FLOOR DRAIN (PARKING SLAB)
	FLOOR DRAIN (INTERIOR)
	EXISTING LIGHT
	TYPICAL PARKING SPACE
	TYPICAL B.F. PARKING SPACE
	F.F.E. FRESH FLOOR ELEVATION
	EXISTING ELEVATION
	PROPOSED ELEVATION
	TOP OF ROOF
	BUILDING ENVELOPE
	FIRE ACCESS ROUTE HEAVY DUTY PAVING ASSEMBLY TO BE DESIGNED TO MEET THE LOADS IMPOSED BY FIRE FIGHTING EQUIPMENT.
	GREEN ROOF
	TERRACE PAVERS

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD



**BDP. Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
+1 416 598 1240 www.bdpquadrangle.com

217-227 Cross Avenue and  
571-587 Argus Road  
2022-04-19 Issued for Rezoning  
for  
Distrikt Developments

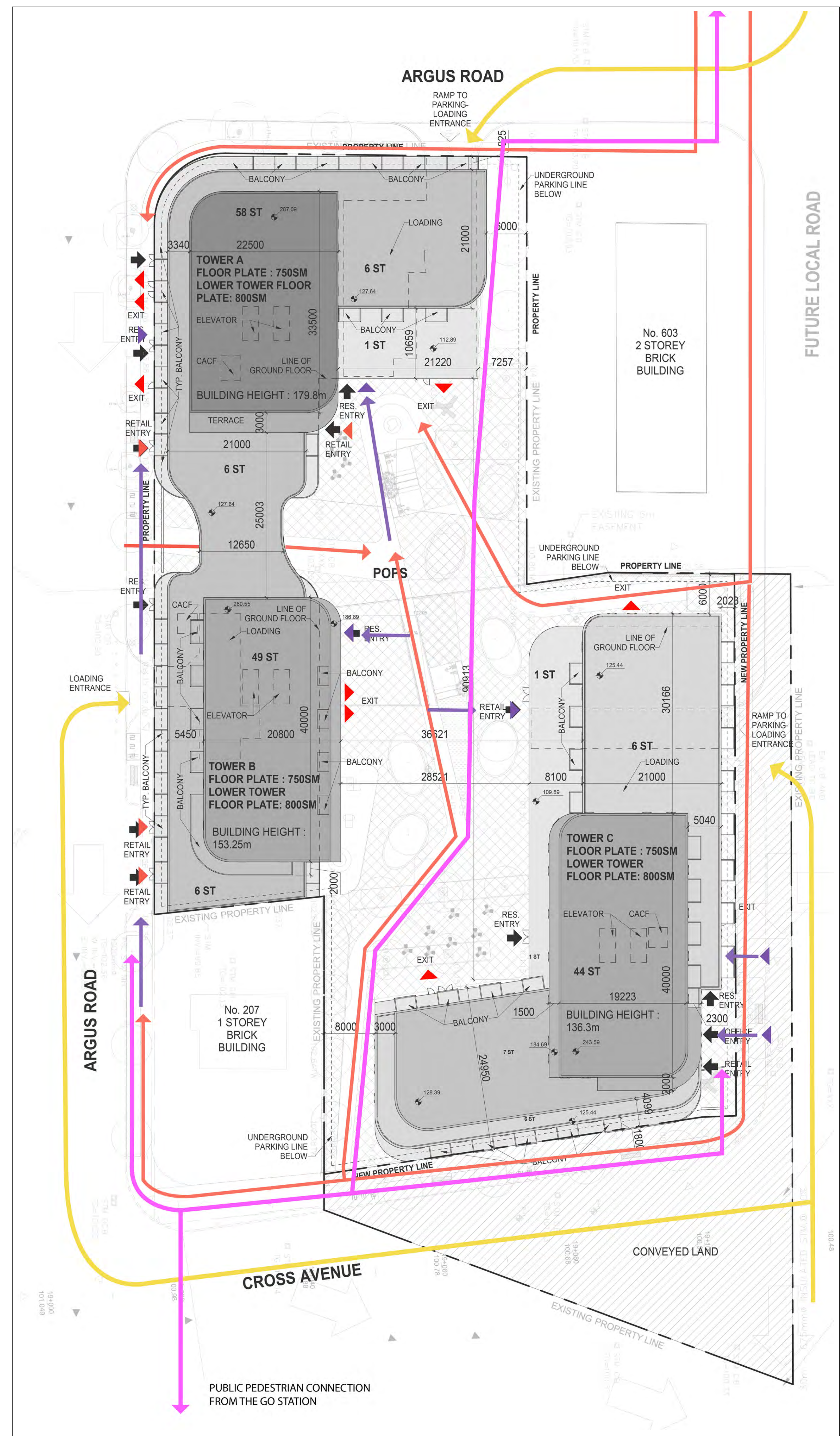
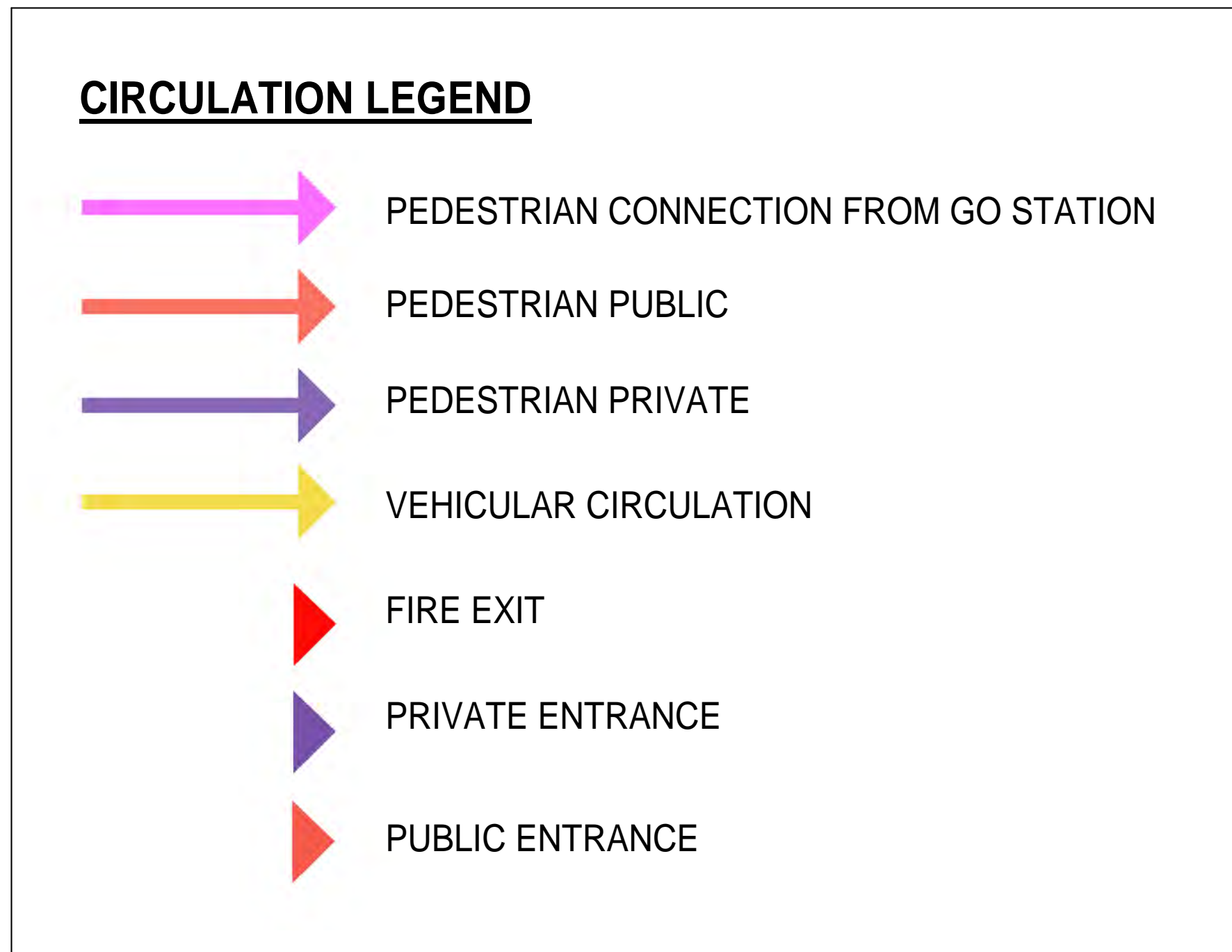
19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

Site plan and Statistics

**A101.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all sizes and dimensions and shall report all discrepancies to the Architect and shall rectify prior to commencing work.

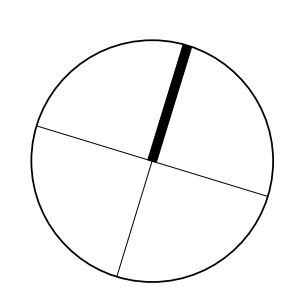
C:\Users\A102S\Documents\A102S\_SITE\_19072\_Cross\_Avenue\_2022\_A102S1.rvt



**1**  
A102.S CIRCULATION DIAGRAM  
SCALE: 1 : 300

REVISION RECORD

2022-04-19 Issued for Rezoning  
ISSUE RECORD



**BDP.**  
**Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 707 Toronto, ON M5V 3H5  
+1 416 598 1240 www.bdpquadrangle.com

217-227 Cross Avenue and  
571-587 Argus Road  
2022-04-19 Issued for Rezoning  
for  
Distrikt Developments

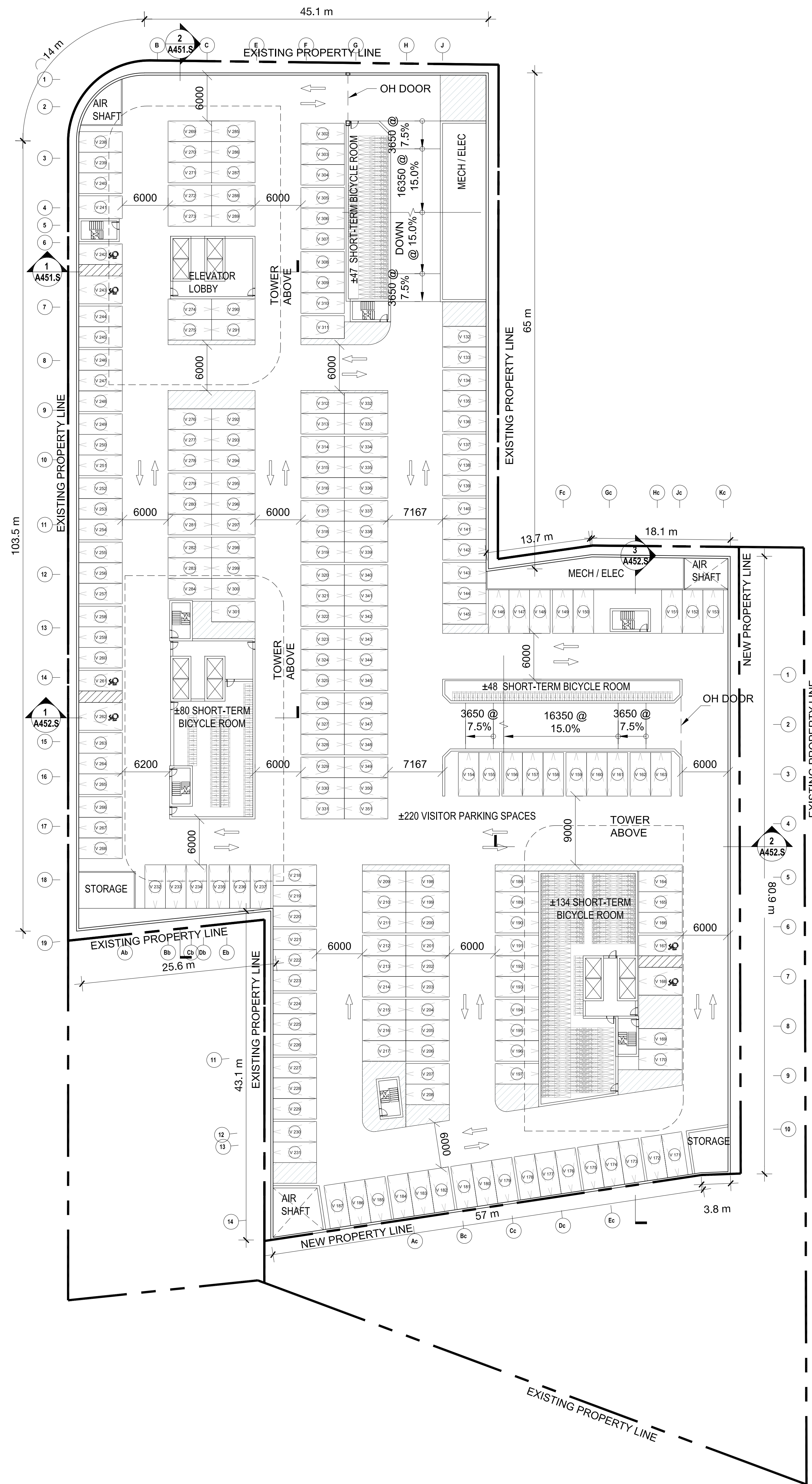
19072 1 : 300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

Circulation Site Plan

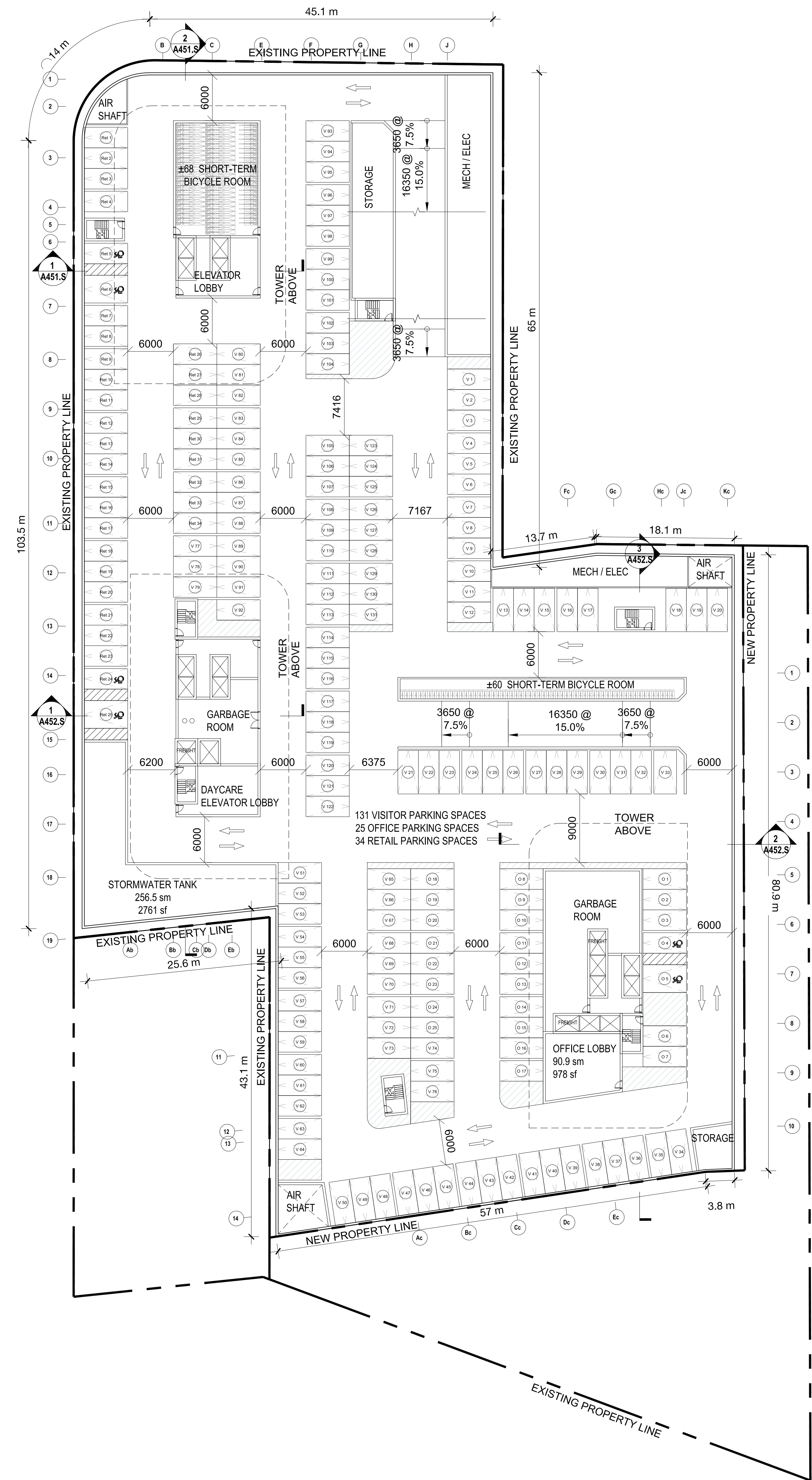
**A102.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and shall coordinate prior to commencing work.

2022-05-11 12:02:05 PM



P2

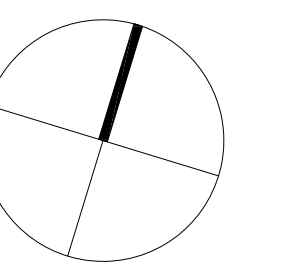


P1

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD



**BDP.  
Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
416-598-1240 www.bdpquadrangle.com

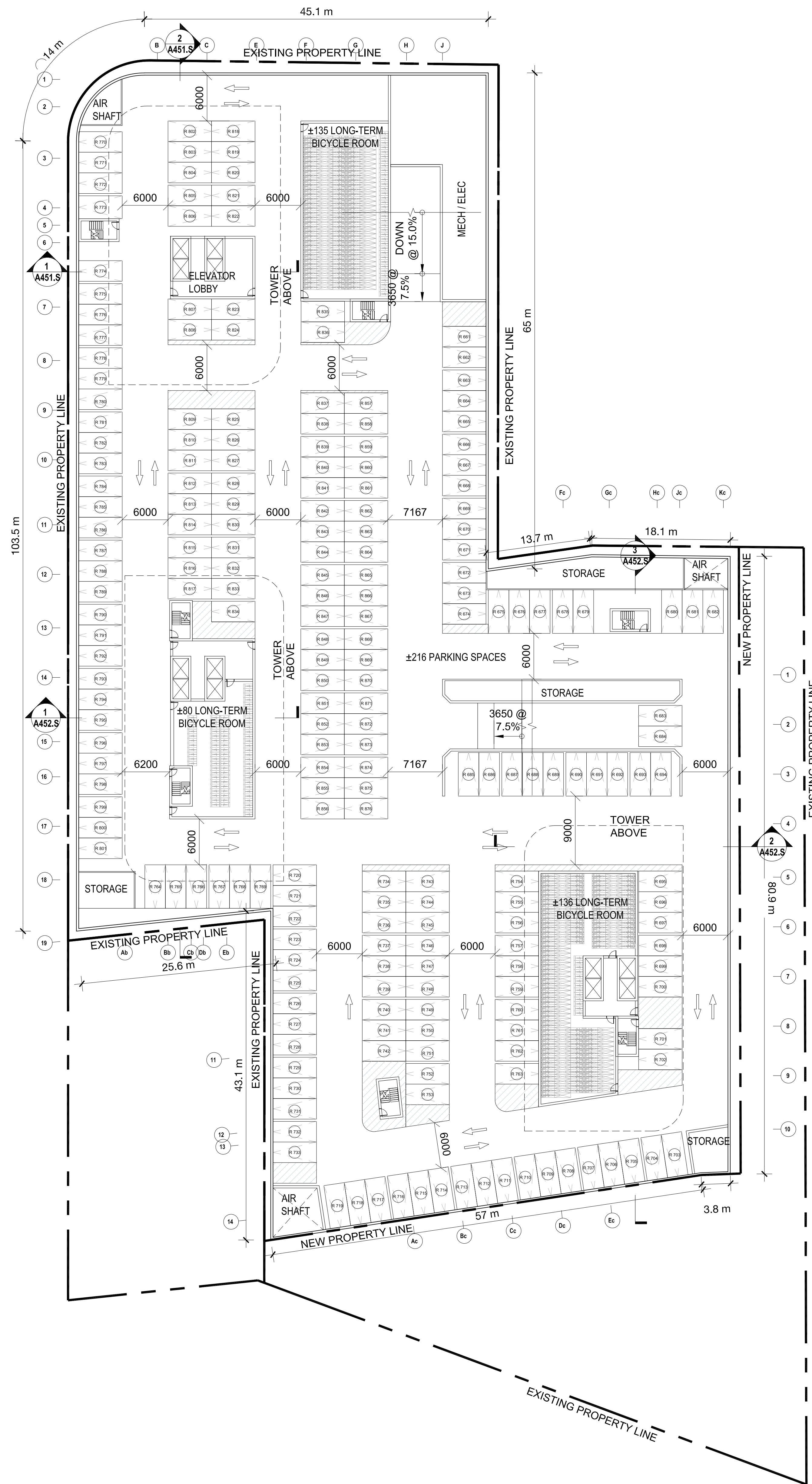
217-227 Cross Avenue and  
571-587 Argus Road  
Oakville, ON

19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

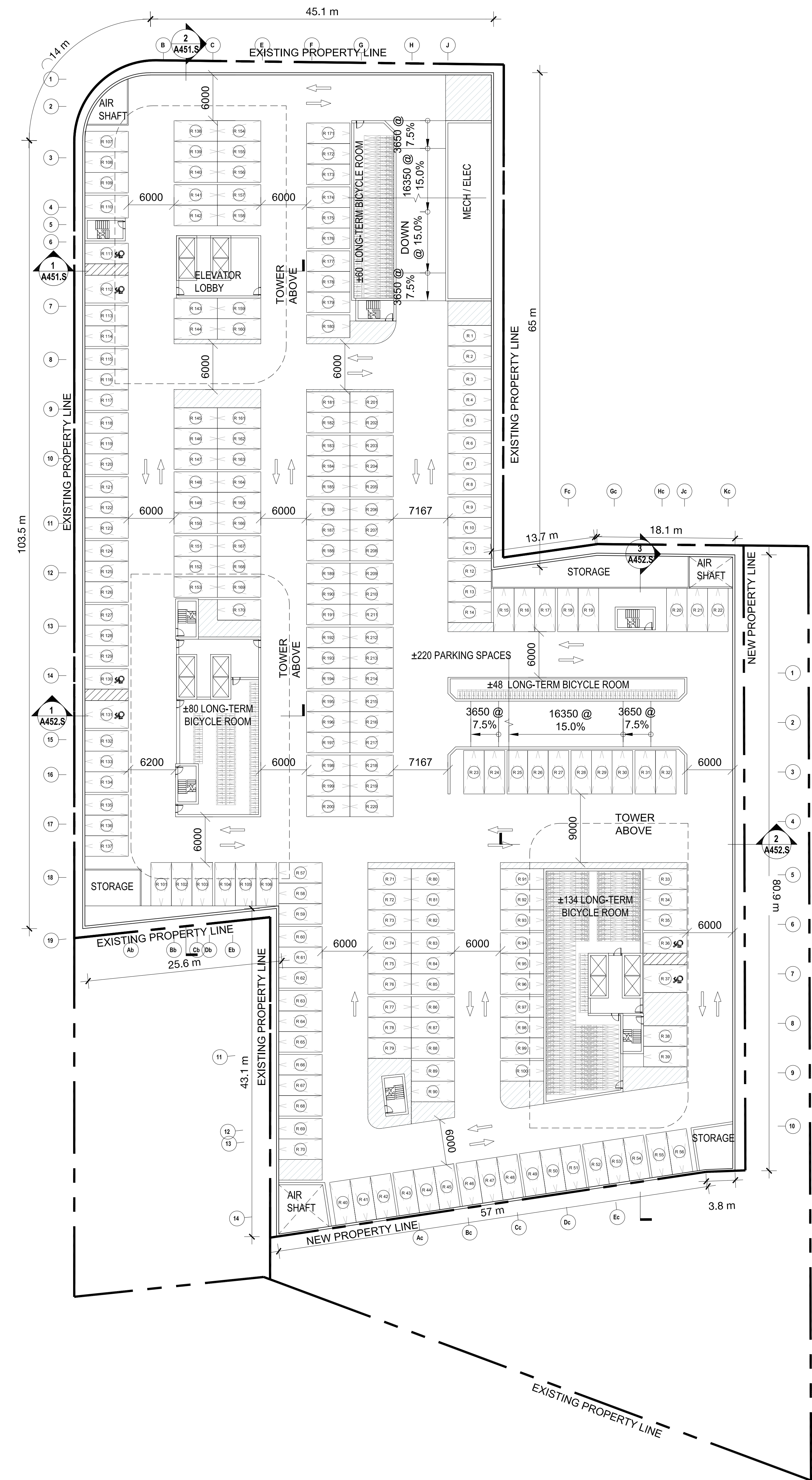
Parking Level Floor Plans  
P1 & P2

**A151.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and obtain clarification prior to commencing work.



P6

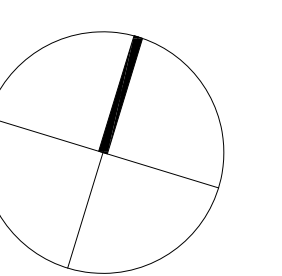


P3-P5

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD



**BDP.  
Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
+1 (416) 598-1240 www.bdpquadrangle.com

217-227 Cross Avenue and  
571-587 Argus Road  
Oakville, ON

19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

Parking Level Floor Plans  
P3-P5  
P6

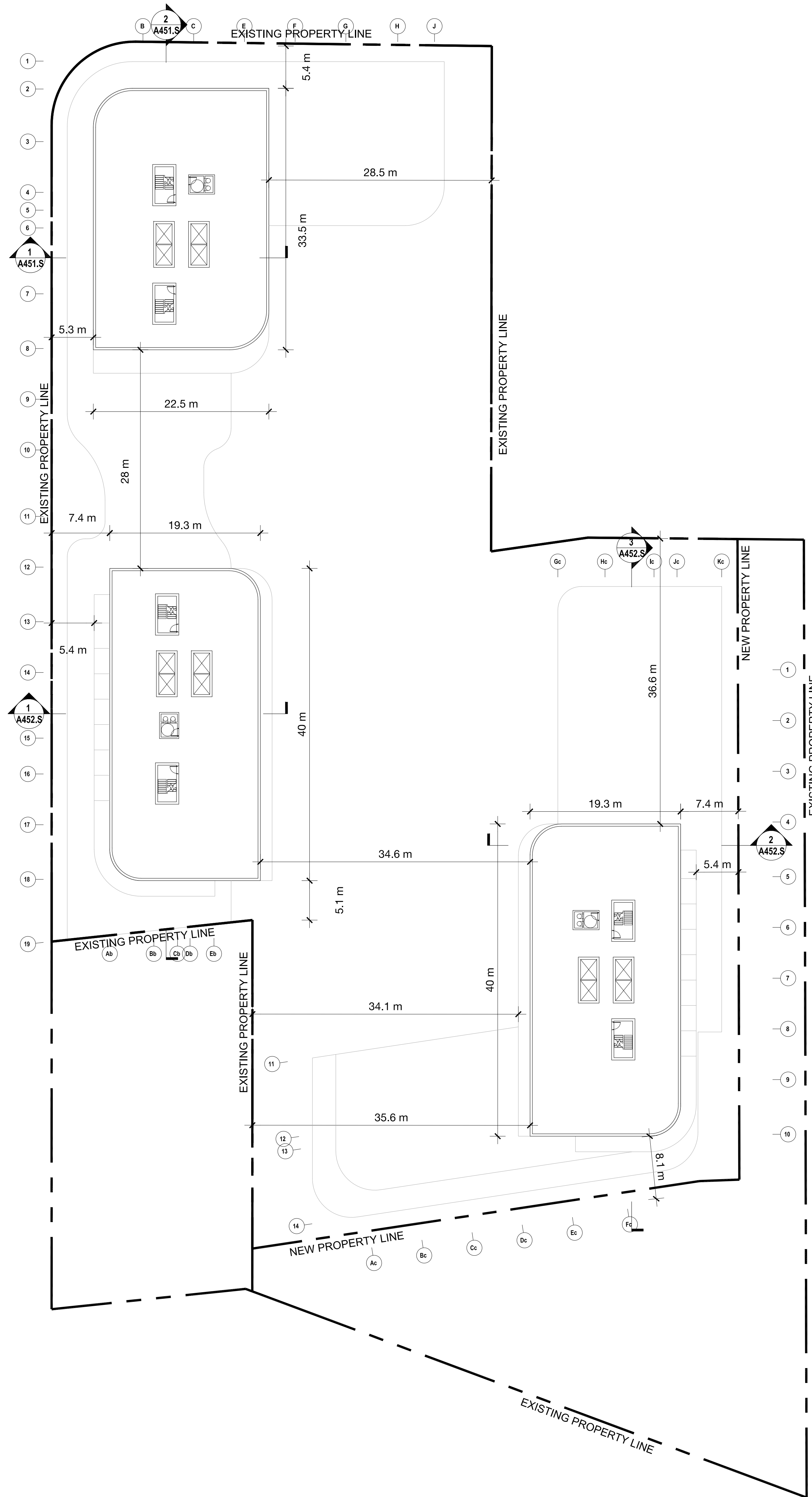
**A151.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and obtain clarification prior to commencing work.

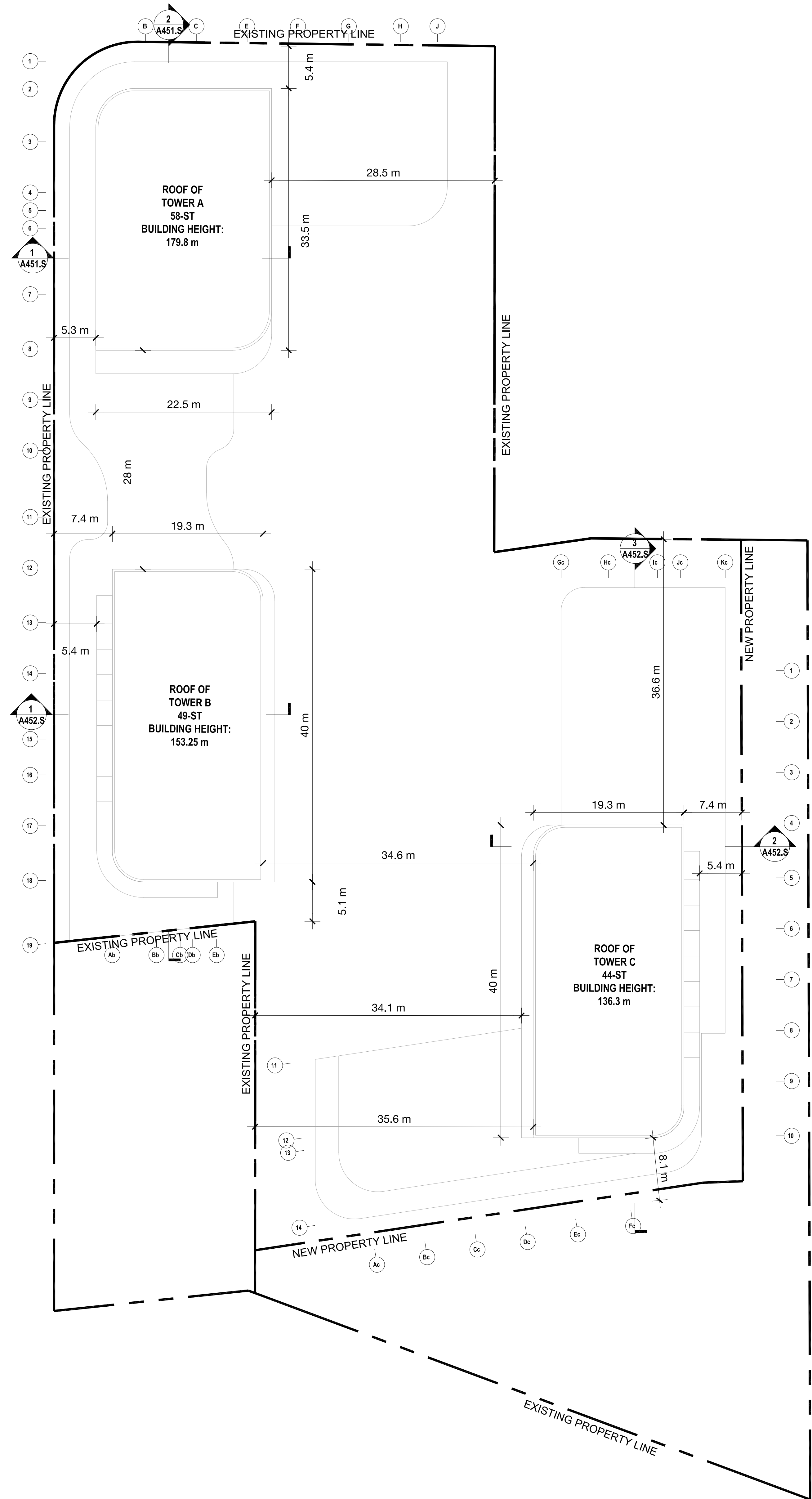








Mechanical Penthouse Plan

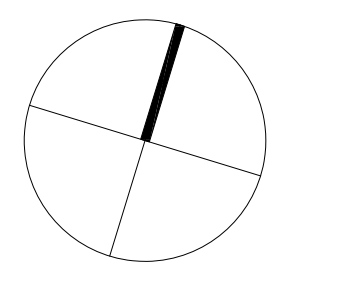


Roof Plan

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD



**BDP.  
Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
T 416-598-1240 www.bdpquadrangle.com

217-227 Cross Avenue and  
571-587 Argus Road  
Oakville, ON

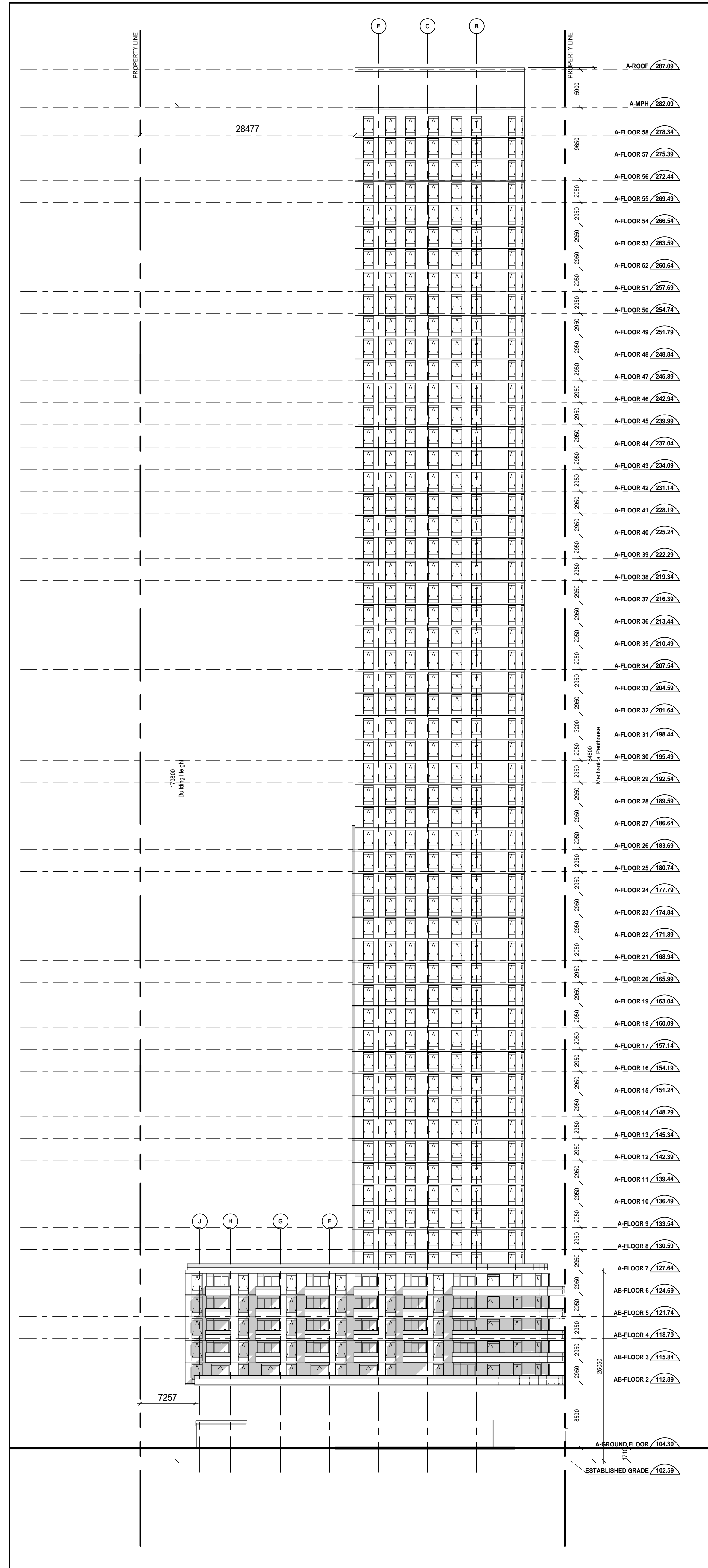
19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

Mechanical Penthouse  
Plan & Roof Plan

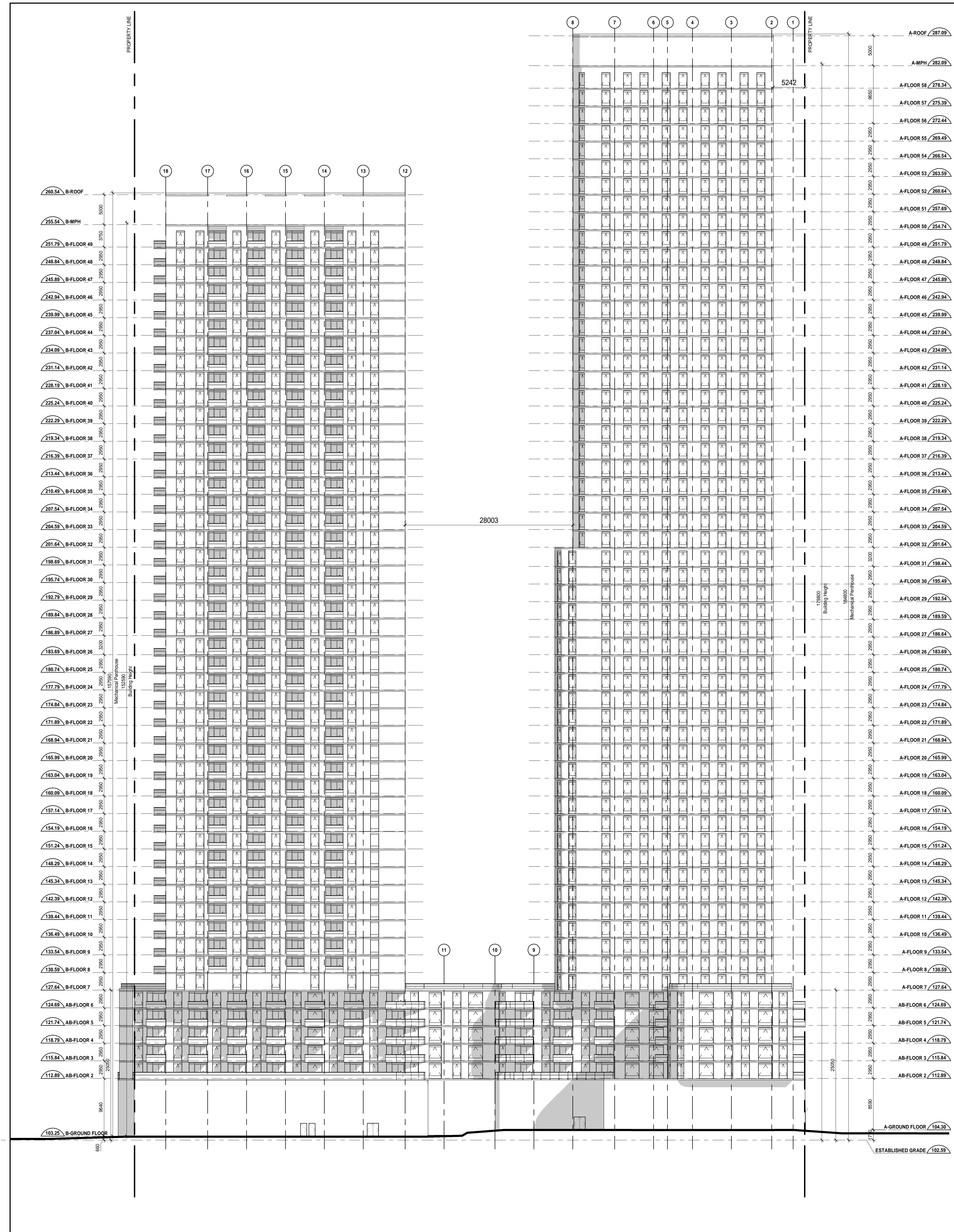
**A204.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and obtain clarification prior to commencing work.





1 BUILDING A - NORTH ELEVATION  
SCALE: 1:300



2 BUILDING AB - EAST ELEVATION  
SCALE: 1:300

- LEGEND:**
- ◆ BRICK - COLOUR 1
  - ◆ BRICK - COLOUR 2
  - ◆ PRECAST
  - ◆ BRICK-EMBEDDED PRECAST
  - ◆ FIBRE-CEMENT CLADDING SYSTEM
  - ◆ PLATE ALUM CLADDING SYSTEM - COLOUR 1
  - ◆ BALCONY SLAB EDGE COVER
  - ◆ BALCONY AND TERRACE RAILING HANDRAILS AND PRIVACY SCREEN SUPPORT POSTS, HANDRAILS AND METAL FLASHING AND PARAPET CAP FLASHING
  - ◆ SHEET STEEL CLADDING SYSTEM
  - ◆ WINDOW SYSTEM METAL SPANDREL PROJECTING PANEL
  - ◆ WINDOW SYSTEM METAL SPANDREL FLUSH PANEL
  - ◆ WINDOW SYSTEM METAL SPANDREL RECESSED PANEL
  - ◆ RESIDENTIAL VISION GLASS - IGU
  - ◆ RESIDENTIAL VISION GLASS V-G+ WITH BIRD FRIENDLY FRIT PATTERN
  - ◆ RETAIL VISION GLASS WITH BIRD FRIENDLY FRIT PATTERN
  - ◆ SPANDREL GLASS - COLOUR 1
  - ◆ RAILING GLASS
  - ◆ RAILING GLASS WITH BIRD FRIENDLY FRIT PATTERN
  - ◆ PRIVACY SCREEN GLASS
  - ◆ RESIDENTIAL AND STOREFRONT WINDOW SYSTEM LOUVRE
  - ◆ ARCHITECTURAL LOUVRE
  - ◆ ELASTOMERIC COATING AT BALCONY UNDERSIDE
  - ◆ EXTERIOR HOLLOW METAL DOOR AND FRAME PAINT COLOUR
  - ◆ EPS
  - ◆ STUCCO FINISH

**REVISION RECORD**

2022-04-19 Issued for Rezoning

**ISSUE RECORD**

**BDP. Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
+1 416 598 1240 www.bdpquadrangle.com

217-227 Cross Avenue and  
571-587 Argus Road  
2022-04-19 Issued for Rezoning

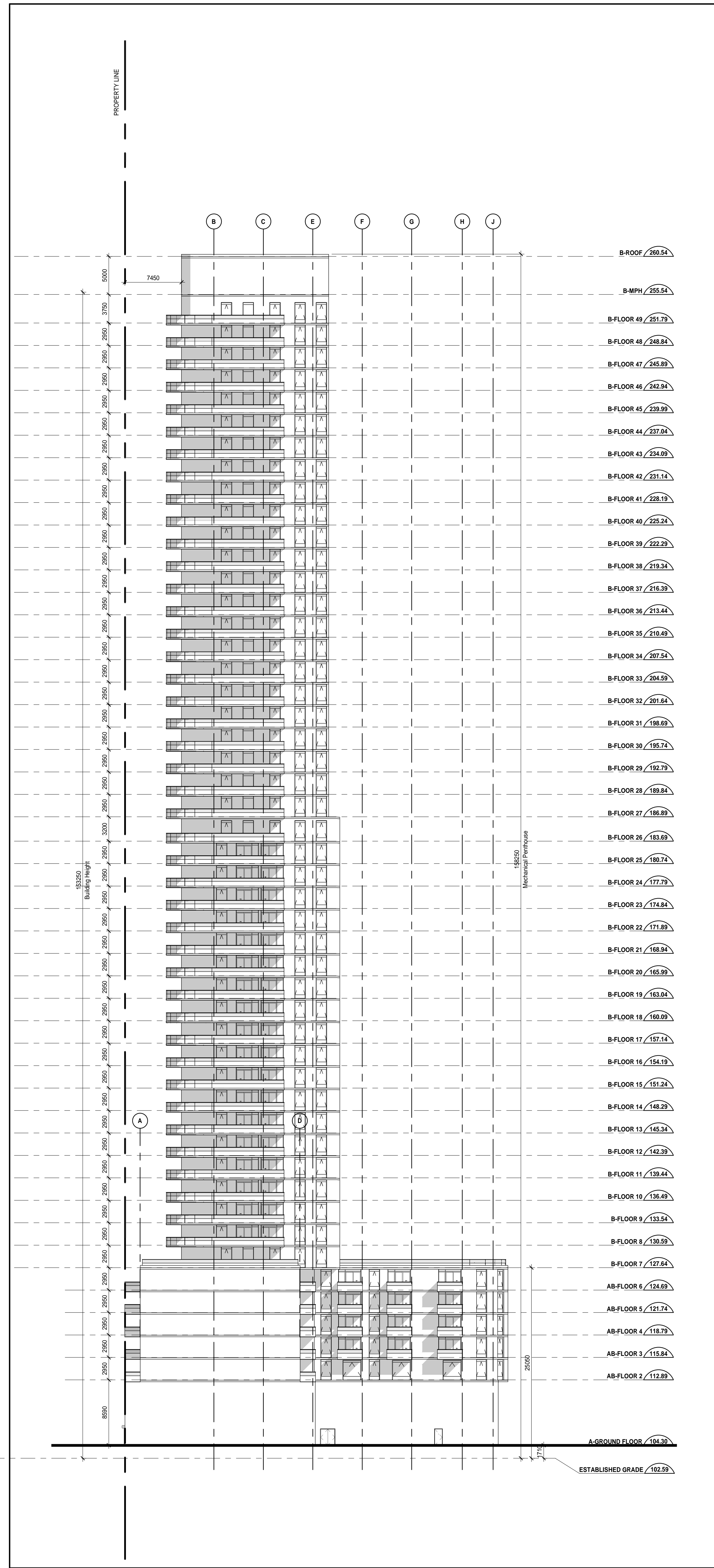
for  
Distrikt Developments

19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

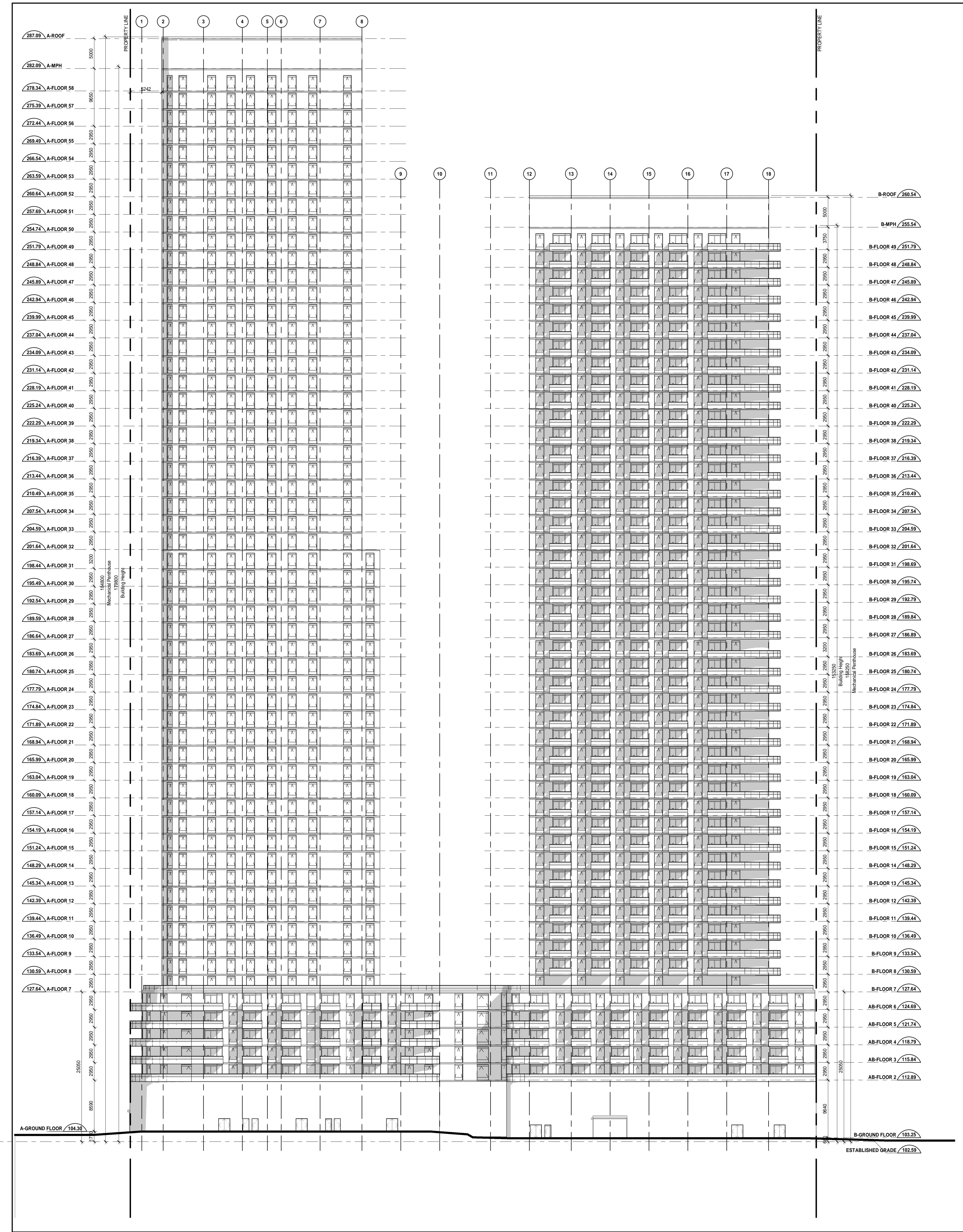
Building A and B - East and North  
Elevations

**A401.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and shall coordinate prior to commencing work.



**2** BUILDING B - SOUTH ELEVATION  
SCALE: 1:300



**1** BUILDING AB - WEST ELEVATION  
SCALE: 1:300

- LEGEND:**
- BRICK - COLOUR 1
  - BRICK - COLOUR 2
  - PRECAST
  - BRICK-EMBEDDED PRECAST
  - FIBRE-CEMENT CLADDING SYSTEM
  - PLATE ALUM CLADDING SYSTEM - COLOUR 1
  - BALCONY SLAB EDGE COVER
  - BALCONY AND TERRACE RAILING
  - WINDOW SYSTEM METAL SPANDREL PROJECTING PANEL
  - WINDOW SYSTEM METAL SPANDREL FLUSH PANEL
  - WINDOW SYSTEM METAL SPANDREL RECESSED PANEL
  - RESIDENTIAL VISION GLASS - IGU
  - RESIDENTIAL VISION GLASS VG-1 WITH BIRD FRIENDLY FRIT PATTERN
  - RETAIL VISION GLASS WITH BIRD FRIENDLY FRIT PATTERN
  - SPANDREL GLASS - COLOUR 1
  - RAILING GLASS
  - RAILING GLASS WITH BIRD FRIENDLY FRIT PATTERN
  - PRIVACY SCREEN GLASS
  - RESIDENTIAL AND STOREFRONT WINDOW SYSTEM LOUVRE
  - ARCHITECTURAL LOUVRE
  - ELASTOMERIC COATING AT BALCONY UNDERSIDE
  - EXTERIOR HOLLOW METAL DOOR AND FRAME PAINT COLOUR
  - EPS
  - STUCCO FINISH

**REVISION RECORD**

2022-04-19 Issued for Rezoning

**ISSUE RECORD**

**BDP.  
Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
+1 416 598 1240 www.bdpquadrangle.com

217-227 Cross Avenue and  
571-587 Argus Road  
2022-04-19 Issued for Rezoning

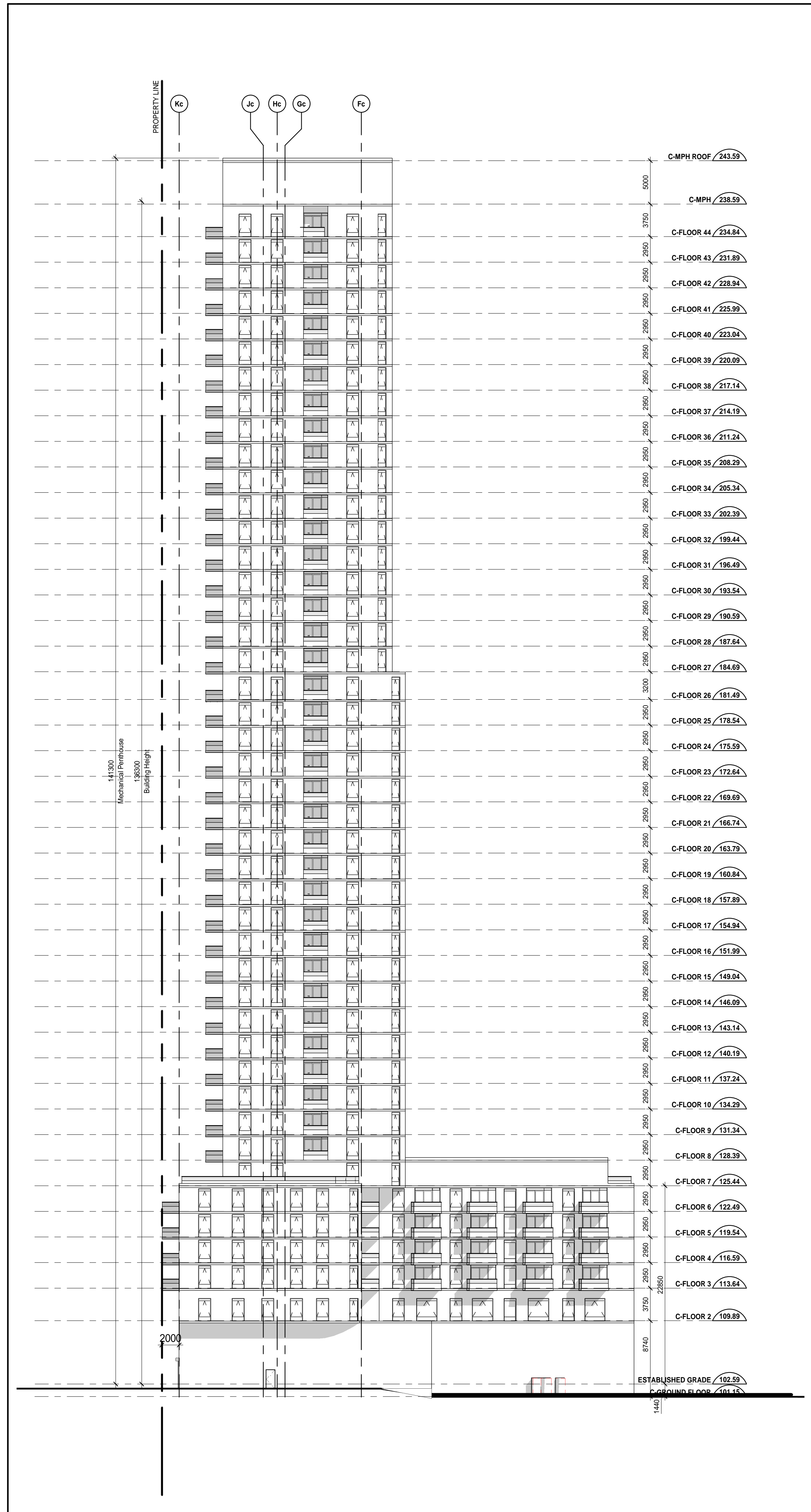
for  
Distrikt Developments

19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

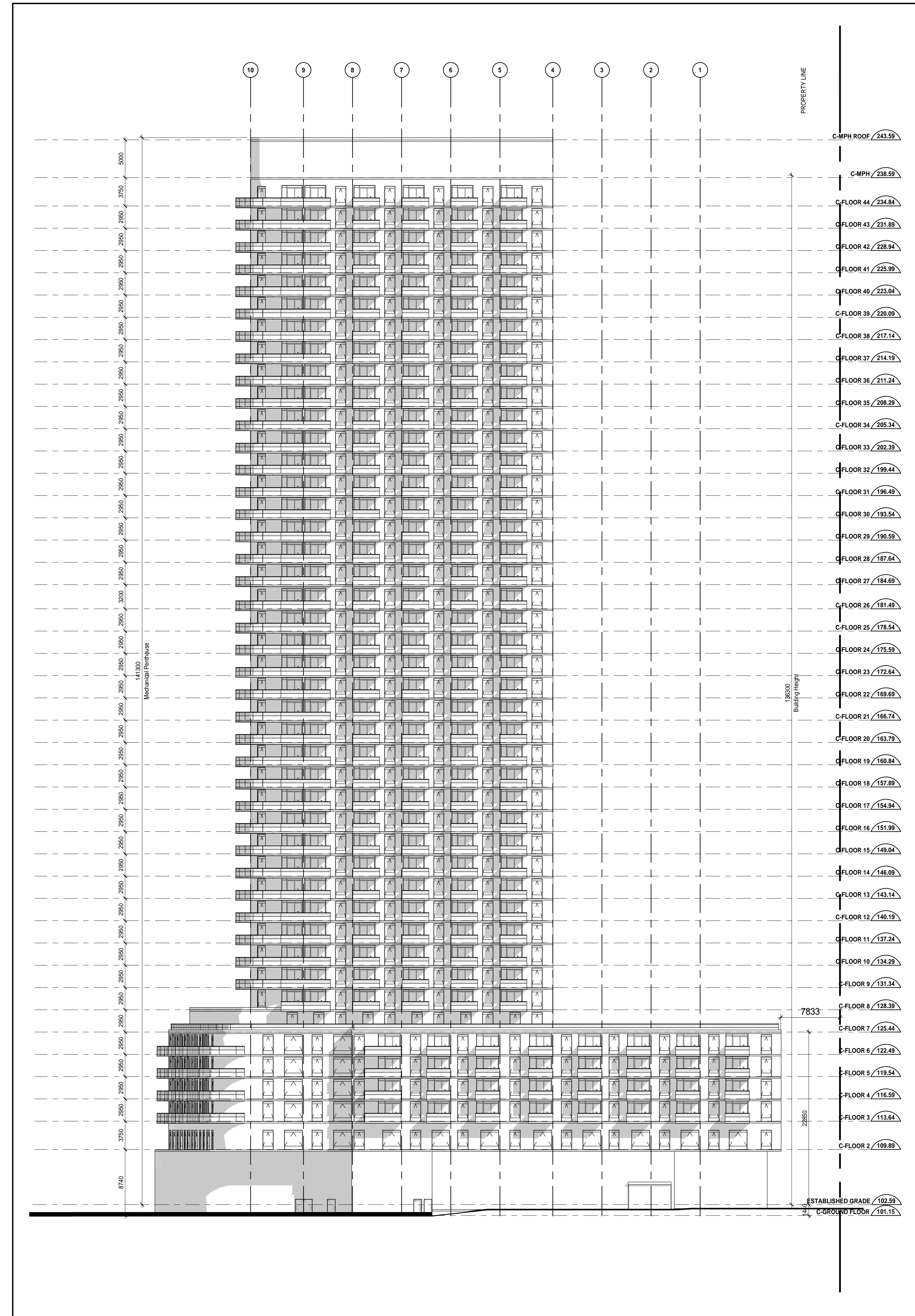
Building A and B - West and  
South Elevations

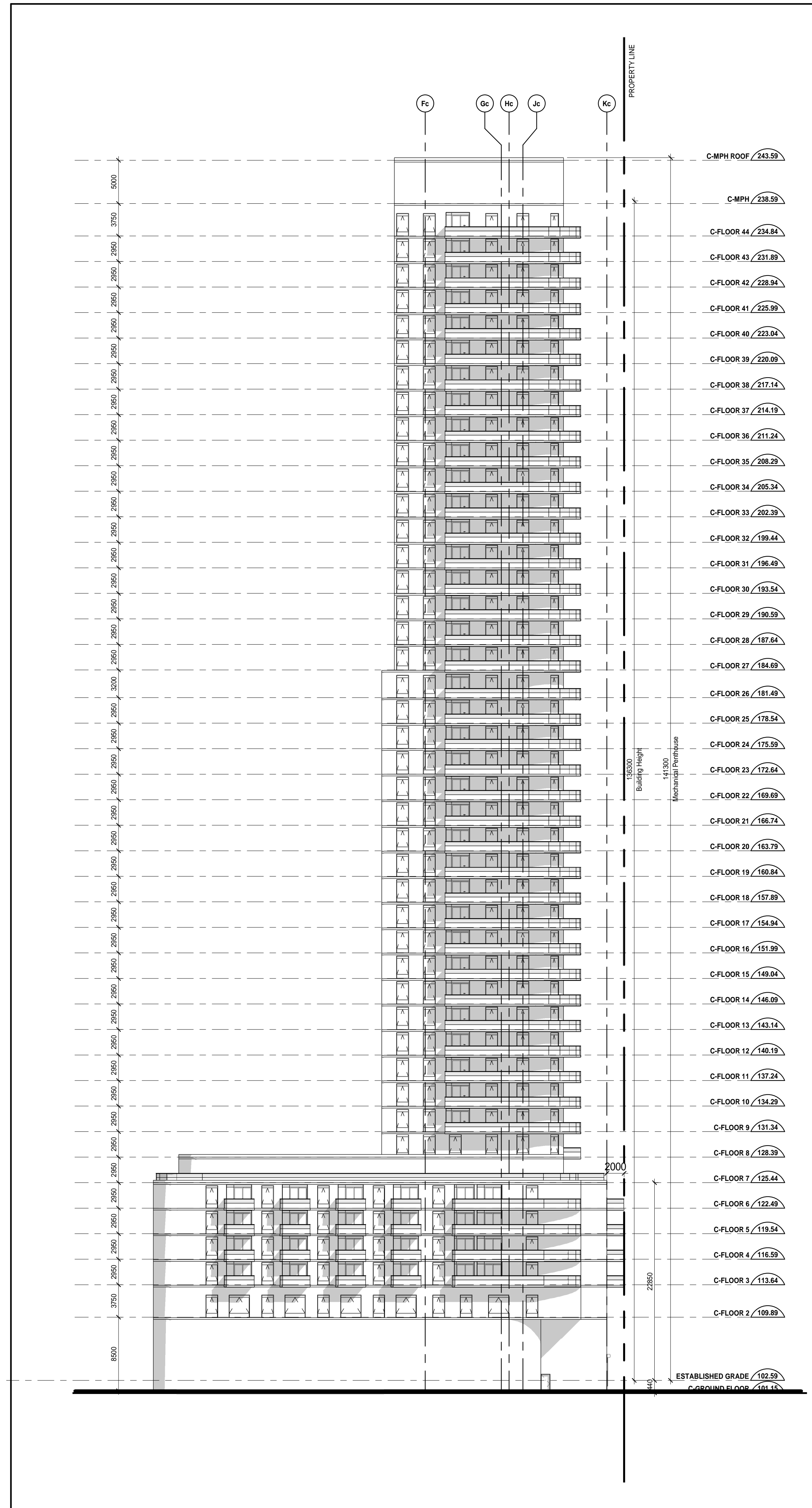
**A402.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and shall coordinate prior to commencing work.

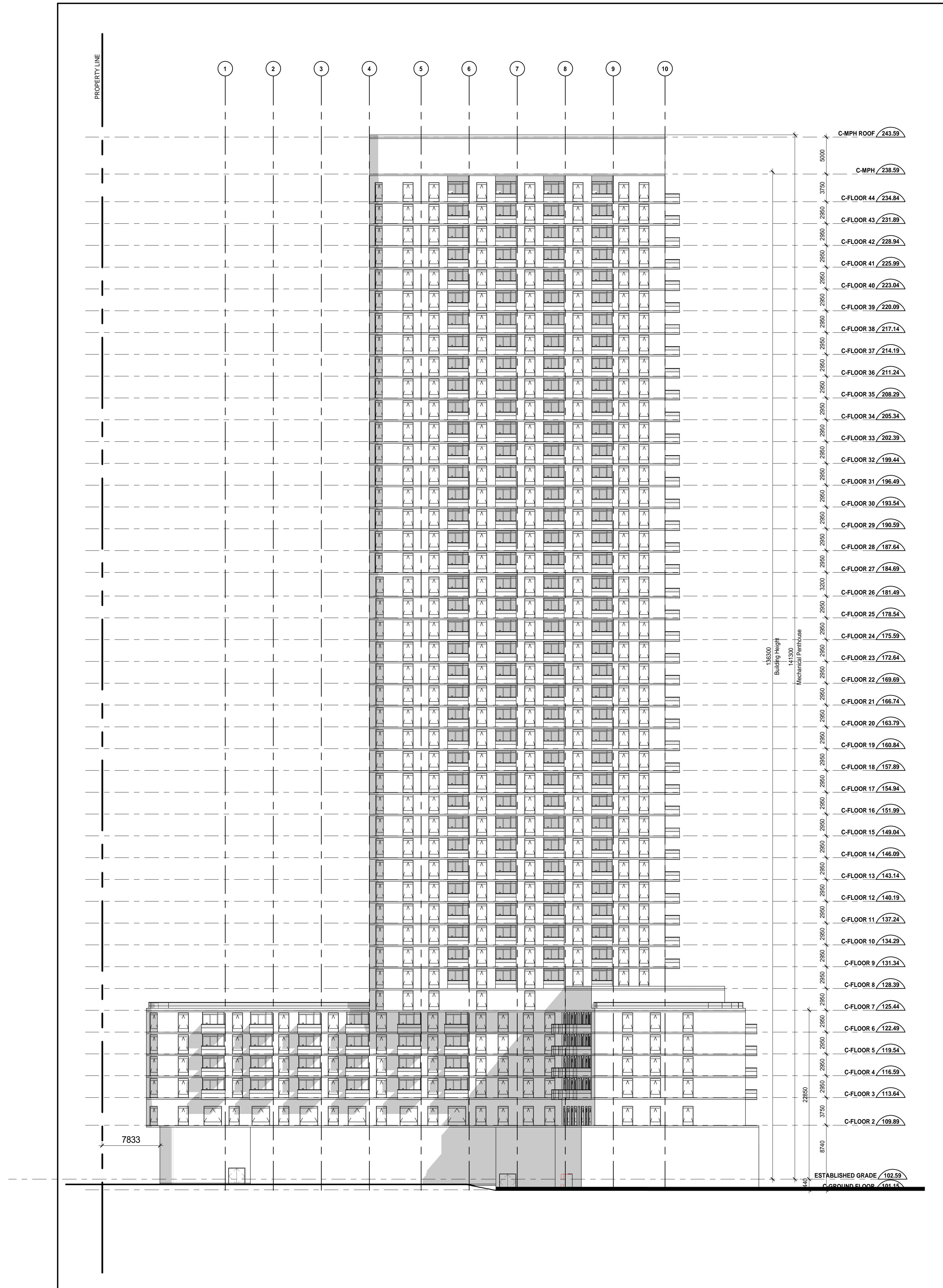


2 BUILDING C - NORTH ELEVATION  
SCALE: 1:300





1 BUILDING C - SOUTH ELEVATION  
SCALE: 1 : 300



2 BUILDING C - WEST ELEVATION  
SCALE: 1 : 300

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD

**BDP.  
Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
+1 416 598 1240 www.bdpquadrangle.com

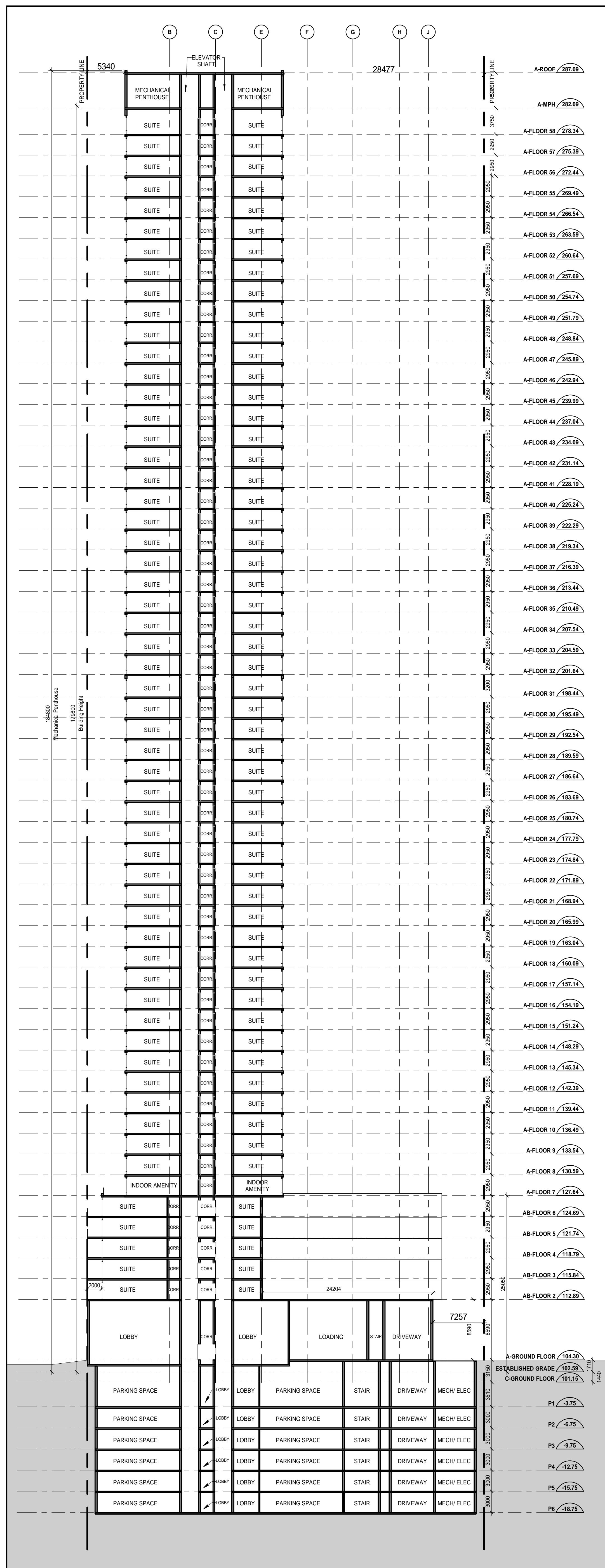
217-227 Cross Avenue and  
571-587 Argus Road  
2022-04-19 Issued for Rezoning  
for  
Distrikt Developments

19072 1 : 300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

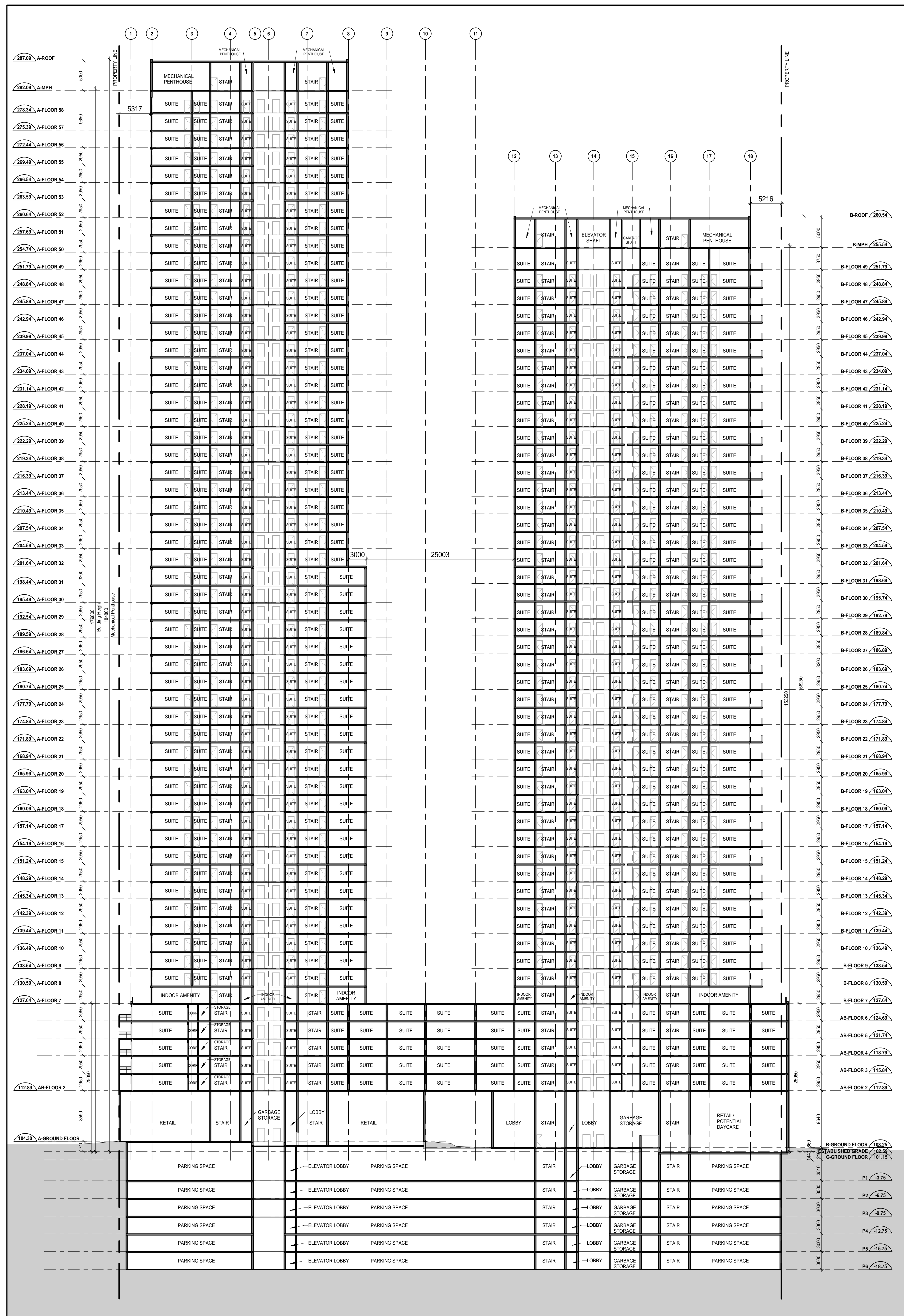
Building C - West and South  
Elevations

**A404.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and other coordination prior to commencing work.



1 BUILDING A - EAST WEST SECTION  
SCALE: 1:300



2 BUILDING AB - NORTH SOUTH SECTION  
SCALE: 1:300

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD

**BDP.  
Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3P5  
+1 (416) 591-1240 www.bdpquadrangle.com

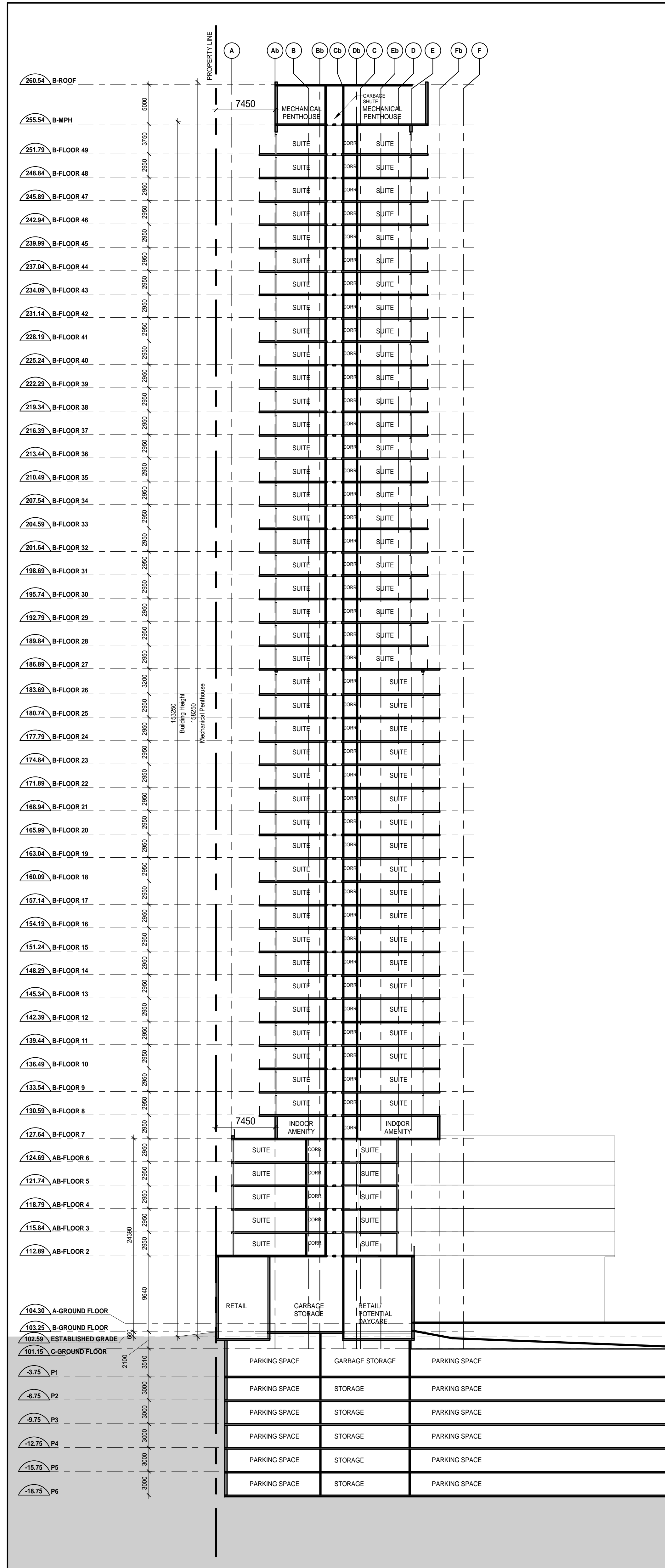
217-227 Cross Avenue and  
571-587 Argus Road  
2022-04-19 Issued for Rezoning  
for  
Distrikt Developments

19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

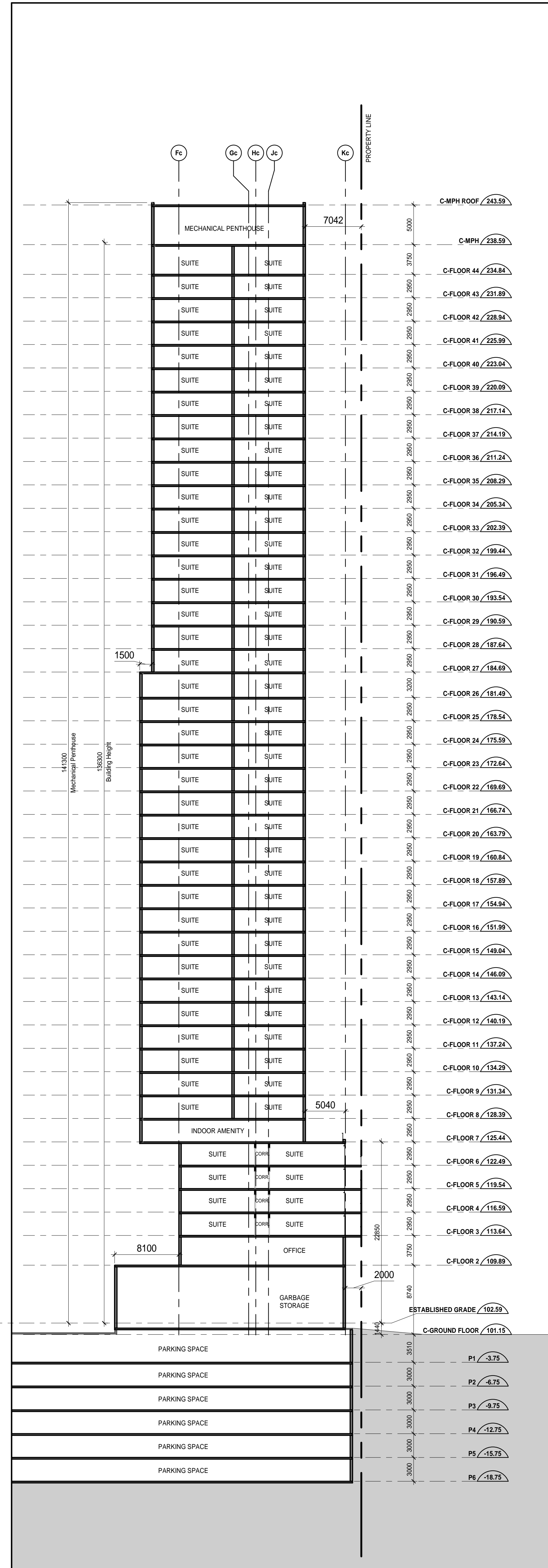
Building A and B Sections

**A451.S**

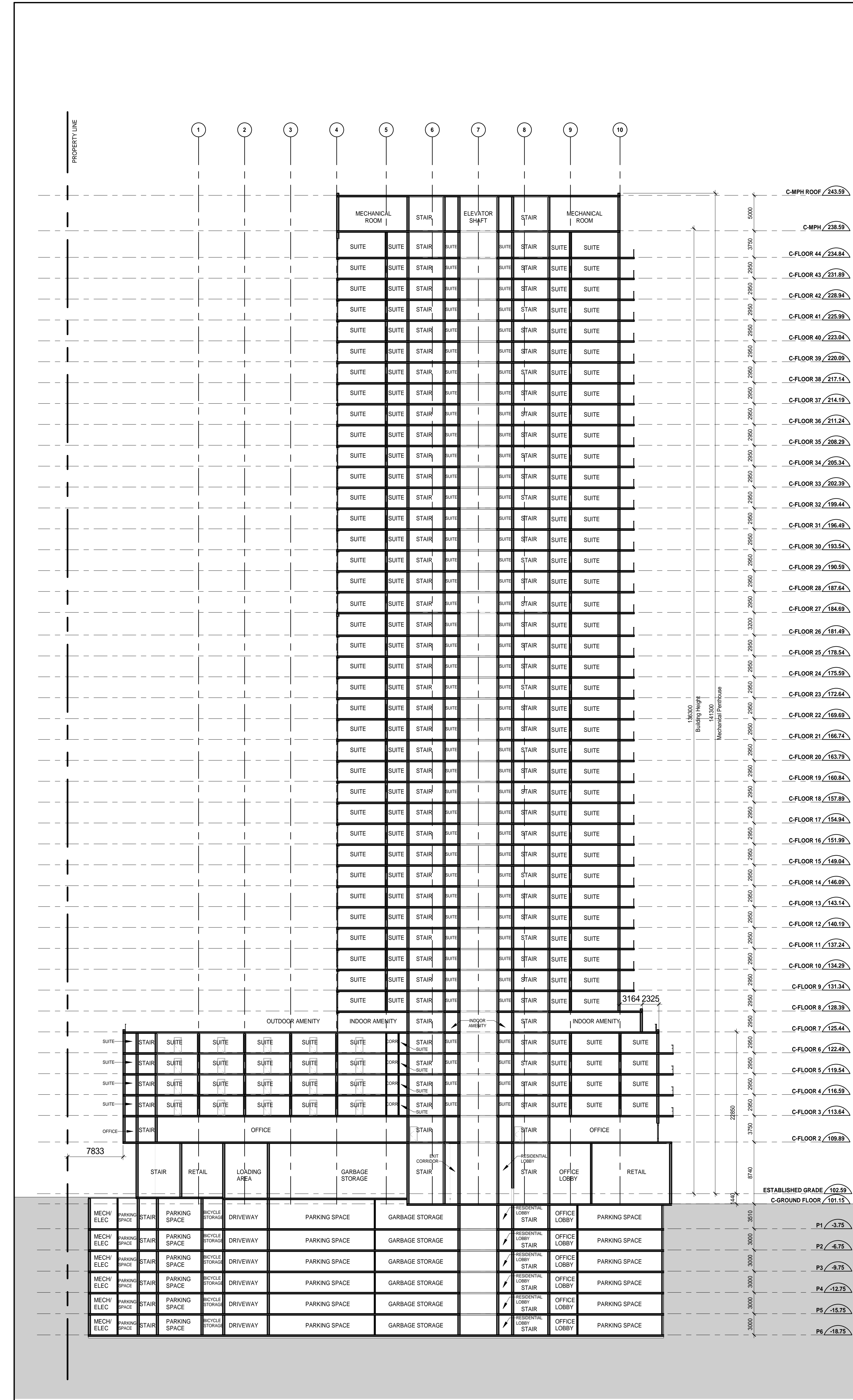
Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and shall coordinate prior to commencing work.



1 BUILDING B - EAST WEST SECTION  
SCALE: 1:300



2 BUILDING C - EAST WEST SECTION  
SCALE: 1:300



3 BUILDING C - NORTH SOUTH SECTION  
SCALE: 1:300

REVISION RECORD

2022-04-19 Issued for Rezoning

ISSUE RECORD

**BDP.  
Quadrangle**

Quadrangle Architects Limited  
901 King Street West, Suite 701 Toronto, ON M5V 3H5  
+1 416 598 1240 www.bdpquadrangle.com

217-227 Cross Avenue and  
571-587 Argus Road  
2022-04-19 Issued for Rezoning  
for  
Distrikt Developments

19072 1:300 AR KVE  
PROJECT SCALE DRAWN REVIEWED

Building B and C Sections

**A452.S**

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and shall coordinate prior to commencing work.