



2077 & 2105 ROYAL WINDSOR DRIVE MISSISSAUGA, ONTARIO

NOISE AND VIBRATION IMPACT STUDY RWDI #2205822 November 29, 2022

SUBMITTED TO

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VERSION HISTORY

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1	October 3, 2022	Draft	Lorenzo Carboni	Slavi Grozev
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NOISE AND VIBRATION IMPACT STUDY 2077 & 2105 ROYAL WINDSOR DRIVE

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EXECUTIVE SUMMARY

RWDI was retained to prepare a Noise and Vibration Impact Study (NVIS) for the proposed 2077 & 2105 Royal Windsor Drive development located in Mississauga, Ontario. The proposed development site is located to the north of Royal Windsor Drive and to the west of Southdown Road, adjacent to the Clarkson GO Station. This assessment was completed to support a joint Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA) submission as required by the City of Mississauga.

The following noise control measures are recommended for the proposed development:

- 1. Installation of central air-conditioning so that all suites' windows can remain closed.
- 2. The inclusion of noise warning clauses related to:
 - a. Transportation sound levels at the building façade and in the outdoor amenity areas
 - b. Proximity to railway line
- 3. Minimum sound isolation performance:
 - a. Suite bedroom window glazing with minimum sound isolation performance of STC-31 West and East Block podium. At other facades the Ontario Building Code requirements will exhibit sufficient noise reduction to meet the interior sound level criteria.
- 4. Construction of perimeter noise barriers along the outdoor amenity areas if feasible, with the applicable warning clause.

Due to the setback of the development from the rail corridor there is no concern for vibration from the rail traffic.

The potential noise impact from stationary sources of sound were evaluated. Based on the noise modeling results and setback distances, the land use compatibility of the proposed development with respect to the nearby industrial or commercial land-uses is considered acceptable from the noise impact perspective.

At this stage in design the impact of the development on itself and its surroundings could not be quantitatively assessed. However, the impact on both the building itself and its surroundings is expected to be feasible to meet the applicable criteria. We recommend that the building design is evaluated prior during detailed design to ensure that the acoustical design is adequately implemented in order to meet the applicable criteria.

Based on the results of the analysis including implementation of the recommendations included with this assessment, the proposed development is predicted to meet the applicable sound and vibration criteria.



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1 INTRODUCTION

RWDI was retained to prepare a Noise and Vibration Impact Study (NVIS) for the proposed 2077 & 2105 Royal Windsor Drive development located in Mississauga, Ontario. The proposed development site is located to the north of Royal Windsor Drive and to the west of Southdown Road, adjacent to the Clarkson GO Station.

The proposed development aims to revitalize the site with a complete mixed-use community including the provision of a range of housing forms, as well as an improved public realm providing pedestrian access to the adjacent proposed public park and Clarkson GO Rail Station. The context site plan is shown in **Figure 1**. Drawings are included in **Appendix E**.

The site is exposed to noise from road traffic on, Southdown Road to the east and Royal Windsor Drive to the south. Additionally, the site is exposed to noise from rail traffic on: the Metrolinx GO corridor and CN freight movements along the same corridor. Additionally, the small CN rail yard located approximately 400 meters to the north is included in the assessment.

Due to the setback of the development from the rail corridor there is no concern for vibration from the rail traffic.

A screening level assessment of nearby industrial and commercial facilities was conducted. Conservative assumptions for potential noise emissions from Class I facilities within 20-meters from the development property line were included in the stationary source assessment. No Class II or Class III facilities were identified within the potential 300-meter or 1000-meter zone of influence, respectively.

This assessment was completed to support a joint Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA) submission as required by the City of Mississauga. This assessment was based on design drawings dated August 11, 2022, and site statistics dated September 13, 2022

2 APPLICABLE CRITERIA

Applicable criteria for transportation noise sources (road and rail), stationary noise sources and rail vibration are adopted from the Ontario Ministry of the Environment, Conservation and Parks (MECP) NPC-300 Environmental Noise Guideline (MOE, 2013), with a summary of the applicable criteria included with **Appendix A**. The Region of Peel General Guidelines for the Preparation of Acoustical Reports in the Region of Peel (Peel, 2012), were also utilized as necessary.

The proposed development site would be characterized as a "Class 1 Area", which is defined according to NPC-300 as an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum."



3 IMPACT OF THE ENVIRONMENT ON THE PROPOSED DEVELOPMENT

3.1 Transportation Source Assessment

3.1.1 Road Traffic Volume Data

The ultimate capacity traffic volumes and breakdowns were obtained from the City of Mississauga. A summary of the traffic data used is included in **Table 1** below with more detailed information included in **Appendix D**.

Table 1: Road Traffic Volumes

Roadway	Ultimate Traffic Volumes (UADT)	% Day/Night	Speed Limit (km/hr)	% Trucks
Royal Windsor Drive	38,500	90% / 10%	60	8
Southdown Road	44,200	90% / 10%	60	11.5

3.1.2 Rail Traffic Volume Data

Future GO transit rail traffic through Clarkson GO station was obtained from Metrolinx. Specific freight rail volumes were not provided by CN. As such, typical volumes based on line type (e.g. principal main line, secondary line) have been assumed as a basis for the analysis.

The data used for the analysis is summarized in **Table 2**, with details of the data used included in **Appendix D**.

Train Type	Daytime	Nighttime	Type of Locomotive	No of Locomotives	No of Cars	Speed (km/h)
	161	29	Diesel	1	6	153
GO Lakeshore West ¹	53	12	Diesel	2	12	153
CN Freight ²	8	4	Diesel	3	75	80
CN Yard ³	7	3	Diesel	1	25	24

Table 2: Rail Volumes and Configuration

Note(s):

1. Modeling includes 3 minutes of idling at the station per locomotive.

2. Assumed secondary main line.

3. Assumed one movement per rail line each daytime, one movement per two rail lines each nighttime.

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3.1.3 Representative Receptors

The selection of receptors affected by transportation noise sources was based on the drawings reviewed for this assessment. Using the "building evaluation" feature of Cadna/A, each façade of the residential buildings was assessed.

Outdoor Living Areas (OLAs) would include outdoor areas intended and designed for the quiet enjoyment of the outdoor environment and which are readily accessible from the building. OLAs may include any common outdoor amenity spaces associated with a multi-unit residential development (e.g. courtyards, roof-top terraces), and/or private backyards and terraces with a minimum depth of 4m provided they are the only outdoor living area for the occupant. Daytime sound levels were assessed at the following identified OLAs:

- OLA_W1: Rooftop amenity space on roof of west building commercial/retail space.
- OLA_W2: Rooftop amenity space on west building podium.
- OLA_E1: Rooftop amenity space on roof of east building commercial/retail space.
- OLA_E2: Rooftop amenity space on east building podium.

The OLAs are indicated in **Figure 2**.

3.1.4 Transportation Source Assessment - Analysis and Results

Sound levels due to the adjacent transportation (road and rail) sources were predicted using the RLS-90 standard (RLS,1990), and FTA method (FTA, 2018) as implemented in the Cadna/A software package.

To assess the impact of transportation noise on suites, the maximum sound level on each façade was determined with the results summarized in **Table 3.** The recommendation presented are broad and indented to assess the feasibility of the development with respect to noise, a more granular assessment for each façade can be performed later in the design phase, such as at site plan approval.

		Road		Rail		Road + Rail		Worst-	
Building	Section	Day L _{EQ} , 16hr	Night L _{EQ} , 8hr	Day L _{EQ} , 16hr	Night L _{EQ} , 8hr	Day L _{EQ} , 16hr	Night L _{EQ} , 8hr	case Facade	Notes
	Podium	71	64	59	57	71	64	South	1
East Block	North Tower	67	61	60	57	68	62	East	1
DIOCK	South Tower	70	63	55	52	70	63	South	1
	Podium	71	64	59	57	71	64	South	1
West Block	North Tower	63	56	59	57	64	59	East	1
	South Tower	69	63	56	54	69	63	South	1

Table 3: Predicted Ground Transportation Sound Levels at Façades

Note(s):

 The acoustical performance of building components must be specified to meet the indoor sound level criteria. Installation of air conditioning to allow for windows and doors to remain closed, warning clause "Type D". Refer to Appendix C for guidance regarding air-conditioning as a noise mitigation measure.



To assess the impact of transportation noise on the qualifying OLAs for the development, predicted sound level results are summarized in **Table 4**.

Receptor	Description	Daytime L _{EQ} , 16hr	Notes
OLA_W1	Rooftop amenity space on roof of west building commercial/retail space.	56 dBA	2
OLA_W2	Rooftop amenity space on west building podium.	54 dBA	1
OLA_E1	Rooftop amenity space on roof of east building commercial/retail space.	60 dBA	2
OLA_E2	Rooftop amenity space on east building podium.	58 dBA	2

Table 4: Predicted Ground Transportation Sound Levels in Outdoor Living Areas

Note(s):

1. The predicted sound level meets the NPC-300 criterion for OLAs. Noise control measures are not required.

2. For OLA sound levels >55 dBA and ≤60 dBA, noise controls may be applied to meet the 55 dBA criterion. If noise control measures are not provided, a warning clause "Type A" is recommended. Noise barrier recommendations are provided in Section 3.3.1.3.

3.2 Stationary Source Assessment

Stationary sources could be grouped into two categories: Those that have a permit with the Ontario Ministry of the Environment, Conservation and Parks (MECP) through an Environmental Compliance Approval (ECA) or Environmental Activity and Sector Registry (EASR); and those that are exempt from ECA or EASR permit requirements.

In the case where a stationary source is included in an ECA or EASR permit, and would be put in a position where it is no longer in compliance with the applicable sound level criteria due to the encroachment of the proposed new development, source specific mitigation and/or formal classification of the proposed development lands as a "Class 4 Area" (refer to C.4.4.2 "Class 4 Area" in NPC-300) would be required. In this case, coordination and agreements between the stationary source owner, proposed new development owner, the land-use planning authority and potentially the MECP would be needed.

In the case where a stationary source is exempt from ECA or EASR permit requirements, the noise provisions of the applicable Municipal Code and guidance from NPC-300 would be applicable. In this case, mitigation of sound levels due to stationary sources would be from a due diligence perspective to avoid nuisance complaints from future occupants of the proposed new development. Mitigation could be in the form of mitigation at the source (with agreement from the stationary source owner) and/or mitigation at the receptor through site and building element design (building orientation, acoustical barriers, façade sound insulation design).

3.2.1 Land-Use Compatibility Review (D-6 Guideline Assessment)

The MECP Guideline D-6 (MOE, 1995) was used as a tool to classify the identified industries and asses their potential influence on the proposed development. The classifications and setback guidelines are summarized in **Appendix A**.

3.2.1.1 Class III Industries

No facilities within the 1000m radius of the proposed development were identified as Class III.

3.2.1.2 Class II Industries

There are two industries within the 1000 m area surrounding the proposed development that have been classified as Class II, Stackpole International Powder Metal (ECA# 7195-A7WSR5) and Stackpole Powertrain International (ECA# 4685-AVKMMY). However, none of the Class II industries are within the potential influence area of 300 m from the proposed development. Furthermore, there are existing residences north of both of these facilities that are closer than the proposed development where compliance has been demonstrated through secondary noise screening. As such, these are expected to comply at the proposed development, and the development itself will not encroach on the permits.

3.2.1.3 Class I Industries

There are several industries within the 300 m area surrounding the proposed development that have been classified as Class I. The following are beyond the 70 m potential influence area;

- Musket Transport Ltd, a logistics provider with no ECA or EASR permit;
- Caruso's Service Centre Inc, an auto shop with no ECA or EASR permit; and
- Royal Windsor, an auto shop with no ECA or EASR permit.

There were four facilities identified as Class I within 70 m potential influence area of the proposed development. These industries are summarized in **Table 5** below.

Name Address		Type of Operation	Industry Class	ECA or EASR Registration #
Way-Side Auto Service	Way-Side Auto Service2133 Royal Windsor Dr, Mississauga, ON L5J 1K5		Class I	N/A
Mississauga BMW Repair	2133 Royal Windsor Dr, Mississauga, ON L5J 1K5	Auto Shop	Class I	N/A
M & M Auto	2133 Royal Windsor Dr, Mississauga, ON L5J 1K5	Auto Shop	Class I	N/A
Audi Repair Mississauga - Lorne Park Car Centre	2133 Royal Windsor Dr, Mississauga, ON L5J 1K5	Auto Shop	Class I	N/A

The four facilities described in **Table 5** currently do not have an environmental permit (ECA or EASR), and therefore the conversion of the lands is not anticipated impact any environmental approvals. Potential noise impacts were assessed as outlined in the following section.

3.2.2 Stationary Source Modeling

RWDI conducted a screening level land-use compatibility assessment based on the guidance of the Ministry of the Environment D-6 Guideline (MOE, 1995a). Stationary sources of noise surrounding the proposed development were identified using a combination publicly available aerial, street-level imagery, business listing and The Ministry of the Environments Access Environment database. Classes were assessed using the noise impact perspective, as an air quality review was not considered for this study.

The results of the D-6 assessment from a noise impact perspective are summarized in **Section 3.2.1**. The results of the D-6 assessment indicate that the nearby auto shops should be included in the assessment as due perspective, given they are not operating under permits issued by the MECP. Additionally, rooftop top HVAC equipment associated with the adjacent buildings are included in the assessment.

3.2.2.1 Representative Receptors

The representative receptor locations were assessed to evaluate the potential stationary source noise impact. Using the "building evaluation" feature of Cadna/A, each façade of the buildings was assessed. The outdoor points of reception for this assessment are selected to coincide with the OLAs.

3.2.2.2 Assumed Sources and Sound Power Levels

Proxy data on file at RWDI was used for the sound power levels of the HVAC units and auto shops included in the assessment. The assumed sound power levels are presented in **Table 6**. The locations of assessed stationary sources are shown in **Figure 3**. Auto shop proxy data includes average simultaneous measurements of various activities with the bay doors open at comparable businesses. These include use of pneumatic tools, air compressors and hammers. Closing the bay doors will reduce the sound levels.

	Proxy Data /	Sound Power Level (dBA)	Duty Cycle		
Source	Calculation		Daytime and Evening (07:00h – 23:00h)	Nighttime (23:00h – 07:00h)	
HVAC_1Fan	Proxy Data	82	Continuous	30min/hour	
AutoShop	Proxy Data	90	30min/hour	Off Duty	

Table 6: Stationary Source Sound Power Level Assumptions

The assumed sound power level values and duty-cycles for the stationary sources are based on reasonable assumptions for the source type. Continuous operation of the HVAC units is assumed during the daytime and a 50% duty cycle given some business do not operate into the nighttime hours. Partial daytime operation of the power equipment at the auto shops, given the power tools are generally not run continuously and the facilities listed business hours do not include nighttime hours.

3.2.2.3 Analysis and Results

Stationary source noise modelling was carried out using the Cadna/A software package, a commercially available implementation of the ISO 9613 (ISO, 1994 and ISO, 1996) algorithms. The predicted sound levels are assessed against the Class 1 limits (refer to **Appendix A**).



The predicted sound levels during the worst-case 1-hour from existing stationary sources are presented in **Table 7**.

		Stationary Sc	ource L _{EQ} , 1hr	Ambient Road Traffic L _{EQ} , 1hr		
Building	Section	Daytime-Evening 0700-2300h	Nighttime ¹ 2300-0700h	Daytime-Evening 0700-2300h	Nighttime ¹ 2300-0700h	
	Podium	49	46	65	54	
	North Tower	46	43	60	53	
East Block	South Tower	48	45	57	54	
DIOCK	OLA_E1	49	-	58	-	
	OLA_E2	40	-	57	-	
	Podium	48	21	57	45	
	North Tower	46	38	57	48	
West Block	South Tower	46	33	60	45 ²	
DIVER	OLA_W1	49	-	53	-	
	OLA_W2	40	-	54	-	

Table 7: Predicted Stationary Source Sound Levels at Facades and Outdoor Points of Reception

Note(s):

1. Outdoor areas are not assessed during the nighttime period.

2. NPC-300 Class 1 default criteria is applicable

As shown in **Table 7**, the nighttime continuous sound levels at the sound levels at the façade of the East Block due to existing stationary sources may exceed the applicable default Class 1 sound level criteria, due to the high traffic in this area, elevated sound level criteria's are calculated for each portion of the façade, these elevated criteria are met at all portions of the facade.

3.3 **Recommendations**

Based on the noise and vibration impact assessment results, the following recommendations were determined for the project. Recommendations are provided for both transportation sources and stationary sources.

3.3.1 Transportation Sources

The following recommendations are provided to address transportation sources.

3.3.1.1 Building Façade Components

Due to the elevated transportation sound levels in the area, acoustical design of the façade components including spandrel, window glazing, and exterior doors, are recommended to be specified for the proposed development.

To assess the development's feasibility, preliminary window glazing, and exterior balcony door sound isolation requirements were determined. These were based on following assumptions:

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- Typical residential living room:
 - Glazing 60% of façade, Door: 20% of façade
 - o 55% Façade to floor area Ratio
- Typical residential bedroom:
 - Glazing 80% of façade, Door: N/A
 - o 81% Façade to floor area Ratio
- Acoustical character of rooms: High absorption finishes/furniture for bedrooms and intermediate absorption finishes/furniture for living rooms.

Based on the predicted plane of window sound levels and the assumptions listed above, recommendations for the minimum sound insulation ratings for the building components were determined using the National Research Council of Canada "BPN-56 method" (NRCC, 1985). The reported results are in terms of Sound Transmission Class (STC) ratings as summarized in **Table 8**.

Building	Section	Window Glazing	Exterior Door ¹	Façade Wall ¹
	Podium	STC-31	STC-30	STC-45
East Block	North Tower	STC-30 ¹	STC-28	STC-45
	South Tower	STC-29 ¹	STC-28	STC-45
	Podium	STC-31	STC-28	STC-45
West Block	North Tower	STC-29 ¹	STC-28	STC-45
	South Tower	STC-29 ¹	STC-28	STC-45

Table 8: Recommended Façade Component Minimum Sound Insulation Rating

Note(s):

1. Building envelope assemblies meeting the minimum Ontario Building Code requirements will exhibit sufficient noise reduction to meet the interior sound level criteria.

The maximum requirement of STC-31 and STC-30 for the window glazing and exterior door, respectively, is considered feasible as this can be achieved by various configurations of insulated glazing units. A more granular assessment for each façade can be performed later in the design phase, such as at site plan approval, to refine the areas where upgraded façade components are required.

Taking into account the assumptions used as a basis to determine the glazing requirements, the applicable indoor transportation source sound level criteria are predicted to be achieved.

We recommend that the façade construction is reviewed during detailed design to ensure that the indoor sound level limits will be met, and that the window/door supplier is requested to provide STC laboratory test reports as part of shop drawing submittal to confirm that the glazing/door components will meet the minimum STC requirements.

3.3.1.2 Ventilation Recommendations

Due to the transportation sound levels at the plane of the façade, central air conditioning is recommended for the proposed development to allow for windows and doors to remain closed as a noise mitigation measure. Further, prospective purchasers or tenants should be informed by a warning clause "Type D".

3.3.1.3 Outdoor Living Areas

Due to exposure to transportation sources along Southdown Road to the east, Royal Windsor Drive to the south, and rail corridor to the north, sound levels in the OLAs are predicted to be elevated. The combined (rail and road) daytime average sound levels for the OLAs included in the assessment are in the range of 58 to 60 dBA. To reduce the transportation sound levels in OLAs to meet the applicable criteria, noise barriers are recommended.

The recommended geometry of the noise barriers are shown in **Figure 4**. The barrier heights are summarized in **Table 9**. General guidance with respect to noise barrier design is included with **Appendix C**.

Receptor Description		Predicted OLA Sound Level	Barrier Height (m) to Meet Sound Level Criterion		
	Daytime L _{EQ} , 16hr	≤ 55 dBA¹	≤ 60 dBA		
OLA_W1	Rooftop amenity space on roof of west building commercial/retail space.	56 dBA	1.5 m ^[2]	-	
OLA_W2	Rooftop amenity space on west building podium.	54 dBA	-	-	
OLA_E1	Rooftop amenity space on roof of east building commercial/retail space.	60 dBA	3.4 m ^[2]	-	
OLA_E2	Rooftop amenity space on east building podium.	58dBA	1.2 & 1.2 m in parallel ^{[2][3]}	-	

Table 9: Barrier Height Recommendations for Outdoor Living Areas

Note(s):

1. Refer to Figure 4 for barrier geometry to meet 55 dBA.

2. If noise control measures are not provided, a warning clause "Type A" is recommended.

3. See Figure 4 for barrier layout.

3.3.2 Stationary Sources

Based on the noise modeling results and setback distances, the proposed development is not anticipated to infringe on the compliance of any commercial or industrial operations with environmental noise permits (ECA or EASR), nor cause infractions against the local noise by-law (By-Law 0360-1979). As such, the land use compatibility of the proposed development with respect to the nearby industries is considered acceptable from the noise impact perspective.

No exceedances of the applicable stationary source criteria are expected at façade or outdoor points of reception.

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3.3.3 Warning Clauses

The following warning clauses are recommended for the proposed development:

- 1. NPC-300 Type A to address transportation sound levels in Outdoor Living Areas as applicable
- 2. NPC-300 Type D to address transportation sound levels at the plane of window
- 3. Proximity to Railway Line Warning Clause
- 4. NPC-300 Type E to address proximity to commercial facilities

Warning clauses are recommended to be included on all development agreements, offers of purchase and agreements of purchase and sale or lease. The wording of the recommended warning clauses is included with **Appendix B**.

4 IMPACT OF THE PROPOSED DEVELOPMENT ON ITS SURROUNDINGS AND ON ITSELF

On-site stationary sources for the development are expected to consist of HVAC related equipment in the roof-top mechanical penthouse as well as various exhaust fans. Further, consideration should be given to control airborne and structure-borne noise generated within the proposed development.

Within the development itself the main sources of noise that are likely to affect the uses of the building are the mechanical systems. The potential noise impact of the commercial component of the development is recommended to be reviewed during detailed design, to ensure the applicable criteria will be met.

Provided that best practices for the acoustical design of the building are followed, noise from building services equipment associated with the development are expected to be feasible to meet the applicable sound level criteria due to the nature (residential/mixed-use) of the proposed development.

We recommend that the potential noise impact of the proposed development is reviewed during detailed design to ensure the applicable sound level criteria will be achieved.

5 CONCLUSIONS

RWDI was retained to prepare a Noise and Vibration Impact Study (NVIS) for the proposed 2077 & 2105 Royal Windsor Drive development located in Mississauga, Ontario.

The following noise control measures are recommended for the proposed development:

- 1. Installation of central air-conditioning so that all suites' windows can remain closed.
- 2. The inclusion of noise warning clauses related to:
 - a. Transportation sound levels at the building façade and in the outdoor amenity areas
 - b. Proximity to railway line
- 3. Minimum sound isolation performance:



- a. Suite bedroom window glazing with minimum sound isolation performance of STC-31 West and East Block podium. At other facades the Ontario Building Code requirements will exhibit sufficient noise reduction to meet the interior sound level criteria.
- 4. Construction of perimeter noise barriers along the outdoor amenity areas if feasible, with the applicable warning clause.

The potential noise impact from stationary sources of sound were evaluated. Nighttime continuous sound levels at the sound levels at the façade of the East Block due to existing stationary sources may exceed the applicable Class 1 sound level criteria. All other areas are expected to meet the criteria. It is expected that façade component and ventilation requirements to address transportation noise will provide an acoustically comfortable interior space where stationary source noise exceeds the criteria.

At this stage in design the impact of the development on itself and its surroundings could not be quantitatively assessed. However, the impact on both the building itself and its surroundings is expected to be feasible to meet the applicable criteria. We recommend that the building design is evaluated prior to building permit to ensure that the acoustical design is adequately implemented in order to meet the applicable criteria.

Based on the results of the analysis including implementation of the recommendations included with this assessment, the proposed development is predicted to meet the applicable sound and vibration criteria.

6 REFERENCES

- 1. Ontario Ministry of the Environment (MOE), August 2013, Publication NPC-300, Environmental Noise Guideline Stationary and Transportation Sources Approval and Planning (MOE, 2013).
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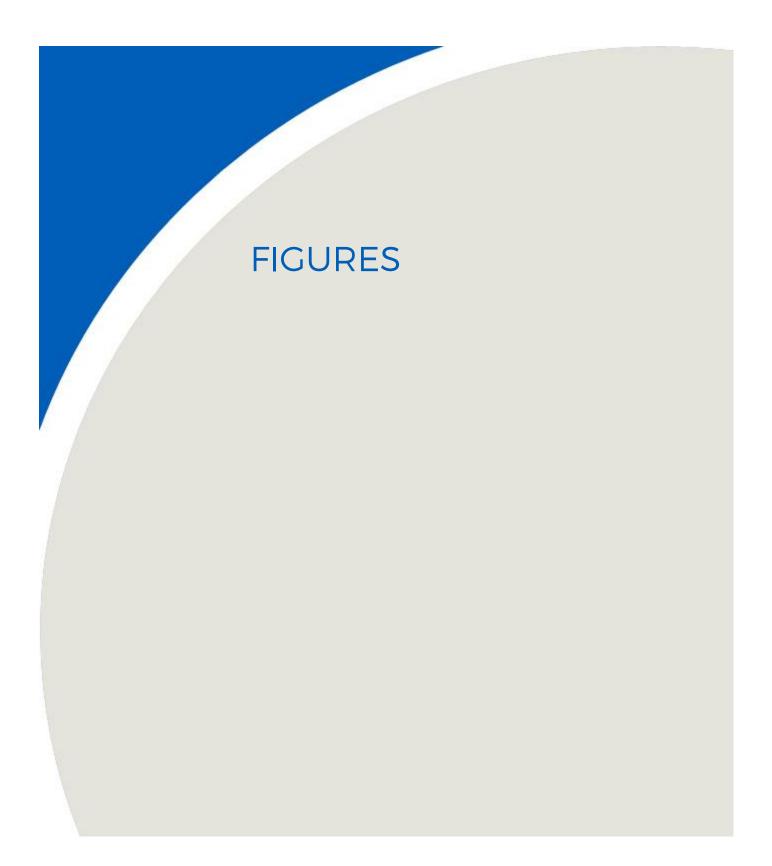
7 STATEMENT OF LIMITATIONS

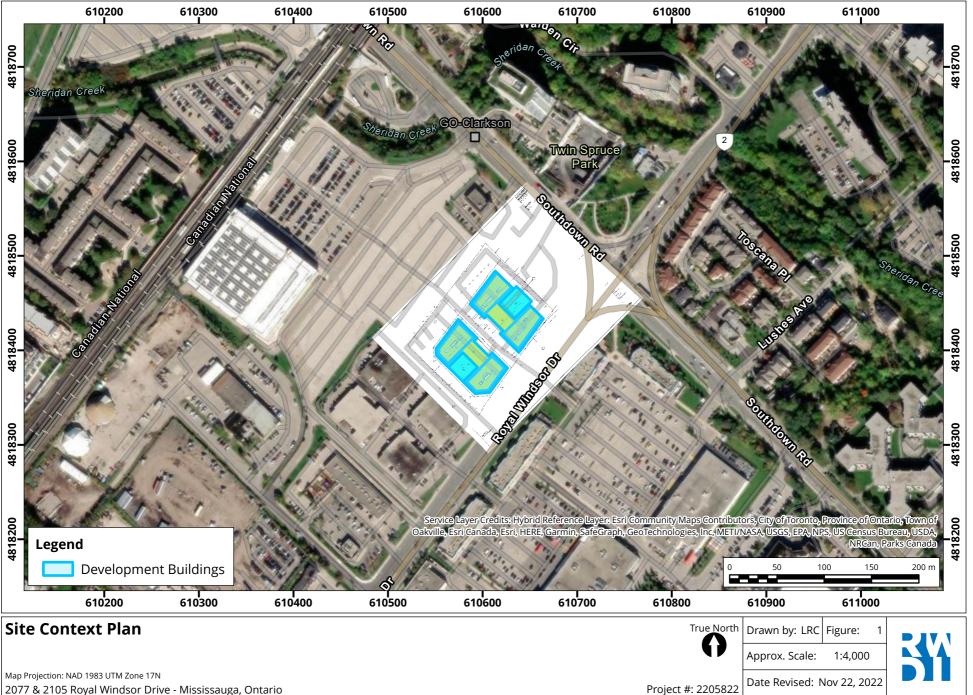
This report entitled "2077 & 2105 Royal Windsor Drive, " dated <u>November 29</u>, 2022 was prepared by Rowan Williams Davies & Irwin Inc. ("RWDI") for Slate Asset Management ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

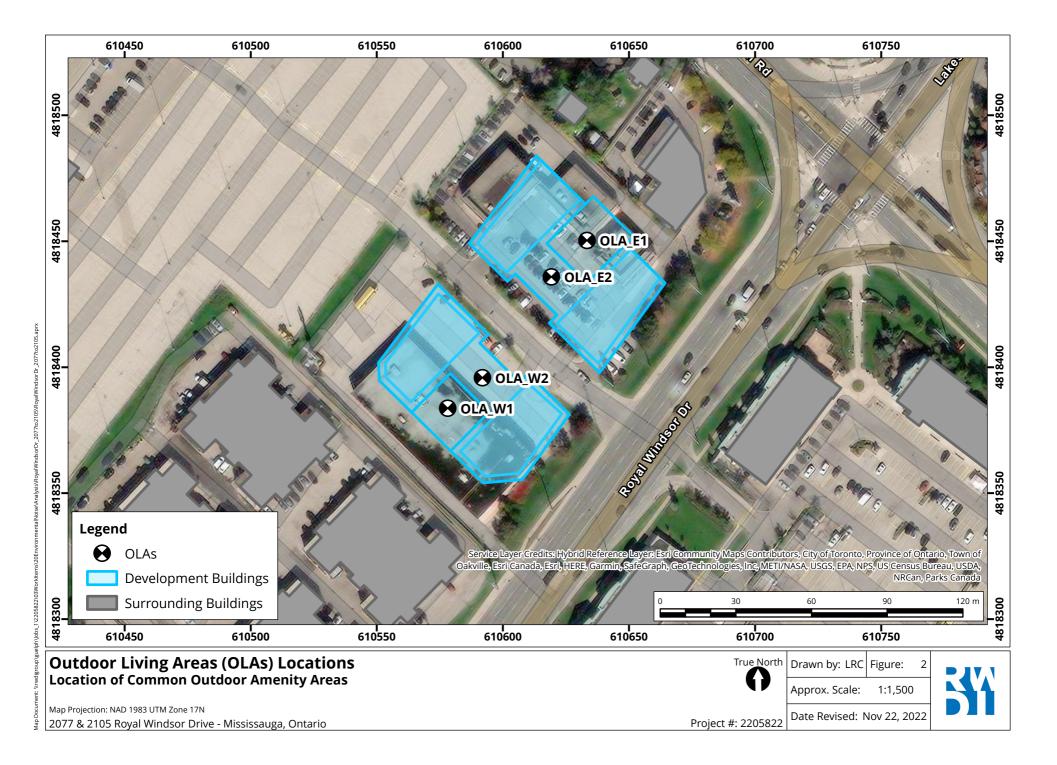
Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

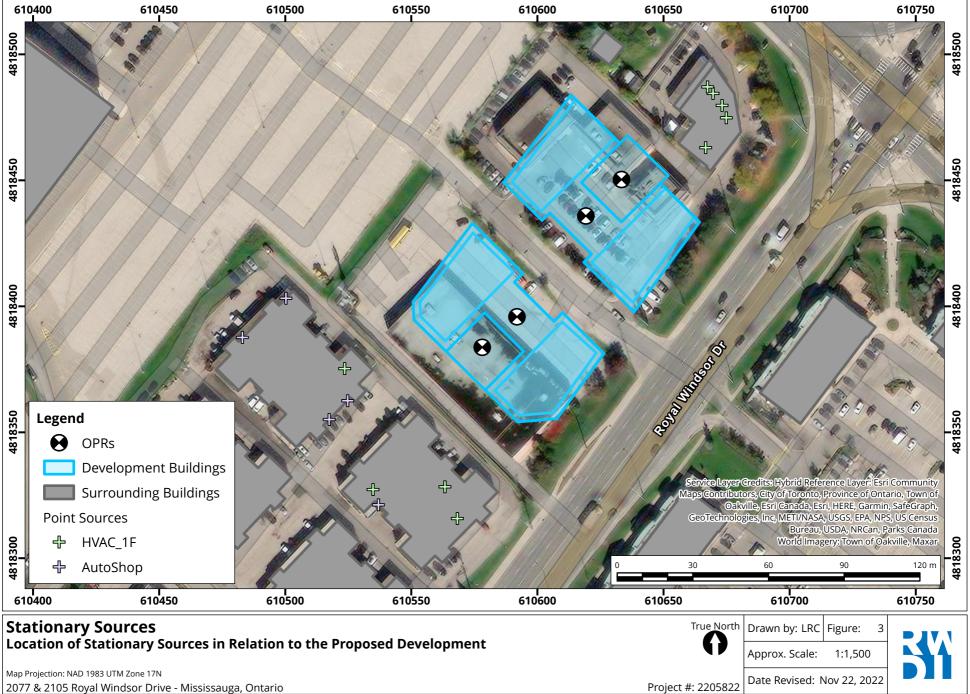


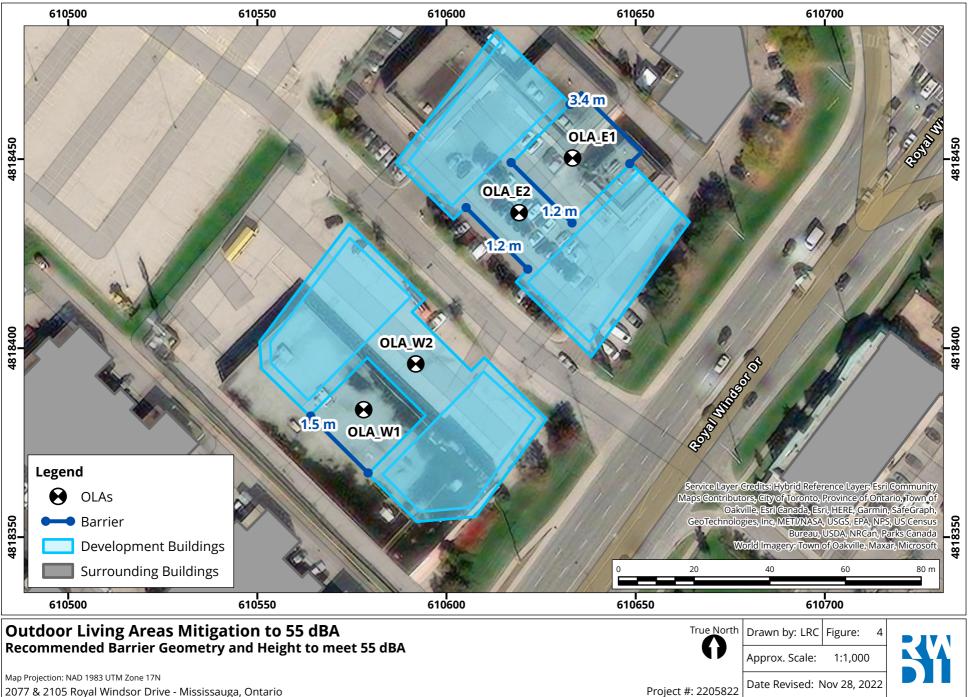




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APPENDIX A



APPENDIX A: CRITERIA

Warning clauses are recommended to be included on all development agreements, offers of purchase and agreements of purchase and sale or lease. Warning clauses may be used individually or in combination.

The following warning clauses are recommended based on the applicable guidelines; however, wording may be modified/customized during consultation with the planning authority to best suit the proposed development:

A.1 Transportation Sources

Guidance from the Ontario Ministry of the Environment, Conservation and Parks (MECP) NPC-300 Environmental Noise Guideline was used to assess environmental noise generated by transportation-related sources. There are three aspects to consider, which include the following:

- i. Transportation source sound levels in indoor living areas (living rooms and sleeping quarters), which determines building façade elements (windows, exterior walls, doors) sound insulation design recommendations.
- ii. Transportation source sound levels at the plane of the window, which determines air-conditioning and ventilation system recommendations and associated warning clauses which inform the future occupants that windows and doors must be closed in order to meet the indoor sound level criteria.
- iii. Transportation source sound levels in Outdoor Living Areas (OLAs), which determines OLA noise mitigation and related warning clause recommendations.

A.1.1 Road and Rail

A.1.1.1 Indoor Sound Level Criteria

For assessing sound originating from transportation sources, NPC-300 defines sound level criteria as summarized in **Table 1** for indoor areas of sensitive uses. The specified values are maximum sound levels and apply to the indicated indoor spaces with the windows and doors closed.

		Sound Level Criteria (Indoors)		
Type of Space	Source	Daytime L _{eq,16-hr} 07:00h – 23:00h	Nighttime L _{eq,8-hr} 23:00h – 07:00h	
Living Quarters Examples: Living, dining and den areas of residences,	Road	45 dBA		
hospitals, nursing homes, schools and daycare centres	Rail	40 0	dBA	
Sleeping Quarters	Road	45 dBA	40 dBA	
	Rail	40 dBA	35 dBA	

Table 1: Indoor Sound Level Criteria for Road and Rail Sources



NPC-300 also provides guidelines for acceptable indoor sound levels that are extended to land uses and developments which are not normally considered noise sensitive. The guideline sound level criteria presented in **Table 2** are provided to inform good-practice design objectives.

		Sound Level Criteria (Indoors)		
Type of Space	Source	Daytime L _{eq,16-hr} 07:00h – 23:00h	Nighttime L _{eq,8-hr} 23:00h – 07:00h	
		50 dBA	-	
General offices, reception areas, retail stores, etc.	Rail	45 dBA	-	
Theatres, places of worship, libraries, individual or semi-		45 dBA	-	
private offices, conference rooms, reading rooms, etc.			-	
Sleeping quarters of residences, hospitals,	Road	-	40 dBA	
nursing/retirement homes, etc.		-	35 dBA	
	Road	-	45 dBA	
Sleeping quarters of hotels/motels		-	40 dBA	

Table 2: Supplementary Indoor Sound Level Criteria for Road and Rail Sources

A.1.1.2 Outdoor Living Areas (OLAs)

Outdoor Living Areas (OLAs) would include outdoor areas intended and designed for the quiet enjoyment of the outdoor environment and which are readily accessible from the building.

OLAs may include any common outdoor amenity spaces associated with a multi-unit residential development (e.g. courtyards, roof-top terraces), and/or private backyards and terraces with a minimum depth of 4m provided they are the only outdoor living area for the occupant. The sound level criteria for outdoor living areas is summarized in **Table 3**.

Table 3: Sound Level Criteria – Outdoor Living Area

	Sound Level Criteria (Outdoors)		
Assessment Location	Daytime L _{eq,16-hr} 07:00h – 23:00h	Nighttime L _{eq,8-hr} 23:00h – 07:00h	
Outdoor Living Area (OLA) (Combined Road and Rail)	55 dBA	-	



A.1.1.3 Outdoor and Plane of Window Sound Levels

In addition to the sound level criteria, noise control measures and requirements for ventilation and warning clauses requirements are recommended for residential land-uses based on predicted transportation source sound levels incident in the plane of window at bedrooms and living/dining rooms, and/or at outdoor living areas. These recommendations are summarized in **Table 4** below.

Assessment		on Sound Level doors)		
Location	Daytime L _{eq,16-hr} 07:00h – 23:00h	Nighttime L _{eq,8-hr} 23:00h – 07:00h	criteria. Warning clause "Type D" is recommended.	
Plane of Window	> 65 dBA	> 60 dBA	closed. The sound insulation performance of building components must be specified and designed to meet the indoor sound level criteria.	
(Road)	> 55 dBA	> 50 dBA	Applicable for low and medium density development: Forced-air ventilation system to allow for the future installation of air- conditioning. Warning clause "Type C" is recommended. Applicable for high density development: Air conditioning to allow windows to remained closed. Warning clause "Type D" is recommended.	
Plane of Window	> 60 dBA	> 55 dBA	The acoustical performance of building façade components should be specified such that the indoor sound level limits are predicted to be achieved. Warning clause "Type D" is recommended.	
(Rail ^{1, 2})		L _{eq, 24hr}) and rom tracks	Exterior walls consisting of a brick veneer or masonry equivalent for the first row of dwellings. Warning clause "Type D" is recommended.	
OLAs (Combined Road and Rail ³) Notes:	≤ 60 dBA > 55 dBA	-	If sound levels are predicted to exceed 55 dBA, but are less than 60 dBA, noise controls may be applied to reduce the sound level to 55 dBA. If noise control measures are not provided, a warning clause "Type A" is recommended.	
	> 60 dBA	-	Noise controls (barriers) should be implemented to meet the 55 dBA criterion. If mitigation is not feasible to meet the 55 dBA criterion for technical, economic or administrative reasons, an exceedance of 5 dB may be acceptable (to a maximum sound level of 60 dBA). In this case a warning clause "Type B" would be recommended.	

1. Whistle noise is included (if applicable) in the determination of the sound level at the plane of window.

2. Some railway companies (e.g. CN, CP) may require that the exterior walls include a brick veneer or masonry equivalent for the façade facing the railway line, regardless of the sound level.

3. Whistle noise is not included in the determination of the sound level at the OLA.



Rail Layover Sites A.1.1.4

NPC-300 provides a sound level limit for rail layover sites to be the higher of the background sound level or 55 dBA L_{eq,1-hr}, for any one-hour period.

A.2 **Stationary Sources**

A.2.1 NPC-300 Sound Level Criteria – Stationary Sources

Guidance from the MECP NPC-300 Environmental Noise Guideline is used to assess environmental noise generated by stationary sources, for example industrial and commercial facilities.

Noise from stationary sources is treated differently from transportation sources and requires sound levels be assessed for the predictable worst-case one-hour average sound level (Leq) for each period of the day. For assessing sound originating from stationary sources, NPC-300 defines sound level criteria for two types of Points of Reception (PORs): outdoor and plane of window.

The assessment criteria for all PORs is the higher of either the exclusion limit per NPC-300 or the minimum background sound level that occurs or is likely to occur at a POR. The applicable exclusion limit is determined based on the level of urbanization or "Class" of the area. The NPC-300 exclusion limits for continuously operating stationary sources are summarized in Table 5.

Time	Class	1 Area	Class	2 Area	Class	3 Area	Class 4 Area	
Period	Outdoor	Plane of Window	Outdoor	Plane of Window	Outdoor	Plane of Window	Outdoor	Plane of Window
Daytime 0700-1900h	50 dBA	50 dBA	50 dBA	50 dBA	45 dBA	45 dBA	55 dBA	60 dBA
Evening 1900-2300h	50 dBA	50 dBA	45 dBA	50 dBA	40 dBA	40 dBA	55 dBA	60 dBA
Nighttime 2300-0700h		45 dBA		45 dBA		40 dBA		55 dBA

Table 5: NPC-300 Exclusion Limits – Continuous and Quasi-Steady Impulsive Stationary Sources (LAeq-1hr)

Notes:

The applicable sound level criterion is the background sound level or the exclusion limit, whichever is higher. 1.

Class 1, 2 and 3 sound level criteria apply to a window that is assumed to be open. 2.

Class 4 area criteria apply to a window that is assumed closed. Class 4 area requires formal designation by the land-use planning authority. 3. 4. Sound level criteria for emergency backup equipment (e.g. generators) operating in non-emergency situations such as testing or maintenance are 5 dB greater than the applicable sound level criteria for stationary sources.

For impulsive sound, other than quasi-steady impulsive sound, from a stationary source, the sound level criteria at a POR is expressed in terms of the Logarithmic Mean Impulse Sound Level (L_{LM}), and is summarized in **Table 6**.

	Number of	Class 1 an	d 2 Areas	Class 3	8 Areas	Class 4 Areas	
Time Period	Impulses in Period of One-Hour	Outdoor	Plane of Window	Outdoor	Plane of Window	Outdoor	Plane of Window
Daytime (0700-2300h)	9 or more	50 dBAI	50 dBAI	45 dBAI	45 dBAI	55 dBAI	60 dBAI
Nighttime (2300–0700h)	9 01 more	-	45 dBAI	-	40 dBAI	-	55 dBAI
Daytime (0700-2300h)	7 to 8	55 dBAI	55 dBAI	50 dBAI	50 dBAI	60dBAI	65 dBAI
Nighttime (2300–0700h)	7 10 8	-	50 dBAI	-	45 dBAI	-	60 dBAI
Daytime (0700-2300h)	5 to 6	60 dBAI	60 dBAI	55 dBAI	55 dBAI	65 dBAI	70 dBAI
Nighttime (2300–0700h)	5 10 6	-	55 dBAI	-	50 dBAI	-	65 dBAI
Daytime (0700-2300h)	4	65 dBAI	65 dBAI	60 dBAI	60 dBAI	70 dBAI	75 dBAI
Nighttime (2300–0700h)	4	-	60 dBAI	-	55 dBAI	-	70 dBAI
Daytime (0700-2300h)	- 3	70 dBAI	70 dBAI	65 dBAI	65 dBAI	75 dBAI	80 dBAI
Nighttime (2300–0700h)	5	-	65 dBAI	-	60 dBAI	-	75 dBAI
Daytime (0700-2300h)	2	75 dBAI	75 dBAI	70 dBAI	70 dBAI	80 dBAI	85 dBAI
Nighttime (2300–0700h)	2	-	70 dBAI	-	65 dBAI	-	80 dBAI
Daytime (0700-2300h)	1	80 dBAI	80 dBAI	75 dBAI	75 dBAI	85 dBAI	90 dBAI
Nighttime (2300–0700h)		-	75 dBAI	-	70 dBAI	-	85 dBAI

Table 6: NPC-300 Exclusion Limits - Impulsive Stationary Sources (LLM)

Notes:

1.

The applicable sound level criterion is the background sound level or the exclusion limit, whichever is higher.

A.2.2 D-Series Guidelines

The MECP D-series guidelines (MOE, 1995) provide direction for land use planning to maximize compatibility of industrial uses with adjacent land uses. The goal of Guideline D-6 is to minimize encroachment of sensitive land uses on industrial facilities and vice versa, in order to address potential incompatibility due to adverse effects such as noise, odour and dust.

For each class of industry, the guideline provides an estimate of potential influence area and states that this influence area shall be used in the absence of the recommended technical studies. Guideline D-6 also recommendes a minimum separation distance between each class of industry and sensitive land uses (see **Table 7**). Section 4.10 of D-6 identifies exceptional circumstances with respect to redevelopment, infill and mixed-use areas. In these cases, the guideline suggests that separation distances at, or less than, the recommended minimum separation distance may be acceptable if a justifying impact assessment is provided.

Industry Class	Definition	Potential Influence Area	Recommended Minimum Separation Distance (property line to property line)
Class I	Small scale, self-contained, daytime only, infrequent heavy vehicle movements, no outside storage.	70 m	20 m
Class II	Medium scale, outdoor storage of wastes or materials, shift operations and frequent heavy equipment movement during the daytime.	300 m	70 m
Class III	Large scale, outdoor storage of raw and finished products, large production volume, continuous movement of products and employees during daily shift operations.	1000 m	300 m

Table 7: Summary of Guideline D-6

Guideline D-6 provides criteria for classifying industrial land uses, based on their outputs, scale of operations, processes, schedule, and intensity of operations. **Table 8** provides the classification criteria and examples.

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Table 8: Guideline D-6 Industrial Categorization Criteria

Criteria	Class I	Class II	Class III
Outputs	 Sound not audible off property Infrequent dust and/ or odour emissions and not intense No ground-borne vibration 	 Sound occasionally audible off property Frequent dust and/ or odour emissions and occasionally intense Possible ground-borne vibration 	 Sound frequently audible off property Persistent and intense dust and/ or odour emissions Frequent ground-borne vibration
Scale	 No outside storage Small scale plant or scale is irrelevant in relation to all other criteria 	 Outside storage permitted Medium level of production 	Outside storage of raw and finished productsLarge production levels
Process	 Self-contained plant or building which produces / stores a packaged product Low probability of fugitive emissions 	 Open process Periodic outputs of minor annoyance Low probability of fugitive emissions 	 Open process Frequent outputs of major annoyances High probability of fugitive emissions
Operation / Intensity	 Daytime operations only Infrequent movement of products and/or heavy trucks 	 Shift operations permitted Frequent movements of products and/or heavy trucks with majority of movements during daytime hours 	 Continuous movement of products and employees Daily shift operations permitted
Examples	 Electronics Manufacturing Furniture refinishing Beverage bottling Auto parts Packaging services Dairy distribution Laundry and linen supply 	 Magazine printing Paint spray booths Metal command Electrical production Dairy product manufacturing Feed packing plant 	 Paint and varnish manufacturing Organic chemicals manufacturing Breweries Solvent recovery plant Soap manufacturing Metal manufacturing



APPENDIX B



APPENDIX B: WARNING CLAUSES

B.1 Transportation Sources

NPC-300 Type A: Recommended to address surface transportation sound levels in OLAs if sound level is in the range of >55 dBA but \leq 60 dBA, and noise controls have <u>not</u> been provided.

"Purchasers/tenants are advised that sound levels due to increasing road traffic (rail traffic) (air traffic) may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

NPC-300 Type B: Recommended to address surface transportation sound levels in OLAs if the sound level is in the range of >55 dBA but \leq 60 dBA, and noise controls have been provided. Recommended to address outdoor aircraft sound levels \geq NEF 30.

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

NPC-300 Type C: Applicable for low and medium density developments only, recommended to address transportation sound levels at the plane of window.

"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."

NPC-300 Type D: Recommended to address transportation sound levels at the plane of window.

"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."

Proximity to Railway Line: Metrolinx/CN/CP/VIA Warning Clause for developments that are within 300 metres of the right-of-way

"Warning: [Canadian National Railway Company] [Metrolinx / GO] [Canadian Pacific Railway Company] [VIA Rail Canada Inc.] or its assigns or successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that 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/Metrolinx/GO/CPR/VIA will not responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way."



B.2 Stationary Sources

NPC-300 Type E: Recommended to address proximity to commercial/industrial land-use

"Purchasers/tenants are advised that due to the proximity of the adjacent industrial/commercial land-uses, noise from the industrial/commercial land-uses may at times be audible."

NPC-300 Type F: Recommended to for Class 4 Area Notification

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



APPENDIX C

APPENDIX C: NOISE MITIGATION GUIDANCE

C.1 Acoustic/Noise Barrier

Generally, noise controls to attenuate transportation sound levels at Outdoor Living Areas (OLAs) would consist of the implementation of acoustic/noise barriers with materials that would meet the guidance included in NPC-300, for example:

- A wall, berm, wall/berm combination or similar structure, used as a noise control measure, and high enough to break the line-of-sight between the source and the receptor.
- The minimum surface density (face weight) is 20 kg/m²
 - Many materials could satisfy the surface density requirement, e.g. wood, glass, concrete, Plexiglas, Acrylite.
 - The required thickness can be determined by dividing the 20 kg/m² face weight by the material density (kg/m³). Typically, this would imply:
 - 50 mm (2") thickness of wood
 - 13 mm (0.5") thickness of lighter plastic (like Plexiglas or PVC)
 - 6 mm (0.25") thickness of heavier material (like aluminum, glass, concrete)
- The barrier should be structurally sound, appropriately designed to withstand wind and snow load, and constructed without cracks or surface gaps. Joints between panels may need to be overlapped to ensure surfaces are free of gaps, particularly for wood construction.
- Any gaps under the barrier that are necessary for drainage purposes should be minimized and localized, so that the acoustical performance of the barrier is maintained.
- If a sound absorptive face is to be included in the barrier design, the minimum noise reduction coefficient is recommended to be NRC 0.7.

C.2 Building Ventilation and Air Conditioning

The use of air conditioning itself is not a noise control measure; however, it allows for windows and doors to remain closed, thereby reducing the indoor sound levels.

NPC-300 provides the following guidance with respect to implementation of building ventilation and air conditioning:

- a. the noise produced by the proposed ventilation system in the space served does not exceed 40 dBA. In practice, this condition usually implies that window air conditioning units are not acceptable;
- b. the ventilation system complies with all national, provincial and municipal standards and codes;
- c. the ventilation system is designed by a heating and ventilation professional; and
- d. the ventilation system enables the windows and exterior doors to remain closed.

Air conditioning systems also need to comply with Publication NPC-216, and/or any local municipal noise by-law that has provisions relating to air conditioning equipment.

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APPENDIX D



APPENDIX D: TRANSPORATION SOURCE VOLUMES

D.1 Rail Volumes

Freight Rail Line Class	Characteristics	Freight Train Modelling Assumptions
Principal Main Line	 Traffic volume generally exceeds 10 trains per day High speeds, usually exceeding 80 kph (50 mph) Includes heavy trains with 3 or 4 locomotives per train, commuter and passenger trains 	 Assume one freight train per hour, or 16 trains per 16-hour day and 8 trains per 8-hour night (24 total per 24 hours) Continuously welded rail 100 kph speed Assume 4 locomotives per train
Secondary Main Line	 Traffic volume generally exceeds 10 trains per day High speeds, usually exceeding 80 kph (50 mph) Trains generally of light to moderate weight with 3 or 4 locomotives per train Majority of traffic may be commuter and passenger trains 	 Assume one freight train per 2 hours, or 8 trains per 16-hour day and 4 trains per 8-hour night (12 total per 24 hours) Continuously welded rail 80 kph speed Assume 3 locomotives per train
Principal Branch Line	 Regular scheduled traffic, usually less than 5 trains per day Low speeds, generally limited to 50 kph (30 mph) Trains generally of light to moderate weight with 1 or 2 locomotives per train but may include heavier trains with more units 	 Assume one freight train per 4 hours, or 4 trains per 16-hour day and 2 trains per 8-hour night (6 total per 24 hours) Continuously welded rail 50 kph speed Assume 2 locomotives per train
Secondary Branch Line	 Intermittent, unscheduled traffic, usually less than 1 train per day Low speeds, generally limited to 50 kph (30 mph) Trains generally of light to moderate weight with 1 locomotive per train 	 Assume one freight train per 8 hours, or 2 trains per 16-hour day and 1 train per 8-hour night (3 total per 24 hours) Continuously welded rail 50 kph speed Assume 1 locomotive per train
Spur Line	 Unscheduled traffic on a demand basis Low speeds, limited to 24kph (15 mph) Trains generally of light to moderate weight with 1 locomotive per train 	 Assume one freight train per 12 hours, or 1 train per 16-hour day and 1 train per 8-hour night (2 total per 24 hours) Jointed rail 24 kph speed Assume 1 locomotive per train
NOTES:	 Canadian Rail Atlas has been used to determine rail li Commuter (GO) and passenger (VIA) rail volumes are 	ne classification and ownership (i.e., CN/CP/other) based on data received from the responsible authority.

Lorenzo Carboni

From: Sent: To: Subject: Amy Patenaude Thursday, September 1, 2022 12:01 PM Lorenzo Carboni FW: 2077 & 2105 Royal Windsor Drive - Traffic Data Request RWDI Project #2205822

SUMMER HOURS: Our organization is moving to summer hours from May 30 through September 2. I will be finished work at 12:30 most Friday afternoons during this time. Enjoy your summer.

Amy Patenaude | Senior Technical/Administrative Assistant Americas Noise/Acoustics/Vibration RWDI Direct Line: 226-314-1280

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: September 1, 2022 11:51 AM
To: Amy Patenaude <Amy.Patenaude@rwdi.com>
Subject: RE: 2077 & 2105 Royal Windsor Drive - Traffic Data Request RWDI Project #2205822

Hi Amy,

Further to your request dated August 31, 2022, the subject lands (2077 & 2105 Royal Windsor Drive, Toronto) 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		Night (2300- 0700)	8	4	21	8

The current track design speed near the subject lands is 95 mph (153 km/h).

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

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase.

Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the procurement phase. The successful proponent team will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process and teams have submitted their bids to Infrastructure Ontario and Metrolinx for evaluation and contract award. GO Expansion construction will get underway in late 2022 or 2023.

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

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We

anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

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

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

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

Regards, Tara

Tara Kamal Ahmadi

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

METROLINX

From: Amy Patenaude <<u>Amy.Patenaude@rwdi.com</u>>
Sent: August 31, 2022 2:06 PM
To: Rail Data Requests <<u>RailDataRequests@metrolinx.com</u>>
Cc: Lorenzo Carboni <<u>Lorenzo.Carboni@rwdi.com</u>>
Subject: FW: 2077 & 2105 Royal Windsor Drive - Traffic Data Request RWDI Project #2205822

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Good Day,

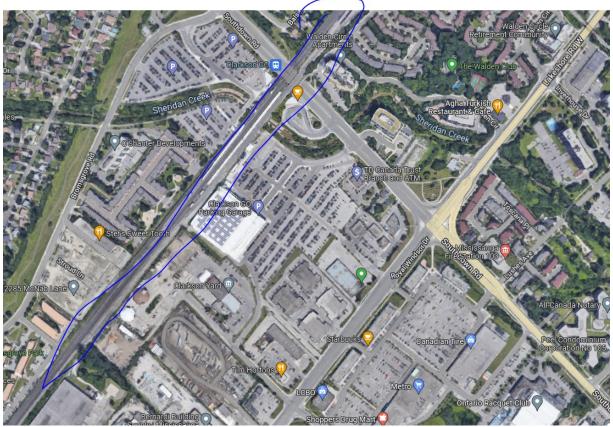
We are a noise study for the above-referenced address and require rail data.

We are looking for:

- Growth rate per annum for a 10-year period
- Day and night train volumes
- Average number of cars per train
- Number of Locomotives per train
- Maximum permissible speed
- Whistles used at crossings in the area
- Type of track (continuously welded, or jointed)
- Any idling of locomotive in the vicinity, and approximate duration of idling

The station involved is Clarkson.

I believe CN also runs freight on this line. If you have any information on that, it would be greatly appreciated.



Thank you. Amy

SUMMER HOURS: Our organization is moving to summer hours from May 30 through September 2. I will be finished work at 12:30 most Friday afternoons during this time. Enjoy your summer.



Amy Patenaude | Senior Technical/Administrative Assistant Americas Noise/Acoustics/Vibration RWDI 600 Southgate Drive, Guelph, ON N1G 4P6 Canada

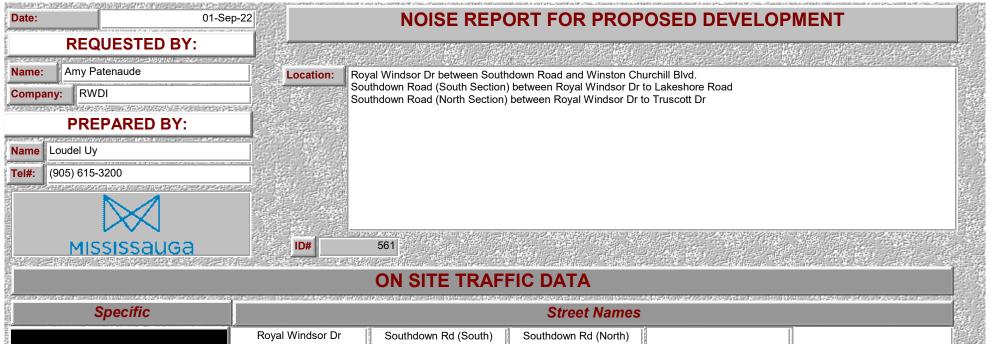
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	Royal Windsor Dr	Southdown Rd (South)	Southdown Rd (North)		 調約
AADT:	38,500	8,200	44,200	*	
# of Lanes:	4 lanes	2 lanes	4 lanes		
% Trucks:	8%	13%	11.5%		
Medium/Heavy Trucks Ratio:	55/45	55/45	55/45		
Day/Night Split:	90/10	90/10	90/10		
Posted Speed Limit:		60 km/h	60 km/h		
Gradient Of Road:	<2%	<2%	<2%		
Ultimate R.O.W:	35m	35m	35m		
Comments: Ultimate Traffic Data C	Dnly (2041)	A		*	

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APPENDIX E

CLARKSON GO SLATE ASSET MANAGEMENT

121 King St W Unit 200 Toronto ON M5H 3T9

REZONING SUBMISSION NOVEMBER 2022

Gensler

Architect 150 King Street West Suite 1400 Toronto ON M5H 1J9 Canada Tel. 416.601.3890

Lithos

Civil Engineering 150 Bermondsey Rd Unit 200 Toronto ON M4A 1Y1 Canada Tel. 416-750-7769

Janet Rosenberg & Studio Inc. Landscape Architect 148 Kenwood Ave. Toronto ON M6C 2S3 Canada Tel. 416-656-6665

LEA

Traffic Consultant 425 University Avenue Suite 400 Toronto ON M5G 1T6 Canada Tel. 905-470-0015

GSAI Sustainability Consultant 10 Kingsbridge Garden Circle Suite 700 Mississauga ON L5R 3K6 Canada Tel. 905-568-8888

Kuntz Arborist Consultant 1267 Lakeshore W Oakville ON L6K 0B3 Canada Tel. 289-837-1871

Goodmans

Planning Legal 333 Bay St. #3400 Toronto ON M5H 2S7 Canada Tel. 416-979-2211

Theakston

Wind Consultant **Glengarry Crescent** Fergus ON N1M 3E2 Canada Tel. 519-787-2910

Pinchin

Geotechnical Consultant 2360 Meadowpine Blvd Unit 2 Mississauga ON L5N 6S2 Canada Tel. 905-363-0678

WSP

Air Consultant 2300 Yonge St Toronto ON M4P 1E4 Canada Tel. 416-487-5256

STATISTICS - SUMMARY								GENSLER				
2022-11-23												
			Nest Block		East Block		Т	otal				
			Nest Diock	Notes	Last Diock	Notes		Jtai				
Site Area				1003		110103	14,864 m²	159,995 SF				
New Public Road			1,834 m²		1,325 m²		3,159 m ²	34,003 SF				
New Private Road			N/A		721 m ²		721 m ²	7,761 SF				
								,				
Proposed development area			4,245 m²		6,412 m²		10,657 m²	114,712 SF				
Parkland			480 m²		568 m²		1,048 m²	11,281 SF				
										aa fuana kafana		
Landscape Open space			1,034 m²		1,825 m²		2,859 m²	30,774 SF	west extension	nce from before on (sent 221013)	Estimated	
												Notes
Gross Building Area (Above ground)			56,134 m ²		50,599 m ²			1,148,871 SF		+ 97,777 SF	n/a	
Gross Building Area (Underground)			19,338 m ²		17,442 m ²			395,904 SF	n/a	n/a	n/a	
Total GBA			75,472 m ²		68,041 m ²			1,544,775 SF	n/a	n/a	n/a	
GFA Octoorbite			46,645 m ²		41,815 m ²			952,181 SF		+ 90,070 SF	+ 46,240 SF	
Saleable			41,390 m ²		37,110 m ²		78,500 m ²	844,970 SF		+ 84,019 SF	n/a	Combined actail as stable 1 live/or
Retail Rentable Live / Work			987 m ² 2,229 m ²		990 m² 6,558 m²		1,978 m ² 8,787 m ²	21,286 SF 94,583 SF	+ 8,287 m ²	+ 89,196 SF	n/a	Combined retail rentable + live/w
Live / work			2,229 11-		0,000 111-		0,/0/ 111-	94,303 55				
Net FSI (GFA/Net Site area)			10.99		6.52		8	.75				
Residential Units			650 UNITS		587 UNITS		1 237	UNITS	67	UNITS	71 UNITS	
Average unit size			685 SF		680 SF			3 SF		6 SF	n/a	
			000 01		000 01		000				n/a	
TOTAL Required Amenity			3,640 m²		3,287 m²		6,927 m²	74,564 SF				
TOTAL Proposed Amenity			3,160 m²		3,540 m²		6,700 m²	72,121 SF				
Indoor Amenity			1,697 m²		1,771 m²		3,468 m²	37,331 SF				
Outdoor Amenity			1,463 m²		1,769 m²		3,232 m²	34,789 SF				
Net Retail Area			987 m²		990 m²		1.070 m2	24.296.65				
Net Retail Area			987 m²		990 m-		1,978 m²	21,286 SF				
Below Ground Parking Breakdown												
Residential	0.6		390	approx. 4 1/4 levels UG	352	approx. 2 1/4 levels UG	7	42				
Visitor/Retail Shared	0.1		65	Located on P1	59	Located on P1	1	24				
TOTAL Proposed Parking			455		411		8	66				
Bike Parkings (all underground)												
Residential Bikes												
	Long Term	0.6	390		352		7	42				
Residential	Short Term	0.05	34		34			68				
Retail	Long Term	0.1 per 100 sm	1		1			2				
Retail	Short Term	0.2 per 100 sm	2		2			4				
TOTAL Required Bike Parking			427		389			16				
TOTAL Proposed Bike Parking			416		288		7	04				
GBA includes all above grade construction												
Interior Amenity is provided on 2nd floor												
Exterior amenity is provided on 2nd floor	and podium roof											
20% parking required to be EV												

AREA STATISTICS

	TISTICS - ARE	AS																GEN
2022	-11-23																	
	OPTION 1					•		1								1	1	
				PHASE 1 (WE TOWE	,			TOWER 2					,	EAST BLOCK) ER 3			TOWER 4	
	LEVEL	PROGRAM	GBA	GFA	SALEABLE	RETAIL	GBA	GFA	SALEABLE	LEVEL	PROGRAM	GBA	GFA	SALEABLE	RETAIL	GBA	GFA	SALE
	L30	MECH PENTHOUSE	1,928 SF			RENTABLE				L30					RENTABLE			
	L29	RESIDENTIAL	6,319 SF	5,484 SF	4,864 SF					L29								
	L28	RESIDENTIAL	7,633 SF	6,718 SF	6,096 SF	4	1,796 SF			L28								
	L27	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF	4	5,577 SF	4,732 SF	4,203 SF	L27		1 000 05						
	L26 L25	RESIDENTIAL RESIDENTIAL	9,502 SF 9,502 SF	8,402 SF 8,402 SF	7,643 SF 7,643 SF	-	6,493 SF 9,289 SF	5,652 SF	5,123 SF 7,575 SF	L26 L25	MECH. PENTHOUSE RESIDENTIAL	1,293 SF 4,314 SF	3,540 SF	3,140 SF				
	L23	RESIDENTIAL	9,502 SF	8,402 SF 8,402 SF	7,643 SF	-	9,289 SF 9,289 SF	8,195 SF 8,195 SF	7,575 SF	L23	RESIDENTIAL	6,917 SF	5,789 SF	5,330 SF	-	1,423 SF		
	L23	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF	-	9,289 SF	8,195 SF	7,575 SF	L23	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF	-	5,339 SF	4,431 SF	3,73
	L22	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF		9,289 SF	8,195 SF	7,575 SF	L22	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF		7,394 SF	6,368 SF	5,78
	L21	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF		9,289 SF	8,195 SF	7,575 SF	L21	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF		9,930 SF	8,753 SF	8,0
TOWER	L20	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF	-	9,289 SF	8,195 SF	7,575 SF	L20	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF	-	9,930 SF	8,753 SF	8,0
ð	L19 L18	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF	4	9,289 SF	8,195 SF	7,575 SF	L19 L18	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF	_	9,930 SF	8,753 SF	8,05
-	L18	RESIDENTIAL	9,502 SF 9,502 SF	8,402 SF 8,402 SF	7,643 SF 7,643 SF	-	9,289 SF 9,289 SF	8,195 SF 8,195 SF	7,575 SF 7,575 SF	L17	RESIDENTIAL RESIDENTIAL	9,830 SF 9,830 SF	8,698 SF 8,698 SF	8,032 SF 8,032 SF	-	9,930 SF 9,930 SF	8,753 SF 8,753 SF	8,05 8,05
	L16	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF	-	9,289 SF	8,195 SF	7,575 SF	L16	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF	-	9,930 SF	8,753 SF	8,05
	L15	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF	1	9,289 SF	8,195 SF	7,575 SF	L15	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF		9,930 SF	8,753 SF	8,05
	L14	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF		9,289 SF	8,195 SF	7,575 SF	L14	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF		9,930 SF	8,753 SF	8,0
	L13	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF		9,289 SF	8,195 SF	7,575 SF	L13	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF		9,930 SF	8,753 SF	8,05
	L12 L11	RESIDENTIAL	9,502 SF	8,402 SF	7,643 SF	-	9,289 SF	8,195 SF	7,575 SF	L12 L11	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF	-	9,930 SF	8,753 SF	8,0
	L11 L10	RESIDENTIAL	9,502 SF 9,502 SF	8,402 SF 8,402 SF	7,643 SF 7,643 SF		9,289 SF 9,289 SF	8,195 SF 8,195 SF	7,575 SF 7,575 SF	L11	RESIDENTIAL	9,830 SF 9,830 SF	8,698 SF 8,698 SF	8,032 SF 8,032 SF		9,930 SF 9,930 SF	8,753 SF 8,753 SF	8,05 8,05
	L9	RESIDENTIAL	9,502 SF	8,402 SF 8,402 SF	7,643 SF		9,289 SF	8,195 SF	7,575 SF	L9	RESIDENTIAL	9,830 SF	8,698 SF	8,032 SF		9,930 SF 9,930 SF	8,753 SF	8,0
	SUBTOTAL		196,418 SF	171,840 SF	156,177 SF		171,779 SF	149,699 SF		SUBTOTAL		159,974 SF	139,799 SF	128,950 SF		143,246 SF	124,588 SF	
	L8	AMENITY	18,269 SF			-				L8	AMENITY	19,062 SF			_			
	L7	RESIDENTIAL (w/ balcony)	31,324 SF	27,328 SF	25,004 SF	4			-	L7 L6	RESIDENTIAL (w/ balcony)	30,055 SF	26,012 SF	23,502 SF	-			
M	L6 L5	RESIDENTIAL (w/ juliet balcony) RESIDENTIAL (w/ balcony)	29,761 SF 31,324 SF	27,328 SF 27,328 SF	25,004 SF 25,004 SF	-			-	L6 L5	RESIDENTIAL (w/ juliet balcony) RESIDENTIAL (w/ balcony)	28,380 SF 32,380 SF	26,012 SF 28,310 SF	23,502 SF 25,800 SF	-			
PODIUM	L4	RESIDENTIAL (w/ juliet balcony)	29,761 SF	27,328 SF	25,004 SF	1			-	L4	RESIDENTIAL (w/ juliet balcony)	30,705 SF	28,310 SF	25,800 SF	-			
ĕ	L3	RESIDENTIAL (w/ balcony)	31,324 SF	27,328 SF	25,004 SF	1			-	L3	RESIDENTIAL (w/ balcony)	32,380 SF	28,310 SF	25,800 SF	1			
	L2	RESIDENTIAL (w/ juliet balcony)	28,747 SF	26,314 SF	23,990 SF					L2	RESIDENTIAL (w/ juliet balcony)	30,705 SF	27,793 SF	25,283 SF				
	L1	RETAIL / LOBBY	35,515 SF	17,590 SF	2,229 SF	10,626 SF	1			L1	RETAIL / LOBBY	37,753 SF	20,956 SF	6,558 SF	10,660 SF	-		
	SUBTOTAL	de effet e e ha	236,025 SF	180,544 SF	151,239 SF	10,626 SF				SUBTOTAL		241,420 SF	185,703 SF	156,245 SF	10,660 SF			
	Subtotal resi	dential only	182,241 SF	162,954 SF	151,239 SF					Subtotal res	sidential only	184,605 SF	164,747 SF	156,245 SF				
			GBA	GFA	SALEABLE	RETAIL	1					GBA	GFA	SALEABLE	RETAIL			
			604.222 SF			RENTABLE	-						450,090 SF		RENTABLE			
	PHASE 1	TOTAL (ABOVE GRADE)	56,134 m ²	46,645 m ²	41,390 m ²	987 m ²				PHASE 2	2 TOTAL (ABOVE GRADE)	50,599 m ²	41,815 m ²	37,110 m ²	990 m ²			
			4 4 40 000 05	050 470 05	044.000.05	04 000 05												
	DEVELOF (ABOVE GRADE		1,148,862 SF 106,733 m ²	952,173 SF 88,460 m ²	844,963 SF 78,500 m ²	1,978 m ²	-											
			100,100 111	00,400 m	10,000 m	1,010 111												
-	LL1	PARKING / LOCKERS PARKING / LOCKERS	41,631 SF 41,631 SF	-						LL1 LL2	PARKING / LOCKERS PARKING / LOCKERS	62,582 SF 62,582 SF	-					
ð ē	LL3	PARKING / LOCKERS	41,631 SF	-						LL3	PARKING / LOCKERS	62,582 SF	-					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LL2 LL3 LL4	PARKING / LOCKERS	41,631 SF	-						LL4	PARKING / LOCKERS	02,002 01	1					
	LL5	PARKING / LOCKERS	41,631 SF]						LL5	PARKING / LOCKERS]					
	SUBTOTAL		208,155 SF							SUBTOTAL		187,746 SF						
			19,338 m ²									17,442 m ²						
		PMENT TOTAL	395,901 SF						_									
	(BELOW GRADE		36,780 m ²															
	PHASE 1		812,377 SF							PHASE 2		732,386 SF						
	(ABOVE + BELO	W GRADE)	75,472 m²							(ABOVE + BEL	OW GRADE)	68,041 m²						
			1,544,763 SF															_
	(ABOVE + BELO	PMENT TOTAL W GRADE GBA)	1,544,703 SF 143,513 m ²															
			140,010 III	-														
	Calculation E	Definitions	The come of the		av of a hord P	have h - h	atabli		a the entrol									
			The sum of the an outside walls of th															
	GFA		used for mechani	ical floor area, st	airwells, elevato	rs, motor vehicle	e parking, bicycle	e parking, stora	ge lockers,									
	5.7		below grade stora generated within t															
			area.	ine building, com	mon raciilues to	une use of the f	Concento OI (110 (Junuing, a day (are and amenity									
	0.0.4		Entire floor Plate t	to the exterior of	the outside wall													
	GBA		Area of residental		Work Units													
	Saleable																	
		ble	Area of retail space	ce														
	Saleable Retail Rental	ble																
	Saleable Retail Rental		Saleable area / G	BA														
	Saleable Retail Rental	dium		BA Retail area / GBA														

UNIT COUNT

			PHASE 1 (WEST BLOCK)									PHASE 2 (EAST BLOCK)					
LEVEL			TOWER 1					/ER 2		LEVEL			TOWER 3					/ER 4	
	1 BED	2 BED	3 BED	LIVE / WORK		1 BED	2 BED	3 BED	TOTAL		1 BED	2 BED	3 BED	LIVE / WORK	TOTAL	1 BED	2 BED	3 BED	тс
-29	1	3	2		<u>6</u> 7	_				L29	_								
.28 .27	2	2 4	3		12	2	2	1	5	L28 L27	-								
_26	7	4	1		12	3	3	1	7	L27	-								
.25	7	4	1		12	8	4	0	12	L25	1	3	0		4	1			
.24	7	4	1		12	8	4	0	12	L24	3	3	1		7	1			
.23	7	4	1		12	8	4	0	12	L23	8	4	1		13	2	2	1	
.22	7	4	1		12	8	4	0	12	L22	8	4	1		13	3	5	0	
.21	7	4	1		12	8	4	0	12	L21	8	4	1		13	7	5	1	
.20	7	4	1		12	8	4	0	12	L20	8	4	1		13	7	5	1	
.19	7	4	1		12	8	4	0	12	L19	8	4	1		13	7	5	1	
_18	7	4	1		12	8	4	0	12	L18	8	4	1		13	7	5	1	
_17 _16	7	4 4	1		12	8	4	0	12	L17 L16	8	4 4	1		13	7	5	1	
.15	7	4	1		<u>12</u> 12	8	4	0	12 12	L16 L15	8	4	1		13 13	7	5	1	
_14	7	4	1		12	8	4	0	12	L14	8	4	1		13	7	5	1	
_13	7	4	1		12	8	4	0	12	L13	8	4	1		13	7	5	1	
.12	7	4	1		12	8	4	0	12	L12	8	4	1		13	7	5	1	1
.11	7	4	1		12	8	4	0	12	L11	8	4	1		13	7	5	1	J
_10	7	4	1		12	8	4	0	12	L10	8	4	1		13	7	5	1	1
_9	7	4	1		12	8	4	0	12	L9	8	4	1		13	7	5	1	1
SUBTOTAL PERCENTAGE	136 56%	81	24 10%	0%	241	141 65%	73 34%	2 1%	216	SUBTOTAL PERCENTAGE	124 60%	66 32%	16 8%	0%	206	96 53%	72 40%	14 8%	1
.3 .2 .1		18 18 Y + RETAIL + LC		3	32 30					L3 L2 L1		13 13 (+ RETAIL + LC		6	33 32				
SUBTOTAL	58	108	24	3	190	_				SUBTOTAL	93	82	18	6	193	1			
PERCENTAGE	31%	57%	13%	2%						PERCENTAGE	48%	42%	9%	3%					
2	units removed to pro	ovide access to West E	Block rooftop amenit	ly .							1 units removed to pro	wide access to East B	lock rooftop amenity						
	1 BED	2 BED	3 BED	LIVE / WORK	TOTAL						1 BED	2 BED	3 BED	LIVE / WORK	TOTAL				
PHASE 1 TOTAL	335	262	50	3	650					PHASE 2 TOTAL	313	220	48	6	587				
PERCENTAGE	52%	40%	8%	0%						PERCENTAGE	53%	37%	8%	1%					
DEVELOPMENT TOTAL	648	482	98	9	1237	1													
				-	1237														
PERCENTAGE	52%	39% 42%	8%	1%															

UNIT MIX

UNIT MIX 2022-11-23																			GENSLEF
UNIT MIX TOTAL	_	_	_	_	_	_	_	_	_		_	_	_	_	_	_	_	_	_
						1										1			
	1 BED	2 BED	E 1 (WEST BL 3 BED	LIVE / WORK	TOTAL						1 BED	2 BED	3 BED	LOCK)	TOTAL	-			
PHASE 1 TOTAL PERCENTAGE	335 52%	262 40%	50 8%	3 0%	650					PHASE 2 TOTAL PERCENTAGE	313 53%	220 37%	48 8%	6 1%	587				
TARGET COUNT TARGET PERCENTAGE	325 50%	273 42%	52 8%	0 0%	650 100%					TARGET PERCENTAGE	294 50%	246 42%	47 8%	0 0%	587 100%				
COUNT DIFF PERCENTAGE DIFF	10 2%	-11 -2%	-2 0%	3 0%						COUNT DIFF PERCENTAGE DIFF	19 3%	-26 -5%	1 0%	6 1%					
			TOWER 1		EST BLOCK)			/ER 2					TOWER 3	PHASE 2 (E/				/ER 4	
TOWER UNIT TOTAL	1 BED 136	2 BED 81	3 BED 24	LIVE / WORK	241	1 BED 141	2 BED 73	3 BED 2	216	TOWER UNIT TOTAL	1 BED 124	2 BED 66	3 BED 16	LIVE / WORK	TOTAL 206	1 BED 96	2 BED 72	3 BED 14	182
PERCENTAGE	56%	34%	10%		211	65%	34%	1%		PERCENTAGE	60%	32%	8%		200	53%	40%	8%	
TARGET COUNT TARGET PERCENTAGE					241 100%	65% 108 50%	34% 91 42%		216 100%						206 100%		40% 76 42%	8% 15 8%	182 100%
TARGET COUNT	56% 121	34% 101	10% 19		241	108	91	1% 17	216	PERCENTAGE TARGET COUNT	60%	32% 87	8% 16		206	53% 91	76	15	
TARGET COUNT TARGET PERCENTAGE COUNT DIFF	56% 121 50% 15	34% 101 42% -20	10% 19 8% 5	3 2%	241	108 50% 33	91 42% -18	1% 17 8% -15	216	PERCENTAGE TARGET COUNT TARGET PERCENTAGE COUNT DIFF	60% 103 50% 21	32% 87 42% -21	8% 16 8% 0	6 3%	206	53% 91 50% 5	76 42% -4	15 8% -1	
TARGET COUNT TARGET PERCENTAGE COUNT DIFF PERCENTAGE DIFF PODIUM UNIT TOTAL	56% 121 50% 15 6% 58	34% 101 42% -20 -8% 108	10% 19 8% 5 2% 24		241 100%	108 50% 33	91 42% -18	1% 17 8% -15	216	PERCENTAGE TARGET COUNT TARGET PERCENTAGE COUNT DIFF PERCENTAGE DIFF PODIUM UNIT TOTAL	60% 103 50% 21 10%	32% 87 42% -21 -10% 82	8% 16 8% 0 0% 18		206 100%	53% 91 50% 5	76 42% -4	15 8% -1	
TARGET COUNT TARGET PERCENTAGE COUNT DIFF PERCENTAGE DIFF PODIUM UNIT TOTAL PERCENTAGE TARGET COUNT	56% 121 50% 15 6% 58 31% 95	34% 101 42% -20 -8% 108 57% 80	10% 19 8% 5 2% 24 13% 15	2% 0	241 100% 190 190	108 50% 33	91 42% -18	1% 17 8% -15	216	PERCENTAGE TARGET COUNT TARGET PERCENTAGE COUNT DIFF PERCENTAGE DIFF PODIUM UNIT TOTAL PERCENTAGE TARGET COUNT	60% 103 50% 21 10% 93 48% 97	32% 87 42% -21 -10% 82 42% 81	8% 16 8% 0 0% 18 9% 15	3% 0	206 100% 193 193	53% 91 50% 5	76 42% -4	15 8% -1	

TARGET AVERAGE	468 SF	829 SF	1,029 SF n/a	775 SF		
		r				
EFFICIENCY TOWER 1	80%		EFFICIENCY TOWER 2		80%	
GBA	196,418 SF		GBA		171,779 SF	
GFA	171,840 SF		GFA		149,699 SF	
SALEABLE	156,177 SF		SALEABLE		138,101 SF	
AVERAGE UNIT SIZE	648 SF	l	AVERAGE UNIT SIZE		639 SF	
		Г	OVERALL PODIUM			
PODIUM RESIDENTIAL ONLY			(incl. amenity / lobby)			
PODIUM RESI. EFFICIENCY	83%		PODIUM EFFICIENCY		69%	
GBA (resi only)	182,241 SF		GBA	:	236,025 SF	
GFA (resi only)	162,954 SF		GFA		180,544 SF	
SALEABLE	151,239 SF		SALEABLE		151,239 SF	
AVERAGE UNIT SIZE	796 SF		RETAIL & L/W RENTABLE		10,626 SF	
AVERAGE UNIT SIZE WEST BLOCK TOTAL EFFICIEN GBA GFA SALEABLE		74% 604,222 SF 502,083 SF 445,517 SF	RETAIL & L/W RENTABLE		10,626 SF	
AVERAGE UNIT SIZE WEST BLOCK TOTAL EFFICIEN GBA GFA SALEABLE AVERAGE UNIT SIZE		74% 604,222 SF 502,083 SF	RETAIL & L/W RENTABLE		10,626 SF	
AVERAGE UNIT SIZE WEST BLOCK TOTAL EFFICIEN GBA GFA SALEABLE	CY	74% 604,222 SF 502,083 SF 445,517 SF 685 SF		establised gra		I from the exterior
AVERAGE UNIT SIZE WEST BLOCK TOTAL EFFICIEN GBA GFA SALEABLE AVERAGE UNIT SIZE	ICY The sum of the a	74% 604,222 SF 502,083 SF 445,517 SF 685 SF areas of each st tors, motor vehi	orey of a building above or below cle parking, bicycle parking, stora		de, measured	
AVERAGE UNIT SIZE WEST BLOCK TOTAL EFFICIEN GBA GFA SALEABLE AVERAGE UNIT SIZE Calculation Definitions	The sum of the a stairwells, elevat of the building, a	74% 604,222 SF 502,083 SF 445,517 SF 685 SF areas of each st tors, motor vehid day care and a	orey of a building above or below cle parking, bicycle parking, stora		de, measured	
AVERAGE UNIT SIZE WEST BLOCK TOTAL EFFICIEN GBA GFA SALEABLE AVERAGE UNIT SIZE Calculation Definitions GFA	The sum of the a stairwells, elevat of the building, a	74% 604,222 SF 502,083 SF 445,517 SF 685 SF areas of each st tors, motor vehit oday care and a e to the exterior	orey of a building above or below cle parking, bicycle parking, stora menity area. of the outside wall		de, measured	

Area of residental units and Live / Work Units Area of retail space Saleable area / GBA Saleable area + Retail area / GBA Saleable area / Total unit count Efficiency Efficiency Podium AVG unit size

EFFICIENCY TOWER 3	81%		EFFICIENCY TOWER 4	80%
GBA	159,974 SF		GBA	143,246 SF
GFA	139,799 SF		GFA	124,588 SF
SALEABLE	128,950 SF		SALEABLE	114,251 SF
AVERAGE UNIT SIZE	626 SF		AVERAGE UNIT SIZE	628 SF
			OVERALL PODIUM	
PODIUM RESIDENTIAL ONLY			(incl. amenity / lobby)	
PODIUM RESI. EFFICIENCY	85%		PODIUM EFFICIENCY	69%
GBA	184,605 SF		GBA	241,420 SF
GFA	164,747 SF		GFA	185,703 SF
SALEABLE	156,245 SF		SALEABLE	156,245 SF
AVERAGE UNIT SIZE	810 SF		RETAIL & L/W RENTABLE	10,660 SF
EAST BLOCK TOTAL EFFICIEN	ICY	73%]	
GBA		544,640 SF		
GFA		450,090 SF		

or of outside walls of the biulding including floor area occupied by interior walls but excluding any part of the building used for mechanical floor area, sed area used for the collection or storage of disposable or recyclable waste generated within the building, common facilities for the use of the residents

SLATE ASSET MANAGEMENT

121 King St W Unit 200 Toronto ON M5H 3T9

Gensler

150 King Street West Suite 1400 Toronto, Ontario M5H 1J9] Canada

Tel 416.601.3890

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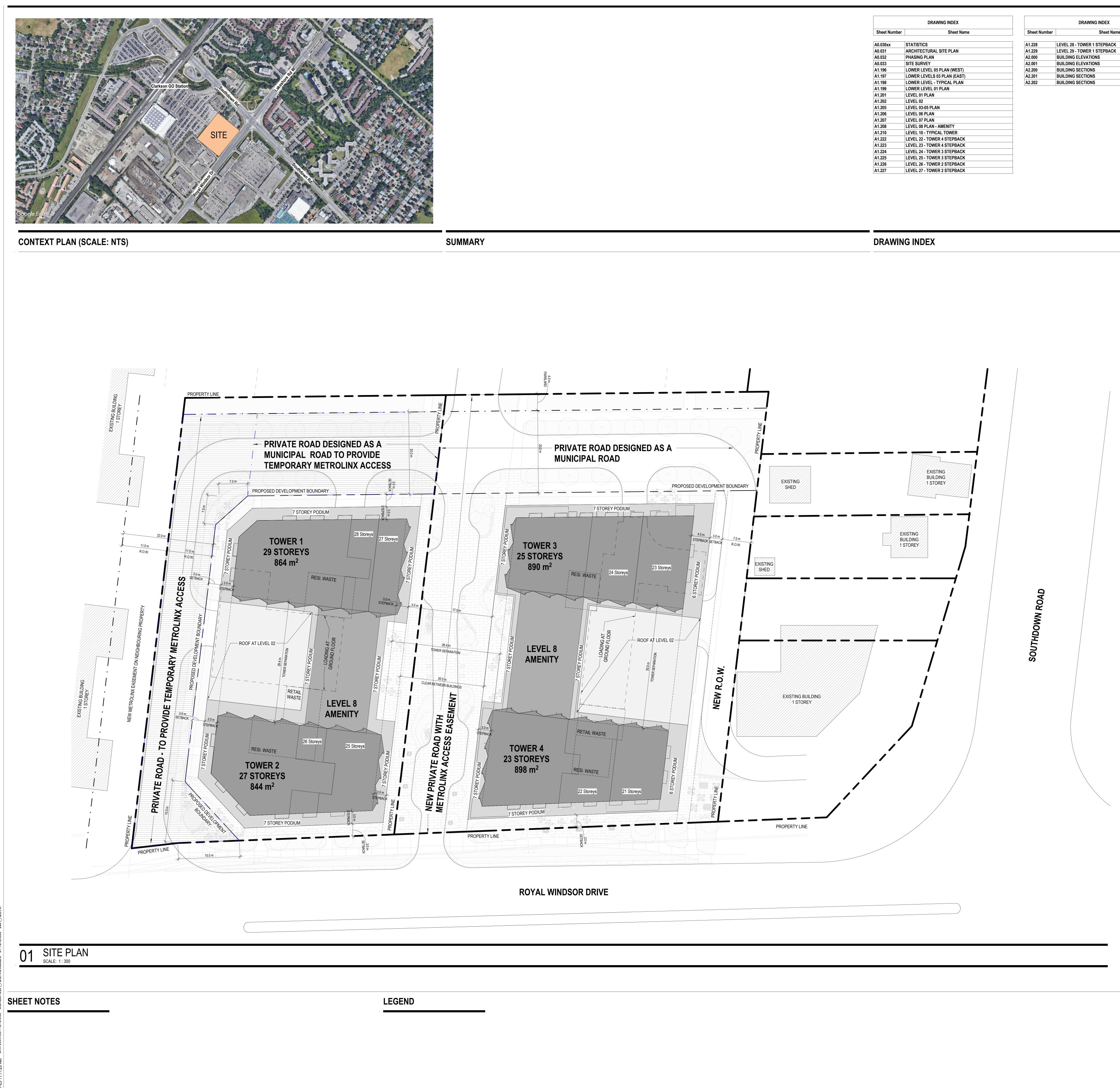
 \triangle Date Description

Project Name CLARKSON GO

Project Number 067.1245.000 Description STATISTICS

A0.030xx

Scale



	DRAWING INDEX
Sheet Number	Sheet Name
A0.030xx	STATISTICS
A0.031	ARCHITECTURAL SITE PLAN
A0.032	PHASING PLAN
A0.033	SITE SURVEY
A1.196	LOWER LEVEL 05 PLAN (WEST)
A1.197	LOWER LEVELS 03 PLAN (EAST)
A1.198	LOWER LEVEL - TYPICAL PLAN
A1.199	LOWER LEVEL 01 PLAN
A1.201	LEVEL 01 PLAN
A1.202	LEVEL 02
A1.205	LEVEL 03-05 PLAN
A1.206	LEVEL 06 PLAN
A1.207	LEVEL 07 PLAN
A1.208	LEVEL 08 PLAN - AMENITY
A1.210	LEVEL 10 - TYPICAL TOWER
A1.222	LEVEL 22 - TOWER 4 STEPBACK
A1.223	LEVEL 23 - TOWER 4 STEPBACK
A1.224	LEVEL 24 - TOWER 3 STEPBACK
A1.225	LEVEL 25 - TOWER 3 STEPBACK
A1.226	LEVEL 26 - TOWER 2 STEPBACK
A1.227	LEVEL 27 - TOWER 2 STEPBACK

	DRAWING INDEX
Sheet Number	Sheet Name
A1.228	LEVEL 28 - TOWER 1 STEPBACK
A1.229	LEVEL 29 - TOWER 1 STEPBACK
A2.000	BUILDING ELEVATIONS
A2.001	BUILDING ELEVATIONS
A2.200	BUILDING SECTIONS
A2.201	BUILDING SECTIONS
A2.202	BUILDING SECTIONS
	1

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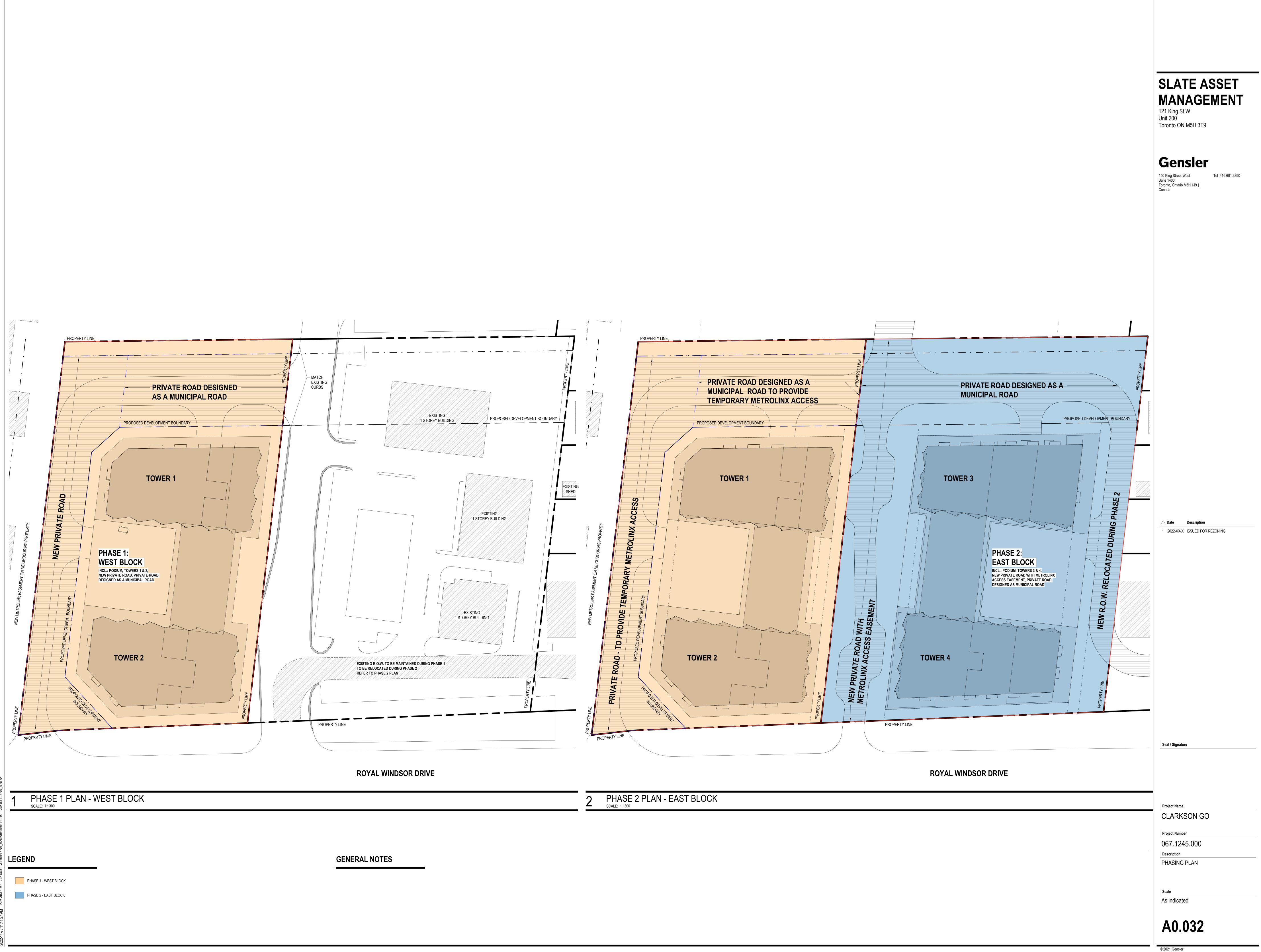
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Project Name CLARKSON GO

Project Number 067.1245.000 Description ARCHITECTURAL SITE PLAN

Scale As indicated

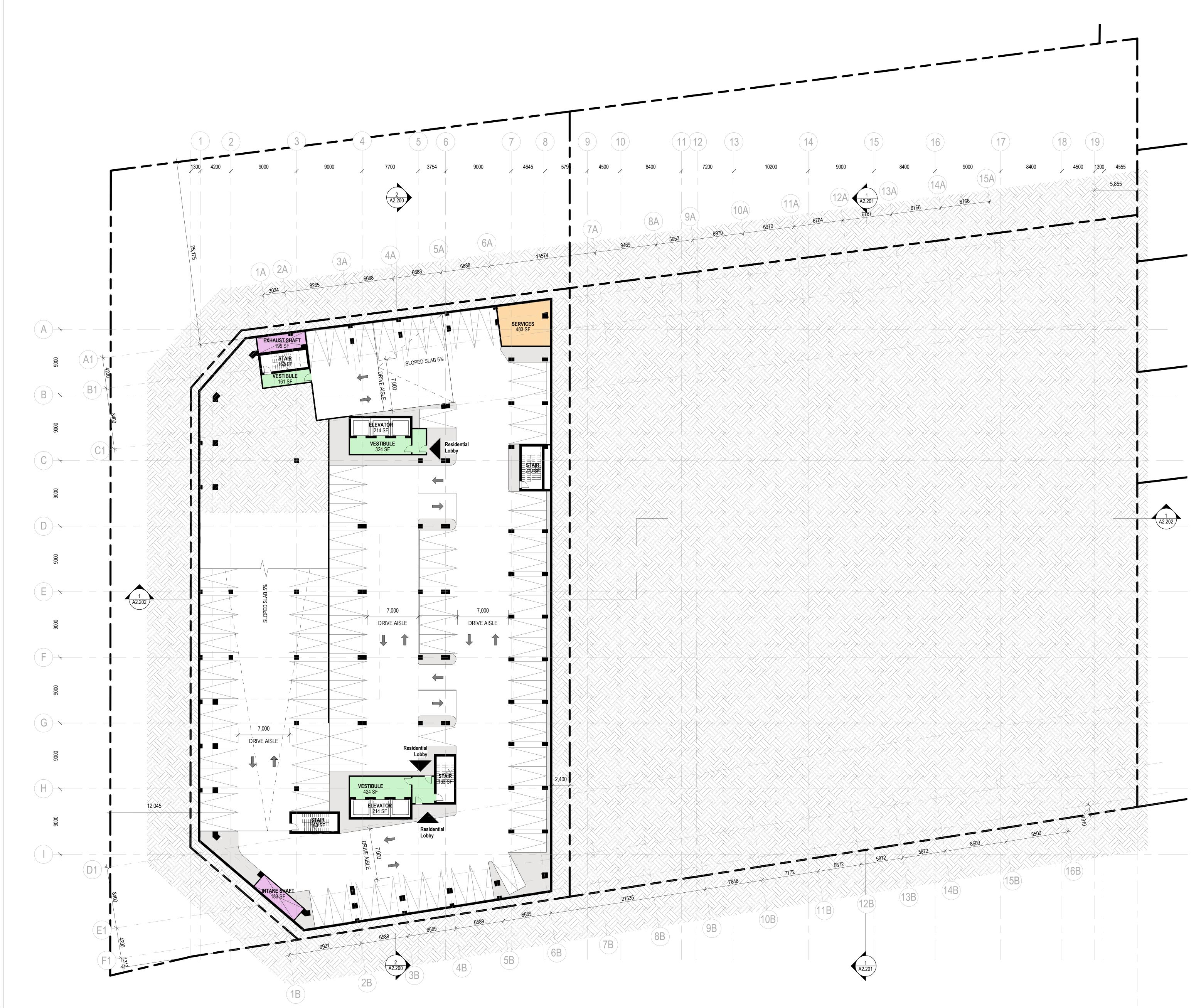
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DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.99974.

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	Gensier 150 King Street West Suite 1400 Toronto, Ontario M5H 1J9] Canada
GENERAL NOTES NOTE: THE LAND SURVEY INFORMATION REPRODUCED ON THIS DRAWING WAS RECEIVED IN GOOD FAITH FROM THE OWNER, AND IS PROVIDED HERE MERELY AS A CONVENIENCE. THE ARCHITECT BEARS NO RESPONSIBILTY, EXPRESSED OR	
IMPLIED, FOR THE CONTENT OR ACCURACY OF ANY INFORMATION CONTAINED IN THE LAND SURVEY INFORMATION, OR FOR THE USE OF THIS INFORMATION BY OTHERS, WHICH REMAINS THE SOLE RESPONSIBILITY OF THE SURVEYOR	
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	Seal / Signature
	Project Name
	CLARKSON GO Project Number 067.1245.000 Description SITE SURVEY
	Scale
	A0.033



LEVEL P5	
Standard - 2600 x 5200 Mississauga	67
LEVEL P4	
Standard - 2600 x 5200 Mississauga	97
LEVEL P3	
Standard - 2600 x 5200 Mississauga	97
LEVEL P2	
Standard - 2600 x 5200 Mississauga	99
LEVEL P1	
Standard - 2600 x 5200 Mississauga	61
Type A - 4900 x 5200 Barrier Free	5
Type B - 3900 x 5200 Barrier Free	12
Grand total	438

EAST BLOCK PARKING COUNT

LEVEL P3	
Standard - 2600 x 5200 Mississauga	127
LEVEL P2	
Standard - 2600 x 5200 Mississauga	159
LEVEL P1	
Standard - 2600 x 5200 Mississauga	112
Type A - 4900 x 5200 Barrier Free	6
Type B - 3900 x 5200 Barrier Free	10
Grand total	414

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Project Name CLARKSON GO

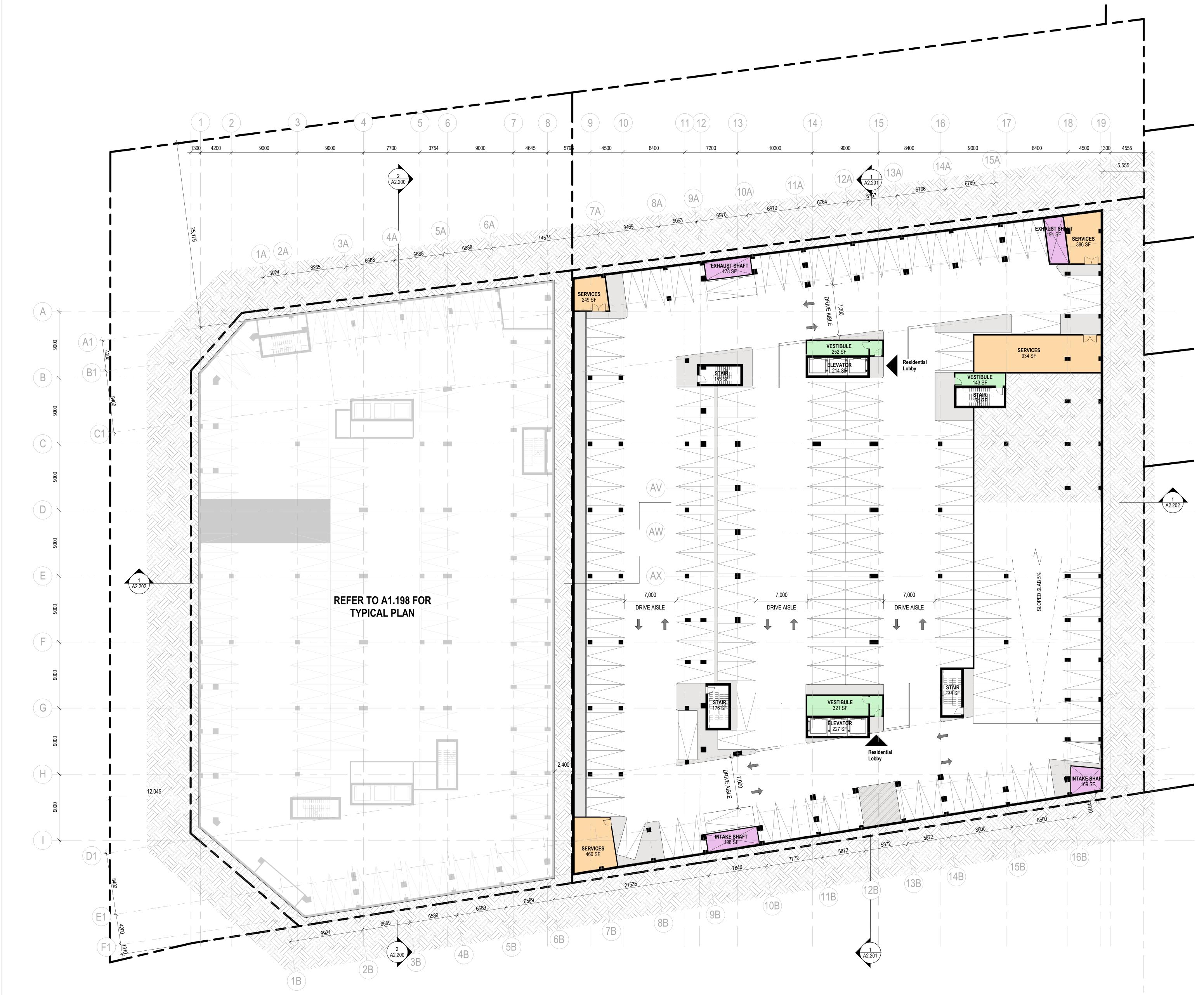
Project Number 067.1245.000 Description LOWER LEVEL 05 PLAN (WEST)

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A1.196

KEY PLAN



LEVEL P5	
Standard - 2600 x 5200 Mississauga	67
LEVEL P4	
Standard - 2600 x 5200 Mississauga	97
LEVEL P3	·
Standard - 2600 x 5200 Mississauga	97
LEVEL P2	
Standard - 2600 x 5200 Mississauga	99
LEVEL P1	
Standard - 2600 x 5200 Mississauga	61
Type A - 4900 x 5200 Barrier Free	5
Type B - 3900 x 5200 Barrier Free	12
Grand total	438

EAST BLOCK PARKING COUNT

LEVEL P3	
Standard - 2600 x 5200 Mississauga	127
LEVEL P2	
Standard - 2600 x 5200 Mississauga	159
LEVEL P1	
Standard - 2600 x 5200 Mississauga	112
Type A - 4900 x 5200 Barrier Free	6
Type B - 3900 x 5200 Barrier Free	10
Grand total	414

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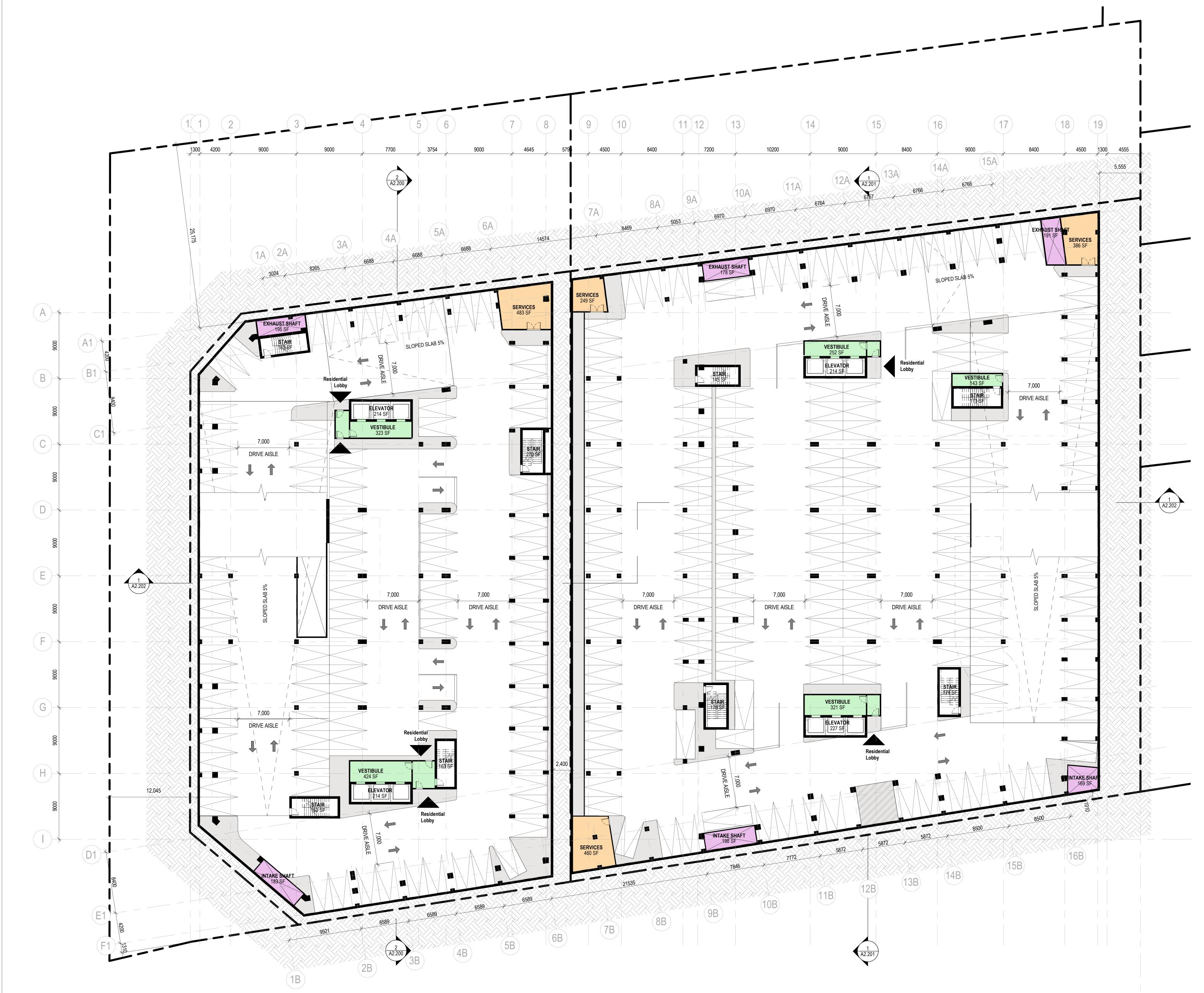
Project Name CLARKSON GO

Project Number

067.1245.000 Description LOWER LEVELS 03 PLAN (EAST)

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LEVEL P5	
Standard - 2600 x 5200 Mississauga	67
LEVEL P4	
Standard - 2600 x 5200 Mississauga	97
LEVEL P3	
Standard - 2600 x 5200 Mississauga	97
LEVEL P2	
Standard - 2600 x 5200 Mississauga	99
LEVEL P1	
Standard - 2600 x 5200 Mississauga	61
Type A - 4900 x 5200 Barrier Free	5
Type B - 3900 x 5200 Barrier Free	12
Grand total	438

EAST BLOCK PARKING COUNT

LEVEL P3	
Standard - 2600 x 5200 Mississauga	127
LEVEL P2	
Standard - 2600 x 5200 Mississauga	159
LEVEL P1	
Standard - 2600 x 5200 Mississauga	112
Type A - 4900 x 5200 Barrier Free	6
Type B - 3900 x 5200 Barrier Free	10
Grand total	414

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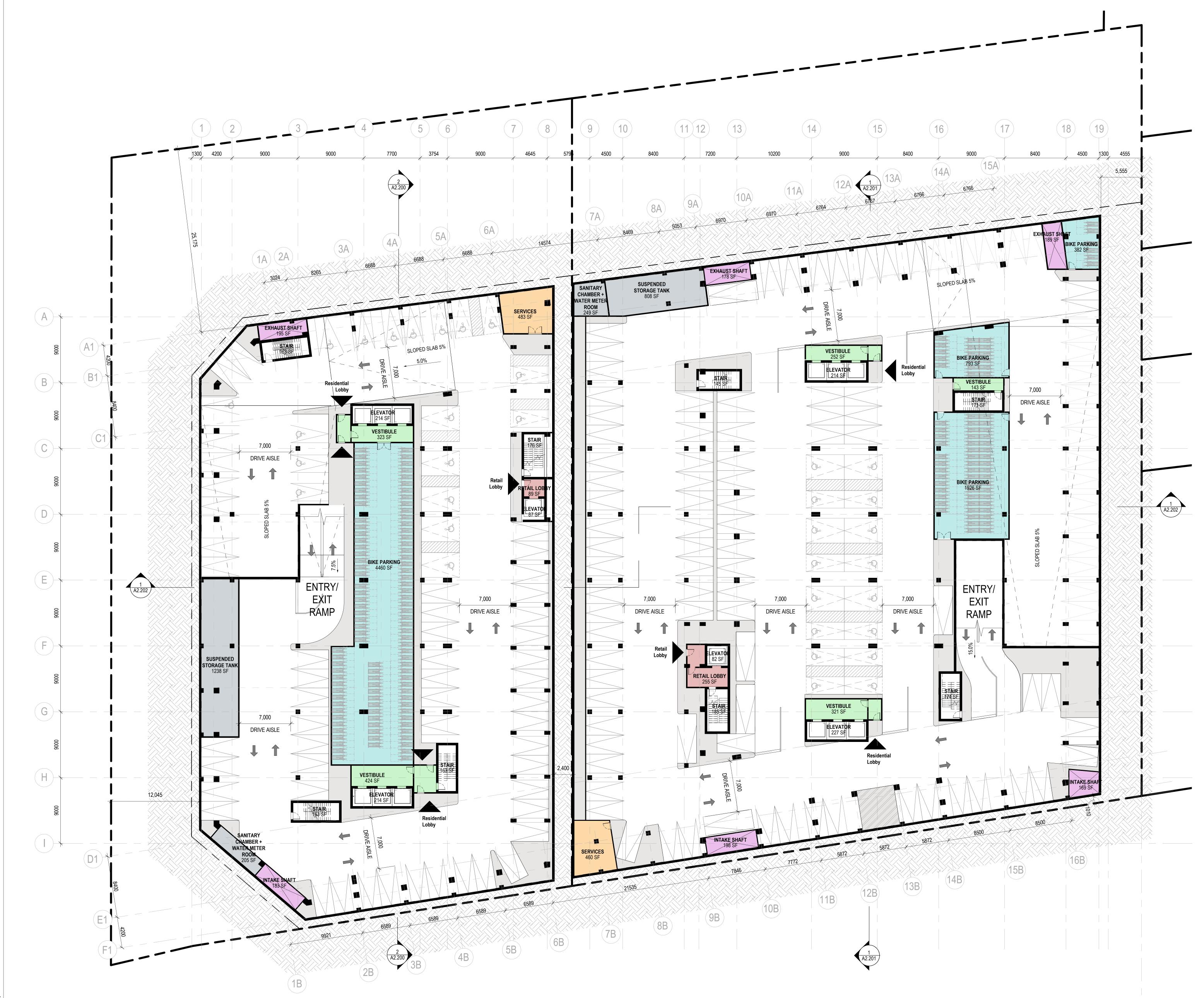
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Project Name CLARKSON GO

Project Number 067.1245.000 Description LOWER LEVEL - TYPICAL PLAN

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LEVEL P5	
Standard - 2600 x 5200 Mississauga	67
LEVEL P4	·
Standard - 2600 x 5200 Mississauga	97
LEVEL P3	
Standard - 2600 x 5200 Mississauga	97
LEVEL P2	
Standard - 2600 x 5200 Mississauga	99
LEVEL P1	·
Standard - 2600 x 5200 Mississauga	61
Type A - 4900 x 5200 Barrier Free	5
Type B - 3900 x 5200 Barrier Free	12
Grand total	438

EAST BLOCK PARKING COUNT

LEVEL P3	
Standard - 2600 x 5200 Mississauga	127
LEVEL P2	
Standard - 2600 x 5200 Mississauga	159
LEVEL P1	
Standard - 2600 x 5200 Mississauga	112
Type A - 4900 x 5200 Barrier Free	6
Type B - 3900 x 5200 Barrier Free	10
Grand total	414

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Project Name CLARKSON GO

Project Number 067.1245.000 Description LOWER LEVEL 01 PLAN

A1.199

Scale 1 : 200



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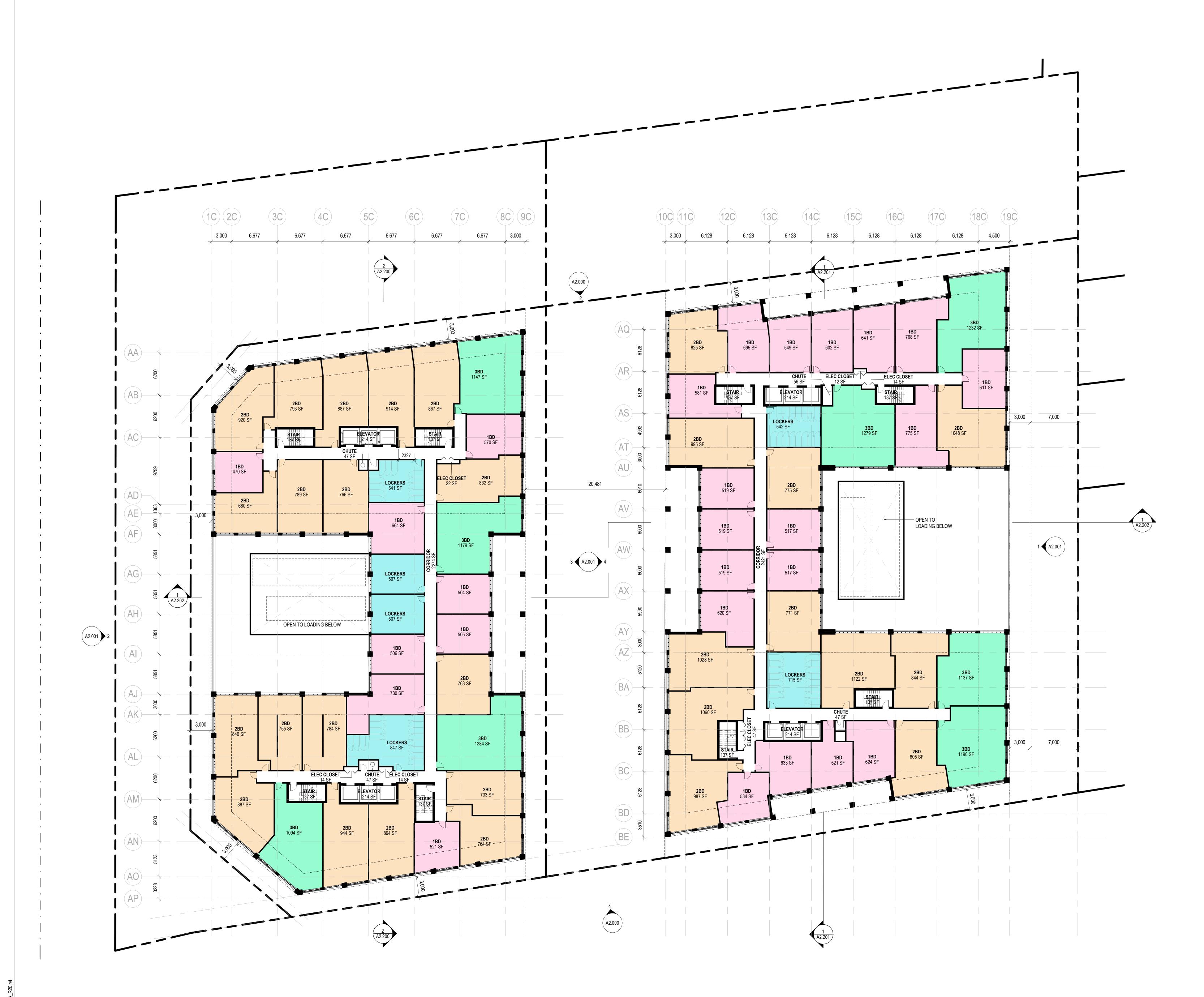
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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 01 PLAN

A1.201

Scale 1 : 200





SHEET NOTES

GENERAL NOTES

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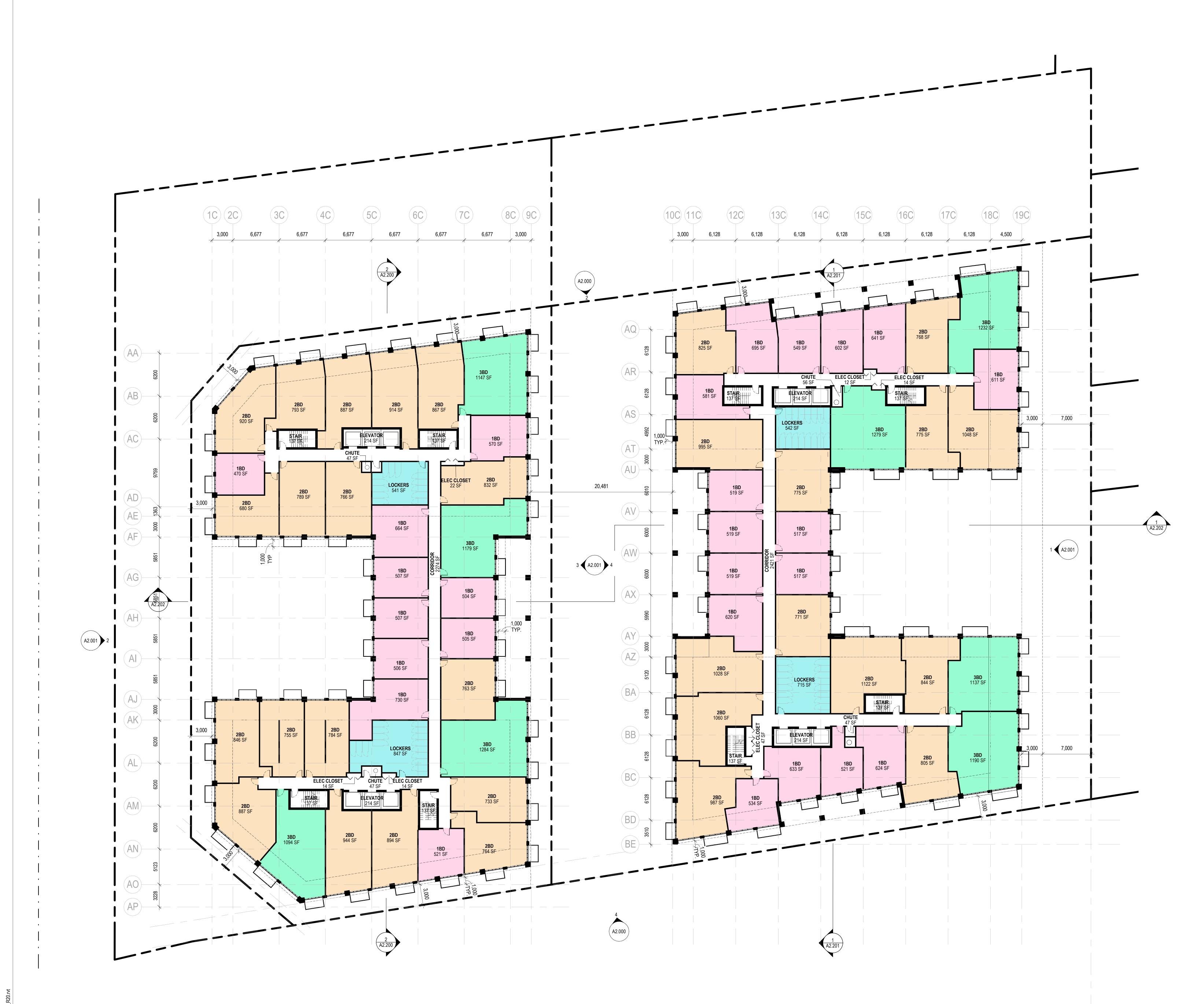
Seal / Signature

Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 02

A1.202

Scale 1 : 200





SHEET NOTES

LEGEND

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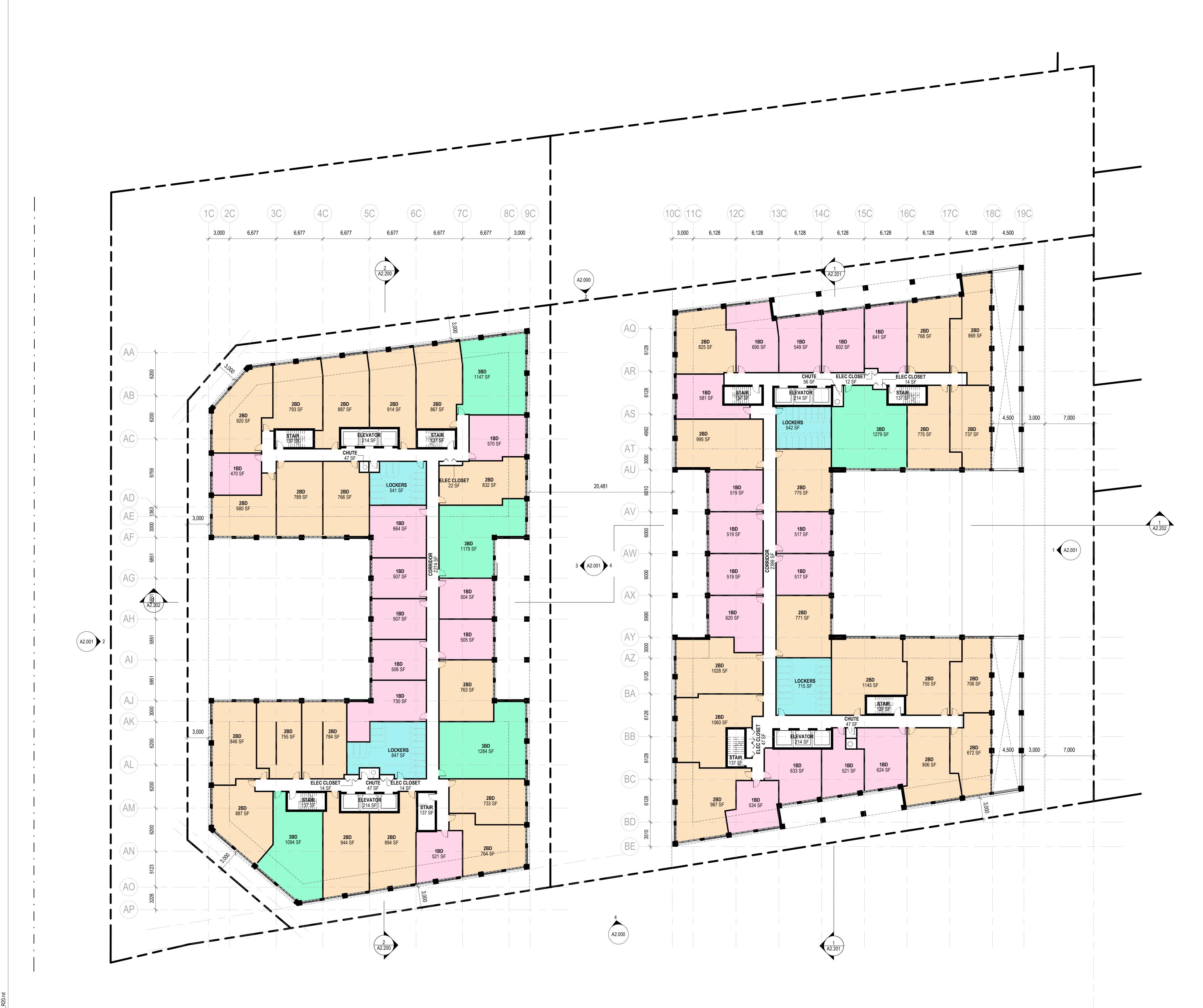
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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 03-05 PLAN

A1.205

Scale 1 : 200





SHEET NOTES

LEGEND

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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 06 PLAN

A1.206

Scale 1 : 200





SHEET NOTES

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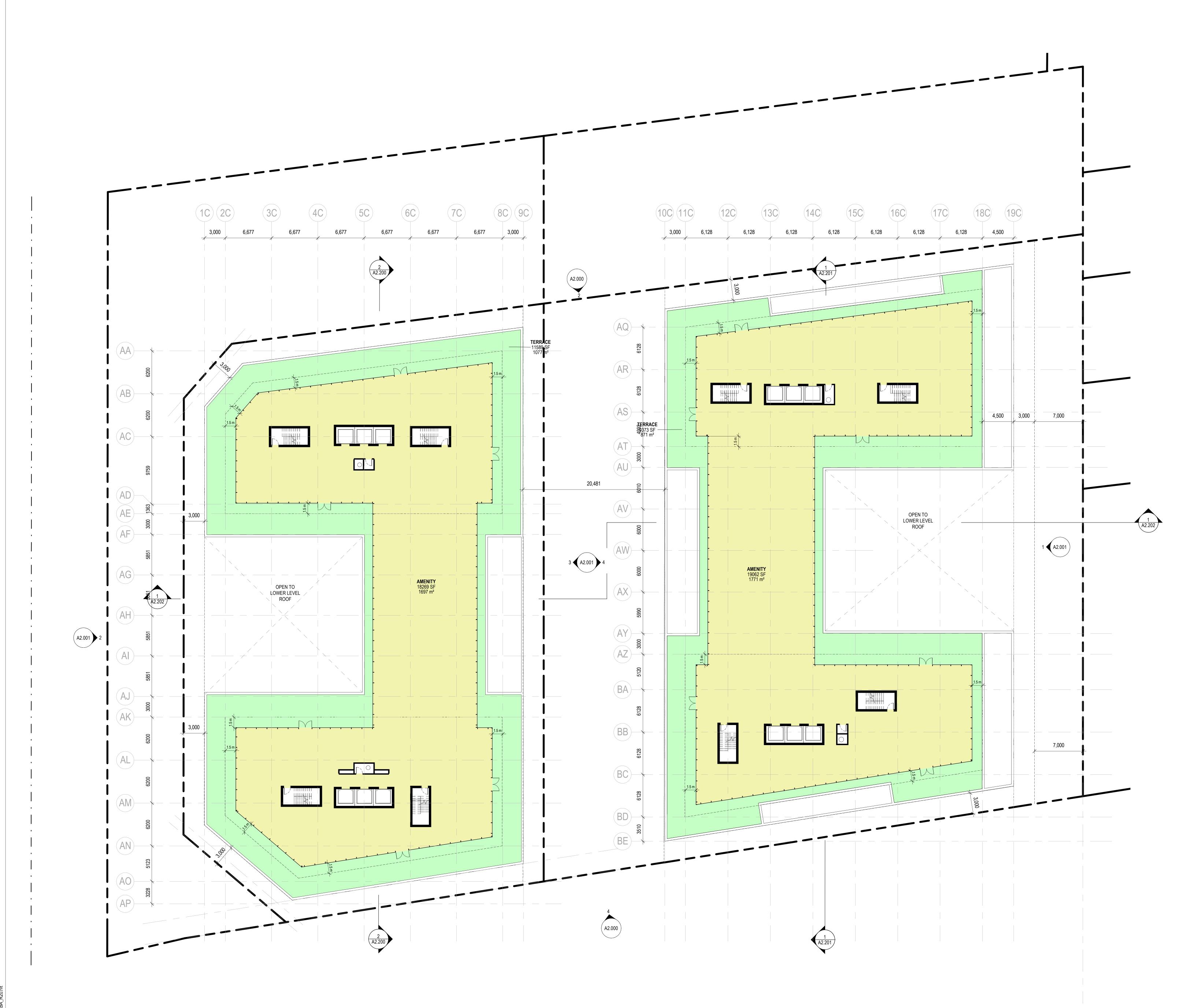
Seal / Signature

Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 07 PLAN

A1.207

Scale 1 : 200





SHEET NOTES

LEGEND

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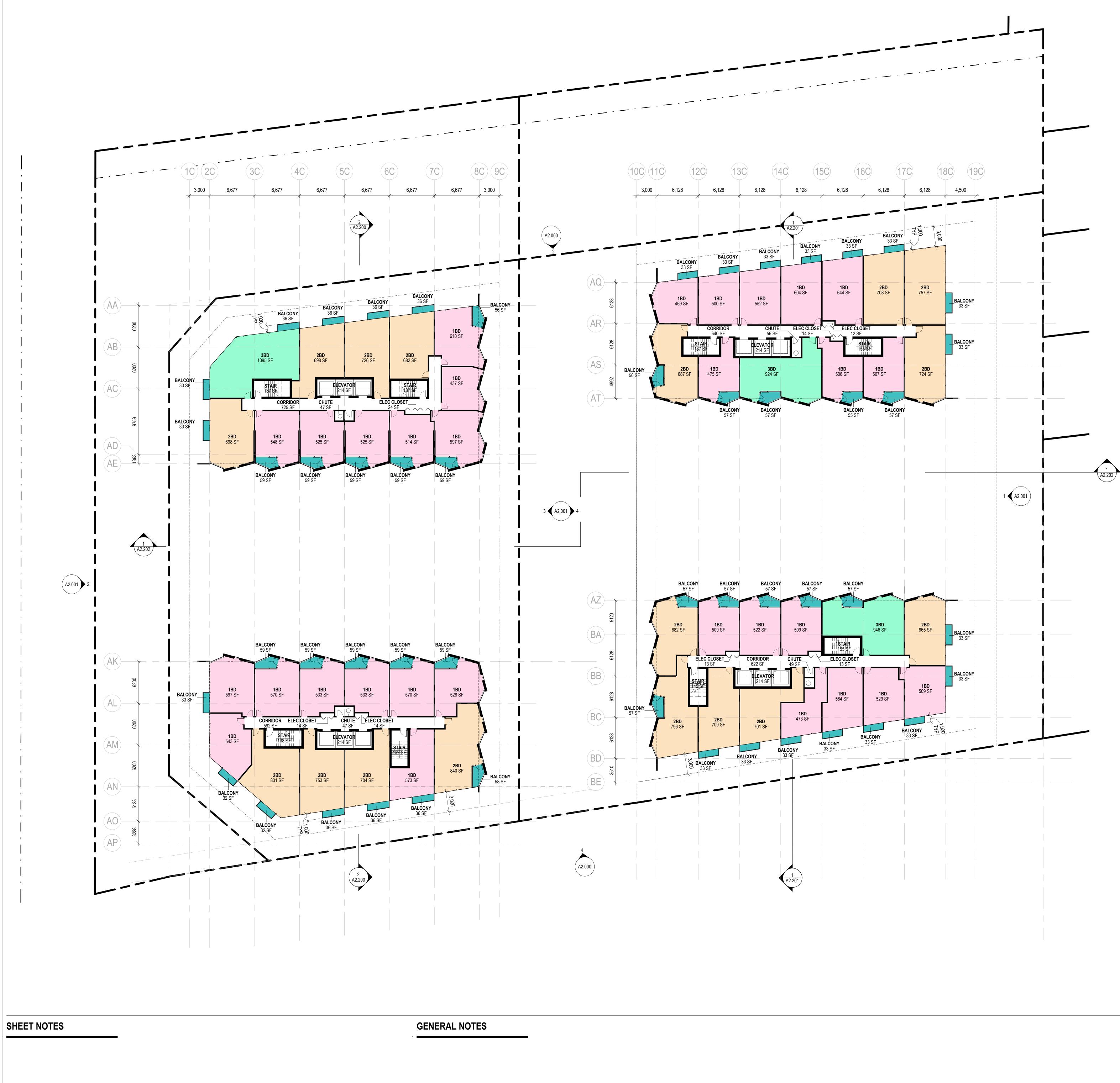
 \triangle Date Description

Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 08 PLAN - AMENITY

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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 10 - TYPICAL TOWER

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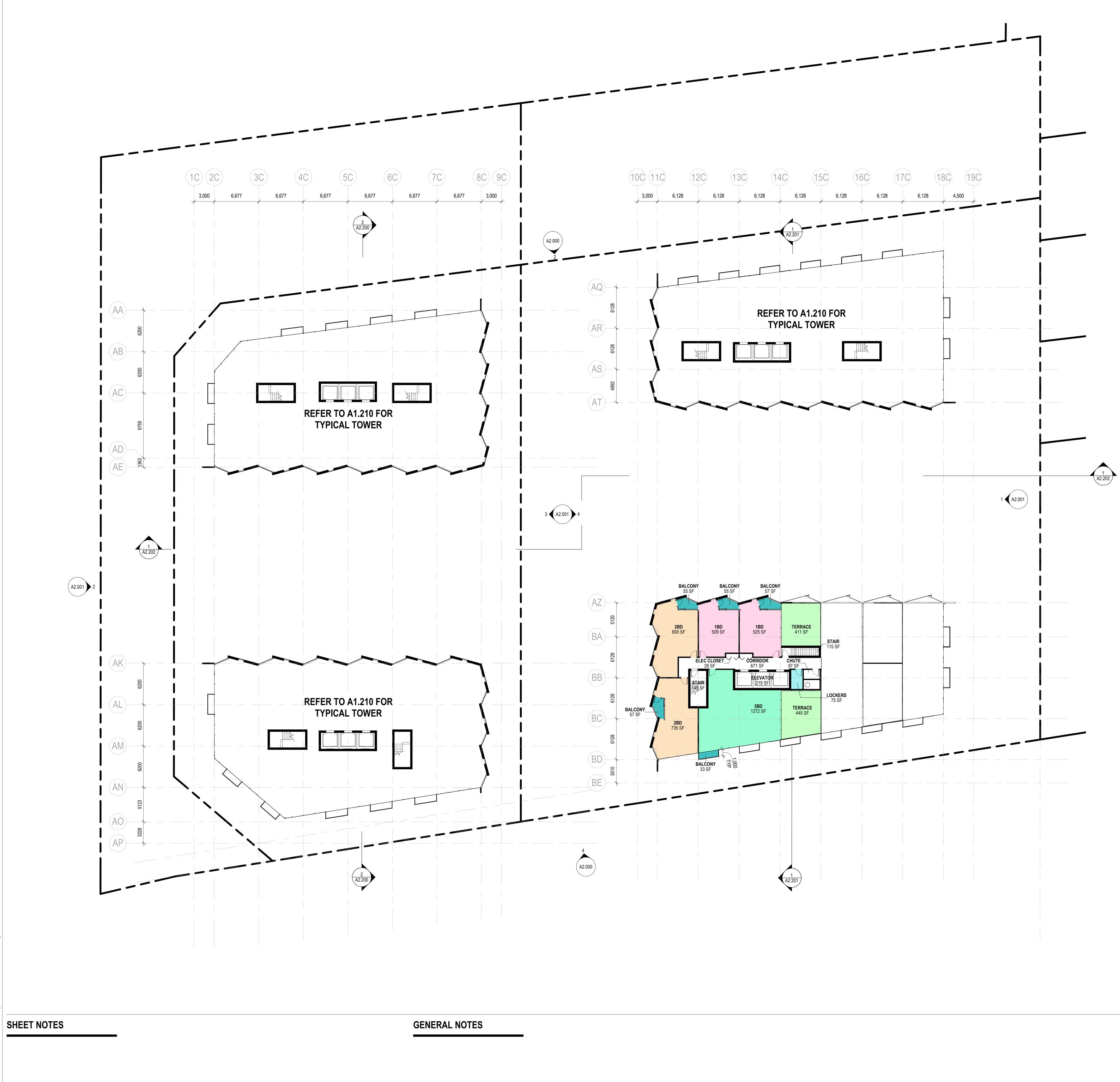
 \triangle Date Description

Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 22 - TOWER 4 STEPBACK

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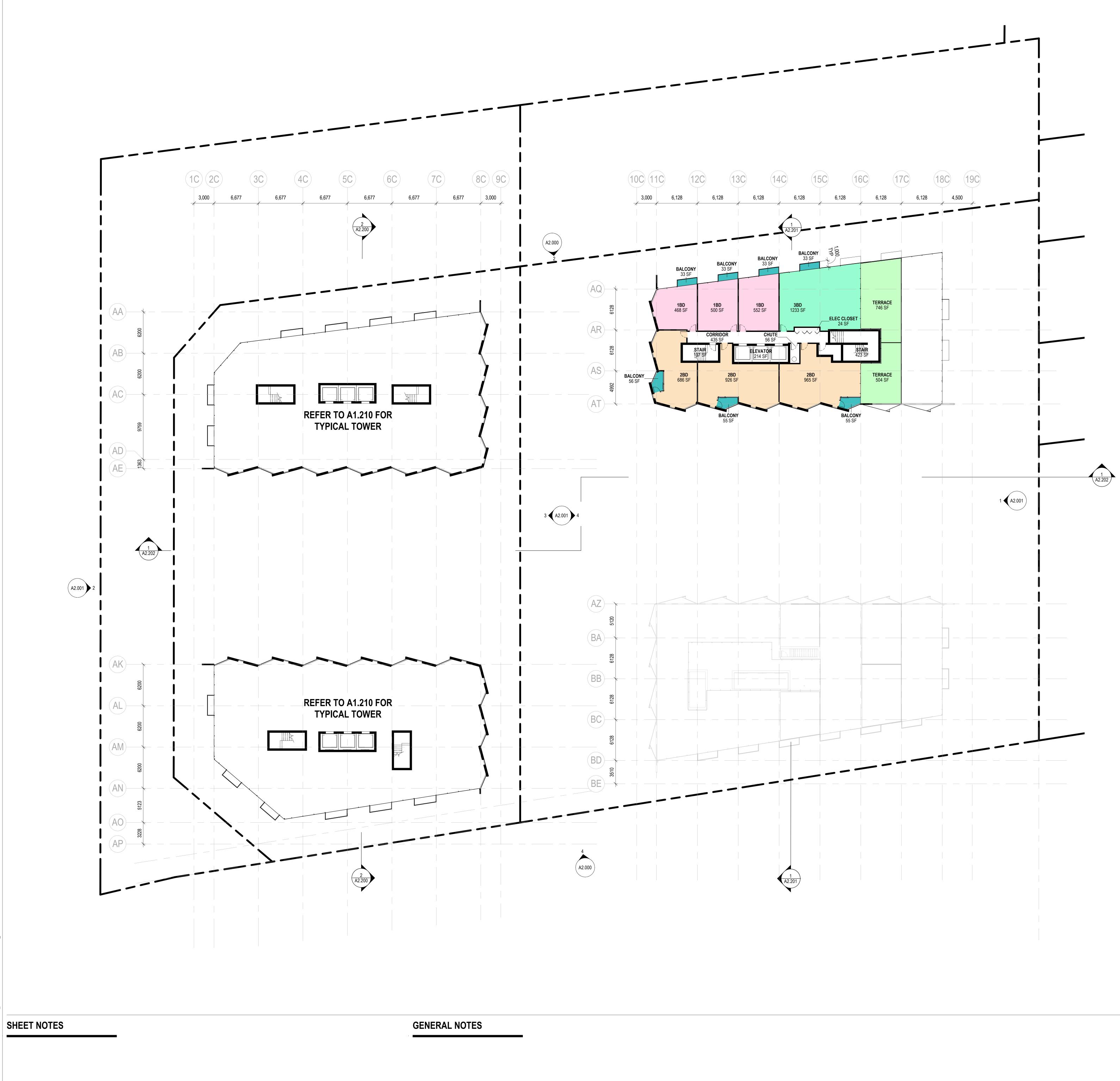
 \triangle Date Description

Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 23 - TOWER 4 STEPBACK

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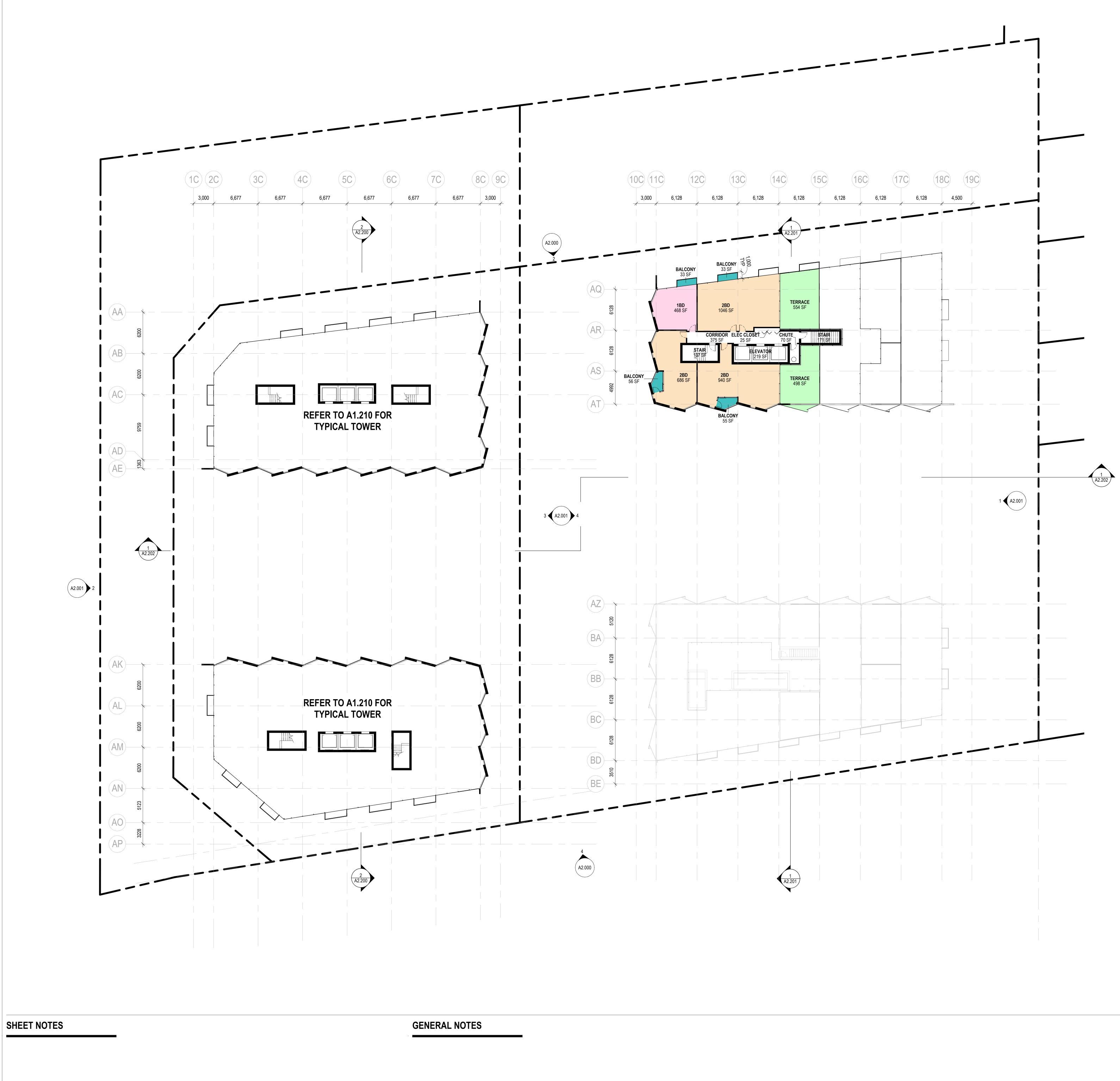
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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 24 - TOWER 3 STEPBACK

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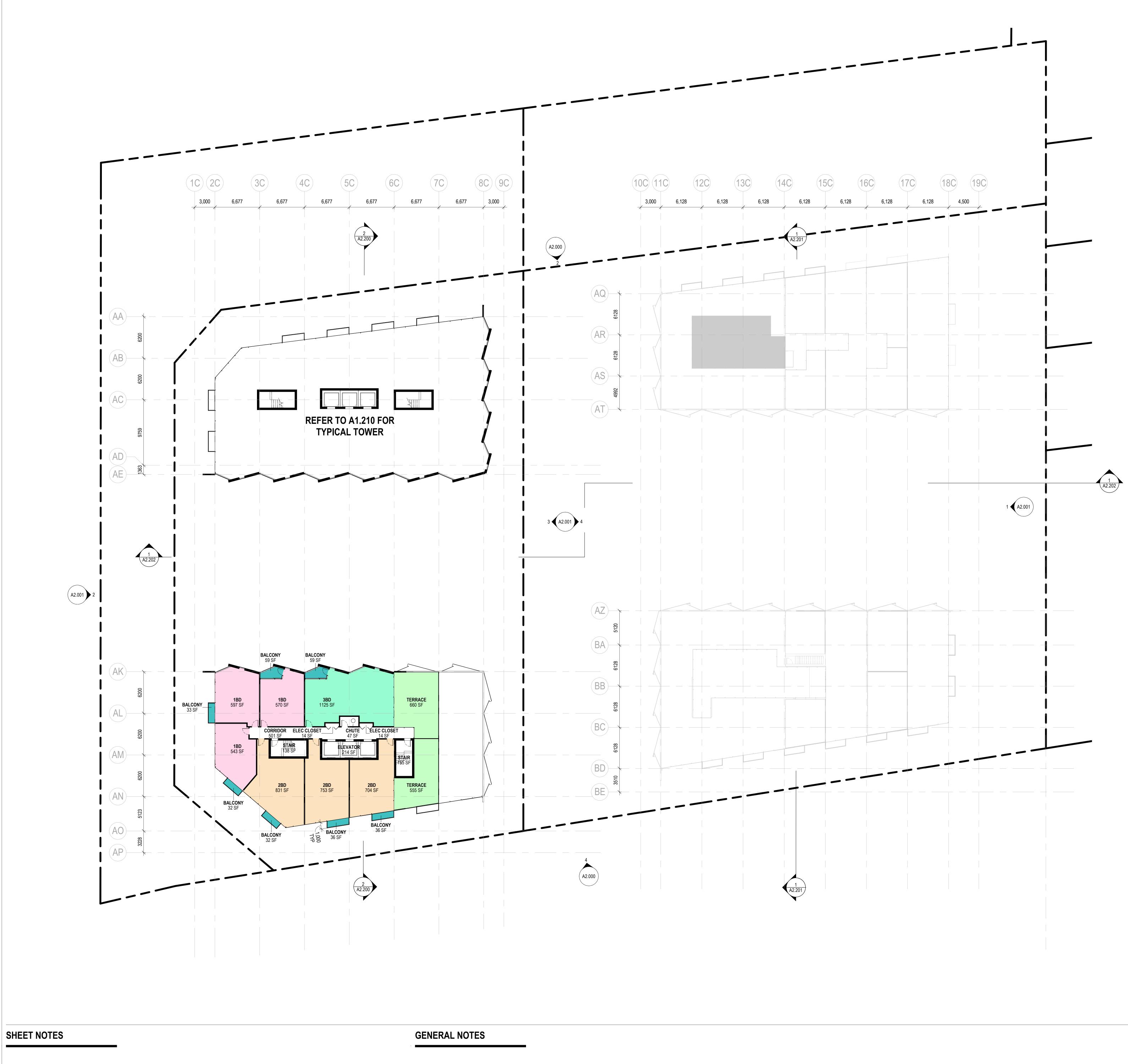
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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 25 - TOWER 3 STEPBACK

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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 26 - TOWER 2 STEPBACK

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 \triangle Date Description

Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 27 - TOWER 2 STEPBACK

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Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 28 - TOWER 1 STEPBACK

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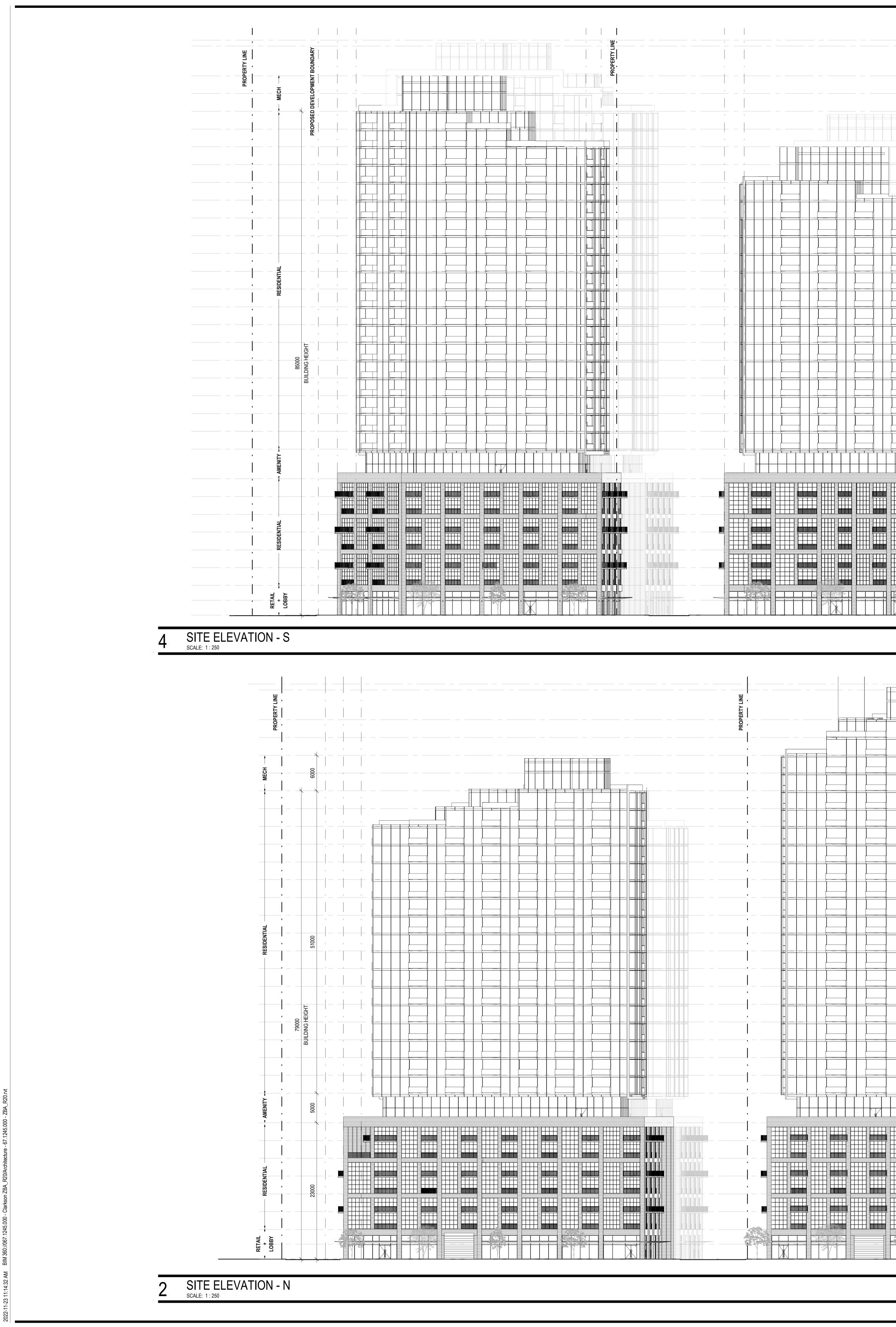
Date Description

Project Name CLARKSON GO

Project Number 067.1245.000 Description LEVEL 29 - TOWER 1 STEPBACK

Scale 1 : 200

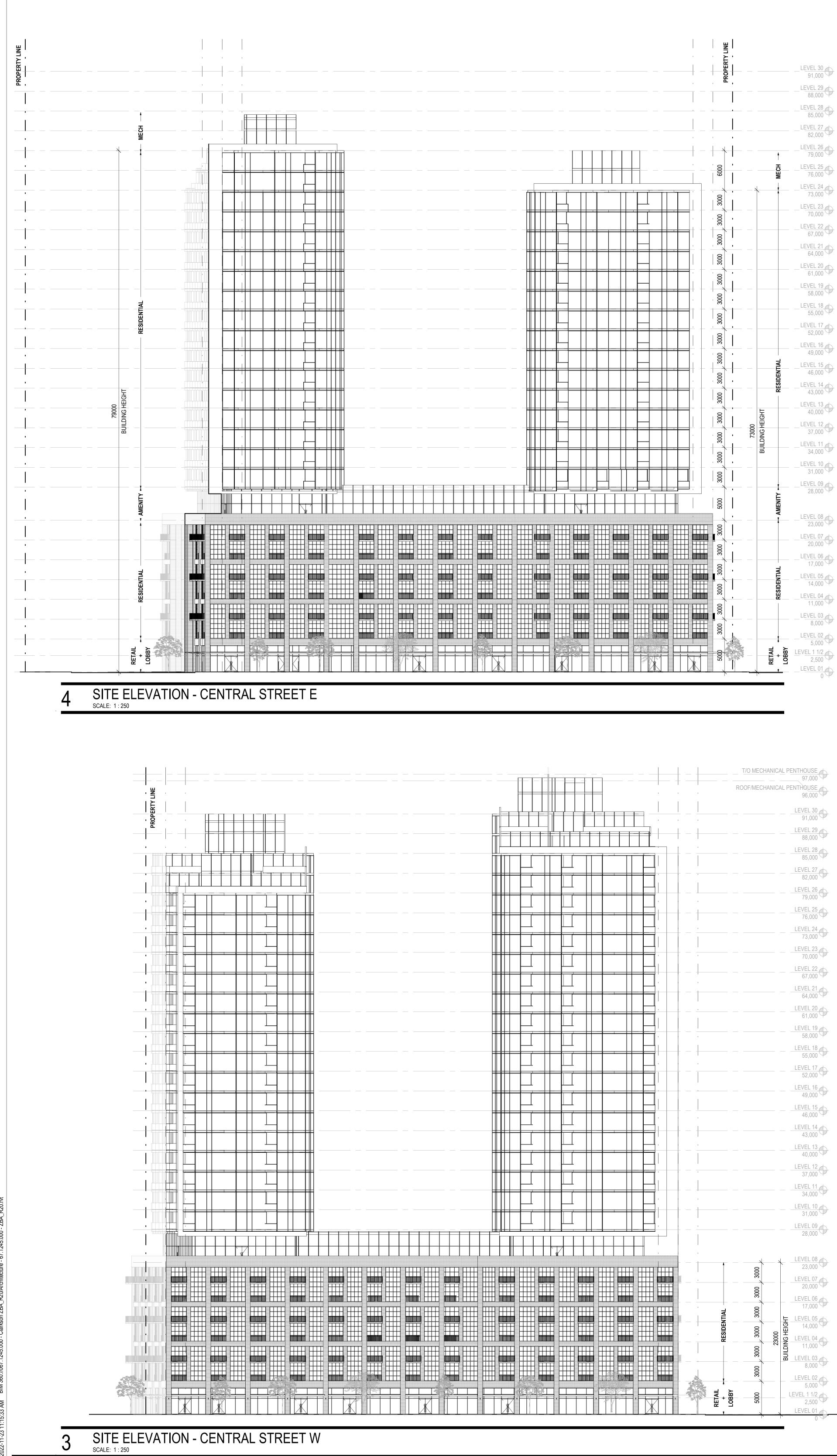
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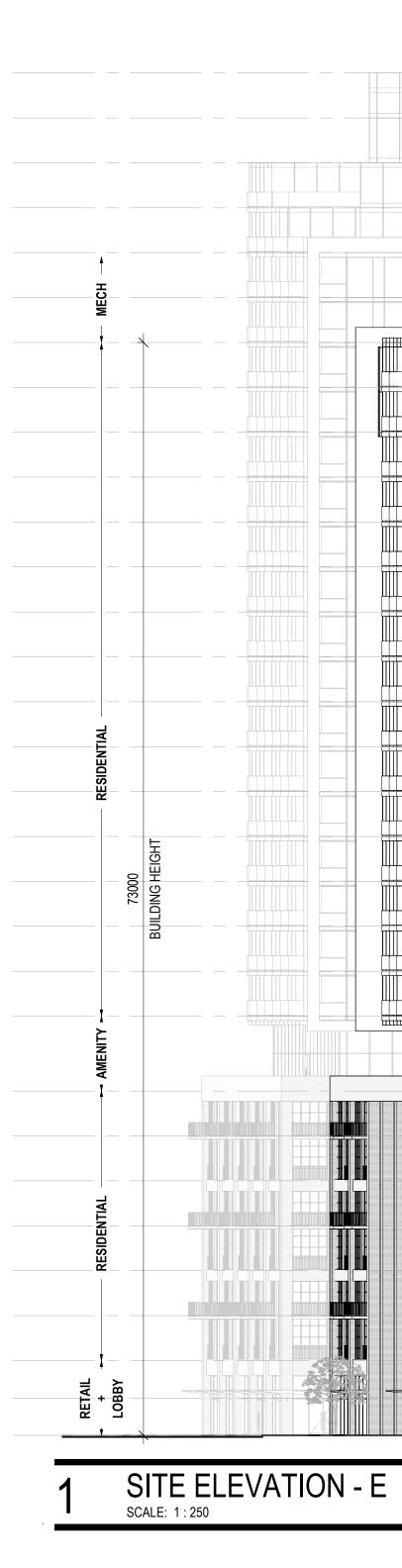


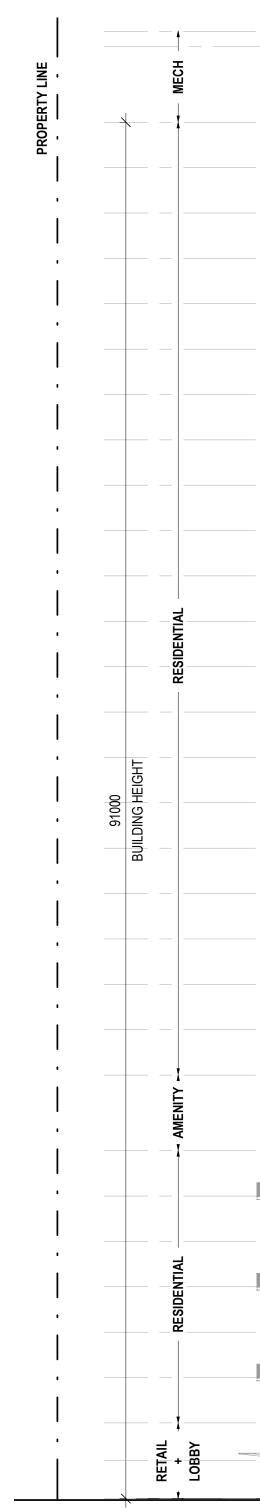
 T/O MECHANICAL PENTHOUSE 97,000 ROOF/MECHANICAL PENTHOUSE 96,000
ROOF/MECHANICAL PENTHQUSE 96,000
91,000 P
88,000
LEVEL 21
64,000 LEVEL 20
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PROPOSED DEVELOPMENT BOUNDARY	97,000
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	LEVEL 05 14,000 - LEVEL 04 11,000
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	LEVEL 1 1/2 2,500 LEVEL 01 0

SHEET NOTES	
	SLATE ASSET
	MANAGEMENT
	121 King St W Unit 200
	Toronto ON M5H 3T9
	Gensler
	150 King Street West Tel 416.601.3890 Suite 1400 Toronto, Ontario M5H 1J9]
	Canada
GENERAL NOTES	
GENERAL NUTES	
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	Seal / Signature
	Project Name
	CLARKSON GO
	Project Number
	067.1245.000 Description
	BUILDING ELEVATIONS
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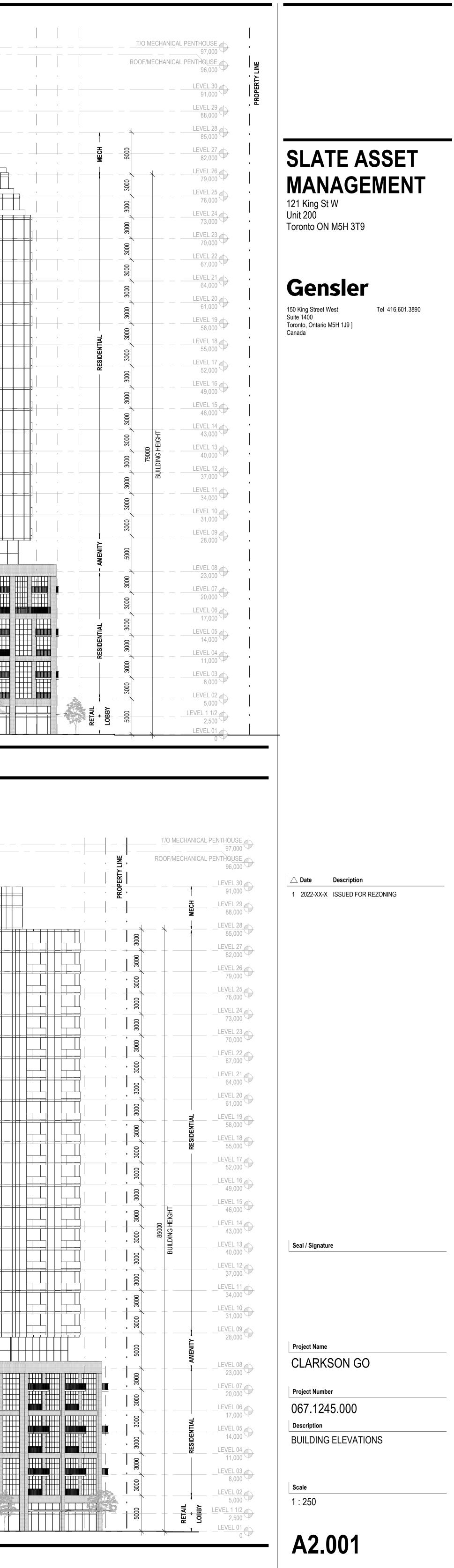
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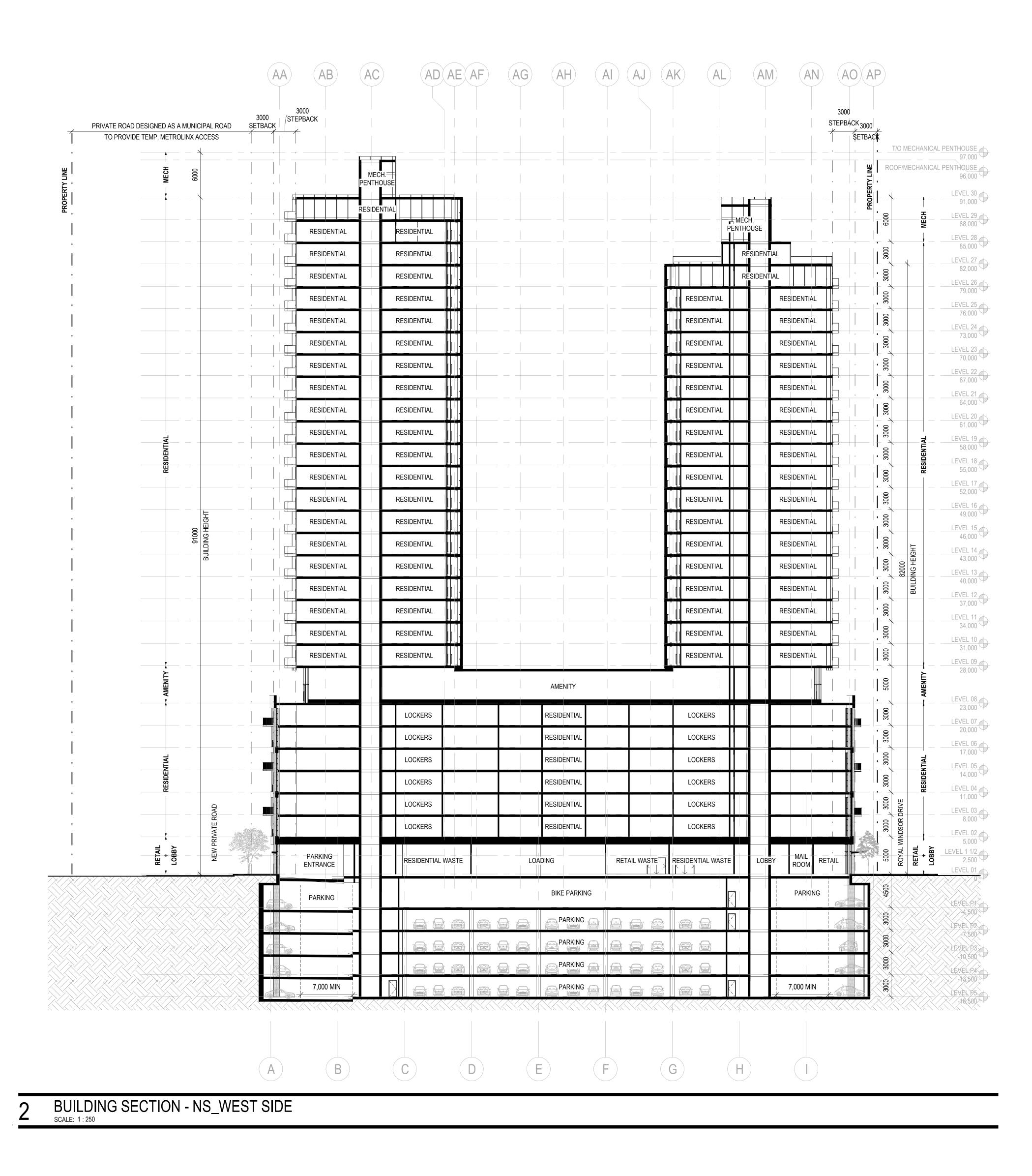
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SHEET NOTES



GENERAL NOTES

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Project Number 067.1245.000 Description BUILDING SECTIONS

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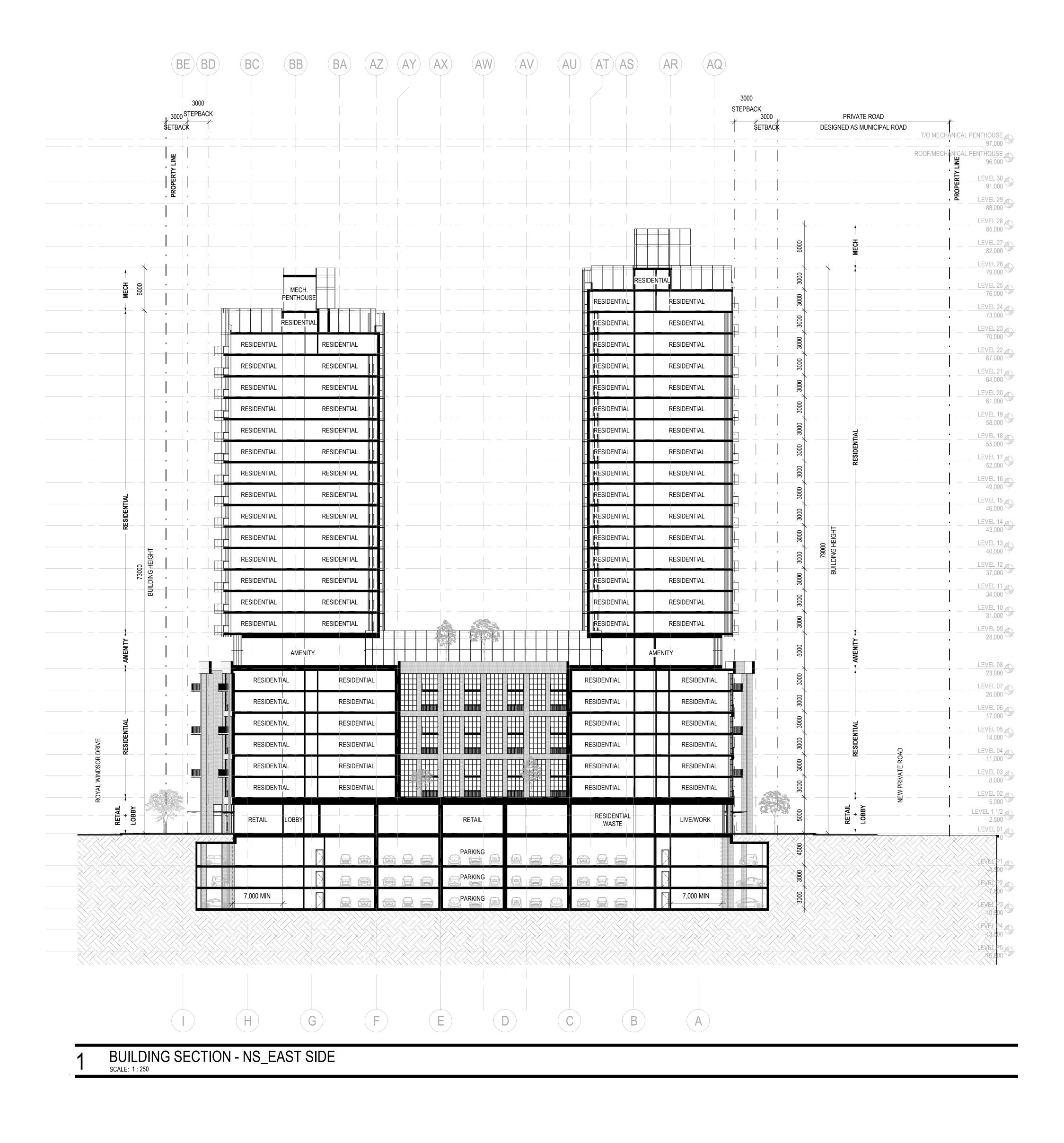
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KEY PLAN

Scale 1 : 250

SHEET NOTES

GENERAL NOTES



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△ Date Description

Project Name CLARKSON GO

Project Number 067.1245.000 Description **BUILDING SECTIONS**

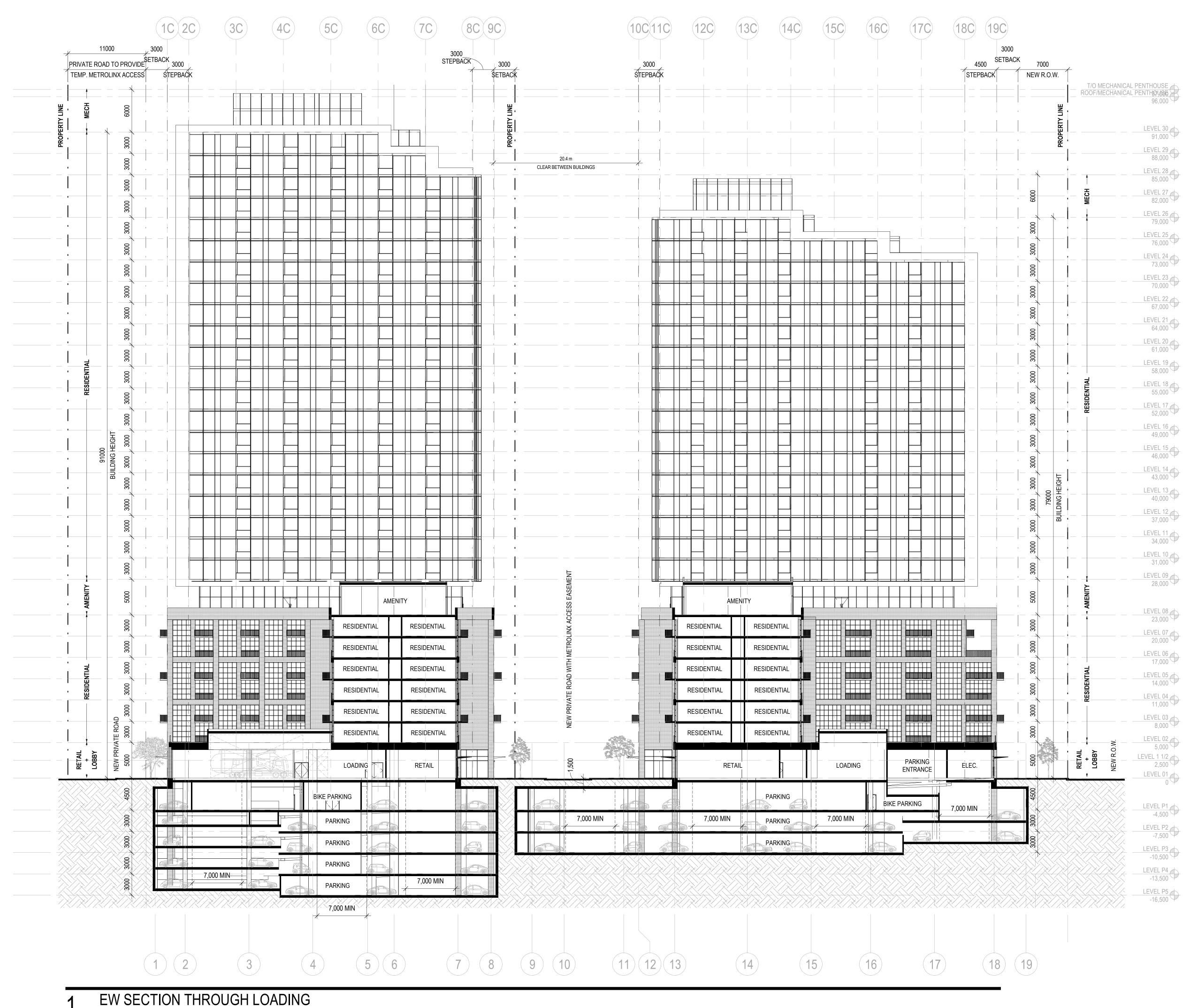
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SHEET NOTES



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GENERAL NOTES

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Project Name CLARKSON GO

Project Number 067.1245.000 Description **BUILDING SECTIONS**

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KEY PLAN

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