

Noise Feasibility Study

Proposed Residential Development

1755 Pickering Parkway

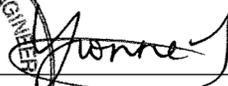
Toronto, Ontario

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1 Introduction and Summary

HGC Engineering was retained by Pickering Ridge Lands Inc. to conduct a noise feasibility study for a proposed residential development to be located at 1755 Pickering Parkway in Pickering, Ontario. The surrounding lands are a mixture of commercial and residential uses. The study is required by the municipality to support of the approvals and applications process by the City.

Rail traffic data was obtained from Metrolinx and Canadian National (CN) personnel. Road traffic data was obtained from the Regional Municipality of Durham, City of Pickering, and Ministry of Transportation (MTO) personnel. The data was used to predict future traffic sound levels at the locations of the proposed building facades and in the outdoor amenity areas. The predicted sound levels were compared to the guidelines of the Ministry of the Environment, Conservation and Parks (MECP), CN, GO Transit, Region and the Municipality.

The results of this study indicate that with suitable noise control measures integrated into the design of the buildings, it is feasible to achieve MECP guideline sound levels. Central air conditioning systems and upgrade glazing constructions will be required for the buildings. Associated acoustical requirements are specified in this report. Warning clauses are also recommended, to inform future residents of the traffic noise impacts and the proximity to commercial facilities.

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

2 Site Description and Noise Sources

Figure 1 is an aerial photo showing the proposed residential development and surrounding land uses. The site is located at 1755 Pickering Parkway in the City of Pickering, Ontario. Figure 2 shows the proposed site plan prepared by Turner Fleischer Architects Inc. dated March 14, 2022. The proposed development (Phase 1) will consist of Tower A1 (31-storey) and Towers A2 (31-storeys) above a 6-storey podium with four levels of underground parking. Appendix D includes preliminary floor plans and building elevations. A master plan of the entire site is provided in Appendix D. The current phase is identified as Phase 1. A road way is proposed to the north of Phase 1 with an 18.5 m right of way. Phase 2 is located to the east. There are proposed townhouse blocks proposed by others, south of Pickering Parkway.

A site visit was made by HGC Engineering personnel in February 2021, to make observations of the acoustical environment and to identify the significant noise sources in the vicinity. South of the site is Highway 401. The GO Transit GO Subdivision and CN Kingston Subdivision railway corridors are located further to the south. During the site visit, it was observed that road traffic on Highway 401 and rail traffic on the GO Transit and CN rail lines in the GO and Kingston Subdivisions, respectively, are the primary sources of noise. Road traffic on Brock Road and Pickering Parkway are secondary sources of noise. A commercial building is currently located on the subject site and will be demolished to make way for the proposed development. The surrounding area consists of residential and commercial uses. There is a Canadian Tire to the north with a loading area including 3 loading bays at the southeast of the building. High background sound levels due to Highway 401 and Brock Road exist on the Phase 1 site. Further, when the east/west roadway is completed, additional traffic volumes will contribute to background sound levels on the site. Existing commercial uses to the east will be demolished and are proposed to include future residential uses. West of the site across Brock Road are existing residential uses. Sounds from the commercial/retail buildings in the area were not noticeable over the rail and road traffic noise and are thus not anticipated to be an issue, but may at times be audible. A noise warning clause to this effect is outlined in Section 5.4.

3 Criteria for Acceptable Sound Levels

3.1 Traffic Noise Criteria

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

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

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

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

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

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

Warning clauses to notify future residents of possible excesses are required when nighttime sound levels exceed 50 dBA at the façade and daytime sound levels exceed 55 dBA in the outdoor living area or at the façade due to road and rail traffic. A central air conditioning system is required for dwellings where future nighttime sound levels outside bedroom/living/dining room windows will exceed 60 dBA or future daytime sound levels exceed 65 dBA.

GO Transit, CN and MECP guidelines recommend exterior walls built with brick veneer or a masonry equivalent construction as a minimum for any dwellings which are within 100 m of the right of way of the railway.

4 Traffic Sound Level Assessment

4.1 Road Traffic Data

Road traffic data for Highway 401 was obtained from the Ministry of Transportation (MTO) in the form of a Summer Average Daily Traffic (SADT) volume. A speed limit of 100 km/h was applied for Highway 401. A commercial vehicle percentage of 12.0% was obtained from MTO personnel and split into 4.6% medium trucks and 7.4% heavy trucks, along with a day-night split of 66%/34%. The road traffic data was projected to the year 2032 using a 2.5% per year growth rate.

Traffic data for Brock Road was obtained from the Region of Durham in the form of ultimate Average Annual Daily Traffic (AADT) values. An ultimate AADT of 40 000 vehicles per day was applied for the analysis. A commercial vehicle percentage of 12% and was further split into 8.4% heavy trucks and 3.6% medium trucks. A posted speed limit of 60 km/h and a day-night split of 90%/10% was also used.

Traffic data for Pickering Parkway was obtained from the City of Pickering in the form hourly

counts. Commercial vehicle percentages were split into 4.4% heavy trucks and 4.4% medium trucks. The road traffic data was projected to the year 2032 using a 2.5% per year growth rate. The posted speed limit of 50 km/h and a 90% day / 10% night split was assumed for the roadways.

Table II summarizes the traffic volume data used in the analysis. Road traffic data is provided in Appendix B.

Table II: Ultimate and Projected Traffic Data to Year 2032

Road Name		Cars	Medium Trucks	Heavy Trucks	Total
Highway 401 <i>(projected)</i>	Daytime	264 969	13 851	22 281	301 101
	Night time	29 441	1 539	2 476	33 456
	Total	294 410	15 390	24 757	334 557
Brock Road <i>(ultimate)</i>	Daytime	31 680	1 296	3 024	36 000
	Night time	3 520	144	336	4 000
	Total	35 200	1 440	3 360	40 000
Pickering Parkway <i>(projected)</i>	Daytime	12 151	586	586	13 323
	Night time	1 350	65	65	1 480
	Total	13 501	651	651	14 803

4.2 Rail Traffic Data

Rail traffic data for the GO Transit GO Subdivision and the CN Kingston Subdivision were obtained from Metrolinx and CN personnel and are attached in Appendix C. The CN rail line is used for passenger, way freight and freight trains. CN data was projected to the year 2032, using a 2.5% per year growth rate.

The GO Transit rail line is used for passenger trains. The Metrolinx rail traffic was forecast to include both diesel and electric locomotives, as indicated in the data included in Appendix C. Despite this, direction has been given from Metrolinx to assume that all trains are to be equivalent to diesel trains for the purposes of acoustical analysis. The data was further split into trains that operate with one or two locomotives. The GO Transit are already expressed as 10-year future volumes.

In conformance with CN and Metrolinx assessment requirements, the maximum speeds, maximum number of cars and locomotives per train were used in the traffic noise analysis to yield a worst case

estimate of train noise. The predicted daytime and nighttime volumes (including the number of locomotives and cars) and provided speeds are presented below in Table III.

Table III: Projected/Forecasted Rail Traffic Data to Year 2032 +

Subdivision	Type of Train +	Maximum Number of Locomotives	Maximum Number of Cars	Maximum Speed (km/h) *	Current Volume Day/Night	Future Volume Day/Night
GO <i>(forecasted)</i>	GO (Diesel)	1	12	137	--	29/8
	GO (Diesel)	2	12	137	--	21/1
	GO (Electric)	1	12	137	--	88/18
	GO (Electric)	2	12	137	--	42/8
Kingston <i>(projected)</i>	Freight	4	140	105	12/4	15/5
	Way Freight	4	25	105	0/4	0/5
	Passenger	2	10	155	34/1	44/1

Note:

+ All GO trains are modelled as diesel trains as per direction from Metrolinx.

*Maximum speed of 150 km/h used in STAMSON

4.3 Road and Rail Traffic Noise Predictions

To assess the levels of road and rail traffic noise which will impact the study area in the future, noise predictions were made using STAMSON version 5.04, a computer algorithm developed by the MECP. Sample STAMSON output is included in Appendix E.

Predictions of the traffic sound levels were made at representative façades shown on the proposed site plan, as shown in Figure 2. The distance setbacks indicated on the site plan along with aerial photos were used for the analysis. Table IV summarizes the predicted sound levels at each of the sound level prediction locations.

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

Building	Prediction Location	Description	Daytime Road/Rail/ Total L _{EQ-16 hr}	Nighttime Road/Rail/ Total L _{EQ-16 hr}
Podium	A	South façade	74 / 68 / 75	73 / 64 / 73
	B	West façade	73 / 66 / 74	71 / 63 / 72
	C	North façade	67 / <55 / 67	61 / <50 / 61
	D	East Façade	72 / 68 / 74	72 / 64 / 73
Tower A1	E	South façade	76 / 70 / 77	76 / 67 / 76
	F	West façade	75 / 67 / 75	73 / 64 / 74
	G	North façade	68 / <55 / 68	61 / <50 / 61
	H	East Façade	73 / 67 / 74	73 / 64 / 73
Tower A2	I	South façade	75 / 70 / 76	75 / 67 / 75
	J	West façade	72 / 65 / 72	70 / 62 / 71
	K	North façade	70 / 65 / 71	70 / 62 / 71
	L	East Façade	75 / 70 / 76	75 / 67 / 75

The preliminary plans indicate that there will be outdoor amenity spaces on the 7th floor. Figure 2b shows the locations of the receivers used to evaluate the predicted future noise levels in these areas. The results are summarized in Table V.

Table V: Future Sound Level at OLA's, [dBA]

Receiver	Location	Daytime L _{EQ} (16 hr)
R1*	7/F	64
R2*	7/F	58
R3*	7/F	65

Note:

* Assuming a standard 1.07 m high parapet or solid railing.

5 Discussion and Recommendations

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

5.1 Outdoor Living Areas

The predicted sound level in the amenity spaces on the 7th floor (R1 and R3) were predicted to be up to 65 dBA, 10 dBA in excess of the MECP limit of 55 dBA, assuming a 1.07 m high solid parapet or guard around the area. Physical mitigation in the form of an acoustic barrier is required at these areas. An acoustic barrier 2.0 m in height along the east and west sides of the perimeter, is recommended to reduce sound levels to 60 dBA. The locations of the acoustic barriers are provided in Figure 3.

An acoustic barrier may be a combination of an acoustic wall and an earth berm. The wall component of the barrier should be of a solid construction with a surface density of no less than 20 kg/m². The walls may be constructed from a variety of materials such as glass, wood, brick, pre-cast concrete or other concrete/wood composite systems provided that it is free of gaps or cracks. The heights and extents of the barriers should be chosen to reduce the sound levels in the OLA's to below 60 dBA and as close to 55 dBA as is technically, administratively and economically feasible, subject to the approval of the municipality respecting any applicable fence height by-laws.

The proposed residential buildings will generally include balconies and/or terraces less than 4 meters in depth. These balconies and terraces are not considered as OLA's under MECP guidelines, and therefore are exempt from traffic noise assessment.

5.2 Indoor Living Areas and Ventilation Requirements

The predicted future nighttime sound levels outside the plane of the bedroom/living/dining room windows of all of the façades with exposure to the highway and railways are greater than 60 dBA. Due to the proximity of this development to Highway 401, all residential units should be equipped with central air conditioning.

5.3 Building Façade Constructions

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

Calculations have been performed to determine options for building envelope constructions required

to maintain indoor sound levels within MECP guidelines. The calculation methods were developed by the National Research Council (NRC), and are based on the predicted outdoor sound levels and the anticipated area of the exposed facade components (walls, windows and doors) relative to the floor area of the adjacent room.

Acoustical Requirements for Glazing

Detailed floor plans and elevations are not yet available for this development. Assuming a typical window to floor area of 50% for the living/dining rooms (40% fixed and 10% operable) and 25% for the bedrooms (20% fixed and 5% operable), the minimum acoustical requirement for the window glazing of the proposed residential buildings, including glass in fixed sections, sliding doors, and operable windows. In an urban environment such as this, we do not typically recommend less than STC-33. Awning windows, and swing or sliding doors to balconies should have tight seals sufficient to achieve similar acoustical performance ratings. Based on the calculations and the stated assumptions, this minimum rating is recommended for all façades of the proposed buildings. Preliminary STC requirements for the buildings are included in Table VI below.

Table VI: Minimum STC Requirements for Glazing at Specific Facades¹

Building	Description	Glazing STC ^{2,3}
Podium	South façade	STC-37
	West façade	STC-36
	North façade	STC-33
	East Façade	STC-37
Tower A1	South façade	STC-40
	West façade	STC-37
	North façade	STC-33
	East Façade	STC-37
Tower A2	South façade	STC-40
	West façade	STC-35
	North façade	STC-33
	East Façade	STC-40

Note:

¹ The calculated STC requirements assume insignificant sound transmission through the walls.

² Based on 50% window to floor area ratio for living rooms and 25% window to floor area ratio for bedrooms.

³ STC requirement refers to installed performance, including sound transmitted through mullions in window-wall systems and seals on operable windows and doors. Test data should be provided where available.

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

The south facades of both residential buildings require high STC ratings. To reduce the STC ratings for the glazing, considered should be given to the following during the design of the suites: minimize the window to floor area ratios and consideration of no sliding patio doors in bedrooms.

Further Review

When detailed floor plans and building elevations are available for the proposed buildings, a review should be conducted to determine the required glazing and building façade constructions based on actual window to floor area ratios.

5.4 Warning Clauses

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

Type A:

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

Type B:

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

Type C:

Purchasers are advised that due to the proximity of the adjacent commercial facilities, sound levels from the facilities may at times be audible.

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

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

Type D:

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

CN's standard warning clause for residential developments located near a principal main line is provided below. The following sample clause is typical of those included in agreements of purchase and sale or lease on the Lands that are within 300 meters of the railway right-of-way.

Type E:

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



6 Impact of the Development on the Environment

Sound levels from noise sources such as rooftop air-conditioners, cooling towers, exhaust fans, etc. should not exceed the minimum one-hour L_{EQ} ambient (background) sound level from road traffic, at any potentially impacted residential point of reception, to comply with MECP guidelines. Based on the levels observed during our site visit, the typical minimum ambient sound levels in the area are expected to be 50 dBA or more during the day and 45 dBA at night. Thus, any electro-mechanical equipment associated with this development (e.g. emergency generator testing, fresh-air handling equipment, etc.) should be designed such that they do not result in noise impact beyond these ranges.

7 Impact of the Development on Itself

Section 5.8.1.1 of the Ontario Building Code (OBC), released on January 1, 2020, specifies the minimum required sound insulation characteristics for demising partitions, in terms of Sound Transmission Class (STC) or Apparent Sound Transmission Class (ASTC) values. In order to maintain adequate acoustical privacy between separate suites in a multi-tenant building, inter-suite walls must meet or exceed STC-50 or ASTC-47. Suite separation from a refuse chute or elevator shaft must meet or exceed STC-55. In addition, it is recommended that the floor/ceiling constructions separating suites from any amenity or commercial spaces also meet or exceed STC-55. Tables 1 and 2 in Section SB-3 of the Supplementary Guideline to the OBC provide a comprehensive list of constructions that will meet the above requirements. Tarion's Builder Bulletin B19R requires the internal design of condominium projects to integrate suitable acoustic features to insulate the suites from noise from each other and amenities in accordance with the OBC, and limit the potential intrusions of mechanical and electrical services of the building on its residents. If B19R certification is needed, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising constructions and mechanical/electrical equipment, when available, to help ensure that the noise impact of the development on itself is maintained within acceptable levels.



8 Summary

The following list summarizes the recommendations made in this report.

1. Central air conditioning systems will be required for the proposed residential buildings.
2. Upgraded glazing constructions will be required at the façades of the proposed buildings as specified in Section 5.3.
3. A 2.0 m high acoustic barrier is required along the east and west sides of the outdoor amenity area on the 7th floor.
4. Noise warning clauses are required in the condominium documents. Some recommended clauses are provided herein.
5. A detailed noise study should be performed when detailed floor plans and building elevations are available to refine glazing requirements based on actual window to floor area ratios.
6. Tarion Builders Bulletin B19R requires that the internal design of condominium projects integrates suitable acoustic features to insulate the suites from noise from each other and amenities in accordance with the OBC, and limit the potential intrusions of mechanical and electrical services of the buildings on its residents. If B19R certification is to be sought, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising constructions, when available, to help ensure that the noise impact of the development on itself is maintained within acceptable levels.

8.1 Implementation

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

- 1) Prior to an application for a building permit, the Municipality's Building Department or a Professional Engineer qualified to provide acoustical engineering services in Ontario shall review the building elevations for future dwellings to ensure that the glazing and exterior wall constructions are adequately designed to ensure acceptable indoor noise levels.

- 2) Prior to assumption for this development, the Municipality's building inspector or a Professional Engineer qualified to provide acoustical engineering services in the Province of Ontario shall certify that the noise control measures for the dwellings units have been properly installed and constructed.



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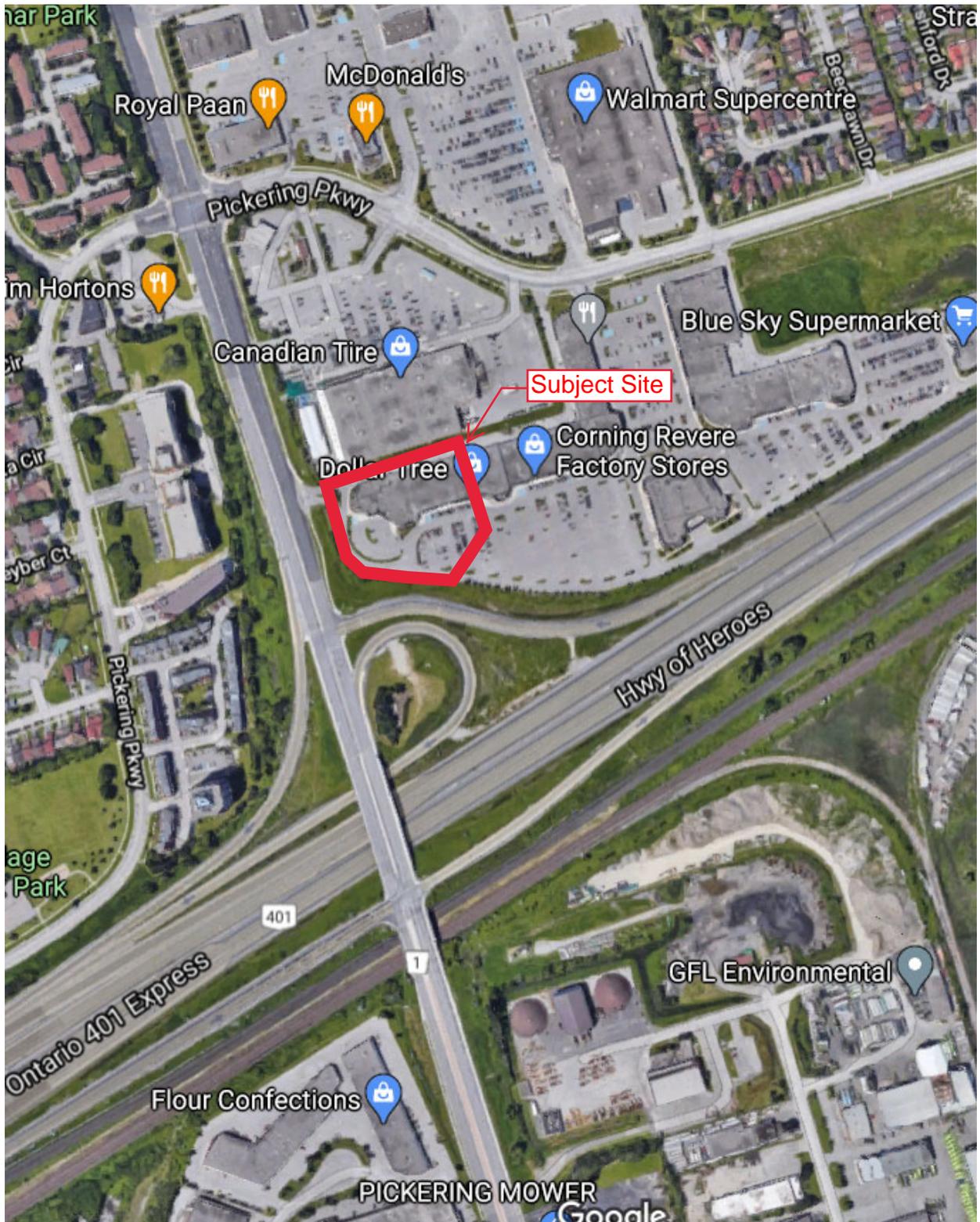


Figure 1: Key Plan

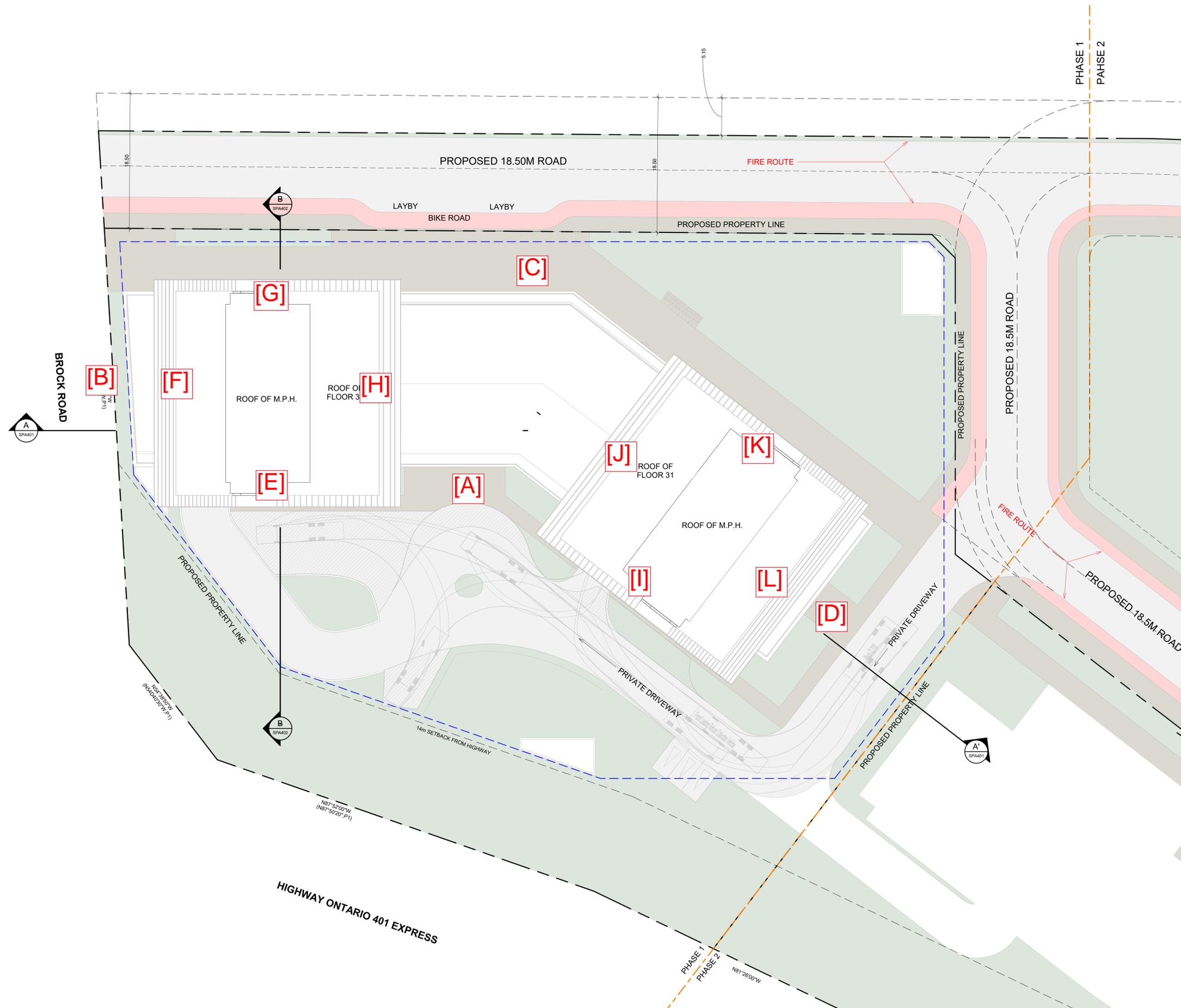


Figure 2: Proposed Site Plan Showing Receptor Locations

#	DATE	DESCRIPTION	BY
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PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
ROOF PLAN

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
1 : 250



DRAWING NO.
SPA158

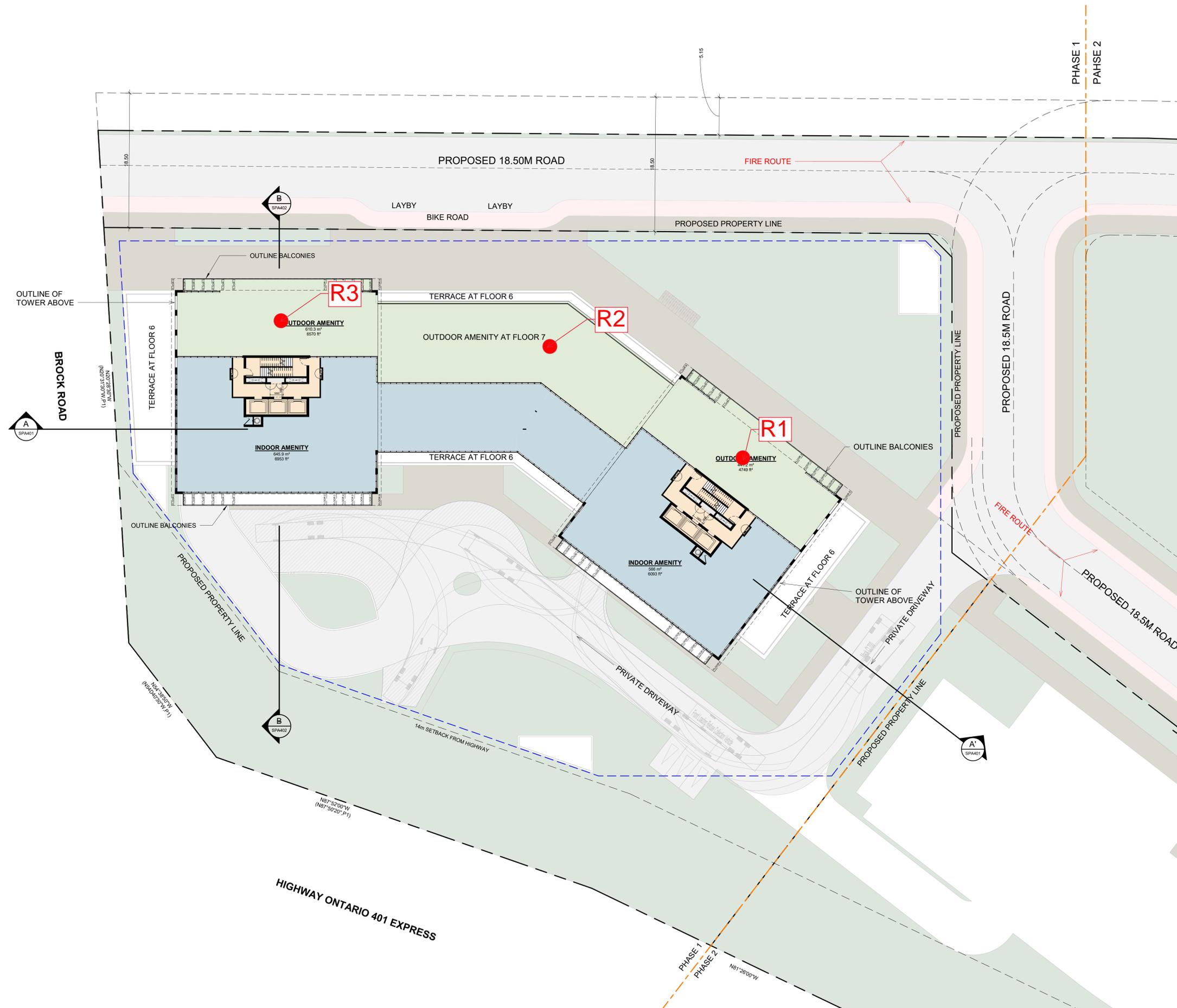


Figure 2b: Proposed 7th Plan OLA Receptor Locations

#	DATE	DESCRIPTION	BY
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PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
FLOOR 07

PROJECT NO. 06.037RZ	DRAWING NO. SPA154
PROJECT DATE 2022-03-14	
DRAWN BY AAF	
CHECKED BY AYU	
SCALE 1 : 250	



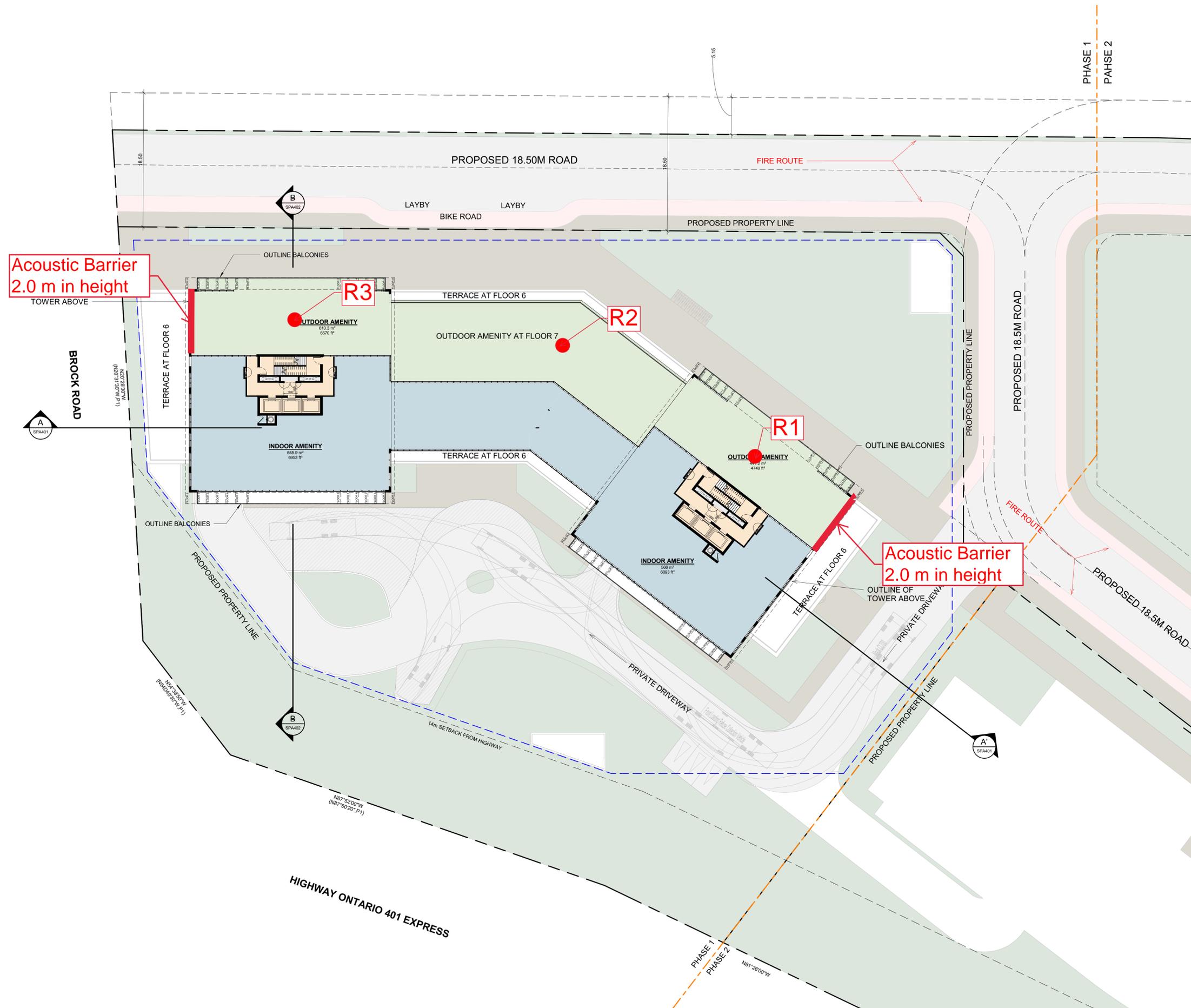


Figure 3: Acoustic Barrier Locations

#	DATE	DESCRIPTION	BY
PROJECT PICKERING DESIGN CENTRE (BLOCK 1) 1775 PICKERING PARKWAY PICKERING, ON.			
DRAWING FLOOR 07			
PROJECT NO.	06.037RZ		
PROJECT DATE	2022-03-14		
DRAWN BY	AAF		
CHECKED BY	AYU		
SCALE	1 : 250		
		DRAWING NO.	
		SPA154	

APPENDIX A

Principal Mainline Requirements



PRINCIPAL MAIN LINE REQUIREMENTS FOR NEW DEVELOPMENT

- A. Safety setback of dwellings from the railway rights-of-way to be a minimum of 30 metres in conjunction with a safety berm. The safety berm shall be adjoining and parallel to the railway rights-of-way with returns at the ends, 2.5 metres above grade at the property line, with side slopes not steeper than 2.5 to 1.
- B. Noise attenuation barrier shall be adjoining and parallel to the railway rights-of-way, having returns at the ends, and a minimum total height of 5.5 metres above top-of-rail. Acoustic fence to be constructed without openings and of a durable material weighing not less than 20 kg. per square metre of surface area. Subject to the review of the noise report, GO Transit may consider other measures recommended by an approved Noise Consultant.
- C. Ground-borne vibration transmission to be evaluated in a report through site testing to determine if dwellings within 75 metres of the railway rights-of-way will be impacted by vibration conditions in excess of 0.14 mm/sec RMS between 4 Hz and 200 Hz. The monitoring system should be capable of measuring frequencies between 4 Hz and 200 Hz, ± 3 dB with an RMS averaging time constant of 1 second. If in excess, isolation measures will be required to ensure living areas do not exceed 0.14 mm/sec RMS on and above the first floor of the dwelling.
- D. The Owner shall install and maintain a chain link fence of minimum 1.83 metre height along the mutual property line.
- E. The following clause should be inserted in all development agreements, offers to purchase, and agreements of Purchase and Sale or Lease of each dwelling unit within 300m of the railway right-of-way.

Warning: Metrolinx, carrying on business as GO Transit, and its assigns and successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that GO Transit or any railway entering into an agreement with GO Transit to use the right-of-way or their assigns or successors as aforesaid may expand their operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). Metrolinx will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way.

- F. Any proposed alterations to the existing drainage pattern affecting the railway right-of-way must receive prior concurrence from GO Transit and be substantiated by a drainage report to the satisfaction of GO Transit.
- G. The Owner shall through restrictive covenants to be registered on title and all agreements of purchase and sale or lease provide notice to the public that the safety berm, fencing and vibration isolation measures implemented are not to be tampered with or altered and further that the Owner shall have sole responsibility for and shall maintain these measures to the satisfaction of GO Transit.
- H. The Owner enter into an Agreement stipulating how GO Transit's concerns will be resolved and will pay GO Transit's reasonable costs in preparing and negotiating the agreement.
- I. The Owner may be required to grant GO Transit an environmental easement for operational emissions, registered on title against the subject property in favour of GO.



PRINCIPAL MAIN LINE REQUIREMENTS

- A. Safety setback of dwellings from the railway rights-of-way to be a minimum of 30 metres in conjunction with a safety berm. The safety berm shall be adjoining and parallel to the railway rights-of-way with returns at the ends, 2.5 metres above grade at the property line, with side slopes not steeper than 2.5 to 1.
- B. The Owner shall engage a consultant to undertake an analysis of noise. At a minimum, a noise attenuation barrier shall be adjoining and parallel to the railway rights-of-way, having returns at the ends, and a minimum total height of 5.5 metres above top-of-rail. Acoustic fence to be constructed without openings and of a durable material weighing not less than 20 kg. per square metre of surface area. Subject to the review of the noise report, the Railway may consider other measures recommended by an approved Noise Consultant.
- C. Ground-borne vibration transmission to be evaluated in a report through site testing to determine if dwellings within 75 metres of the railway rights-of-way will be impacted by vibration conditions in excess of 0.14 mm/sec RMS between 4 Hz and 200 Hz. The monitoring system should be capable of measuring frequencies between 4 Hz and 200 Hz, ± 3 dB with an RMS averaging time constant of 1 second. If in excess, isolation measures will be required to ensure living areas do not exceed 0.14 mm/sec RMS on and above the first floor of the dwelling.
- D. The Owner shall install and maintain a chain link fence of minimum 1.83 metre height along the mutual property line.
- E. The following clause should be inserted in all development agreements, offers to purchase, and agreements of Purchase and Sale or Lease of each dwelling unit within 300m of the railway right-of-way: "Warning: Canadian National Railway Company or its assigns or successors in interest has or have a rights-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the railway facilities on such rights-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). CNR will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid rights-of-way."
- F. Any proposed alterations to the existing drainage pattern affecting railway property must receive prior concurrence from the Railway and be substantiated by a drainage report to the satisfaction of the Railway.
- G. The Owner shall through restrictive covenants to be registered on title and all agreements of purchase and sale or lease provide notice to the public that the safety berm, fencing and vibration isolation measures implemented are not to be tampered with or altered and further that the Owner shall have sole responsibility for and shall maintain these measures to the satisfaction of CN.
- H. The Owner enter into an Agreement stipulating how CN's concerns will be resolved and will pay CN's reasonable costs in preparing and negotiating the agreement.
- I. The Owner may be required to grant CN an environmental easement for operational noise and vibration emissions, registered against the subject property in favour of CN.

March 2002

APPENDIX B

Road Traffic Data

Highway	Location Description	Dist. (KM)	Year	Pattern Type	AADT	SADT	SAWDT	WADT	AR
			2007	C	160,300	178,100	180,600	144,000	1.0
			2008	C	162,900	179,800	177,300	146,200	1.0
			2009	C	165,400	182,500	184,300	148,900	0.9
			2010	C	168,000	185,100	186,800	151,200	0.7
			2011	C	170,600	187,600	189,400	153,500	N/A
			2012	C	173,200	190,500	187,000	155,800	N/A
			2013	C	175,800	193,300	191,600	158,200	N/A
			2014	C	188,000	206,800	201,200	169,200	N/A
			2015	C	205,000	225,500	219,400	184,500	N/A
			2016	C	210,000	231,000	224,700	189,000	N/A
401	BROCK RD IC-399-REG RD 1-PICKERING	1.7	1988	SC	108,500	120,400	120,400	97,600	0.8
			1989	SC	110,000	122,100	123,200	98,900	0.8
			1990	SC	118,800	131,800	131,800	106,900	0.7
			1991	SC	113,000	124,300	125,400	102,800	1.0
			1992	SC	114,500	123,600	127,000	106,400	0.6
			1993	SC	116,500	125,800	129,300	107,100	1.1
			1994	SC	124,700	135,900	139,700	112,200	0.8
			1995	SC	128,100	138,300	143,500	117,900	0.8
			1996	SC	131,500	147,900	149,900	118,500	0.9
			1997	SC	134,800	151,700	153,700	121,500	0.9
			1998	SC	138,200	155,500	156,000	124,500	0.7
			1999	SC	148,000	167,200	167,100	133,300	1.0
			2000	SC	151,600	170,600	171,200	136,600	0.8
			2001	SC	156,500	176,800	176,800	140,900	0.8
			2002	SC	161,400	180,800	182,100	145,200	0.7
			2003	SC	172,000	180,600	201,200	151,400	0.8
			2004	SC	180,000	190,100	210,000	159,300	0.8
			2005	SC	189,000	200,100	220,700	166,300	0.9
			2006	SC	187,100	198,000	218,700	165,000	0.6
			2007	SC	190,700	201,600	220,500	167,700	0.9
			2008	SC	194,300	203,800	192,200	170,900	0.8
			2009	SC	202,300	213,600	236,700	178,400	0.6
			2010	SC	201,500	213,100	235,900	177,700	0.7

Highway	Location Description	Dist. (KM)	Year	Pattern Type	AADT	SADT	SAWDT	WADT	AR
			2011	SC	212,300	271,800	248,400	169,900	N/A
			2012	SC	217,700	230,700	217,700	191,600	N/A
			2013	SC	223,000	236,400	214,100	196,300	N/A
			2014	SC	213,000	225,800	219,400	187,400	N/A
			2015	SC	220,000	233,200	226,600	193,600	N/A
			2016	SC	223,000	236,400	229,700	196,200	N/A
401	LIVERPOOL RD IC-397-REG RD 29-PICKERING	2.5	1988	C	122,000	135,400	135,400	109,700	0.7
			1989	C	125,100	138,900	140,100	112,600	0.8
			1990	C	128,300	142,400	142,400	115,500	0.6
			1991	C	131,400	144,500	145,900	119,600	0.6
			1992	C	134,600	145,400	149,400	123,800	0.6
			1993	C	137,700	148,700	152,800	128,100	0.6
			1994	C	140,900	153,600	157,800	126,800	0.8
			1995	C	144,000	155,500	161,300	132,500	0.7
			1996	C	147,200	165,600	167,800	132,600	1.0
			1997	C	150,300	169,100	171,300	135,400	0.6
			1998	C	153,500	172,700	173,300	138,300	0.4
			1999	C	165,300	186,800	186,600	148,900	0.5
			2000	C	171,100	192,500	193,200	154,200	0.3
			2001	C	172,500	194,900	194,900	155,300	0.3
			2002	C	174,400	195,300	196,800	156,900	0.3
			2003	C	178,800	200,300	202,000	160,900	0.4
			2004	C	183,200	204,600	206,000	165,400	0.3
			2005	C	187,700	209,000	210,700	168,600	0.4
			2006	C	193,000	214,400	216,100	173,600	0.3
			2007	C	197,400	219,400	222,400	177,400	0.5
			2008	C	201,900	222,800	219,800	181,100	0.4
			2009	C	206,300	227,700	229,900	185,700	0.4
			2010	C	210,800	232,300	234,400	189,800	0.4
			2011	C	215,200	236,700	238,900	193,700	N/A
			2012	C	219,700	241,600	237,200	197,700	N/A
			2013	C	222,000	244,200	242,000	199,800	N/A
			2014	C	224,000	246,400	239,700	201,600	N/A

Yvonne Lo

From: Bee, Christopher (MTO) <Christopher.Bee@ontario.ca>
Sent: January 20, 2021 7:39 PM
To: Yvonne Lo
Cc: Bee, Christopher (MTO)
Subject: RE: Commercial Vehicle % - HWY401 at Westney Road and Brock Rd

Follow Up Flag: Follow up
Flag Status: Flagged

To Yvonne Lo, HGC:

I am keeping safe and healthy so far.
I hope you are as well.

Official MTO “% commercial” data at:

H401 and Brock Rd – 12 % for at least 10 years to 2016
H401 and Westney -- 11 % for at least 10 years to 2016.

“% commercial “ includes long heavy trucks, short light trucks, buses, cars with trailer, vans, and specials, but NOT REGULAR CARS.

There are no further breakdown details available.

Regards.

Christopher Bee
MTO CR Traffic Office
STIRCS

From: Yvonne Lo <ylo@hgcengineering.com>
Sent: January-19-21 3:53 PM
To: Bee, Christopher (MTO) <Christopher.Bee@ontario.ca>
Subject: Commercial Vehicle % - HWY401 at Westney Road

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

Hi Christopher,

HGC Engineering is currently conducting a noise feasibility study for a proposed development located at 73 Cedar Street, in Ajax, ON, as shown in the link below:

<https://goo.gl/maps/xiJhF1J8ZNrn5Hxk7>

Can you please provide commercial vehicle percentages for Highway 401 near Westney Road in Ajax, ON?

Thank you!

Best,

Yvonne Lo, MEng, PEng
Project Consultant

HGC Engineering [NOISE](#) | [VIBRATION](#) | [ACOUSTICS](#)

Howe Gastmeier Chapnik Limited

2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7

t: 905.826.4044 ext.232 e: ylo@hgcengineering.com

Visit our website: www.hgcengineering.com Follow Us – [LinkedIn](#) | [Twitter](#) | [YouTube](#)

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The Regional Municipality of Durham

Planning and Economic
Development Department

Planning Division

605 ROSSLAND RD. E.
4TH FLOOR
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WHITBY, ON L1N 6A3
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1-800-372-1102
Fax: 905-666-6208
E-Mail: planning@durham.ca

www.durham.ca

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

ROAD SEGMENT TRAFFIC FORECASTS FOR NOISE ANALYSES

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

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

Provided For:

Name / Name of Firm: Yvonne Lo, HGC Engineering
Address: 2000 Argentia Road, Plaza One, Suite 203, Mississauga, ON
Telephone: (905) 826-4044 Fax:

Location of Proposal:

1755 Pickering Parkway (south side, east of Brock Road)

Municipality: Pickering Lot(s): Concession:
Durham Region File No. (if available):
Name of Property Owner (if available):

Date Request Received: January 19, 2021 Received By: Chris Leitch

Date Forecast Sent: January 29, 2021

Name of Road Segment	Forecasted AADT*	No. of Lanes	% of Trucks	Heavy : Medium Truck Ratio		Speed (km/h)
Brock Road, south of Pickering Parkway	40,000	6	12	70	30	60
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0

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

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: N41
 Station ID: M6
 Pickering Pkwy from Marshcourt Dr to
 Beechlawn Dr
 Date Start: 09-Jun-15
 Date End: 11-Jun-15
 Date Start: 09-Jun-15

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/09/15	0	28	7	2	0	0	0	0	0	0	0	0	0	37
01:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
02:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
03:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
04:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
05:00	0	15	3	0	0	3	0	0	0	1	0	0	0	22
06:00	0	47	10	4	0	0	0	2	0	1	0	0	1	65
07:00	1	70	27	3	0	0	0	1	0	0	1	0	0	103
08:00	0	98	26	7	1	0	1	3	0	2	2	0	3	143
09:00	0	96	39	10	1	2	0	5	1	1	2	0	1	158
10:00	3	126	33	4	3	3	0	2	0	2	0	0	1	177
11:00	0	167	46	7	2	3	1	1	1	3	1	0	1	233
12 PM	0	209	55	6	2	4	2	1	0	0	0	0	2	281
13:00	0	222	49	10	1	5	2	3	1	2	1	0	1	297
14:00	0	249	62	8	6	2	1	3	0	3	2	0	1	337
15:00	1	334	54	8	4	4	0	1	0	2	0	0	1	409
16:00	1	440	69	3	4	4	1	4	1	0	0	0	1	528
17:00	0	438	101	5	3	2	1	1	1	0	0	0	0	552
18:00	1	405	59	5	3	1	1	0	0	1	0	1	1	478
19:00	0	254	73	4	2	3	0	1	0	0	0	0	1	338
20:00	2	195	55	1	0	1	0	1	0	0	0	0	0	255
21:00	0	155	51	0	0	1	0	1	0	0	0	0	0	208
22:00	0	81	31	1	1	0	0	0	0	0	0	0	0	114
23:00	0	44	13	0	1	1	0	0	0	0	0	0	0	59
Day Total	9	3713	867	88	34	39	10	30	5	18	9	1	15	4838
Percent	0.2%	76.7%	17.9%	1.8%	0.7%	0.8%	0.2%	0.6%	0.1%	0.4%	0.2%	0.0%	0.3%	
AM Peak	10:00	11:00	11:00	09:00	10:00	05:00	08:00	09:00	09:00	11:00	08:00		08:00	11:00
Vol.	3	167	46	10	3	3	1	5	1	3	2		3	233
PM Peak	20:00	16:00	17:00	13:00	14:00	13:00	12:00	16:00	13:00	14:00	14:00	18:00	12:00	17:00
Vol.	2	440	101	10	6	5	2	4	1	3	2	1	2	552

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EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/10/15	1	35	7	1	0	0	0	0	0	0	0	0	0	44
01:00	0	22	1	0	0	0	0	0	0	0	0	0	0	23
02:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
03:00	0	9	1	1	0	0	0	0	0	0	0	0	0	11
04:00	0	10	2	0	0	0	0	1	0	0	0	0	0	13
05:00	0	20	4	1	0	3	0	0	0	0	0	0	0	28
06:00	0	61	15	3	0	1	1	6	1	0	0	0	0	88
07:00	0	94	31	6	2	2	0	3	0	5	0	0	1	144
08:00	0	108	29	10	2	1	0	6	0	1	1	0	4	162
09:00	0	120	32	8	1	8	0	8	1	1	1	0	1	181
10:00	0	153	44	4	2	3	0	6	1	2	0	0	2	217
11:00	0	188	56	8	1	9	0	8	0	1	3	0	3	277
12 PM	4	168	59	6	2	3	0	5	0	2	0	0	1	250
13:00	3	206	61	7	3	4	1	6	0	4	2	0	0	297
14:00	0	256	46	7	5	5	0	6	1	3	1	0	1	331
15:00	1	272	90	5	3	3	0	1	0	4	2	0	0	381
16:00	1	334	86	4	2	4	0	4	2	6	0	0	3	446
17:00	0	402	94	6	1	3	1	0	1	0	0	0	2	510
18:00	0	346	96	3	2	5	0	1	0	0	0	0	0	453
19:00	1	248	40	6	3	3	0	2	1	0	0	0	0	304
20:00	1	241	32	1	0	5	0	3	0	0	0	0	0	283
21:00	0	168	28	1	1	0	0	0	1	0	0	0	0	199
22:00	0	99	13	1	1	1	0	0	0	0	0	0	0	115
23:00	0	78	7	0	1	1	0	0	0	0	0	0	0	87
Day Total	12	3648	877	89	32	64	3	66	9	29	10	0	18	4857
Percent	0.2%	75.1%	18.1%	1.8%	0.7%	1.3%	0.1%	1.4%	0.2%	0.6%	0.2%	0.0%	0.4%	
AM Peak	00:00	11:00	11:00	08:00	07:00	11:00	06:00	09:00	06:00	07:00	11:00		08:00	11:00
Vol.	1	188	56	10	2	9	1	8	1	5	3		4	277
PM Peak	12:00	17:00	18:00	13:00	14:00	14:00	13:00	13:00	16:00	16:00	13:00		16:00	17:00
Vol.	4	402	96	7	5	5	1	6	2	6	2		3	510

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Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/11/15	1	33	5	2	0	1	0	0	0	0	0	0	0	42
01:00	0	25	3	0	0	1	1	0	1	0	0	0	0	31
02:00	0	17	3	0	0	0	0	0	0	0	0	0	0	20
03:00	0	8	1	0	1	1	0	0	0	0	0	0	0	11
04:00	0	8	2	1	0	0	0	0	0	0	0	0	1	12
05:00	0	22	5	2	0	0	0	0	0	0	0	0	0	29
06:00	1	66	20	2	1	1	0	2	0	1	2	0	1	97
07:00	3	88	31	8	3	1	1	2	0	7	0	0	2	146
08:00	1	127	39	8	0	2	2	12	0	2	1	0	1	195
09:00	1	117	36	7	2	3	0	11	1	0	1	0	2	181
10:00	2	196	41	8	2	2	0	10	3	5	2	0	1	272
11:00	0	257	54	7	1	4	0	11	1	2	1	0	1	339
12 PM	6	211	53	6	2	4	0	6	1	2	1	0	2	294
13:00	0	232	56	8	0	3	0	12	1	3	1	0	2	318
14:00	3	291	64	8	3	4	1	12	0	2	0	0	2	390
15:00	1	376	71	11	4	3	1	12	0	2	4	0	1	486
16:00	1	466	70	7	1	1	1	3	0	2	0	0	2	554
17:00	0	492	86	4	1	2	1	4	1	1	1	0	0	593
18:00	1	444	69	8	2	6	0	5	2	0	0	0	0	537
19:00	0	285	76	2	3	4	1	0	0	0	1	0	0	372
20:00	1	280	64	0	0	1	0	1	0	1	1	0	0	349
21:00	0	204	35	1	3	0	0	2	0	0	0	0	0	245
22:00	2	121	25	1	0	0	0	0	0	0	0	0	0	149
23:00	0	54	14	1	1	1	0	0	0	0	0	0	0	71
Day Total	24	4420	923	102	30	45	9	105	11	30	16	0	18	5733
Percent	0.4%	77.1%	16.1%	1.8%	0.5%	0.8%	0.2%	1.8%	0.2%	0.5%	0.3%	0.0%	0.3%	
AM Peak	07:00	11:00	11:00	07:00	07:00	11:00	08:00	08:00	10:00	07:00	06:00		07:00	11:00
Vol.	3	257	54	8	3	4	2	12	3	7	2		2	339
PM Peak	12:00	17:00	17:00	15:00	15:00	18:00	14:00	13:00	18:00	13:00	15:00		12:00	17:00
Vol.	6	492	86	11	4	6	1	12	2	3	4		2	593
Grand Total	45	11781	2667	279	96	148	22	201	25	77	35	1	51	15428
Percent	0.3%	76.4%	17.3%	1.8%	0.6%	1.0%	0.1%	1.3%	0.2%	0.5%	0.2%	0.0%	0.3%	

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: N41
 Station ID: M6
 Pickering Pkwy from Marshcourt Dr to
 Beechlawn Dr
 Date Start: 09-Jun-15
 Date End: 11-Jun-15
 Date Start: 09-Jun-15

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/09/15	0	10	2	0	0	0	0	0	0	0	0	0	0	12
01:00	0	4	0	1	0	2	0	0	0	0	0	0	0	7
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	4	2	1	0	0	0	0	0	0	0	0	2	9
04:00	0	9	2	0	1	3	0	0	0	0	0	0	0	15
05:00	0	52	11	0	2	3	0	0	1	1	0	0	1	71
06:00	1	144	26	5	2	7	0	0	1	0	0	0	0	186
07:00	1	208	49	5	2	3	0	2	1	2	0	0	0	273
08:00	2	243	44	13	0	4	0	2	0	1	0	0	0	309
09:00	1	181	49	10	5	9	0	2	1	1	0	0	0	259
10:00	1	129	45	7	2	5	1	2	0	0	0	0	0	192
11:00	0	190	37	7	1	6	0	5	1	0	0	0	1	248
12 PM	1	164	40	5	2	6	0	7	0	0	0	0	0	225
13:00	0	172	46	6	3	3	0	5	0	0	1	0	0	236
14:00	1	164	44	5	1	4	0	0	1	0	0	0	0	220
15:00	0	161	42	7	3	4	0	0	0	0	0	0	0	217
16:00	0	180	36	1	0	0	0	2	0	0	1	0	0	220
17:00	3	186	32	2	0	2	0	0	0	0	0	0	0	225
18:00	1	187	35	3	1	0	0	0	0	0	0	0	0	227
19:00	1	165	42	4	1	0	0	0	0	0	0	0	0	213
20:00	0	143	17	1	0	0	0	0	0	0	0	0	0	161
21:00	1	82	14	1	0	0	0	0	0	0	0	0	0	98
22:00	0	42	10	0	0	4	0	0	0	0	0	0	0	56
23:00	0	22	4	0	0	0	0	1	0	0	0	0	0	27
Day Total	14	2843	629	84	26	65	1	28	6	5	2	0	4	3707
Percent	0.4%	76.7%	17.0%	2.3%	0.7%	1.8%	0.0%	0.8%	0.2%	0.1%	0.1%	0.0%	0.1%	
AM Peak	08:00	08:00	07:00	08:00	09:00	09:00	10:00	11:00	05:00	07:00			03:00	08:00
Vol.	2	243	49	13	5	9	1	5	1	2			2	309
PM Peak	17:00	18:00	13:00	15:00	13:00	12:00		12:00	14:00		13:00			13:00
Vol.	3	187	46	7	3	6		7	1		1			236

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WB

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06/10/15	0	20	0	0	0	0	0	0	0	0	0	0	0	20
01:00	0	8	3	0	1	0	0	0	0	0	0	0	0	12
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	1	1	0	0	0	0	0	0	0	0	0	2	4
04:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
05:00	0	42	18	3	2	6	0	0	2	1	0	0	0	74
06:00	0	146	26	9	3	6	0	2	1	1	0	0	0	194
07:00	2	191	49	12	6	6	0	13	1	0	0	0	0	280
08:00	3	251	55	15	0	6	1	12	1	3	0	0	0	347
09:00	3	185	51	10	2	3	0	14	1	1	0	0	0	270
10:00	0	142	41	10	1	4	0	15	1	0	0	0	0	214
11:00	0	201	39	17	0	13	0	8	2	1	0	1	0	282
12 PM	1	155	36	13	6	5	0	3	0	0	0	0	1	220
13:00	2	163	39	10	0	3	0	3	0	0	2	0	0	222
14:00	1	149	35	8	1	4	0	0	0	0	0	0	0	198
15:00	2	149	41	10	2	4	0	2	0	2	1	0	0	213
16:00	1	142	34	6	2	2	0	0	1	0	0	0	0	188
17:00	1	174	36	6	1	1	0	0	1	0	0	0	0	220
18:00	0	206	26	3	0	0	0	1	0	0	0	0	0	236
19:00	0	158	31	2	0	0	0	0	0	0	0	0	0	191
20:00	1	134	26	2	1	0	0	1	0	0	0	0	0	165
21:00	0	83	15	1	0	0	0	0	0	0	0	0	0	99
22:00	0	54	4	1	0	1	0	0	0	0	0	0	0	60
23:00	0	19	4	0	0	0	0	0	0	0	0	0	0	23
Day Total	17	2791	611	138	28	64	1	74	11	9	3	1	3	3751
Percent	0.5%	74.4%	16.3%	3.7%	0.7%	1.7%	0.0%	2.0%	0.3%	0.2%	0.1%	0.0%	0.1%	
AM Peak	08:00	08:00	08:00	11:00	07:00	11:00	08:00	10:00	05:00	08:00		11:00	03:00	08:00
Vol.	3	251	55	17	6	13	1	15	2	3		1	2	347
PM Peak	13:00	18:00	15:00	12:00	12:00	12:00		12:00	16:00	15:00	13:00		12:00	18:00
Vol.	2	206	41	13	6	5		3	1	2	2		1	236

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WB

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06/11/15	0	10	2	0	0	4	0	0	0	0	0	0	0	16
01:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
02:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	3	4	0	0	0	0	0	0	0	0	0	1	8
04:00	0	9	1	0	0	3	0	0	0	0	0	0	0	13
05:00	0	41	16	5	2	4	0	0	3	1	0	0	0	72
06:00	1	154	25	13	1	5	0	7	1	1	0	0	0	208
07:00	3	224	50	11	5	7	0	12	1	0	0	0	0	313
08:00	2	254	50	20	2	8	1	14	2	0	0	0	0	353
09:00	2	193	41	10	1	10	0	21	1	0	0	0	1	280
10:00	6	177	43	9	1	13	0	15	1	0	1	0	0	266
11:00	2	169	46	11	1	14	0	18	0	2	0	0	0	263
12 PM	3	204	53	7	2	13	0	14	1	2	0	0	0	299
13:00	1	191	42	8	0	12	0	14	1	1	2	0	0	272
14:00	2	185	38	11	3	3	0	10	0	1	2	1	0	256
15:00	2	196	24	6	0	7	0	15	0	0	2	0	1	253
16:00	3	189	28	8	1	7	0	12	0	1	1	0	0	250
17:00	1	190	37	1	0	0	0	3	0	1	0	0	0	233
18:00	3	230	32	3	0	0	0	2	0	0	0	0	0	270
19:00	2	179	28	1	0	0	0	0	0	0	0	0	0	210
20:00	0	155	22	1	0	0	0	0	0	0	0	0	0	178
21:00	0	85	20	1	0	1	0	0	0	0	0	0	0	107
22:00	0	58	11	1	0	1	0	0	0	0	0	0	0	71
23:00	0	27	5	1	0	0	1	0	0	0	0	0	0	34
Day Total	33	3136	619	128	19	112	2	157	11	10	8	1	3	4239
Percent	0.8%	74.0%	14.6%	3.0%	0.4%	2.6%	0.0%	3.7%	0.3%	0.2%	0.2%	0.0%	0.1%	
AM Peak	10:00	08:00	07:00	08:00	07:00	11:00	08:00	09:00	05:00	11:00	10:00		03:00	08:00
Vol.	6	254	50	20	5	14	1	21	3	2	1		1	353
PM Peak	12:00	18:00	12:00	14:00	14:00	12:00	23:00	15:00	12:00	12:00	13:00	14:00	15:00	12:00
Vol.	3	230	53	11	3	13	1	15	1	2	2	1	1	299
Grand Total	64	8770	1859	350	73	241	4	259	28	24	13	2	10	11697
Percent	0.5%	75.0%	15.9%	3.0%	0.6%	2.1%	0.0%	2.2%	0.2%	0.2%	0.1%	0.0%	0.1%	

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EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
06/09/15	0	38	9	2	0	0	0	0	0	0	0	0	0	49
01:00	0	16	1	1	0	2	0	0	0	0	0	0	0	20
02:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
03:00	0	13	3	1	0	0	0	0	0	0	0	0	2	19
04:00	0	18	4	0	1	3	0	0	0	0	0	0	0	26
05:00	0	67	14	0	2	6	0	0	1	2	0	0	1	93
06:00	1	191	36	9	2	7	0	2	1	1	0	0	1	251
07:00	2	278	76	8	2	3	0	3	1	2	1	0	0	376
08:00	2	341	70	20	1	4	1	5	0	3	2	0	3	452
09:00	1	277	88	20	6	11	0	7	2	2	2	0	1	417
10:00	4	255	78	11	5	8	1	4	0	2	0	0	1	369
11:00	0	357	83	14	3	9	1	6	2	3	1	0	2	481
12 PM	1	373	95	11	4	10	2	8	0	0	0	0	2	506
13:00	0	394	95	16	4	8	2	8	1	2	2	0	1	533
14:00	1	413	106	13	7	6	1	3	1	3	2	0	1	557
15:00	1	495	96	15	7	8	0	1	0	2	0	0	1	626
16:00	1	620	105	4	4	4	1	6	1	0	1	0	1	748
17:00	3	624	133	7	3	4	1	1	1	0	0	0	0	777
18:00	2	592	94	8	4	1	1	0	0	1	0	1	1	705
19:00	1	419	115	8	3	3	0	1	0	0	0	0	1	551
20:00	2	338	72	2	0	1	0	1	0	0	0	0	0	416
21:00	1	237	65	1	0	1	0	1	0	0	0	0	0	306
22:00	0	123	41	1	1	4	0	0	0	0	0	0	0	170
23:00	0	66	17	0	1	1	0	1	0	0	0	0	0	86
Day Total	23	6556	1496	172	60	104	11	58	11	23	11	1	19	8545
Percent	0.3%	76.7%	17.5%	2.0%	0.7%	1.2%	0.1%	0.7%	0.1%	0.3%	0.1%	0.0%	0.2%	
AM Peak	10:00	11:00	09:00	08:00	09:00	09:00	08:00	09:00	09:00	08:00	08:00		08:00	11:00
Vol.	4	357	88	20	6	11	1	7	2	3	2		3	481
PM Peak	17:00	17:00	17:00	13:00	14:00	12:00	12:00	12:00	13:00	14:00	13:00	18:00	12:00	17:00
Vol.	3	624	133	16	7	10	2	8	1	3	2	1	2	777

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06/10/15	1	55	7	1	0	0	0	0	0	0	0	0	0	64
01:00	0	30	4	0	1	0	0	0	0	0	0	0	0	35
02:00	0	15	3	0	0	0	0	0	0	0	0	0	0	18
03:00	0	10	2	1	0	0	0	0	0	0	0	0	2	15
04:00	0	23	3	0	0	0	0	1	0	0	0	0	0	27
05:00	0	62	22	4	2	9	0	0	2	1	0	0	0	102
06:00	0	207	41	12	3	7	1	8	2	1	0	0	0	282
07:00	2	285	80	18	8	8	0	16	1	5	0	0	1	424
08:00	3	359	84	25	2	7	1	18	1	4	1	0	4	509
09:00	3	305	83	18	3	11	0	22	2	2	1	0	1	451
10:00	0	295	85	14	3	7	0	21	2	2	0	0	2	431
11:00	0	389	95	25	1	22	0	16	2	2	3	1	3	559
12 PM	5	323	95	19	8	8	0	8	0	2	0	0	2	470
13:00	5	369	100	17	3	7	1	9	0	4	4	0	0	519
14:00	1	405	81	15	6	9	0	6	1	3	1	0	1	529
15:00	3	421	131	15	5	7	0	3	0	6	3	0	0	594
16:00	2	476	120	10	4	6	0	4	3	6	0	0	3	634
17:00	1	576	130	12	2	4	1	0	2	0	0	0	2	730
18:00	0	552	122	6	2	5	0	2	0	0	0	0	0	689
19:00	1	406	71	8	3	3	0	2	1	0	0	0	0	495
20:00	2	375	58	3	1	5	0	4	0	0	0	0	0	448
21:00	0	251	43	2	1	0	0	0	1	0	0	0	0	298
22:00	0	153	17	2	1	2	0	0	0	0	0	0	0	175
23:00	0	97	11	0	1	1	0	0	0	0	0	0	0	110
Day Total	29	6439	1488	227	60	128	4	140	20	38	13	1	21	8608
Percent	0.3%	74.8%	17.3%	2.6%	0.7%	1.5%	0.0%	1.6%	0.2%	0.4%	0.2%	0.0%	0.2%	
AM Peak	08:00	11:00	11:00	08:00	07:00	11:00	06:00	09:00	05:00	07:00	11:00	11:00	08:00	11:00
Vol.	3	389	95	25	8	22	1	22	2	5	3	1	4	559
PM Peak	12:00	17:00	15:00	12:00	12:00	14:00	13:00	13:00	16:00	15:00	13:00		16:00	17:00
Vol.	5	576	131	19	8	9	1	9	3	6	4		3	730

cars = 7556+1542 = 9098/9972 = 91.2%

mt = 230+49+157+11 = 438/9972 = 4.4%

100-91.2-4.4 = 4.4%

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	06/11/15	1	43	7	2	0	5	0	0	0	0	0	0	0	58
	01:00	0	31	4	0	0	1	1	0	1	0	0	0	0	38
	02:00	0	24	3	0	0	0	0	0	0	0	0	0	0	27
	03:00	0	11	5	0	1	1	0	0	0	0	0	0	1	19
	04:00	0	17	3	1	0	3	0	0	0	0	0	0	1	25
	05:00	0	63	21	7	2	4	0	0	3	1	0	0	0	101
	06:00	2	220	45	15	2	6	0	9	1	2	2	0	1	305
	07:00	6	312	81	19	8	8	1	14	1	7	0	0	2	459
	08:00	3	381	89	28	2	10	3	26	2	2	1	0	1	548
	09:00	3	310	77	17	3	13	0	32	2	0	1	0	3	461
	10:00	8	373	84	17	3	15	0	25	4	5	3	0	1	538
	11:00	2	426	100	18	2	18	0	29	1	4	1	0	1	602
	12 PM	9	415	106	13	4	17	0	20	2	4	1	0	2	593
	13:00	1	423	98	16	0	15	0	26	2	4	3	0	2	590
	14:00	5	476	102	19	6	7	1	22	0	3	2	1	2	646
	15:00	3	572	95	17	4	10	1	27	0	2	6	0	2	739
	16:00	4	655	98	15	2	8	1	15	0	3	1	0	2	804
	17:00	1	682	123	5	1	2	1	7	1	2	1	0	0	826
	18:00	4	674	101	11	2	6	0	7	2	0	0	0	0	807
	19:00	2	464	104	3	3	4	1	0	0	0	1	0	0	582
	20:00	1	435	86	1	0	1	0	1	0	1	1	0	0	527
	21:00	0	289	55	2	3	1	0	2	0	0	0	0	0	352
	22:00	2	179	36	2	0	1	0	0	0	0	0	0	0	220
	23:00	0	81	19	2	1	1	1	0	0	0	0	0	0	105
	Day Total	57	7556	1542	230	49	157	11	262	22	40	24	1	21	9972
	Percent	0.6%	75.8%	15.5%	2.3%	0.5%	1.6%	0.1%	2.6%	0.2%	0.4%	0.2%	0.0%	0.2%	
	AM Peak	10:00	11:00	11:00	08:00	07:00	11:00	08:00	09:00	10:00	07:00	10:00		09:00	11:00
	Vol.	8	426	100	28	8	18	3	32	4	7	3		3	602
	PM Peak	12:00	17:00	17:00	14:00	14:00	12:00	14:00	15:00	12:00	12:00	15:00	14:00	12:00	17:00
	Vol.	9	682	123	19	6	17	1	27	2	4	6	1	2	826
	Grand Total	109	20551	4526	629	169	389	26	460	53	101	48	3	61	27125
	Percent	0.4%	75.8%	16.7%	2.3%	0.6%	1.4%	0.1%	1.7%	0.2%	0.4%	0.2%	0.0%	0.2%	

APPENDIX C

Rail Traffic Data



Train Count Data

TRANSMITTAL

To: HGC Engineering
Destinataire : 2000 Argentia Rd
Plaza, Suite 203
Mississauga ON
L5N 1P7

Project : KNG - 312.02 – Brock Road, Pickering ON

Att'n: Yvonne Lo

Routing: ylo@hgcengineering.com

From: Michael Vallins
Expéditeur :

Date: 2021/04/26

Cc: Adjacent Development
CN via e-mail

Urgent For Your Use For Review For Your Information Confidential

**Re: Train Traffic Data – CN Kingston Subdivision near Brock Road in
Pickering ON**

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

Should you have any questions, please do not hesitate to contact the undersigned at permits.gld@cn.ca.

Sincerely,
CN Design & Construction


Michael Vallins P.Eng
Manager, Public Works- Eastern Canada
Permits.gld@cn.ca

Date: 2021/04/26

Project Number: KNG - 312.02 – Brock Road, Pickering ON

Dear Yvonne Lo:

Re: Train Traffic Data – CN Kingston Subdivision near Brock Road in Pickering ON

The following is provided in response to Yvonne’s 2021/01/19 request for information regarding rail traffic in the vicinity of Brock Road in Pickering at approximately Mile 312.02 on CN’s Kingston Subdivision.

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

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

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

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	12	140	65	4
Way Freight	0	25	65	4
Passenger	34	10	95	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	4	140	65	4
Way Freight	4	25	65	4
Passenger	1	10	95	2

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

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There is no at-grade crossing in the immediate vicinity of the study area. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

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

The triple mainline track is considered to be continuously welded rail throughout the study area. The presence of 4 switches located at Mile 313.02, 313.04, 313.12, and 313.13 may exacerbate the noise and vibration caused by train movements.

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

I trust the above information will satisfy your current request.

Sincerely,



Michael Vallins P.Eng
Manager, Public Works- Eastern Canada
Permits.gld@cn.ca

Yvonne Lo

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: February 5, 2021 8:57 PM
To: Yvonne Lo
Cc: Terri Cowan
Subject: RE: Rail Traffic Data Request - 1755 Pickering Parkway

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Yvonne:

Further to your request dated January 19, 2021, the subject lands (1775 Pickering Parkway, Pickering) are located within 300 metres of the Metrolinx GO Subdivision (which carries Lakeshore East GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and electric trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 12 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 215 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)	29	21	88	42	Night (2300-0700)	8	1	18	8

1 LOCO -
D - 29+88=117
N - 8+18=26

2 LOCO -
D - 21+42=63
N - 1+8=9

The current design track design speed near the subject lands is 85 mph (137 km/h).

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

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. That's why, in addition to studying the environmental impacts of traditional electrification, Metrolinx has studied the feasibility of another form of electrification - hydrogen powered vehicles.

Both options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the procurement phase. The successful proponent team will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process and teams are currently completing the bids that will close in 2021. GO Expansion construction will get underway in 2022.

Metrolinx has not made a final decision regarding the electric train technology or technologies to be deployed. 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.

EDMOND WU, MCIP, RPP

Project Manager

Third Party Projects Review, Capital Projects Group

Metrolinx | 20 Bay Street | Suite 600 | Toronto | Ontario | M5J 2W3

T: 416.202.8513 | C: 437.240.8613



From: Yvonne Lo <ylo@hgcengineering.com>

Sent: January 19, 2021 14:57

To: Rail Data Requests <RailDataRequests@metrolinx.com>

Subject: Rail Traffic Data Request - 1755 Pickering Parkway

Hi,

HGC Engineering is currently conducting a noise feasibility study for a proposed development located at 1755 Pickering Parkway, in Pickering, ON, as shown in the link below:

<https://goo.gl/maps/eqbdKth391oecMZw7>

Please provide rail traffic data for the rail line to the south.

Thank you!

Best,

Yvonne Lo, MEng, PEng

Project Consultant

HGC Engineering NOISE / VIBRATION / ACOUSTICS

Howe Gastmeier Chapnik Limited

2000 Argenta Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7

t: 905.826.4044 ext. 232 e: ylo@hgcengineering.com

Visit our website: www.hgcengineering.com Follow Us – [LinkedIn](#) | [Twitter](#) | [YouTube](#)

EXTERNAL SENDER: Do not click any links or open any attachments unless you trust the sender and know the content is safe.

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APPENDIX D

Supporting Drawings

PICKERING DESIGN CENTRE (BLOCK 1)

1775 PICKERING PARKWAY
PICKERING, ON.

06.037RZ



**TURNER
FLEISCHER**

67 Lesmill Road
Toronto, ON, M3B 2T8
turnerfleischer.com

March 14th 2022

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SALEABLE UNIT MIX PROVIDED

BLDG	FLOOR	SALEABLE UNIT MIX PROVIDED							TOTAL	AVG. UNIT SIZE		
		STUDIO	1B	1B+D	2B	2B+D	3B	3B+D		m²	ft²	
BLDG A1 +A2	FLOOR 2	6	1	13		7	4		31	72.7	783	
	FLOOR 3	6	1	13		7	4		31	72.7	783	
	FLOOR 4	6	1	13		7	4		31	72.7	783	
	FLOOR 5	6	1	13		7	4		31	72.7	783	
	FLOOR 6	6	2	11		6	1		26	63.3	681	
	FLOOR 8		4	10		4	2		20	68.0	732	
	FLOOR 9		4	10		4	2		20	68.0	732	
	FLOOR 10		4	10		4	2		20	68.0	732	
	FLOOR 11		4	10		4	2		20	68.0	732	
	FLOOR 12		4	10		4	2		20	68.0	732	
	FLOOR 13		4	10		4	2		20	68.0	732	
	FLOOR 14		4	10		4	2		20	68.0	732	
	FLOOR 15		4	10		4	2		20	68.0	732	
	FLOOR 16		4	10		4	2		20	64.8	697	
	FLOOR 17		4	10		4	2		20	64.8	697	
	FLOOR 18		4	10		4	2		20	64.8	697	
	FLOOR 19		4	10		4	2		20	64.8	697	
	FLOOR 20		4	10		4	2		20	64.8	697	
	FLOOR 21		4	10		4	2		20	64.8	697	
	FLOOR 22		4	10		4	2		20	64.8	697	
	FLOOR 23		4	10		4	2		20	64.8	697	
	FLOOR 24		4	10		4	2		20	64.8	697	
	FLOOR 25		4	10		4	2		20	64.8	697	
	FLOOR 26		4	10		4	2		20	64.8	697	
	FLOOR 27		4	10		4	2		20	64.8	697	
	FLOOR 28		4	10		4	2		20	64.8	697	
	FLOOR 29		4	10		4	2		20	64.8	697	
	FLOOR 30		4	10		4	2		20	64.8	697	
	FLOOR 31		4	10		4	2		20	64.8	697	
	SUBTOTAL		30	102	303		130	65				
	TOTAL UNITS		30	405		130	65		630			
UNIT MIX		4.8%	16.2%	48.1%	0.0%	20.6%	10.3%	0.0%	100.0%	67.1	722	
UNIT MIX TOTAL		4.8%	64.3%		20.6%	10.3%		100.0%				
AVG UNIT SIZE		42.8	53.2	63.9	0.0	79.8	89.7	0.0	m²			
AVG UNIT SIZE TOTAL		42.8	61.2		79.8	89.7		m²				

AMENITY AREAS REQUIRED & PROVIDED

BLDG	TYPE	REQUIRED			PROVIDED		
		RATIO	m²	ft²	RATIO	m²	ft²
BLDG A1	INDOOR AMENITY	2.00 m²/UNIT	644.00	6,932	2.64 m²/UNIT	851.28	9,163
	OUTDOOR AMENITY	TOTAL AMENITY REQUIRED MINUS THE INDOOR AMENITY PROVIDED (NO LESS THAN 40.0m²)			1.89 m²/UNIT	610.34	6,570
	TOTAL AMENITY	4.00 m²/UNIT	1,288.00	13,864	4.53 m²/UNIT	1,461.63	15,733

AMENITY AREAS REQUIRED & PROVIDED

BLDG	TYPE	REQUIRED			PROVIDED		
		RATIO	m²	ft²	RATIO	m²	ft²
BLDG A2	INDOOR AMENITY	2.00 m²/UNIT	616.00	6,631	2.22 m²/UNIT	686.76	7,392
	OUTDOOR AMENITY	TOTAL AMENITY REQUIRED MINUS THE INDOOR AMENITY PROVIDED (NO LESS THAN 40.0m²)			1.43 m²/UNIT	441.16	4,749
	TOTAL AMENITY	4.00 m²/UNIT	1,232.00	13,261	3.66 m²/UNIT	1,127.92	12,141

SALEABLE UNIT MIX REQUIRED

BLDG	RATIO	SALEABLE UNIT MIX REQUIRED							TOTAL
		STUDIO	1B	1B+D	2B	2B+D	3B	3B+D	
BLDG A1 +A2	COUNT	32	95	126	189	126	62		630

SALEABLE UNIT MIX PROVIDED - UNIT TOTALS

BLDG	FLOOR	SALEABLE UNIT MIX PROVIDED							TOTAL	AVG. UNIT SIZE	
		STUDIO	1B	1B+D	2B	2B+D	3B	3B+D		m²	ft²
BLDG A1	A1	15	49	154		72	32		322	67.6	728
	A2	15	53	149		58	33		308	66.6	716
SUBTOTAL		30	102	303		130	65		630		
TOTAL UNITS		30	405		130	65		630			
UNIT MIX		4.8%	16.2%	48.1%	0.0%	20.6%	10.3%	0.0%	100.0%	67.1	722
UNIT MIX TOTAL		4.8%	64.3%		20.6%	10.3%		100.0%			
AVG UNIT SIZE		42.8	53.2	63.9	0.0	79.8	89.7	0.0	m²		
AVG UNIT SIZE TOTAL		42.8	61.2		79.8	89.7		m²			

SALEABLE UNIT MIX PROVIDED

BLDG	FLOOR	SALEABLE UNIT MIX PROVIDED							TOTAL	AVG. UNIT SIZE		
		STUDIO	1B	1B+D	2B	2B+D	3B	3B+D		m²	ft²	
BLDG A1	FLOOR 2	3		7		5	2		17	74.7	804	
	FLOOR 3	3		7		5	2		17	74.7	804	
	FLOOR 4	3		7		5	2		17	74.7	804	
	FLOOR 5	3		7		5	2		17	74.7	804	
	FLOOR 6	3	1	6		4			14	64.0	689	
	FLOOR 8		2	5		2	1		10	68.0	732	
	FLOOR 9		2	5		2	1		10	68.0	732	
	FLOOR 10		2	5		2	1		10	68.0	732	
	FLOOR 11		2	5		2	1		10	68.0	732	
	FLOOR 12		2	5		2	1		10	68.0	732	
	FLOOR 13		2	5		2	1		10	68.0	732	
	FLOOR 14		2	5		2	1		10	68.0	732	
	FLOOR 15		2	5		2	1		10	68.0	732	
	FLOOR 16		2	5		2	1		10	64.8	697	
	FLOOR 17		2	5		2	1		10	64.8	697	
	FLOOR 18		2	5		2	1		10	64.8	697	
	FLOOR 19		2	5		2	1		10	64.8	697	
	FLOOR 20		2	5		2	1		10	64.8	697	
	FLOOR 21		2	5		2	1		10	64.8	697	
	FLOOR 22		2	5		2	1		10	64.8	697	
	FLOOR 23		2	5		2	1		10	64.8	697	
	FLOOR 24		2	5		2	1		10	64.8	697	
	FLOOR 25		2	5		2	1		10	64.8	697	
	FLOOR 26		2	5		2	1		10	64.8	697	
	FLOOR 27		2	5		2	1		10	64.8	697	
	FLOOR 28		2	5		2	1		10	64.8	697	
	FLOOR 29		2	5		2	1		10	64.8	697	
	FLOOR 30		2	5		2	1		10	64.8	697	
	FLOOR 31		2	5		2	1		10	64.8	697	
	SUBTOTAL		15	49	154		72	32				
	TOTAL UNITS		15	203		72	32		322			
UNIT MIX		4.7%	15.2%	47.8%	0.0%	22.4%	9.9%	0.0%	100.0%	67.6	728	
UNIT MIX TOTAL		4.7%	63.0%		22.4%	9.9%		100.0%				
AVG UNIT SIZE		43.5	51.9	63.9		80.3	92.6		m²			
AVG UNIT SIZE TOTAL		43.5	61.0		80.3	92.6		m²				

SALEABLE UNIT MIX PROVIDED

BLDG	FLOOR	SALEABLE UNIT MIX PROVIDED							TOTAL	AVG. UNIT SIZE		
		STUDIO	1B	1B+D	2B	2B+D	3B	3B+D		m²	ft²	
BLDG A2	FLOOR 2	3	1	6		2	2		14	70.3	757	
	FLOOR 3	3	1	6		2	2		14	70.3	757	
	FLOOR 4	3	1	6		2	2		14	70.3	757	
	FLOOR 5	3	1	6		2	2		14	70.3	757	
	FLOOR 6	3	1	5		2	1		12	62.4	672	
	FLOOR 8		2	5		2	1		10	68.0	732	
	FLOOR 9		2	5		2	1		10	68.0	732	
	FLOOR 10		2	5		2	1		10	68.0	732	
	FLOOR 11		2	5		2	1		10	68.0	732	
	FLOOR 12		2	5		2	1		10	68.0	732	
	FLOOR 13		2	5		2	1		10	68.0	732	
	FLOOR 14		2	5		2	1		10	68.0	732	
	FLOOR 15		2	5		2	1		10	68.0	732	
	FLOOR 16		2	5		2	1		10	64.8	698	
	FLOOR 17		2	5		2	1		10	64.8	698	
	FLOOR 18		2	5		2	1		10	64.8	698	
	FLOOR 19		2	5		2	1		10	64.8	698	
	FLOOR 20		2	5		2	1		10	64.8	698	
	FLOOR 21		2	5		2	1		10	64.8	698	
	FLOOR 22		2	5		2	1		10	64.8	698	
	FLOOR 23		2	5		2	1		10	64.8	698	
	FLOOR 24		2	5		2	1		10	64.8	698	
	FLOOR 25		2	5		2	1		10	64.8	698	
	FLOOR 26		2	5		2	1		10	64.8	698	
	FLOOR 27		2	5		2	1		10	64.8	698	
	FLOOR 28		2	5		2	1		10	64.8	698	
	FLOOR 29		2	5		2	1		10	64.8	698	
	FLOOR 30		2	5		2	1		10	64.8	698	
	FLOOR 31		2	5		2	1		10	64.8	698	
	SUBTOTAL		15	53	149		58	33		308		
	TOTAL UNITS		15	202		58	33		308			
UNIT MIX		4.9%	17.2%	48.4%	0.0%	18.8%	10.7%	0.0%	100.0%	66.6	716	
UNIT MIX TOTAL		4.9%	65.6%		18.8%	10.7%		100.0%				
AVG UNIT SIZE		42.1	54.5	63.9		79.2	86.8		m²			
AVG UNIT SIZE TOTAL		42.1	61.4		79.2	86.8		m²				

VEHICULAR PARKING - MINIMUM REQUIRED

BLDG	USE	RATIO (MIN.)	UNITS / GFA (m²)	SPACES (MIN.)
	STUDIO UNITS	0.80 / UNIT	30	24
	1B & 1B+D UNITS	0.80 / UNIT	405	324
	2B & 2B+D UNITS	0.80 / UNIT	130	104
	3B & 3B+D UNITS	0.80 / UNIT	65	52
	RETAIL	3.50/100 m²	1669	58
	TOTAL			656

VEHICULAR PARKING PROVIDED

BLDG	FLOOR	USE			TOTAL
		RETAIL	VISITOR	RESIDENTIAL	
BLDG A1 +A2	FLOOR 1	3			3
	UG 1	59	94	4	157
	UG 2			160	160
	UG 3			168	168
	UG 4			171	171
	TOTAL	62	94	503	659

WASTE MANAGEMENT REQUIREMENTS - GENERAL NOTES

THE PROPOSED DEVELOPMENT WILL BE SERVED BY A GARAGE CHUTE WITHIN THE BUILDINGS WITH SEPERATE GARBAGE AND RECYCLING LOCATED ON THE GROUND FLOOR TO DIVERT GARBAGE AND RECYCLEABLE MATERIALS INTO SEPERATE BINS.

- PRIVATE COLLECTION WILL BE PROVIDED FOR COMMERCIAL WASTE MANAGEMENT
- MUNICIPAL COLLECTION WILL BE PROVIDED FOR THE RESIDENTIAL UNITS

THE PROPOSED WASTE COLLECTION AREAS WILL REQUIRE MOVEMENT OF BINS AND ROLL-AWAY CARTS BY PROPERTY MANAGEMENT DURING WASTE COLLECTION. AS SUCH:

- PROPERTY MANAGEMENT IS RESPONSIBLE FOR MOVING BINS DURING COLLECTION TO STAGING AREA

SOLID WASTE MANAGEMNET REQUIREMENTS (CITY OF PICKERING)

- A FRONT END GARBAGE BIN WITH A CAPACITY OF ONE CUBIC YARD PER TEN (10) RESIDENTIAL UNITS
- ROLLOUT RECYCLING CART, ONE 95 GALLON CART FOR EVERY 7 UNITS

TOWER A1

GARBAGE

322 UNITS/40 (NUMBER OF UNITS PER BIN) = 9 BINS (4 CUBIC YARDS)

RECYCLING

322 UNITS/7 (NUMBER OF UNITS PER CART)= 46 BINS (95 GALLON)

TOWER A2

GARBAGE

308 UNITS/40 (NUMBER OF UNITS PER BIN) = 8 BINS (4 CUBIC YARDS)

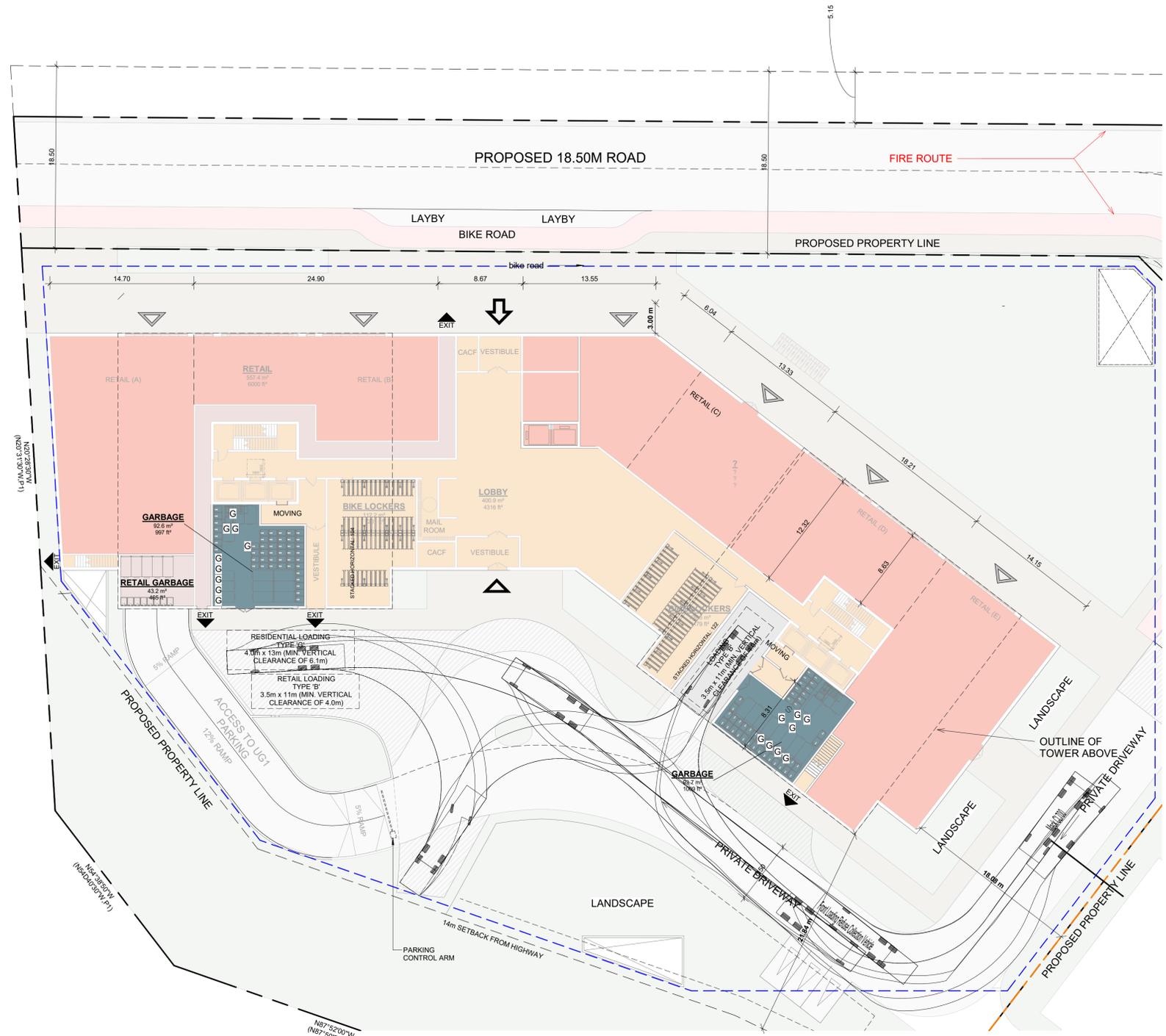
RECYCLING

308 UNITS/7 (NUMBER OF UNITS PER CART)= 44 BINS (95 GALLON)

TOTAL NUMBER OF UNITS = 630

TOTAL NUMBER OF GARBAGE BINS = 17 (4 CUBIC YARD BINS)

TOTAL NUMBER OF RECYCLING BINS = 90 (96 GALLON CARTS)



**TOWER A1
31 STOREYS**

**TOWER A1
31 STOREYS**

#	DATE	DESCRIPTION	BY
---	------	-------------	----



PROJECT
PICKERING DESIGN CENTRE
(BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

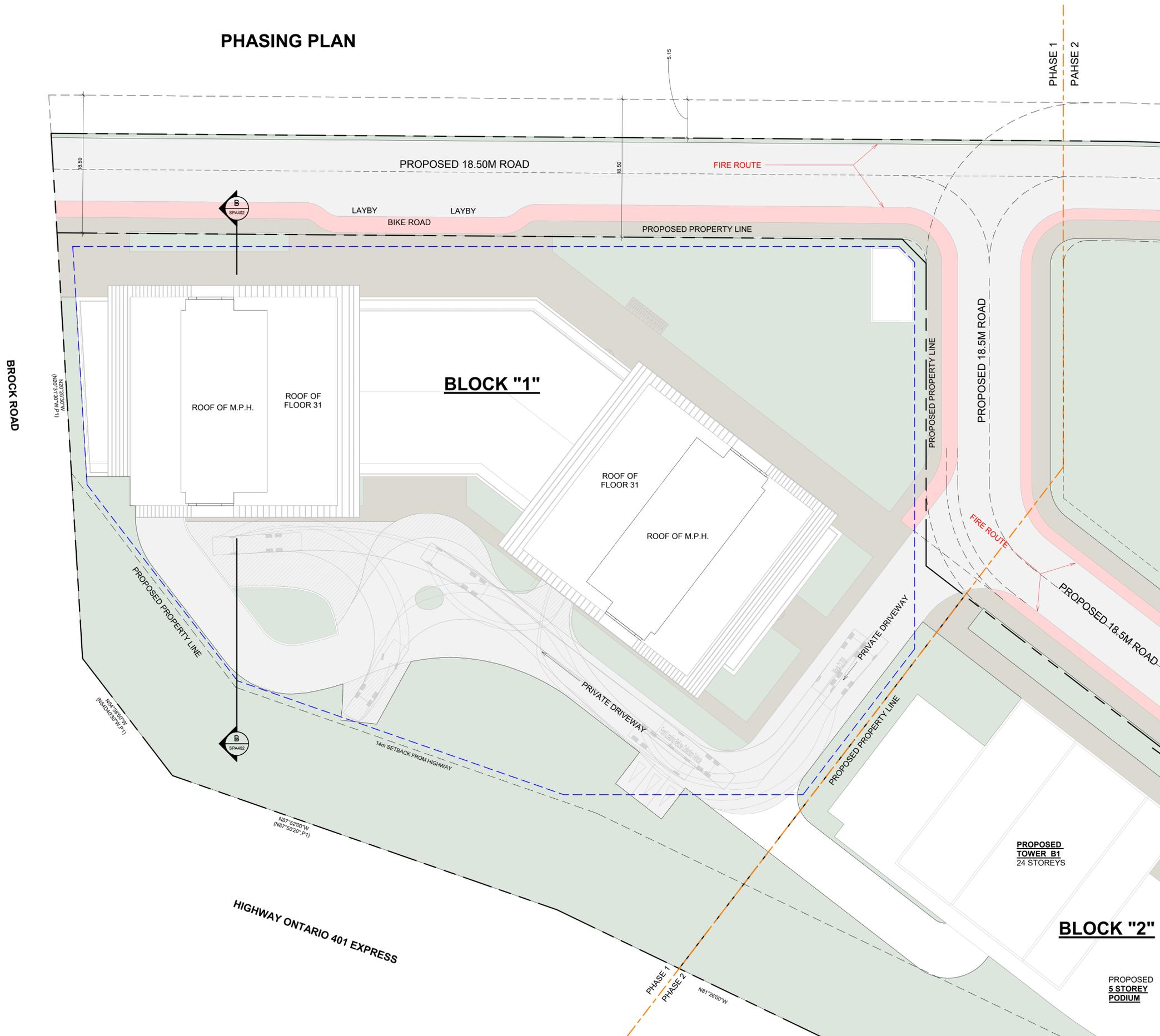
DRAWING
RESIDENTIAL SOLID WASTE
MANAGEMENT

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
1 : 250

DRAWING NO.
SPA008

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PHASING PLAN



LEGEND

LOCATION OF EXISTING BUILDINGS

#	DATE	DESCRIPTION	BY
---	------	-------------	----



PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

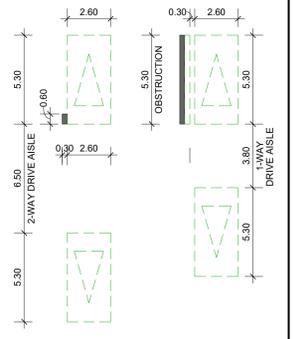
DRAWING
PHASING PLAN

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
SKA
CHECKED BY
AYU
SCALE
As indicated

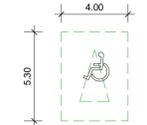
DRAWING NO.
SPA009

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TYPICAL DIMENSIONS (UNLESS OTHERWISE NOTED):
2-WAY AISLE WIDTH: MIN. 6.50m
1-WAY AISLE WIDTH: MIN. 3.80m
TYPICAL PARKING SPACE: MIN 2.60 x 5.30m
PARALLEL PARKING SPACE: MIN 2.60 x 5.30m



TYPICAL BARRIER-FREE SPACE MIN. 4.0 x 5.3 x 2.75m HIGH



CONVEX MIRROR

#	DATE	DESCRIPTION	BY
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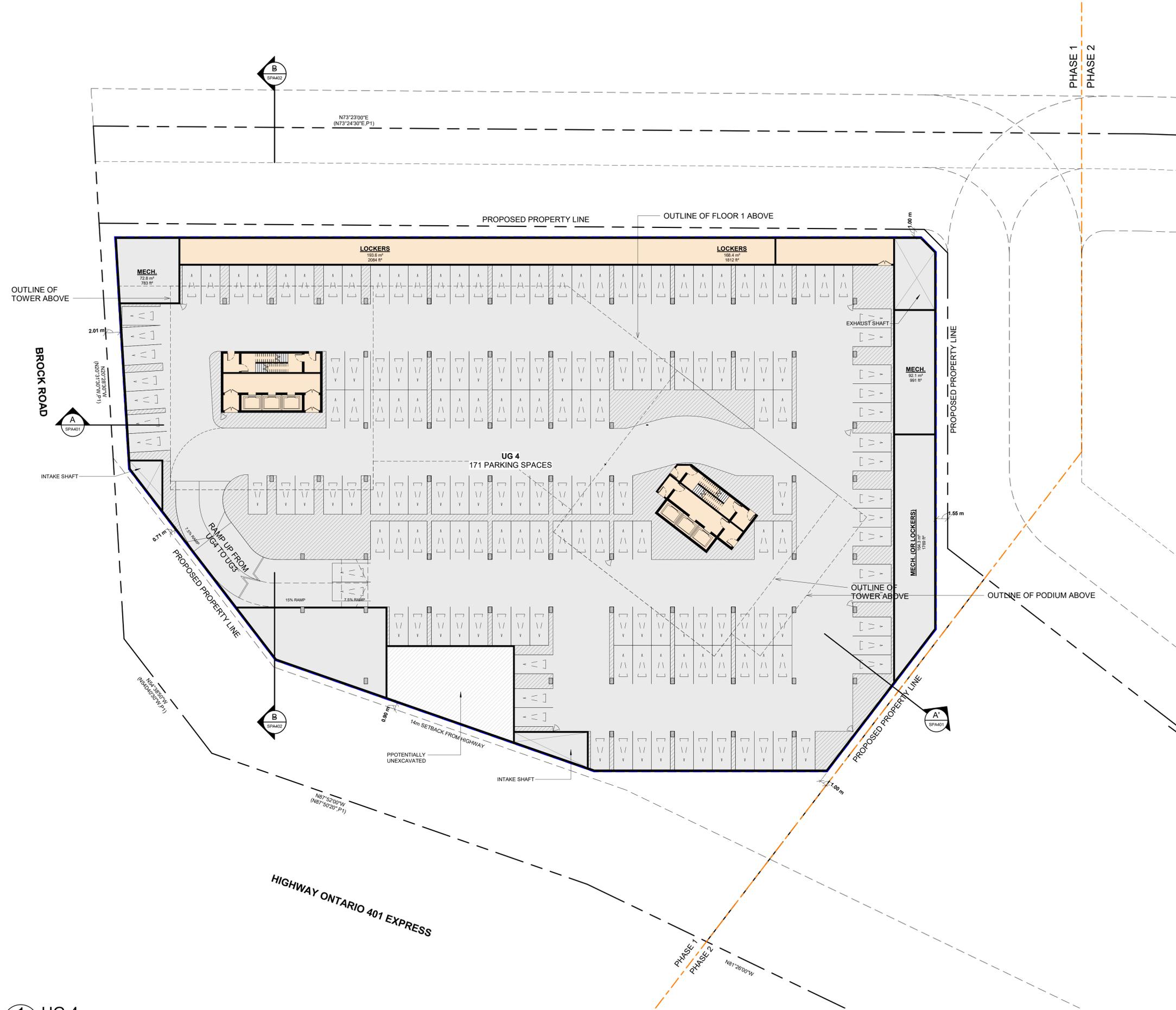
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
UNDERGROUND LEVEL 04

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
As indicated



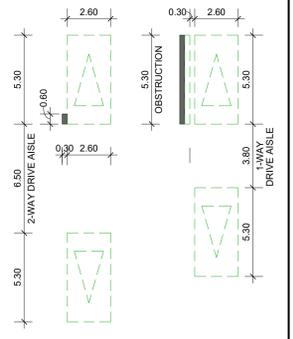
DRAWING NO.
SPA101



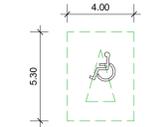
1 UG 4
SPA101/ 1: 250

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "For Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.

TYPICAL DIMENSIONS (UNLESS OTHERWISE NOTED):
2-WAY AISLE WIDTH: MIN. 6.50m
1-WAY AISLE WIDTH: MIN. 3.80m
TYPICAL PARKING SPACE: MIN 2.60 x 5.30m
PARALLEL PARKING SPACE: MIN 2.60 x 5.30m



TYPICAL BARRIER-FREE SPACE MIN.
4.0 x 5.3 x 2.75m HIGH



CONVEX MIRROR

#	DATE	DESCRIPTION	BY
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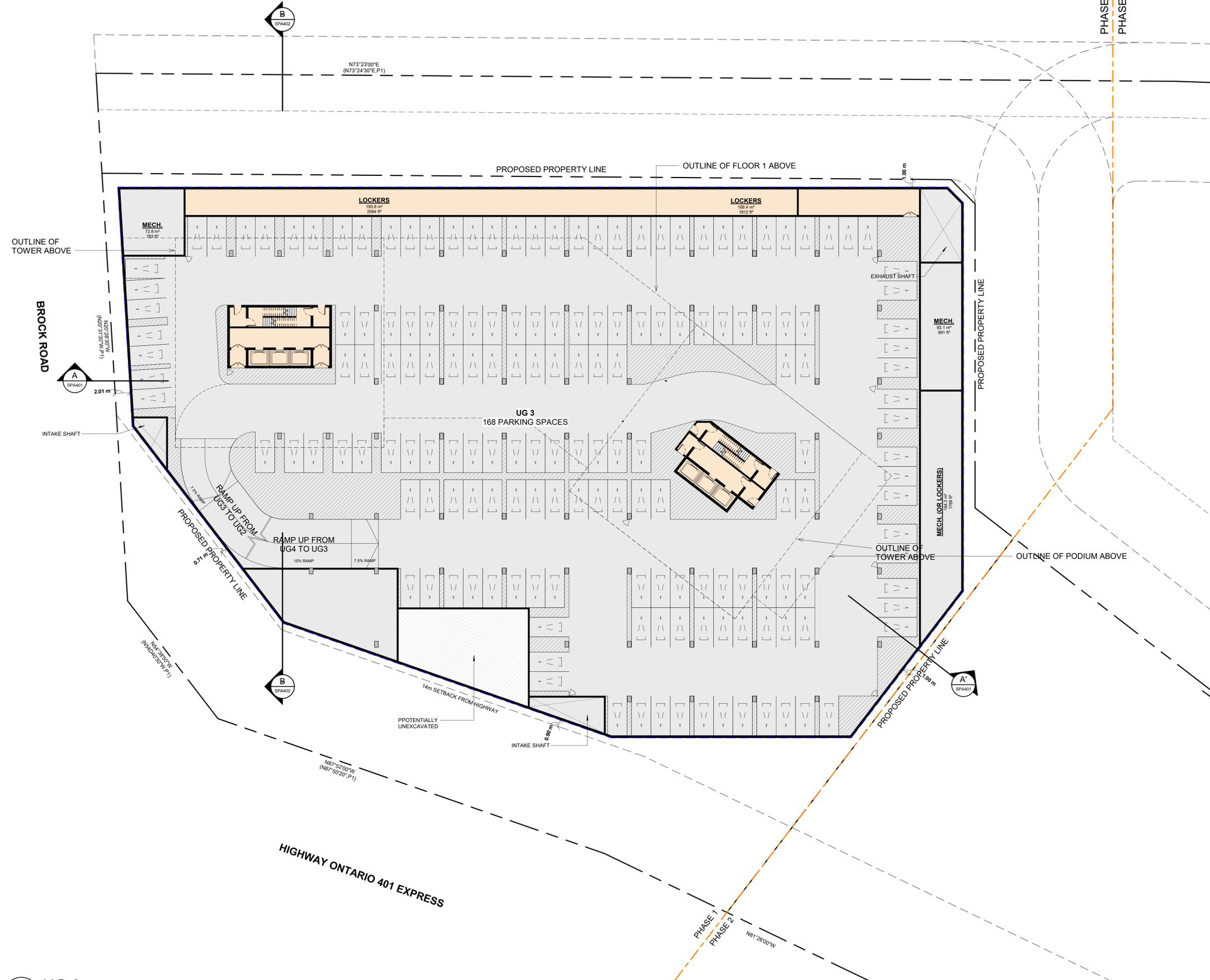
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
UNDERGROUND LEVEL 03

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
As indicated



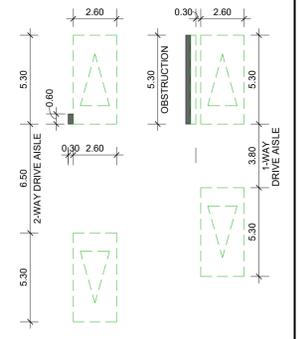
DRAWING NO.
SPA102



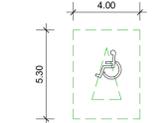
1 UG 3
SPA102 1 : 250

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "For Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.

TYPICAL DIMENSIONS (UNLESS OTHERWISE NOTED):
2-WAY AISLE WIDTH: MIN. 6.50m
1-WAY AISLE WIDTH: MIN. 3.80m
TYPICAL PARKING SPACE: MIN 2.60 x 5.30m
PARALLEL PARKING SPACE: MIN 2.60 x 5.30m



TYPICAL BARRIER-FREE SPACE MIN.
4.0 x 5.3 x 2.75m HIGH



CONVEX MIRROR

#	DATE	DESCRIPTION	BY
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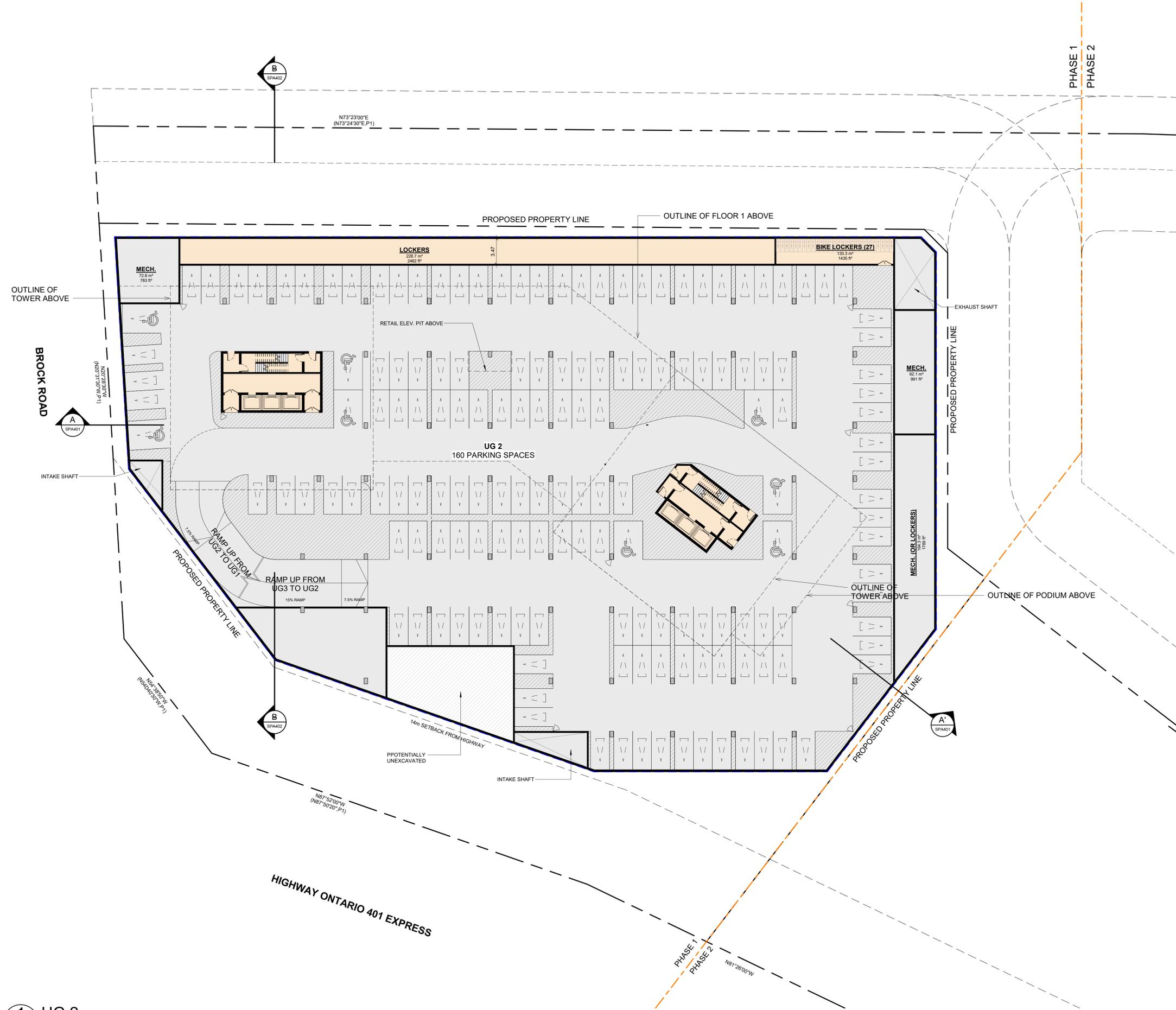
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
UNDERGROUND LEVEL 02

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
As indicated



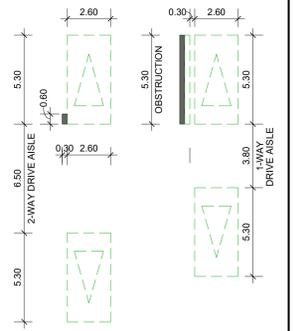
DRAWING NO.
SPA103



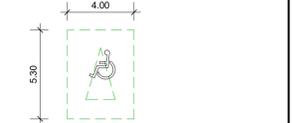
1 UG 2
SPA103 1:250

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Construction must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "For Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.

TYPICAL DIMENSIONS (UNLESS OTHERWISE NOTED):
2-WAY AISLE WIDTH: MIN. 6.50m
1-WAY AISLE WIDTH: MIN. 3.80m
TYPICAL PARKING SPACE: MIN 2.60 x 5.30m
PARALLEL PARKING SPACE: MIN 2.60 x 5.30m



TYPICAL BARRIER-FREE SPACE MIN.
4.0 x 5.3 x 2.75m HIGH



CONVEX MIRROR

#	DATE	DESCRIPTION	BY
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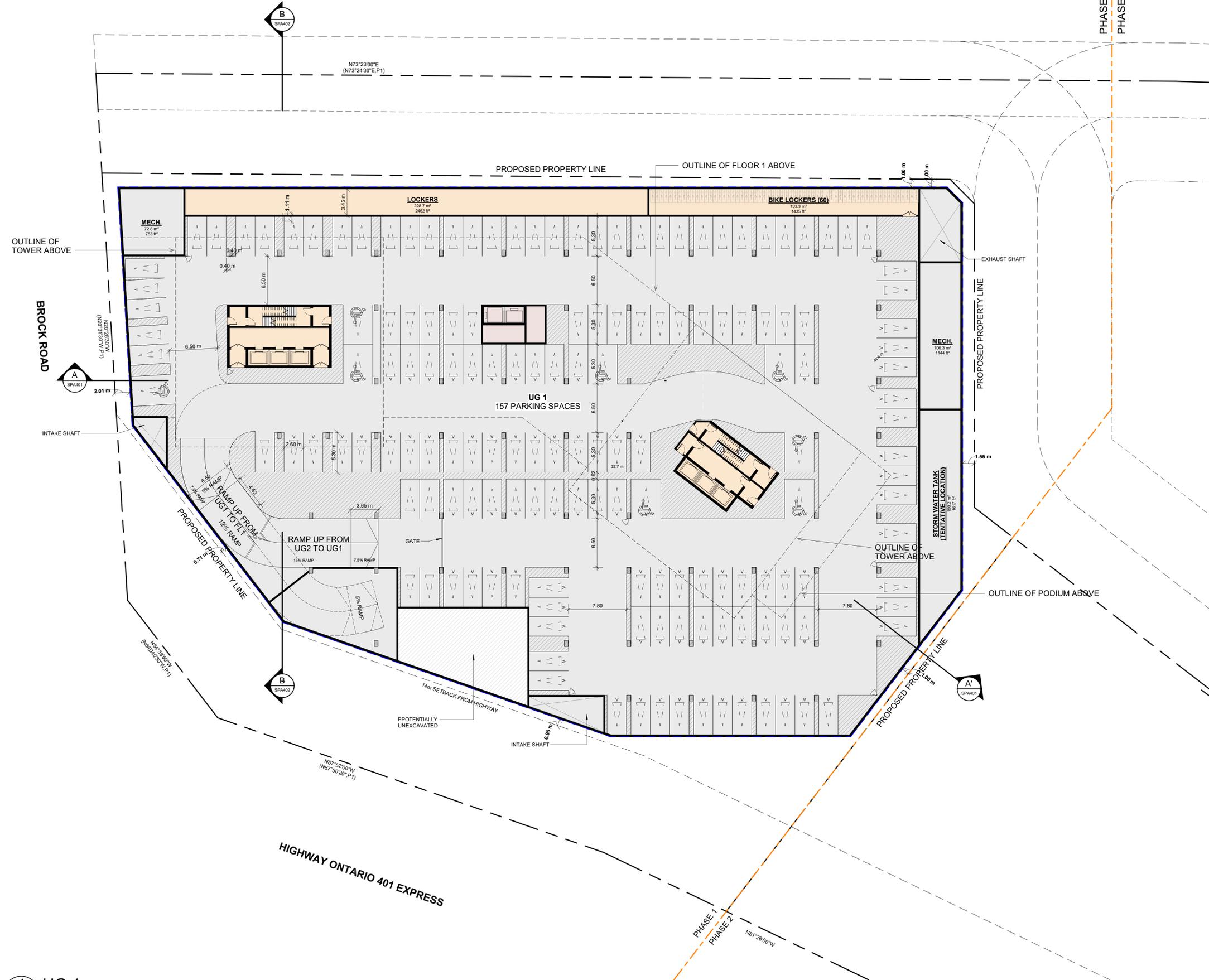
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
UNDERGROUND LEVEL 01

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
As indicated



DRAWING NO.
SPA104

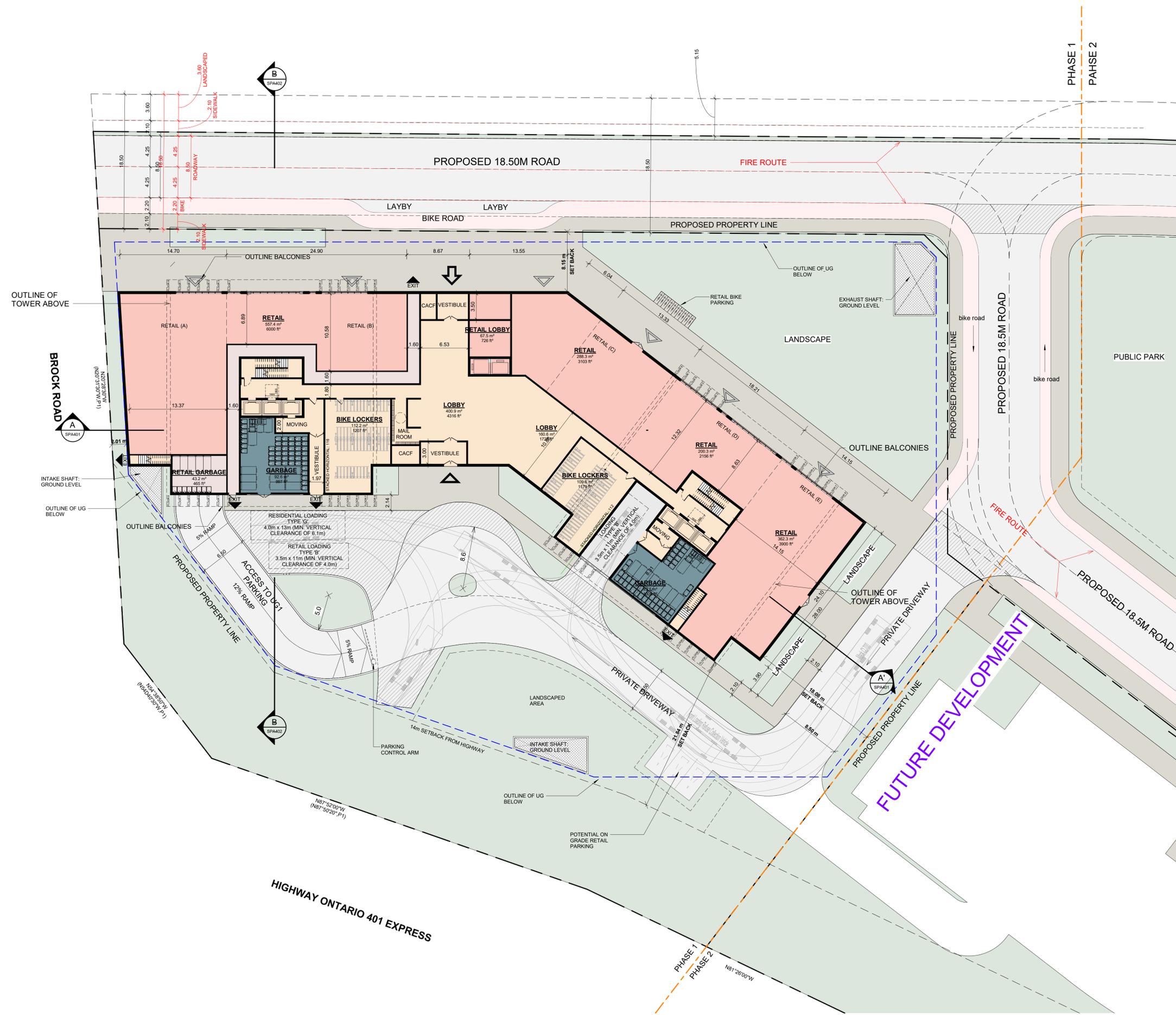


1 UG 1
SPA104 1:250

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of all relevant building jurisdictions. The contractor working from drawings not specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from his work.

LEGEND

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



#	DATE	DESCRIPTION	BY
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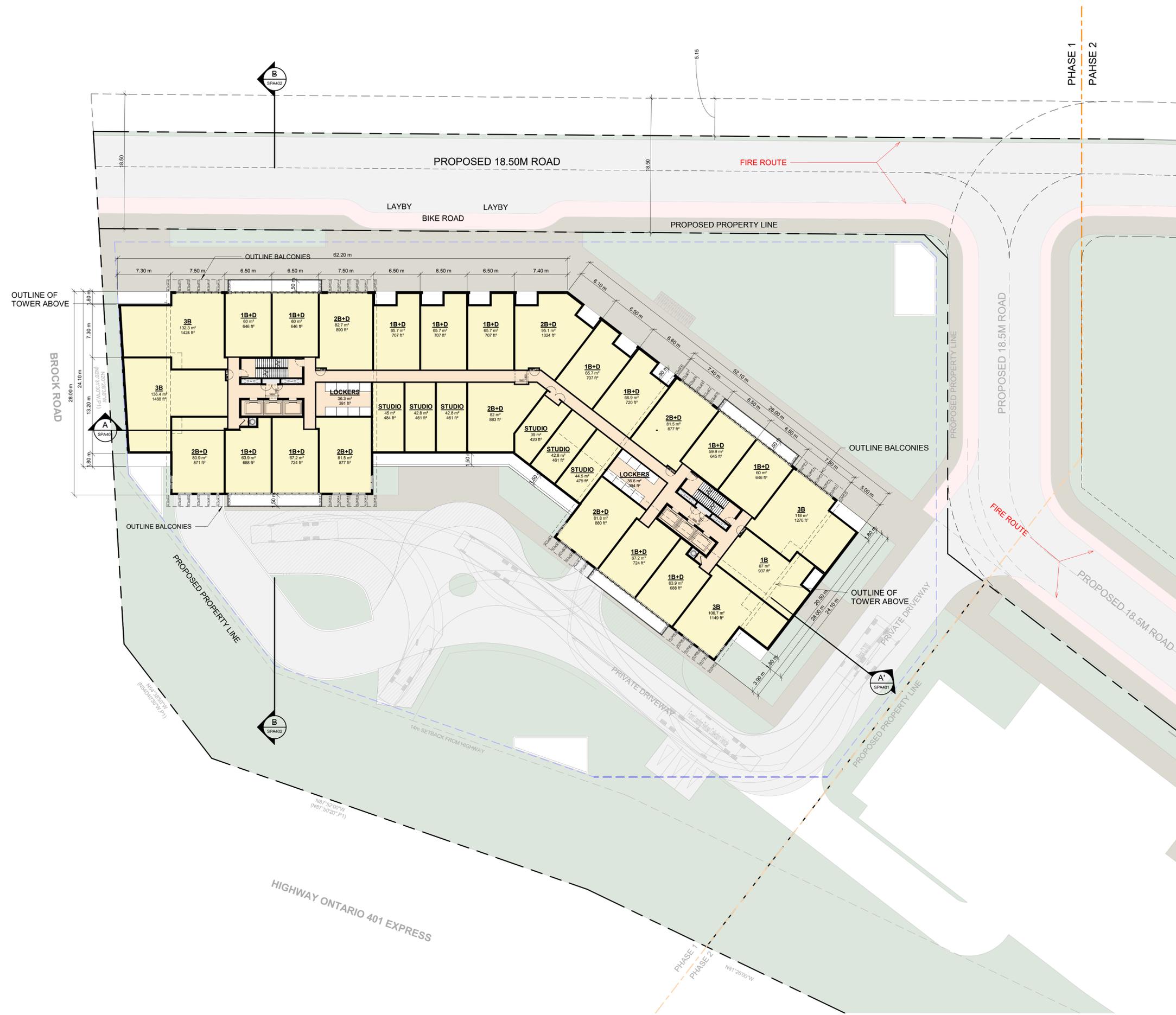
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
FLOOR 01

PROJECT NO.
06.03FRZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
As indicated



This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "for Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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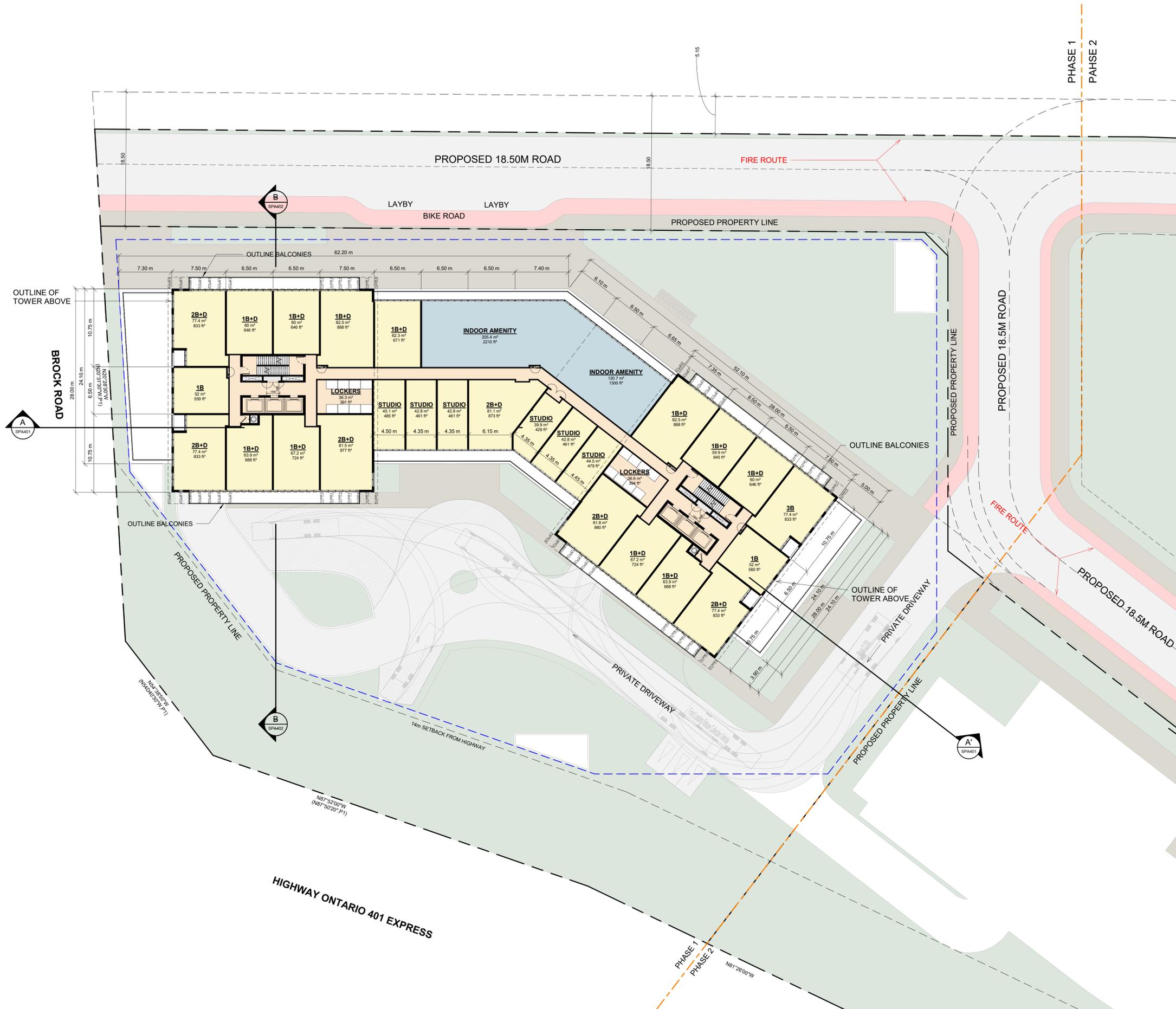
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
FLOOR 02 - 05

PROJECT NO. 06.037RZ
PROJECT DATE 2022-03-14
DRAWN BY AAF
CHECKED BY AYU
SCALE 1 : 250

DRAWING NO. **SPA152**

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authority having jurisdiction. The contractor working from drawings not specifically marked "For Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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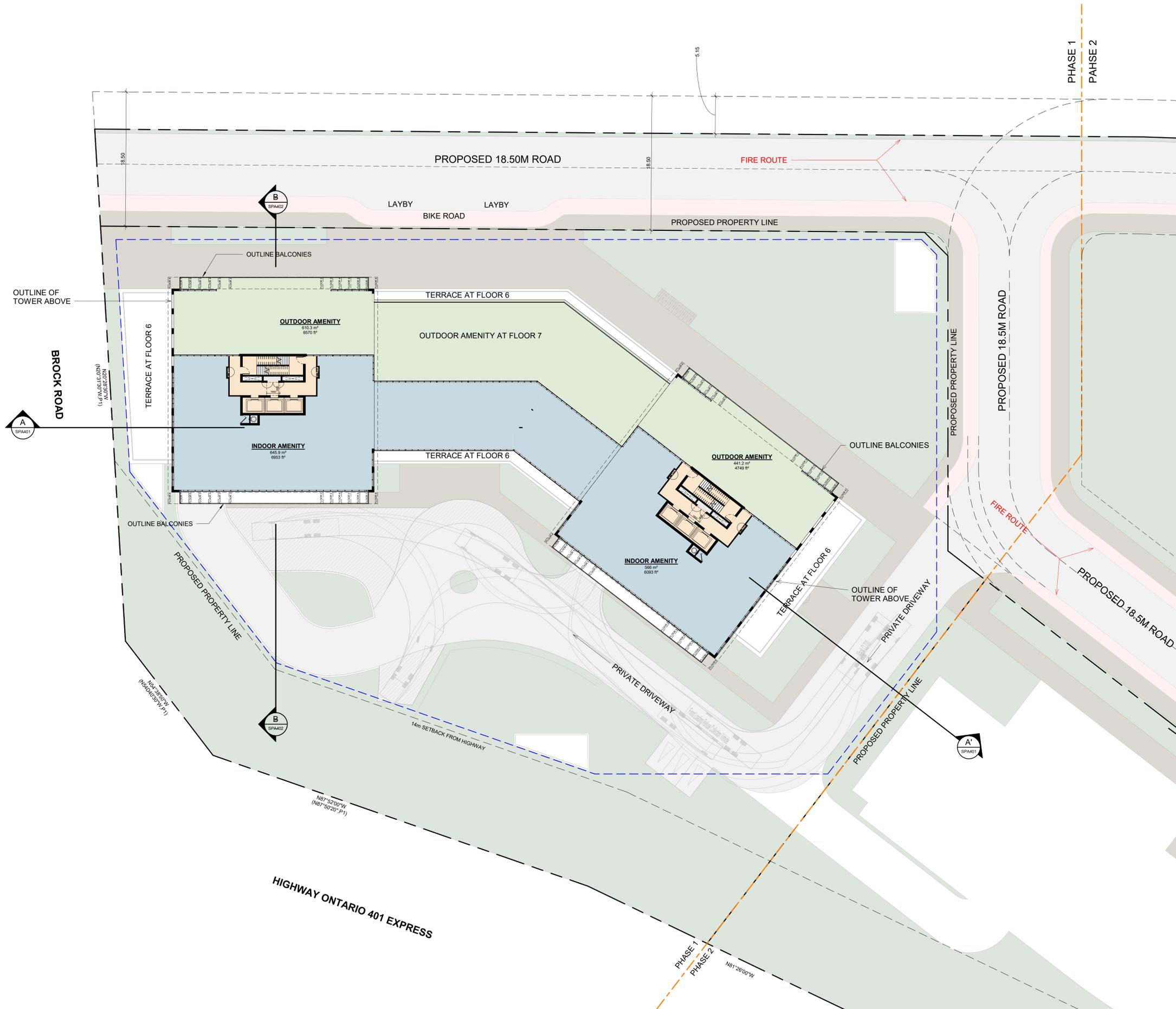
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
FLOOR 06

PROJECT NO.	06.03FRZ
PROJECT DATE	2022-03-14
DRAWN BY	AAF
CHECKED BY	AYU
SCALE	1 : 250

DRAWING NO. **SPA153**

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "for Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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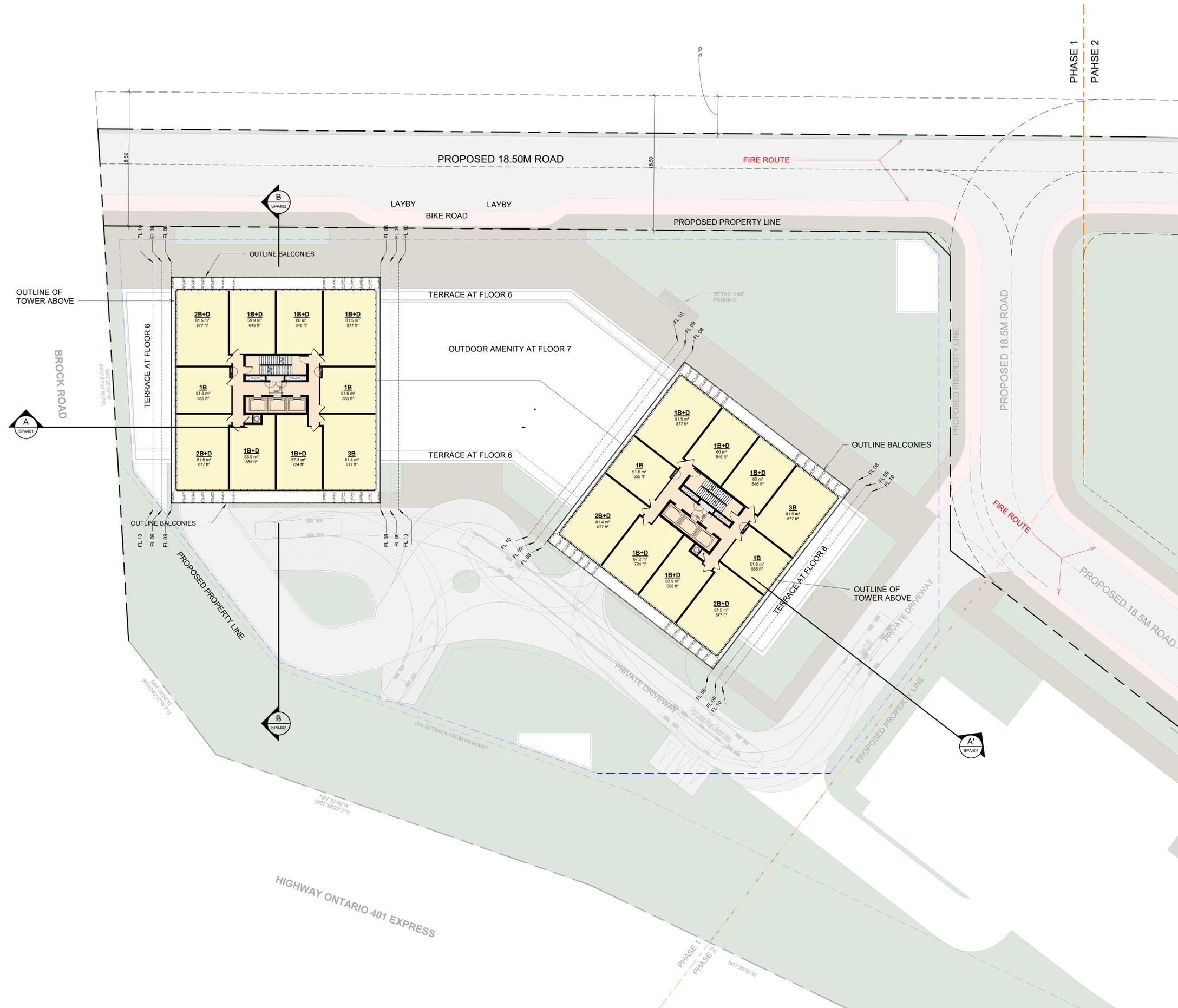
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
FLOOR 07

PROJECT NO. 06.03FRZ
PROJECT DATE 2022-03-14
DRAWN BY AAF
CHECKED BY AYU
SCALE 1 : 250

	DRAWING NO. SPA154
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This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "For Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

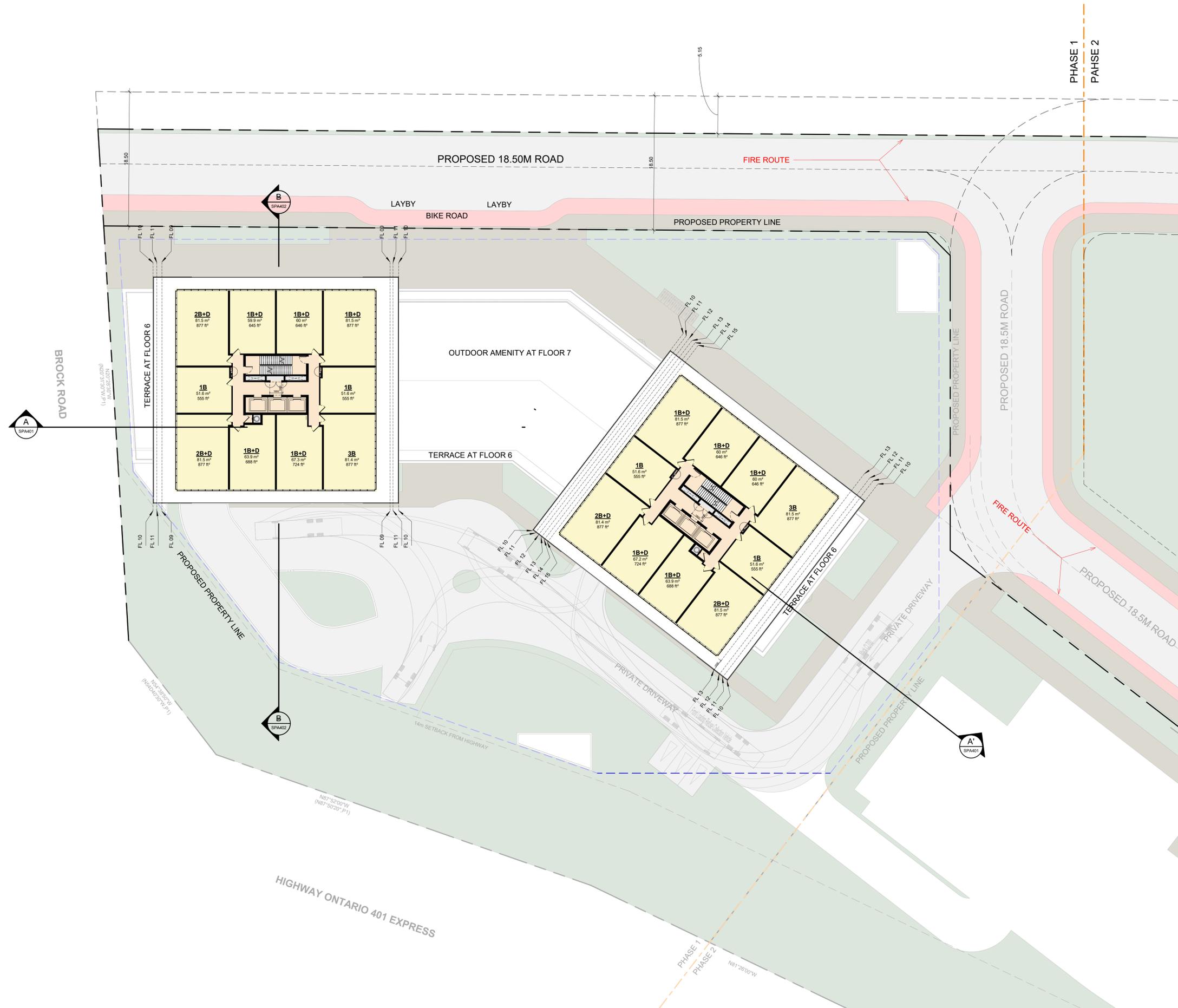
FLOOR 08 - 09

PROJECT NO.
06.03FRZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
1 : 250



DRAWING NO.
SPA155

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of all relevant having jurisdiction. The contractor working from drawings not specifically marked "For Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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**PICKERING DESIGN CENTRE
(BLOCK 1)**
1775 PICKERING PARKWAY
PICKERING, ON.

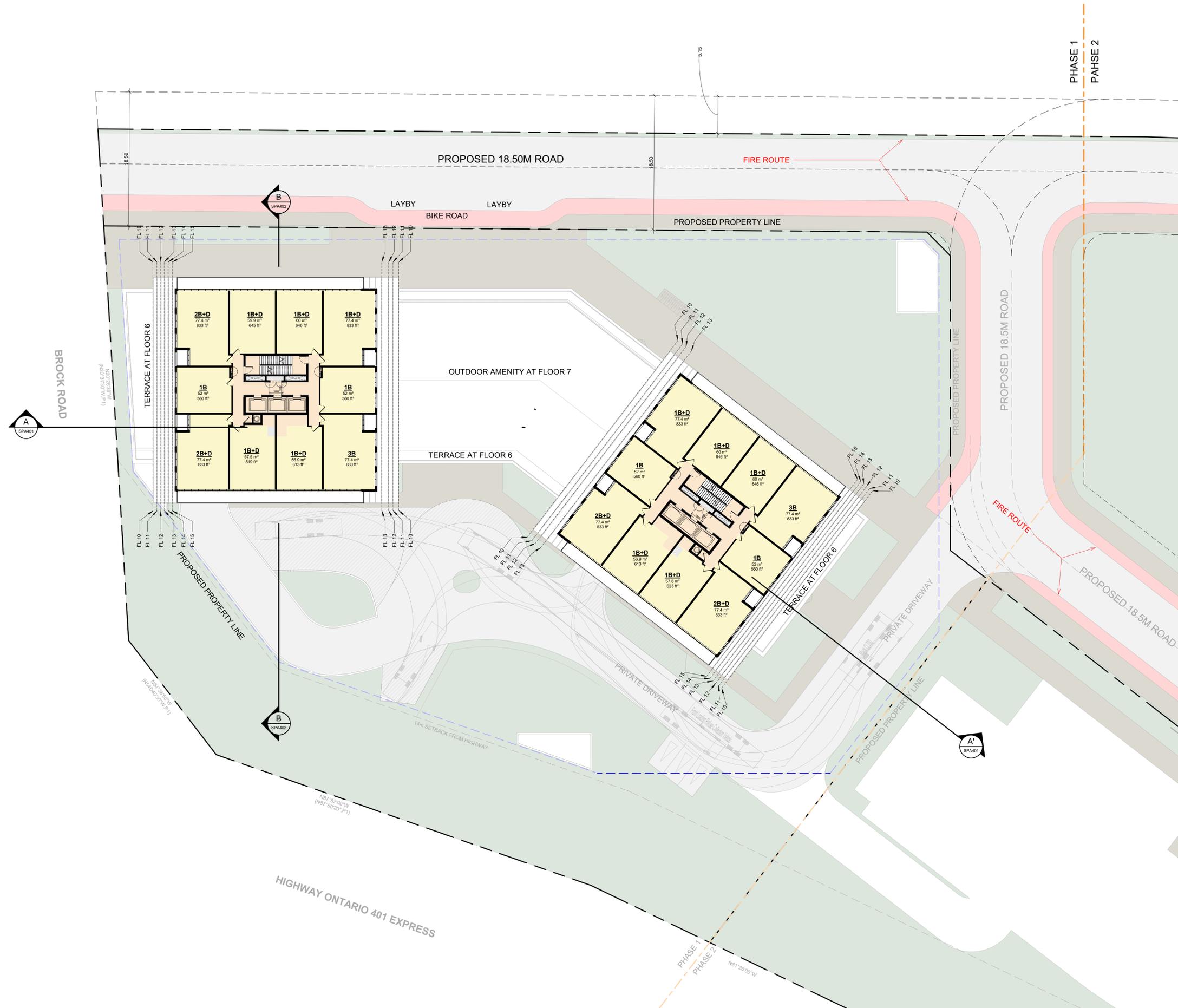
FLOOR 10 - 15

PROJECT NO. 06.037RZ
PROJECT DATE 2022-03-14
DRAWN BY AAF
CHECKED BY AYU
SCALE 1 : 250

DRAWING NO. SPA156



This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "for Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

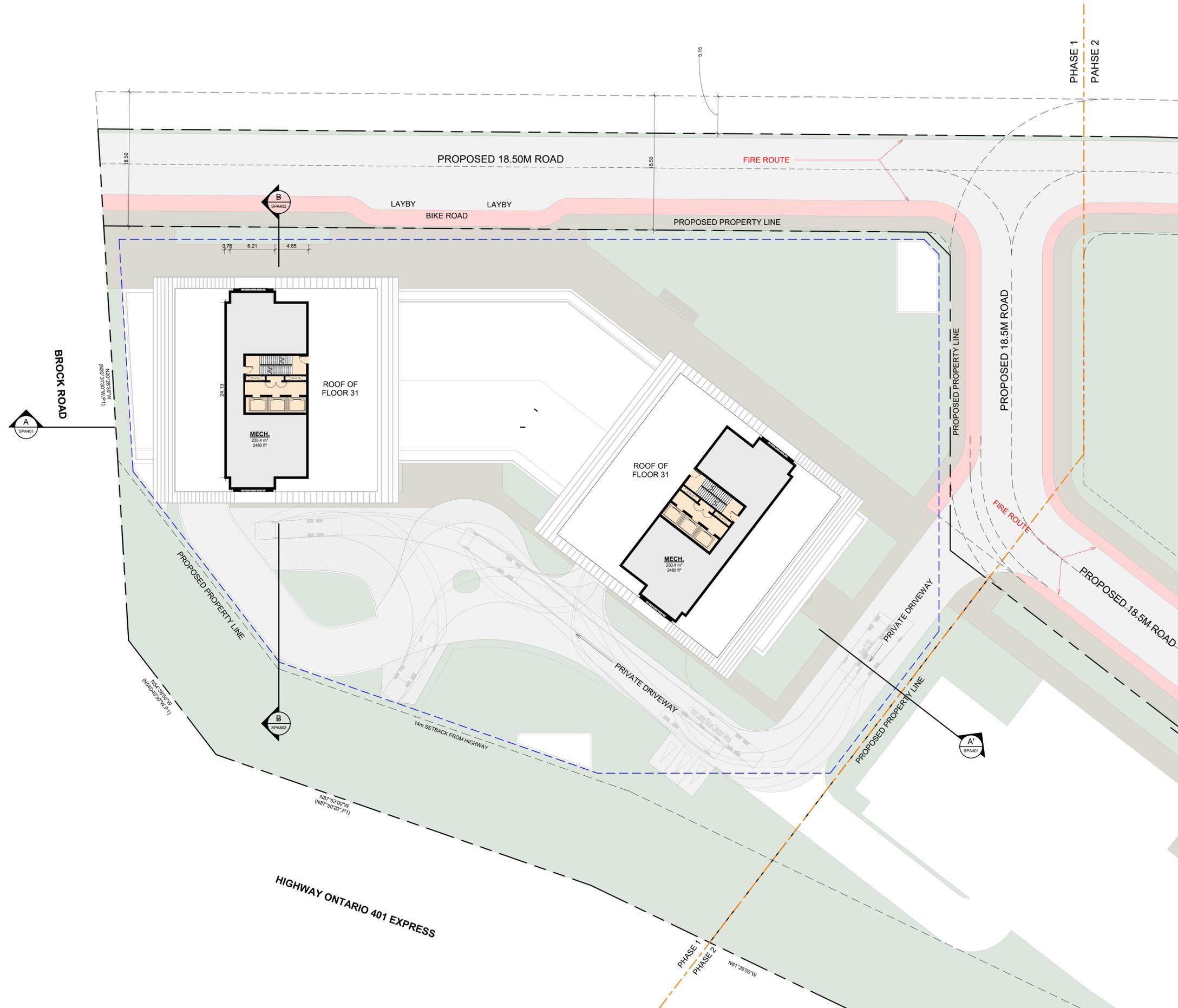
DRAWING
FLOOR 16 - 31 (TYPICAL)

PROJECT NO.
06.037RZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
1 : 250

DRAWING NO.
SPA156B



This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "for Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

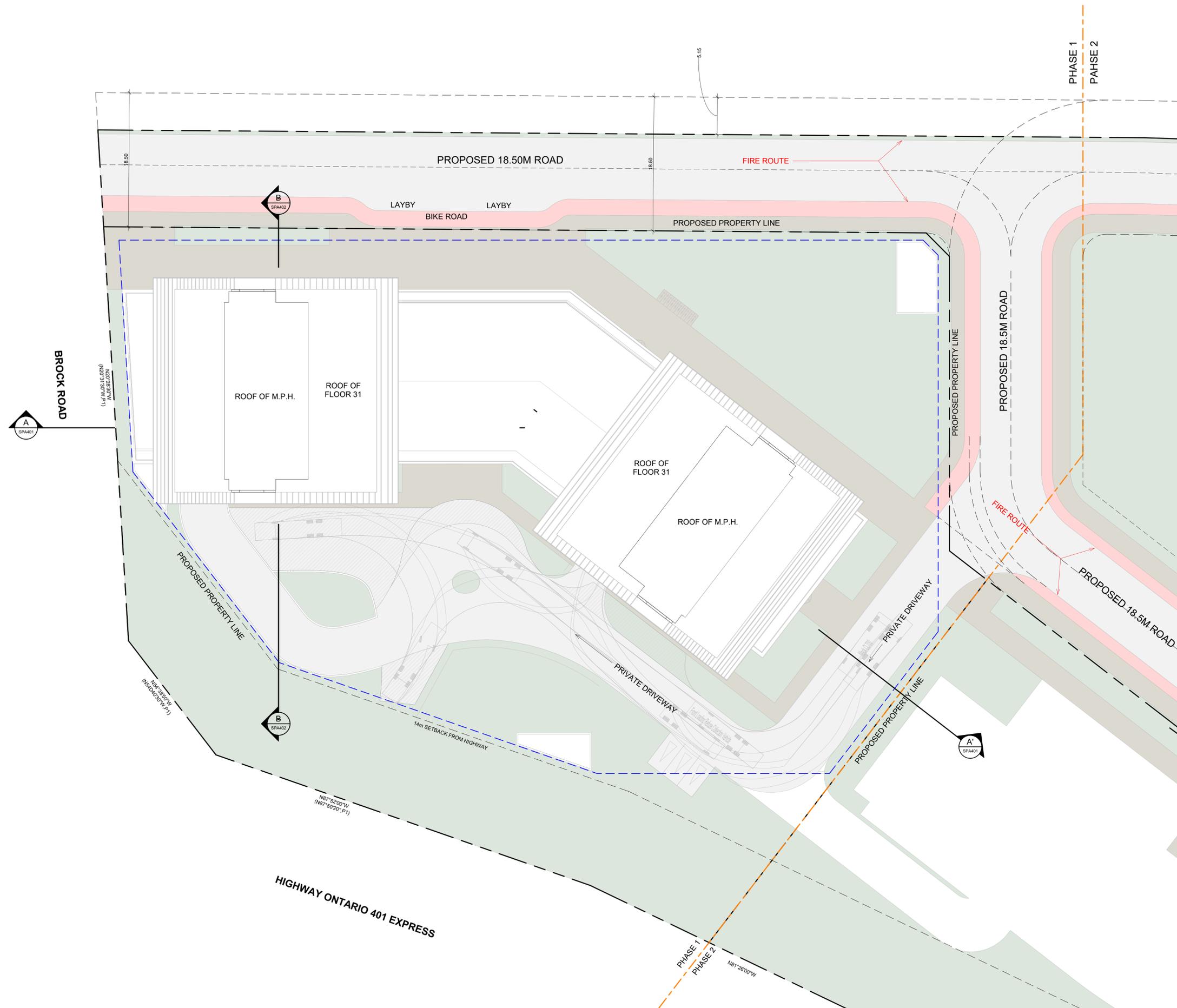
DRAWING
M.P.H.

PROJECT NO. 06.03FRZ	
PROJECT DATE 2022-03-14	
DRAWN BY AAF	
CHECKED BY AYU	
SCALE 1 : 250	



DRAWING NO.
SPA157

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked "for Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



#	DATE	DESCRIPTION	BY
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PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
ROOF PLAN

PROJECT NO.
06.03FRZ
PROJECT DATE
2022-03-14
DRAWN BY
AAF
CHECKED BY
AYU
SCALE
1 : 250

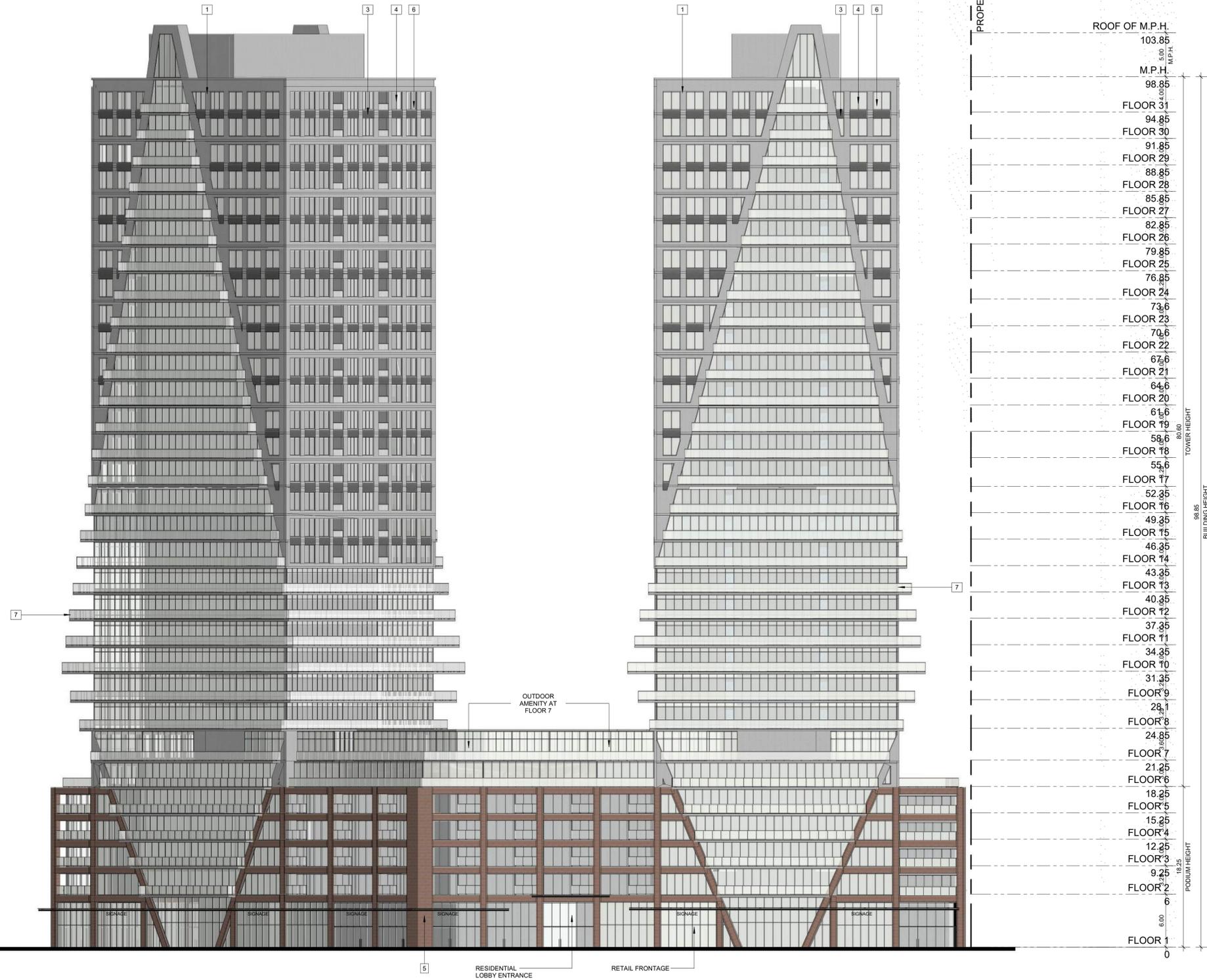


DRAWING NO.
SPA158

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. The drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of applicable governing jurisdiction. The contractor working from drawings not specifically marked for Contractor must assume full responsibility and bear costs for any corrections or damages resulting from his work.

EXTERIOR FINISH LEGEND

1	PRECAST CONCRETE - LIGHT GREY
2	PRECAST CONCRETE - DARK GREY
3	SPANDREL PANEL - DARK GREY
4	ALUMINUM MULLION - GREY
5	MASONRY - DARK RED
6	CLEAR GLAZING
7	BALCONY GLAZING



ROOF OF M.P.H.	103.85
M.P.H.	98.85
FLOOR 31	94.85
FLOOR 30	91.85
FLOOR 29	88.85
FLOOR 28	85.85
FLOOR 27	82.85
FLOOR 26	79.85
FLOOR 25	76.85
FLOOR 24	73.6
FLOOR 23	70.6
FLOOR 22	67.6
FLOOR 21	64.6
FLOOR 20	61.6
FLOOR 19	58.6
FLOOR 18	55.6
FLOOR 17	52.35
FLOOR 16	49.35
FLOOR 15	46.35
FLOOR 14	43.35
FLOOR 13	40.35
FLOOR 12	37.35
FLOOR 11	34.35
FLOOR 10	31.35
FLOOR 9	28.1
FLOOR 8	24.85
FLOOR 7	21.35
FLOOR 6	18.25
FLOOR 5	15.25
FLOOR 4	12.25
FLOOR 3	9.25
FLOOR 2	6
FLOOR 1	0

#	DATE	DESCRIPTION	BY
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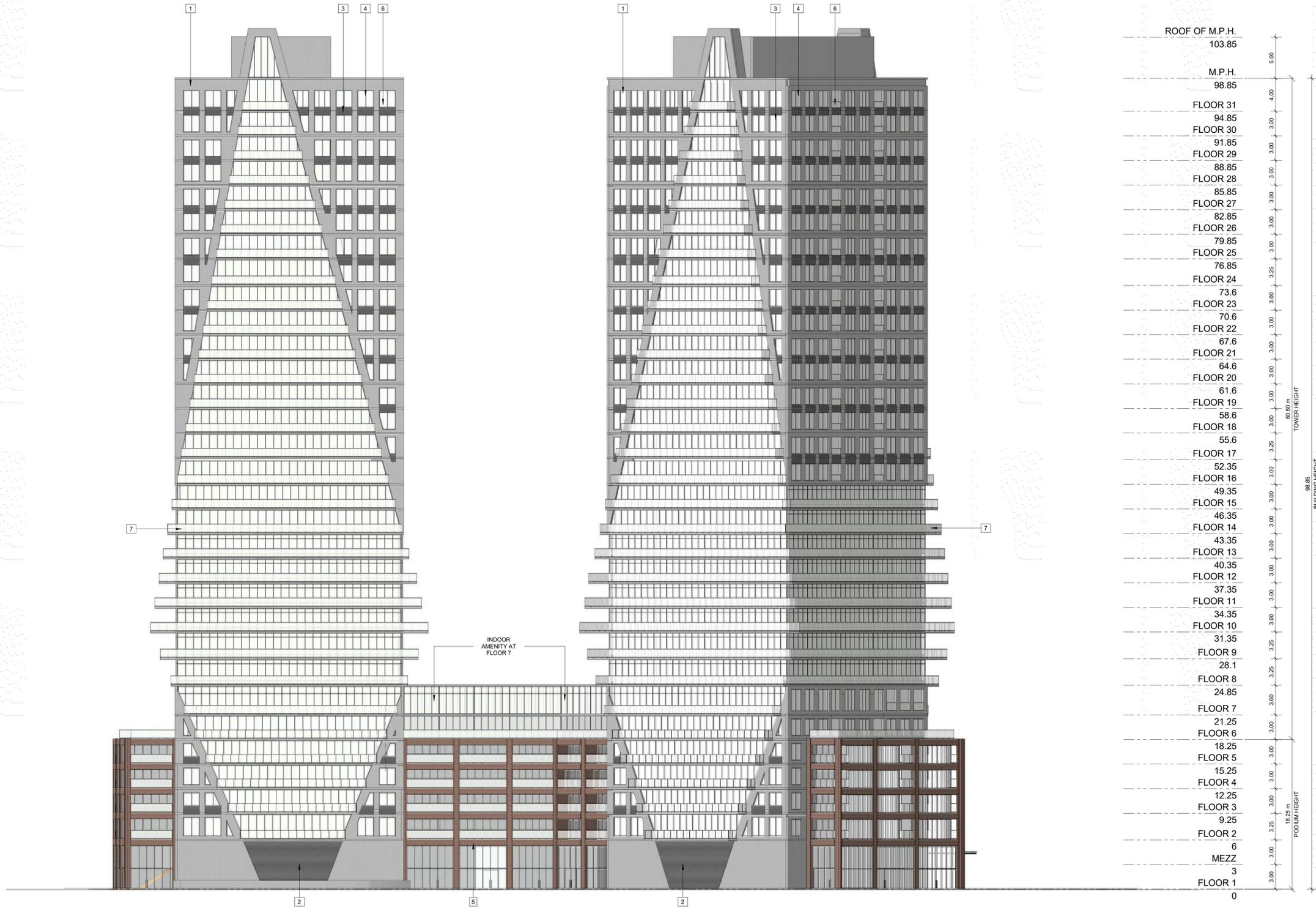
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
NORTH ELEVATION

PROJECT NO.	06.037RZ
PROJECT DATE	2022-03-14
DRAWN BY	SKA
CHECKED BY	AYU
SCALE	As indicated

DRAWING NO.
SPA301

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of applicable governing jurisdiction. The contractor working from drawings not specifically marked for Contractor must assume full responsibility and bear costs for any corrections or damages resulting from his work.



1 South Elevation
SPA302 1 : 250

EXTERIOR FINISH LEGEND	
1	PRECAST CONCRETE - LIGHT GREY
2	PRECAST CONCRETE - DARK GREY
3	SPANDREL PANEL - DARK GREY
4	ALUMINUM MULLION - GREY
5	MASONRY - DARK RED
6	CLEAR GLAZING
7	BALCONY GLAZING

#	DATE	DESCRIPTION	BY
---	------	-------------	----



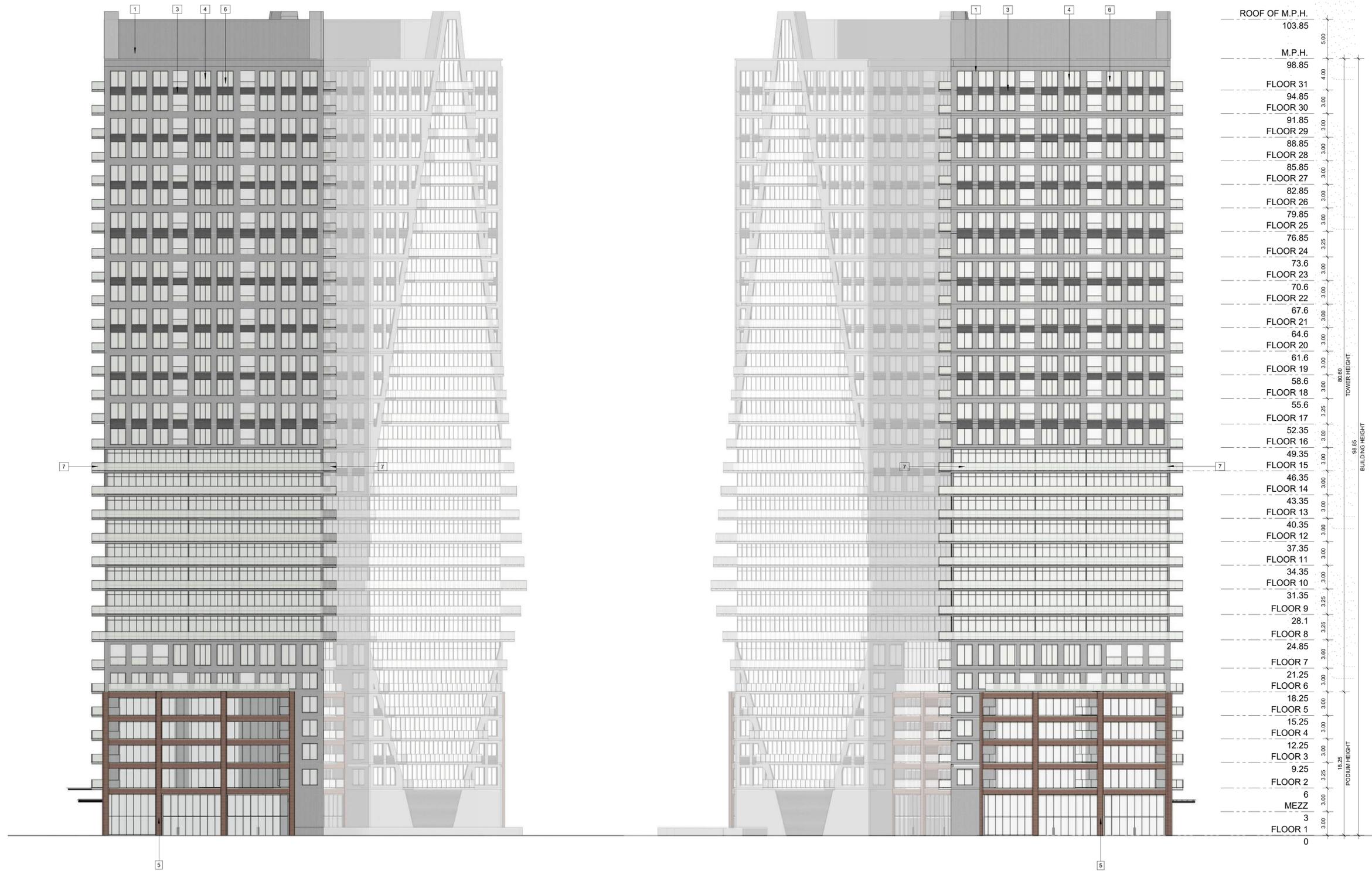
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
SOUTH ELEVATION

PROJECT NO.	06.037RZ
PROJECT DATE	2022-03-14
DRAWN BY	SKA
CHECKED BY	AYU
SCALE	As indicated

DRAWING NO.
SPA302

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. The drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of applicable building jurisdiction. The contractor working from drawings not specifically marked "For Contractor" must assume full responsibility and bear costs for any corrections or damages resulting from his work.



2 West Elevation
SPA303 1 : 250

1 South East Elevation
SPA303 1 : 250

EXTERIOR FINISH LEGEND	
1	PRECAST CONCRETE - LIGHT GREY
2	PRECAST CONCRETE - DARK GREY
3	SPANDREL PANEL - DARK GREY
4	ALUMINUM MULLION - GREY
5	MASONRY - DARK RED
6	CLEAR GLAZING
7	BALCONY GLAZING

#	DATE	DESCRIPTION	BY



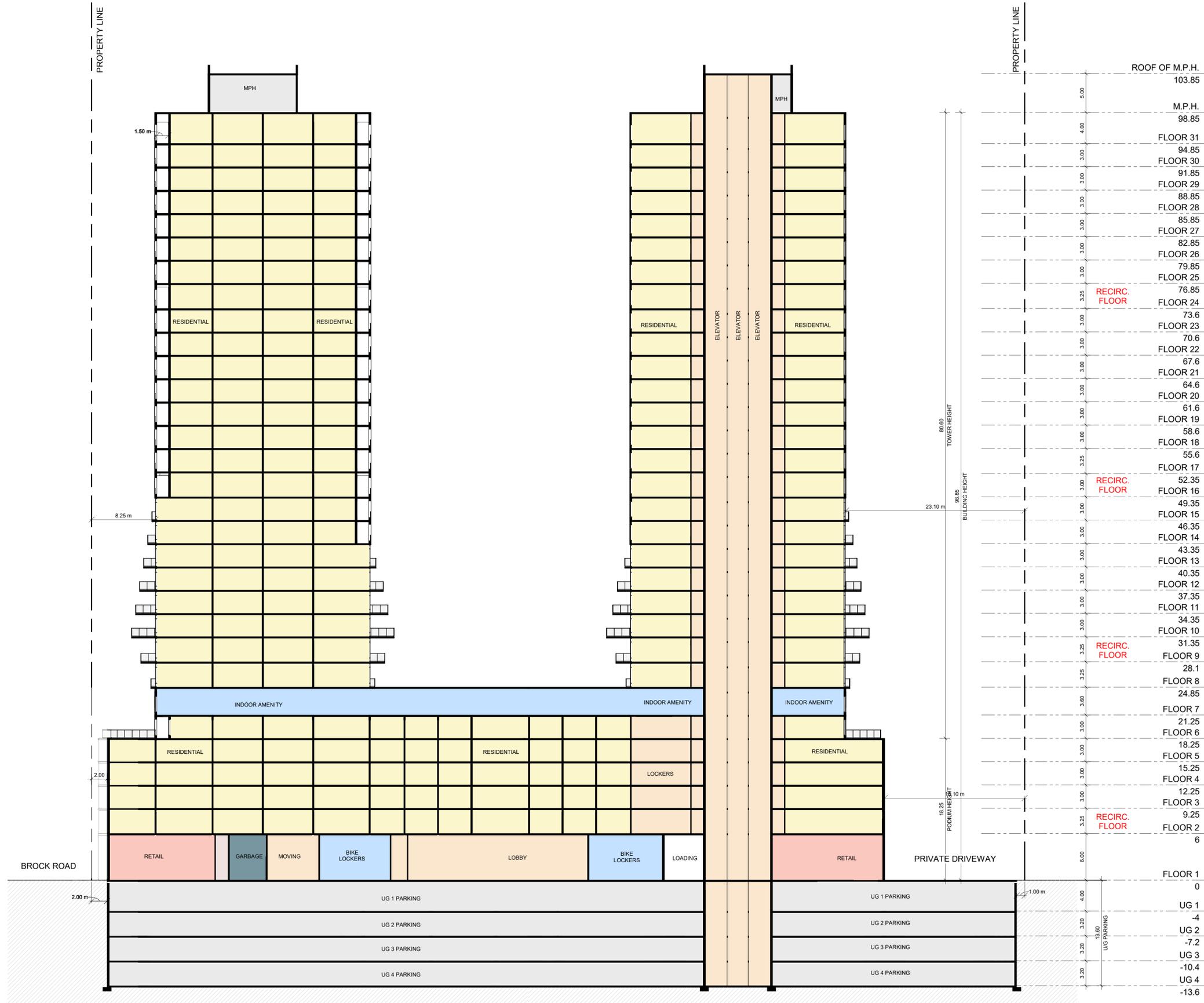
PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
EAST AND WEST ELEVATIONS

PROJECT NO.	06.037RZ
PROJECT DATE	2022-03-14
DRAWN BY	SKA
CHECKED BY	AYU
SCALE	As indicated

DRAWING NO.
SPA303

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc. information shown on this drawing. Refer to the appropriate consultant drawings before proceeding with the work. Contractor must conform to all applicable codes and requirements of authority having jurisdiction. The contractor working from drawings not specifically marked for Contractor must assume full responsibility and bear costs for any corrections or damages resulting from his work.



A Section A-A
SPA401/ 1 : 250

#	DATE	DESCRIPTION	BY
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PROJECT
PICKERING DESIGN CENTRE (BLOCK 1)
1775 PICKERING PARKWAY
PICKERING, ON.

DRAWING
BUILDING SECTIONS

PROJECT NO.
06.037RZ

PROJECT DATE
2022-03-14

DRAWN BY
SKA

CHECKED BY
AYU

SCALE
1 : 250

DRAWING NO.
SPA401

APPENDIX E

STAMSON 5.04 Output

STAMSON 5.0 NORMAL REPORT Date: 22-03-2022 13:55:35
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a.te Time Period: Day/Night 16/8 hours
 Description: **Predicted daytime and nighttime sound levels at the south
 façade of the podium, prediction location [A].**

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

Train Type	! Trains	! Speed ! (km/h)	! # loc ! /Train	! # Cars ! /Train	! Eng type	! Cont !weld
1. 1D	! 29.0/8.0	! 137.0	! 1.0	! 12.0	! Diesel!	No
2. 2D	! 21.0/1.0	! 137.0	! 2.0	! 12.0	! Diesel!	No
3. 1E	! 88.0/18.0	! 137.0	! 1.0	! 12.0	! Diesel!	No
4. 2E	! 42.0/8.0	! 137.0	! 2.0	! 12.0	! Diesel!	No

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

Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 255.00 / 255.00 m
 Receiver height : 17.00 / 17.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 No Whistle
 Reference angle : 0.00

Rail data, segment # 2: CN (day/night)

Train Type	! Trains	! Speed ! (km/h)	! # loc ! /Train	! # Cars ! /Train	! Eng type	! Cont !weld
* 1. FREIGHT	! 15.4/5.1	! 105.0	! 4.0	! 140.0	! Diesel!	No
* 2. WAY	! 0.0/5.1	! 105.0	! 4.0	! 25.0	! Diesel!	No
* 3. PASSENGER	! 43.5/1.3	! 150.0	! 2.0	! 10.0	! Diesel!	No

* The identified number of trains have been adjusted for future growth using the following parameters:

Train type:	! Unadj. !	! Annual % !	! Years of !
No Name	! Trains !	! Increase !	! Growth !
1. FREIGHT	! 12.0/4.0	! 2.50	! 10.00 !
2. WAY	! 0.0/4.0	! 2.50	! 10.00 !
3. PASSENGER	! 34.0/1.0	! 2.50	! 10.00 !

Data for Segment # 2: CN (day/night)

Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)

Receiver source distance : 285.00 / 285.00 m
 Receiver height : 17.00 / 17.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 No Whistle
 Reference angle : 0.00

Results segment # 1: GO (day)

 LOCOMOTIVE (0.00 + 64.75 + 0.00) = 64.75 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 45 0.12 80.02 -13.78 -1.49 0.00 0.00 0.00 64.75

WHEEL (0.00 + 58.46 + 0.00) = 58.46 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 45 0.22 75.21 -15.07 -1.68 0.00 0.00 0.00 58.46

Segment Leq : 65.67 dBA

Results segment # 2: CN (day)

 LOCOMOTIVE (0.00 + 63.16 + 0.00) = 63.16 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 45 0.12 78.97 -14.32 -1.49 0.00 0.00 0.00 63.16

WHEEL (0.00 + 57.21 + 0.00) = 57.21 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 45 0.22 74.55 -15.66 -1.68 0.00 0.00 0.00 57.21

Segment Leq : 64.14 dBA

Total Leq All Segments: 67.98 dBA

Results segment # 1: GO (night)

 LOCOMOTIVE (0.00 + 60.43 + 0.00) = 60.43 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 45 0.12 75.71 -13.78 -1.49 0.00 0.00 0.00 60.43

WHEEL (0.00 + 54.33 + 0.00) = 54.33 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 45 0.22 71.08 -15.07 -1.68 0.00 0.00 0.00 54.33

Segment Leq : 61.38 dB
Results segment # 2: CN (night)

LOCOMOTIVE (0.00 + 60.39 + 0.00) = 60.39 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	45	0.12	76.20	-14.32	-1.49	0.00	0.00	0.00	60.39

WHEEL (0.00 + 54.85 + 0.00) = 54.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	45	0.22	72.19	-15.66	-1.68	0.00	0.00	0.00	54.85

Segment Leq : 61.46 dBA
Total Leq All Segments: 64.43 dBA

Road data, segment # 1: HWY401 (day/night)

Car traffic volume : 102942/51471 veh/TimePeriod *

Medium truck volume : 5381/2691 veh/TimePeriod *

Heavy truck volume : 8656/4328 veh/TimePeriod *

Posted speed limit : 100 km/h

Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 118200

Percentage of Annual Growth : 2.50

Number of Years of Growth : 16.00

Medium Truck % of Total Volume : 4.60

Heavy Truck % of Total Volume : 7.40

Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: HWY401 (day/night)

Angle1 Angle2 : -90.00 deg 45.00 deg

Wood depth : 0 (No woods.)

No of house rows : 0 / 0

Surface : 1 (Absorptive ground surface)

Receiver source distance : 180.00 / 180.00 m

Receiver height : 17.00 / 17.00 m

Topography : 1 (Flat/gentle slope; no barrier)

Reference angle : 0.00

Road data, segment # 2: HWY401 (day/night)

Car traffic volume : 102942/51471 veh/TimePeriod *

Medium truck volume : 5381/2691 veh/TimePeriod *
 Heavy truck volume : 8656/4328 veh/TimePeriod *
 Posted speed limit : 100 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 118200
 Percentage of Annual Growth : 2.50
 Number of Years of Growth : 16.00
 Medium Truck % of Total Volume : 4.60
 Heavy Truck % of Total Volume : 7.40
 Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 2: HWY401 (day/night)

Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 210.00 / 210.00 m
 Receiver height : 17.00 / 17.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Road data, segment # 3: Brock (day/night)

Car traffic volume : 31680/3520 veh/TimePeriod *
 Medium truck volume : 1296/144 veh/TimePeriod *
 Heavy truck volume : 3024/336 veh/TimePeriod *
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 40000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 3.60
 Heavy Truck % of Total Volume : 8.40
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 3: Brock (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 36.00 / 36.00 m
 Receiver height : 17.00 / 17.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: HWY401 (day)

Source height = 1.65 m

ROAD (0.00 + 69.79 + 0.00) = 69.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	45	0.19	84.25	0.00	-12.85	-1.62	0.00	0.00	0.00

SubLeq
69.79

Segment Leq : 69.79 dBA

Results segment # 2: HWY401 (day)

Source height = 1.65 m

ROAD (0.00 + 68.99 + 0.00) = 68.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	45	0.19	84.25	0.00	-13.64	-1.62	0.00	0.00	0.00

SubLeq
68.99

Segment Leq : 68.99 dBA

Results segment # 3: Brock (day)

Source height = 1.70 m

ROAD (0.00 + 67.19 + 0.00) = 67.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
0	90	0.19	75.24	0.00	-4.52	-3.52	0.00	0.00	0.00

SubLeq
67.19

Segment Leq : 67.19 dBA

Total Leq All Segments: 73.56 dBA

Results segment # 1: HWY401 (night)

Source height = 1.65 m

ROAD (0.00 + 69.79 + 0.00) = 69.79 dBA

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

-90	45	0.19	84.25	0.00	-12.85	-1.62	0.00	0.00	0.00
69.79									

Segment Leq : 69.79 dBA

Results segment # 2: HWY401 (night)

Source height = 1.65 m

ROAD (0.00 + 68.99 + 0.00) = 68.99 dBA

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

-90	45	0.19	84.25	0.00	-13.64	-1.62	0.00	0.00	0.00
68.99									

Segment Leq : 68.99 dBA

Results segment # 3: Brock (night)

Source height = 1.70 m

ROAD (0.00 + 60.66 + 0.00) = 60.66 dBA

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

0	90	0.19	68.70	0.00	-4.52	-3.52	0.00	0.00	0.00
60.66									

Segment Leq : 60.66 dBA

Total Leq All Segments: 72.70 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 74.62
 (NIGHT): 73.30