

October 3, 2024

VIA E-MAIL TO: slauzon@distrikt.com

Sasha Lauzon, M.Pl., MCIP, RPP
Vice President of Development & Planning
Distrikt
90 Wingold Avenue, Unit 1
Toronto, Ontario
M6B 1P5

**Re: Reliance Letter – Noise Feasibility Study, Proposed Mixed-Use/Residential
Development, Oakville TOC Development, 166 South Service Road, Oakville, Ontario**

Dear Sasha,

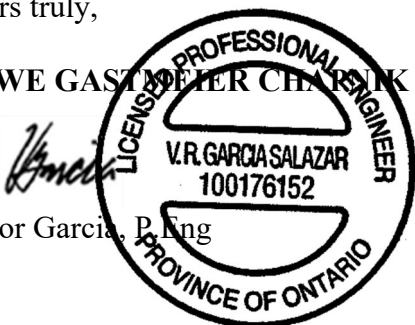
As requested, we are providing this reliance letter for the proposed mixed-use/residential development located at 166 South Service Road in Oakville, Ontario. Our previous report was entitled, “Noise Feasibility Study, Proposed Mixed-Use/Residential Development, 166 South Service Road, Oakville, Ontario” dated March 26, 2024. The latest site plan for the proposed development prepared by Sweeny & Co Architects dated September 20, 2024, is attached.

The building locations are generally the same as those included in the previous report. The heights of the proposed buildings have decreased by 1-storey for Tower 1, increased by 1-storey for Tower 2, and Tower 3 has been increased by 5-storeys. The recommendations included in our previous report remain valid. The detailed study will be submitted with the next Oakville TOC submission which will include responses to comments provided by the Town of Oakville including, updated road and rail traffic information, a review of detailed floor plans and building elevations to refine glazing requirements, and a statement regarding air traffic noise. We trust this is sufficient for your current purposes, please feel free to contact us if you have any further questions or concerns.

Yours truly,

HOWE GASTMEIER CHAPNIK LIMITED

Victor Garcia, P.Eng



Any conclusions or recommendations provided by HGC Engineering in this letter/memo have limitations as detailed on our website: <https://acoustical-consultants.com/limitations/>.

Noise Feasibility Study

Proposed Mixed-Use/Residential Development

166 South Service Road

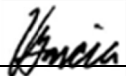
Oakville, Ontario

Prepared for:

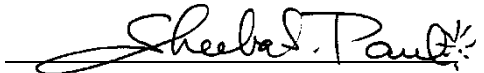
166 South Service Inc.
1-90 Wingold Avenue
North York, Ontario, M6B 1P5

Prepared by




Victor Garcia, PEng

Reviewed by


Sheeba Paul, MEng, PEng

March 26, 2024

HGC Project No. 02100766

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ACOUSTICS



NOISE



VIBRATION

1 Introduction and Summary

HGC Engineering was retained by 166 South Service Inc. to conduct a noise feasibility study for a proposed mixed-use/residential development located at 166 South Service Road in Oakville, Ontario. The study is required by the municipality as part of the approvals process.

This report has been updated to include an updated site plan prepared by Sweeny & Co Architects dated March 6, 2024.

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

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

Sound level impacts from the existing neighbouring commercial/retail uses were also investigated and were determined to have the potential to exceed the background sound levels during a worst-case operational scenario. Mitigation in the form of architectural solutions, such as utilizing balconies of appropriate height to mitigate sound levels at the façades of the buildings, are recommended if specific commercial uses are to remain. Detailed noise studies are recommended for each building as the development proposal proceeds.



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

2 Site Descriptions and Sources of Sound

An aerial photo showing a key plan is attached as Figure 1 also showing the surrounding land uses. A proposed site plan prepared by Sweeny & Co Architects dated March 6, 2024, is included as Figure 2. The proposed development will consist of three residential towers: 52-storeys (Tower 1) and 56-storeys (Tower 2) connected by a 3-storey podium; and 44-storeys (Tower 3) with a 6-storey podium. Seven levels of underground parking are expected to be provided beneath the towers. The ground floors of the proposed buildings are proposed to include primarily retail uses. The 3-storey podium associated with Towers 1 and 2 is proposed to include commercial/retail spaces on the ground level, bicycle parking on the mezzanine level, and indoor amenity space/commercial gym space on the 3rd floor. The fourth floors of Towers 1 and 2 include indoor amenity space. Residential suites begin on the 5th floors of Towers 1 and 2. For the podium associated with Tower 3, residential suites begin on the 2nd floor. The ground floor includes retail space with bike parking on the mezzanine level. Appendix C includes the preliminary drawings for the proposed development.

The site is located at 166 South Service Road in Oakville, Ontario. Currently the subject site includes various commercial buildings which are to be removed. The remaining surrounding lands are primarily existing commercial/industrial land uses including: Holiday Inn Oakville and an office building to the northeast; Value Village, Famijoy Supermarket, and mixed commercial uses to the southwest; a car wash among other commercial buildings to the southeast; and the Oakville GO Station further to the southeast. A site visit was conducted to investigate the noise sources associated with the surrounding uses and is further discussed in Section 6.0.

3 Sound Level Criteria

3.1 Road and Rail Traffic Noise

Guidelines for acceptable levels of road and rail traffic noise applicable to residential developments are given in the MECP publication NPC-300, “Environmental Noise Guideline Stationary and



Transportation Sources – Approval and Planning”, release date October 21, 2013 and are listed in Table 1 below. The Federation of Canadian Municipalities (FCM) and Railway Association of Canada (RAC) “Guidelines for New Development in Proximity to Railway Operations”, dated May 2013 (RAC/FCM guidelines were also reviewed dated November 2006). The values in Table 1 are energy equivalent (average) sound levels [L_{EQ}] in units of A-weighted decibels [dBA].

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

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

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

The guidelines in the MECP publication allow the sound level in an OLA to be exceeded by up to 5 dBA, without mitigation, if warning clauses are placed in the purchase and rental agreements to the property. Where OLA sound levels exceed 60 dBA, physical mitigation is required to reduce the OLA sound level to below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible.

Indoor guidelines for rail noise are 5 dBA more stringent than for road noise, to account for the low frequency (rumbling) character of locomotive sound, and its greater potential to transmit through exterior wall/window assemblies.

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

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

to 60 dBA or when daytime sound levels at bedroom/living/dining room windows are in the range of 56 to 65 dBA.

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

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

4 Traffic Noise Predictions

4.1 Road Traffic Data

Road traffic data for the QEW was obtained from the MTO in the form of summer average daily traffic (SADT) for the year 2019 and is provided in Appendix B. The data was projected to the year 2034 using a 2.5%/year growth rate. A daytime commercial vehicle percentage of 14% was split into 5.4% medium trucks and 8.6% heavy trucks, was used in the analysis. A day/night split of 67%/13% and a posted speed limit of 100 km/h were used in the analysis.

Road traffic data for Cross Avenue was obtained from the Town of Oakville. The data was provided in the form of peak hour turning movement counts for the year 2020 and is provided in Appendix B. The traffic data was projected to the year 2034 using a 2.5% growth rate. A commercial vehicle percentage for Cross Avenue of 5.4% was provided and split into 2.1% medium trucks and 3.3% heavy trucks. A day/night split of 90%/10% was assumed in the analysis. A posted speed limit of 50 km/h was used for Cross Avenue.

Ultimate road traffic information for Trafalgar Road was obtained from Region of Halton personnel and is provided in Appendix A. A posted speed limit of 50 km/h was used for Trafalgar Road. An existing commercial vehicle percentage of 2.7% was obtained from the Region of Halton, split into 1.5% medium trucks and 1.2% heavy trucks was also used in the analysis, along with a day-night split of 90%/10%. Table 2 summarizes the road traffic data used in the analysis.



Table 2: Road Traffic Data

Road Name		Cars	Medium Trucks	Heavy Trucks	Total
QEW <i>Projected to 2034</i>	Daytime	193 272	12 136	19 328	224 736
	Nighttime	95 194	5 978	9 520	110 692
	Total	288 466	18 114	28 848	335 428
Cross Avenue <i>Projected to 2034</i>	Daytime	17 839	396	622	18 857
	Nighttime	1 982	44	69	2 095
	Total	19 821	440	691	20 952
Trafalgar Road <i>Ultimate</i>	Daytime	24 082	371	297	24 750
	Nighttime	2 676	41	33	2 750
	Total	26 758	412	330	27 500

4.2 Rail Traffic

Rail traffic data for the CN Oakville Subdivision was obtained from CN railway and Metrolinx/GO Transit personnel and is attached in Appendix B. This line is used for way freight and passenger operations and is classified as a principal main line. The maximum permissible train speed for way freight trains in the area of the site is 97 kph (60 mph), 129 kph (80 mph) for passenger, and 153 kph (95 mph) for GO trains. In conformance with CN and GO Transit assessment requirements, the maximum speeds, maximum number of cars and locomotives per train were used in the traffic noise analysis to yield a worst-case estimate of train noise. The data was projected to the year 2034 using a 2.5% per year growth rate. Table 3 summarises the Metrolinx and CN rail traffic data used in the analysis.

Table 3: Rail Traffic Data Projected to the Year 2034

Type of Train	Number of Trains Day/ Night	Number of locomotives	Number of cars	Max Speed (KPH)
Way Freight	5.8 / 3.1	4	25	56
Passenger	19.3 / 0.0	2	10	56
GO	362.9 / 55.4	1	12	129

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

4.3 Traffic Noise Predictions

To assess the levels of traffic noise which will impact the site in the future, predictions were made using a numerical computer modeling package (*Cadna-A version 2023 MRI build: 197.5343*) due to the complexity of the site. The model is based on the methods from ISO Standard 9613-2.2, “*Acoustics - Attenuation of Sound During Propagation Outdoors*”, which accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures.

The road and rail noise sources have been included in the model using line sources included in Cadna/A. Road traffic noise sources were calibrated using STAMSON 5.04. The rail traffic noise reference levels are based on the Federal Transit Authority (FTA) noise prediction manual (2018) which contains data on the modern vehicle and rolling stock noise emissions. Our experience suggests that road and rail sound levels predicted by Cadna are reasonably accurate.

Predictions of overall sound levels from all road and rail sources were made at various representative façade locations throughout the site. The predicted sound levels from road and rail traffic impacting the proposed development are summarized in the following tables at each façade. Appendix C shows the figures showing the predicted sound level from road and rail traffic along each façade of the proposed buildings. The 6-storey podium below Tower 1 is proposed to include office use and has not been considered in the analysis below.



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

Building	Façade	Daytime - at Façade L _{EQ(16)}		Daytime - at Façade Total L _{EQ(16)}
		Road	Rail	
Tower 1 52-Storey	Northwest	80	<55	80
	Northeast	76	59	76
	Southeast	62	59	64
	Southwest	77	58	77
	7 th Floor Amenity	--	--	72*
Tower 2 56-Storey	Northwest	74	<55	74
	Northeast	73	61	73
	Southeast	59	62	64
	Southwest	72	59	72
3-Storey Podium	4 th Floor Amenity	--	--	66*
Tower 3 44-Storey	Northwest	72	<55	72
	Northeast	71	61	71
	Southeast	59	64	65
	Southwest	71	61	71
	2 nd Floor Amenity	--	--	67*
	4 th Floor Amenity	--	--	68*
	7 th Floor Amenity	--	--	69*

Note: *With a minimum 1.07 m solid parapet wall

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

Building	Façade	Nighttime - at Façade L _{EQ(8)}		Nighttime - at Façade Total L _{EQ(8)}
		Road	Rail	
Tower 1 52-Storey	Northwest	80	<50	80
	Northeast	76	54	76
	Southeast	62	54	63
	Southwest	77	53	77
Tower 2 56-Storey	Northwest	74	<50	74
	Northeast	73	56	74
	Southeast	58	57	60
	Southwest	72	54	72
Tower 3 44-Storey	Northwest	72	<50	72
	Northeast	71	56	71
	Southeast	57	59	61
	Southwest	71	56	71

5 Traffic Noise Recommendations

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

5.1 Outdoor Living Areas

There are outdoor amenity spaces indicated on the drawings located on the podium connecting Towers 1 and 2, 7th floor of Tower 1, and on the 2nd, 4th, and 7th floors of Tower 3. The predicted sound level at all of the common outdoor amenity terraces were predicted with a minimum 1.07 m high solid parapet wall.

The maximum predicted sound level on the identified amenity spaces located on the podium for Towers 1 and 2, 7th floor of Tower 1, and 4th floor of Tower 3 is 72 dBA, well in excess of the MECP limit of 55 dBA. Acoustic barriers on these terraces would need to exceed 3.0 m in height in order to reduce sound levels to below 60 dBA, which is not considered feasible technically or economically for the project. Consideration could be given in detail design to integrating some

smaller structures, screens or landscaping features to create quieter pockets or zones on this terrace. A unique warning clause is suggested below to advise tenants that noise levels on this terrace will be high.

For the amenity space located on the 2nd and 7th floors of Tower 3, the sound level is predicted to be 67 and 69 dBA, well in excess of the MECP limit of 55 dBA. With an acoustic barrier 2.5 m in height for the 2nd floor amenity space, and 2.9 m for the 7th floor amenity space, the predicted sound level in this amenity space can be reduced to 60 dBA. The 5 dBA sound level excess is acceptable to the MECP if it is acceptable to the municipality.

As a general note, the wall component of the barrier should be of a solid construction with a surface density of no less than 20 kg/m². The walls may be constructed from a variety of materials such as wood, brick, pre-cast concrete or other concrete/wood composite systems or transparent materials provided that it is free of gaps or cracks within or below its extent.

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

5.2 Indoor Living Areas and Ventilation Requirements

Central Air Conditioning

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

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



5.3 Building Façade Constructions

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

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

Exterior Wall Constructions

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

Exterior Doors

There may be swing doors and some glazed sliding patio doors for entry onto the balconies from living/dining/bedrooms and some bedrooms. The glazing areas on the doors are to be counted as part of the total window glazing area. If exterior swing doors are to be used, they shall be insulated metal doors equipped with head, jamb and threshold weather seals.

Acoustical Requirements for Glazing

At the time of this report, detailed floor plans and elevations are under development. Assuming a typical window to floor area of 50% (40% fixed and 10% operable) for the living/dining rooms and 40% (30% fixed and 10% operable) bedrooms, the minimum acoustical requirement for the basic window glazing, including glass in fixed sections, swing or sliding doors, and operable windows, is provided in Table 6.



Table 6: Required Minimum Glazing STC Proposed Buildings

Building	Façade	Preliminary Glazing STC ^{1, 2}
Tower 1 52-Storeys	Northwest	STC-45
	Northeast	STC-41
	Southeast	STC-33
	Southwest	STC-42
Tower 2 56-Storeys	Northwest	STC-39
	Northeast	STC-38
	Southeast	STC-33
	Southwest	STC-37
Tower 3 44-Storeys	Northwest	STC-37
	Northeast	STC-37
	Southeast	STC-33
	Southwest	STC-36

Note:

¹ Based on 50% window to floor area ratio for living/dining rooms and 40% for bedrooms.

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

The northwest, and northeast, and southwest façades of Towers 1, and northwest façade of Tower 2 have significant STC requirements. It may be difficult to find suitable STC constructions. It is suggested that the window to floor area ratios be minimized as much as possible along these façades. Sliding patio doors should not be included into bedrooms, swing doors are more suitable for suites with exposure to the QEW.

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

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

Further Review

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

5.4 Warning Clauses

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

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

Type A:

Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road and rail traffic may continue to be of concern, occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality's and the Ministry of the Environment, Conservation and Parks' noise criteria.

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

Type B:

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

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

5.5 Impact of the Development on Itself

Section 5.8.1.1 of the Ontario Building Code (OBC), released on January 1, 2020, specifies the minimum required sound insulation characteristics for demising partitions, in terms of Sound Transmission Class (STC) or Apparent Sound Transmission Class (ASTC) values. In order to maintain adequate acoustical privacy between separate suites in a multi-tenant building, inter-suite walls must meet or exceed STC-50 or ASTC-47. Suite separation from a refuse chute or elevator



shaft must meet or exceed STC-55. In addition, it is recommended that the floor/ceiling constructions separating suites from any amenity or commercial spaces also meet or exceed STC-55. Tables 1 and 2 in Section SB-3 of the Supplementary Guideline to the OBC provide a comprehensive list of constructions that will meet the above requirements.

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

5.6 Impact of the Development on the Environment

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

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

6.1 Noise Source Description

There are existing commercial facilities surrounding the site including: Holiday Inn Oakville and an office building to the northeast; Value Village, Famijoy Supermarket, and mixed commercial uses to the southwest; a car wash among other commercial buildings to the southeast; and the Oakville GO Station further to the southeast.



The rooftop mechanical equipment (air conditioning units), car wash bays, and trucks arriving for deliveries (primarily at the grocery store) are potentially significant stationary sources of sound. A site visit was conducted in January 2022 to investigate the acoustical environment. Sensitive receptor locations were taken at the façades of the proposed buildings.

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

6.2 Criteria for Acceptable Sound Levels

6.2.1 Stationary Noise Criteria

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

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

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



Stationary Source (Steady Sound)

NPC-300 is intended for use in the planning of both residential and commercial/industrial land uses and provides the acceptability limits for sound due to commercial operations in that regard. The facade of a residence (i.e., in the plane of a window), or any associated usable outdoor area is considered a sensitive point of reception (within 30 m of a dwelling façade). NPC-300 stipulates that the exclusionary sound level limit for a stationary noise source in urban Class 1 and 2 areas are taken to be 50 dBA during daytime and evening hours (07:00 to 19:00 and 19:00 to 23:00), and 45 dBA during nighttime hours (23:00 to 07:00) at the plane of the windows of noise sensitive spaces. If the background sound levels due to road traffic exceed the exclusionary limits, then that background sound level becomes the criterion. The background sound level is defined as the sound level that occurs when the source under consideration is not operating, and may include traffic noise and natural sounds.

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

Hourly daytime traffic data was obtained for the QEW from the MTO and for Trafalgar Road from the Region of Halton. Hourly daytime traffic data was not available for Cross Avenue. Using the current traffic volumes obtained from the Town, the traffic data was applied to a generic 24 hour traffic pattern developed by the US Department of Transportation, Federal Highways Administration contained in the report titled “Summary of National and Regional Travel Trends 1970 – 1995” dated May 1996. The traffic volumes were then used to predict sound levels at the residential receptors during the day/nighttime hours to determine the minimum hour background sound levels at those locations due to the traffic on the public roadways.

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

Table 7: Minimum Hourly Traffic Volumes on Surrounding Roadways

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

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

Table 8: Applicable Sound Level Limits, L_{EQ} (dBA) for Class I Areas

Building	Façade	Sound Level Limits	
		Daytime (07:00 to 23:00)	Nighttime (23:00 to 07:00)
Tower 1 52-Storey Building	Northwest	69	62
	Northeast	65	59
	Southeast	53	46
	Southwest	66	59
	7 th Floor Amenity	66*	--
Tower 2 56-Storey Building	Northwest	66	59
	Northeast	64	58
	Southeast	51	45
	Southwest	62	55
3-Storey Podium	4 th Floor Amenity	62*	--
Tower 3 44-Storey Building	Northwest	62	55
	Northeast	61	57
	Southeast	50	45
	Southwest	63	58
	2 nd Floor Amenity	62*	--
	4 th Floor Amenity	62*	--
	7 th Floor Amenity	63*	--

Note: *With minimum 1.07 m solid parapet

Compliance with MECP criteria generally results in acceptable levels of sound at residential receptors although there may be residual audibility during periods of low background sound.

6.3 Stationary Source Assessment

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

Sound emission data for the rooftop equipment was obtained from HGC Engineering project files for typical commercial facilities. The source levels associated used in the analysis is listed in Table 9 below.

Table 9: Source Sound Power Levels [dB re 10-12 W]

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

The above outlined sound levels and site features were used as input to a predictive computer model. The software used for this purpose (*Cadna-A Version 2023 MRI build: 197.5343*) is a computer implementation of ISO Standard 9613-2.2 “Acoustics - Attenuation of Sound During Propagation Outdoors.” The ISO method accounts for reduction in sound level with distance due to geometrical

spreading, air absorption, ground attenuation and acoustical shielding by intervening structures such as barriers.

The following information and assumptions were used in the analysis.

Commercial Buildings

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

Receptors

- Façades of proposed residential development.

Assumed daytime worst-case scenario:

- All rooftop HVAC equipment operating for 40 minutes in an hour;
- Two medium trucks arriving for deliveries at the Famijoy idling for 10 minutes each, with one truck with a “reefer” operating for 20 minutes in an hour;
- Two tractor trailers arriving for deliveries at the Home Depot;
- All car wash bays (coin operated) operating for 30 minutes each;
- All vacuums operating for 15 minutes each at the car wash;

Assumed night-time worst-case scenario:

- All rooftop HVAC equipment operating for 20 minutes in an hour;
- Two tractor trailers arriving for deliveries at the Home Depot;
- All car wash bays (coin operated) operating for 10 minutes each;
- All vacuums operating for 10 minutes each at the car wash;



6.4 Results

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

Table 10: Predicted Stationary Source Sound Levels at the Proposed Residential Buildings [dBA]

Building	Façade	Criteria Day/Night	Daytime	Nighttime
Tower 1 52-Storey Building	Northwest	69 / 62	37	31
	Northeast	65 / 59	45	42
	Southeast	53 / 46	50	45
	Southwest	66 / 59	50	45
	7 th Floor Amenity	66* / --	45*	--
Tower 2 56-Storey Building	Northwest	66 / 59	40	36
	Northeast	64 / 58	49	46
	Southeast	52 / 46	52	48
	Southwest	62 / 55	52	46
3-Storey Podium	4 th Floor Amenity	62* / --	43*	--
Tower 3 44-Storey Building	Northwest	62 / 55	54	44
	Northeast	61 / 57	52	50
	Southeast	50 / 45	53	51
	Southwest	63 / 58	57	51
	2 nd Floor Amenity	62* / --	49*	--
	4 th Floor Amenity	62* / --	48*	--
	7 th Floor Amenity	63* / --	49*	--

The results of this analysis indicate that the predicted steady sound levels due to the surrounding facilities has the potential to be in excess of the sound level criteria by up to 2 dBA during the night at Tower 2, and up to 3 dBA during the day and 6 dBA during the night at Tower 3 considering a worst-case operational scenario.

6.5 Discussion and Recommendations with Regard to the Commercial Facilities

While the MECP does not generally accept central air conditioning or mechanical ventilation as mitigation measures for stationary noise sources per se, it is noted that central air conditioning is

likely to be installed in the proposed buildings for the residential units so that the windows can remain closed against both traffic and stationary noise.

NPC-300 encourages noise mitigation at the source if possible. In this case, physical noise source mitigation options are quite limited due to the nature of the nearby commercial and residential buildings and the height of the residential receptors.

Sound level excesses may occur along the southeastern façades of Towers 2 and 3 with direct exposure to the coin operated car wash during the day and night. The excesses are primarily due to operations of the car wash located directly to the southeast and commercial uses to the west of the site.

One option is to address the excesses at these façades of the buildings through modification to the buildings themselves, especially if the proposed development is to proceed with the existing commercial uses remaining as is. The following are some conceptual mitigation measures to achieve the criteria.

- Spaces along the southeast façades of the 6-storey podium connecting Towers 2 and 3, and Tower 3, could be designed to include windows into non-sensitive spaces (e.g. office space, indoor amenity space, etc.).
- Minor excesses along 3, could also include receptor mitigation in the form of architectural solutions such as utilizing balconies of appropriate height (solid parapet made of glass) to shield any windows to sensitive spaces behind for the affected buildings. As this is an area in transition, the surrounding uses may change.
 - If the coin operated car wash and neighboring commercial uses ceased operation prior to occupancy of the proposed development, there would be no excesses along the façades of the proposed development. Figure 7 indicates the areas for potential noise mitigation.
- Other options include mitigating noise at the source which implies replacement of existing rooftop units with quieter models or enclosing the rooftop units, or relocating or removing the



coin operated car wash from the current location. These options will need the co-operation of the commercial uses.

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

Type D:

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

7 Summary and Recommendations

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

Transportation Noise

1. A 2.5 m acoustic barrier for the 2nd floor amenity space and 2.9 m acoustic barrier for the 7th floor amenity space of Tower 3 will reduce the sound level in the amenity spaces to 60 dBA. For the other common amenity spaces, acoustic barriers exceeding 3.0 m in height would be required to reduce sound levels in those spaces to 60 dBA, which is not considered feasible. A unique warning clause is recommended for these amenity spaces.
2. Central air conditioning is required for all of the proposed buildings.
3. Upgraded building constructions are required for the façades of the proposed buildings as indicated in Section 5.3.
4. Warning clauses should be included in the property and tenancy agreements and offers of purchase and sale to inform the future owners/residents of the presence of the roadways, railway and the nearby commercial operations.
5. When detailed drawings are available, at SPA or as a condition, a detailed noise study should be conducted to refine the glazing constructions based on actual window to floor area ratios. It is suggested that the window to floor area ratios be minimized as much as possible along the



façades with exposure to the QEW. Sliding patio doors should not be included into bedrooms, swing doors are more suitable for suites with exposure to the QEW.

6. Tarion's Builder Bulletin (B19R) requires that the internal design of condominium projects integrates suitable acoustic features to insulate the suites from noise from each other and amenities in accordance with the OBC, and limit the potential intrusions of mechanical and electrical services of the buildings on its residents. If B19R certification is needed, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising constructions and mechanical/electrical equipment, when available, to help ensure that the noise impact of the development on itself are maintained within acceptable levels. Outdoor sound emissions should also be checked to ensure compliance with the Town's by-law.

Stationary Noise

1. Sound level excesses may be expected at some areas of the building façades due to existing stationary noise sources, primarily rooftop mechanical equipment from surrounding buildings (grocery store building to the west) and an existing coin operated car wash to the southeast. Conceptual options are provided.
2. A site visit of the commercial buildings to the west of the proposed development should be conducted during the summer months to determine the make and model numbers of the rooftop mechanical units and to conduct sound level measurements of those units to confirm the sound level assumptions, confirm the need for mitigation and inform the design of that mitigation should it be required.
3. To address the potential for audible sound from the neighbouring commercial and residential buildings and nuisance sources, specific noise warning clauses are required as indicated in the above sections of this report.

8 Conclusions

Based on the assessment presented herein, the conceptual development proposal is considered to be feasible from a noise impact perspective. Preliminary noise modelling of the nearby existing



commercial facilities indicates results to be within criteria at the majority of residential facades, with the exception of façades directly facing the existing coin operated car wash. Conceptual recommendations for mitigation were provided to achieve the relevant Class I criteria. Detailed noise studies are recommended for each building as the development proposal proceeds.



ACOUSTICS



NOISE



VIBRATION

Limitations

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VIBRATION



Figure 1 Key Plan



ACOUSTICS

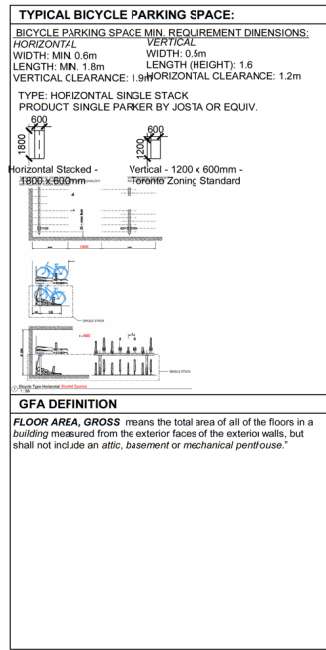
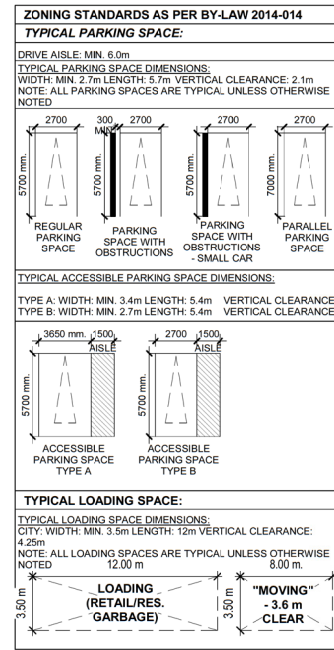


NOISE

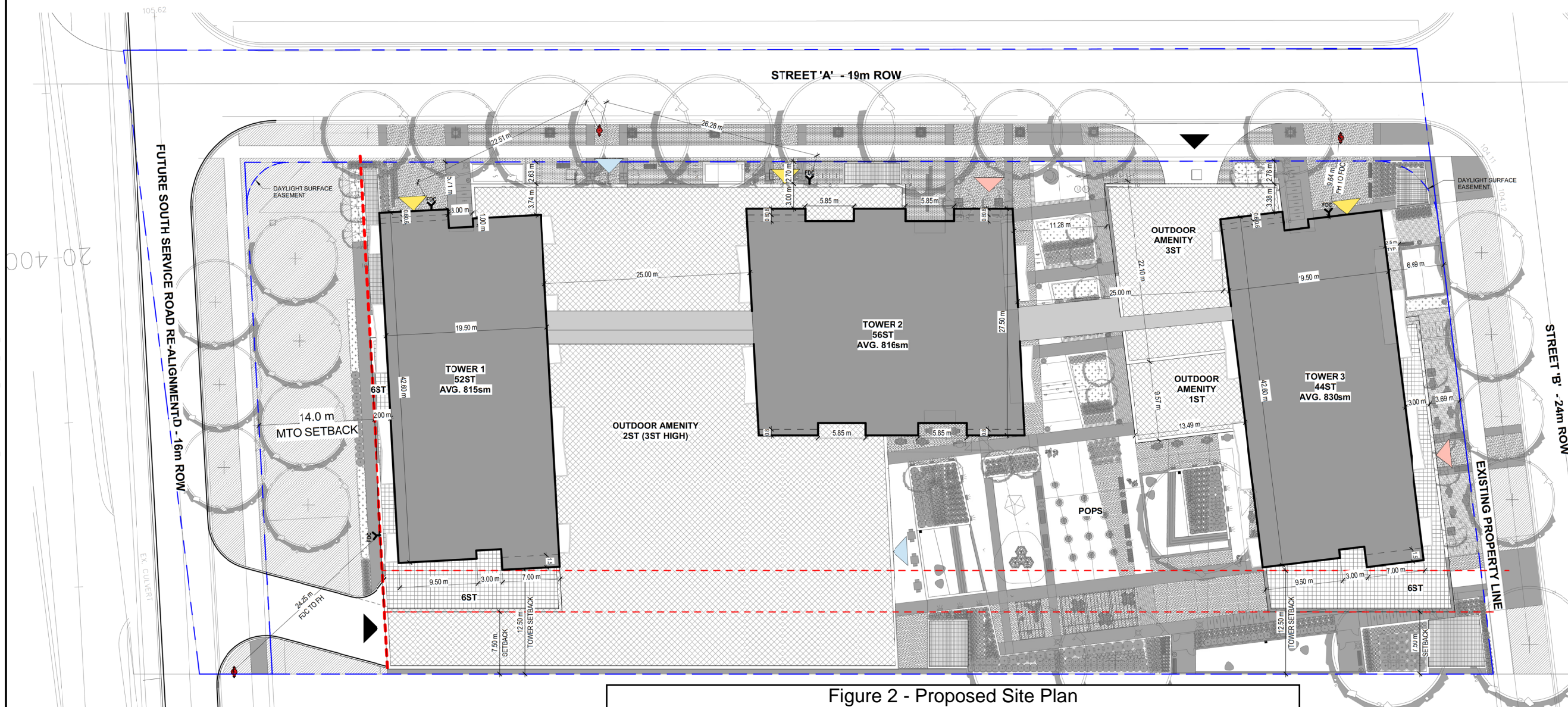


VIBRATION

ZONING STANDARDS

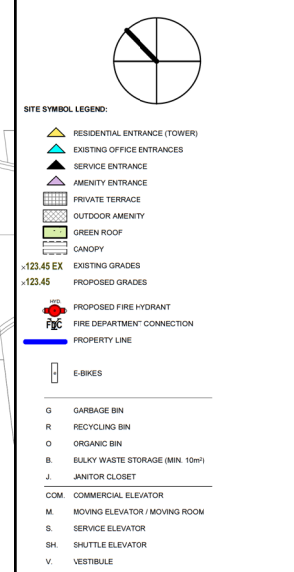


SITE PLAN



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Sweeny & Co Architects
 134 PETER STREET | SUITE 1601
 TORONTO, ONTARIO | M5V 2H2 | CANADA
 P: 416-971-6252 | F: 416-971-5420
 E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
 166 South Service Road
 South Service Road & Trafalgar

CLIENT
 166 South Service Inc.

DWG TITLE
 Site Plan & Zoning Information

DATE: 2024-03-06
 SCALE: 1:250
 DRAWN: MS
 CHECKED: AG
 PROJ. No.: 2128

DWG No. **AZ100**

Figure 2 - Proposed Site Plan

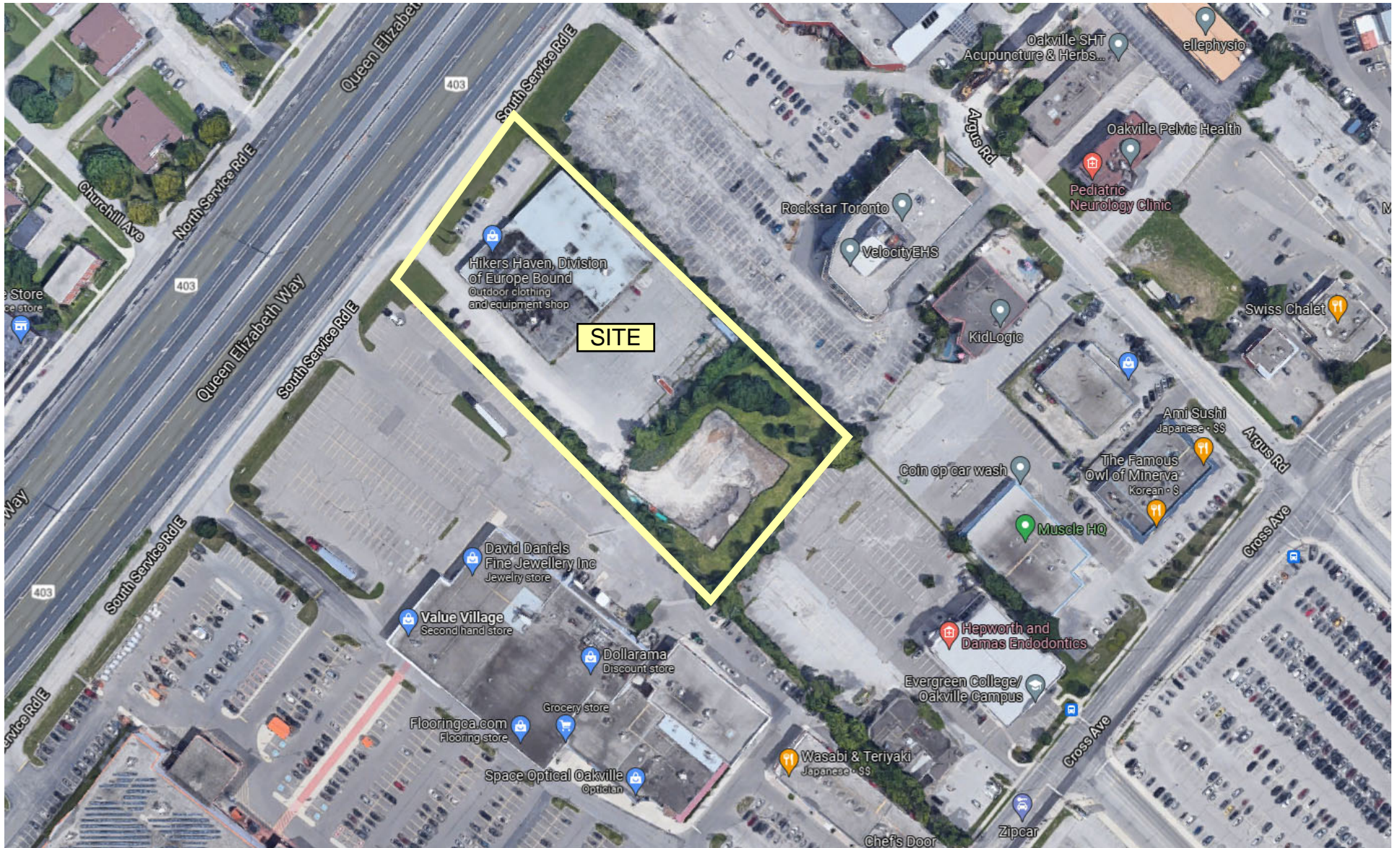


Figure 3 - Aerial Photo Showing Surrounding Land Uses



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Figure 4: Aerial Photo Showing Source and Receptor Locations

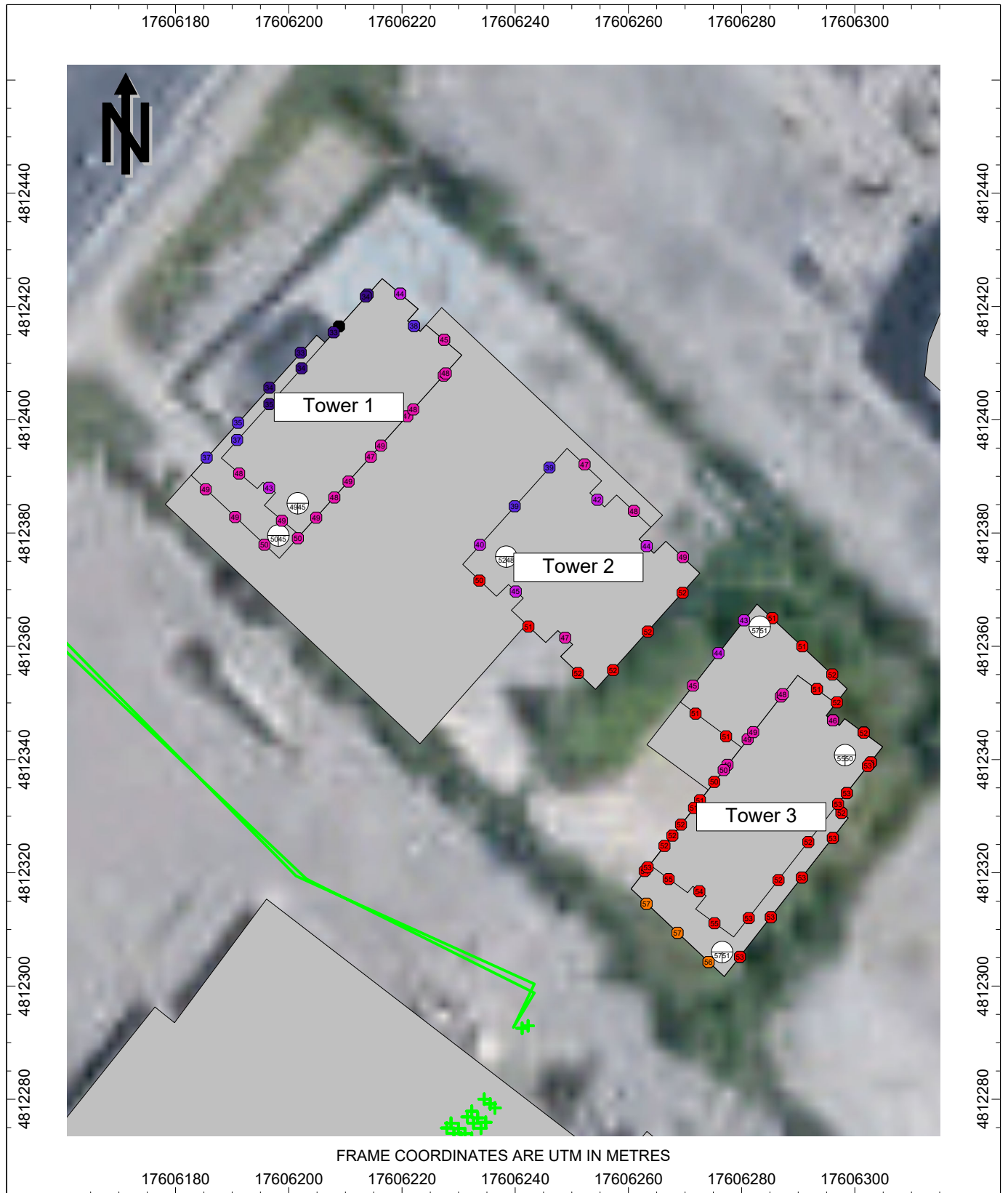


Figure 5: Sound Levels, dBA, Due to Steady Stationary Noise Sources, Daytime

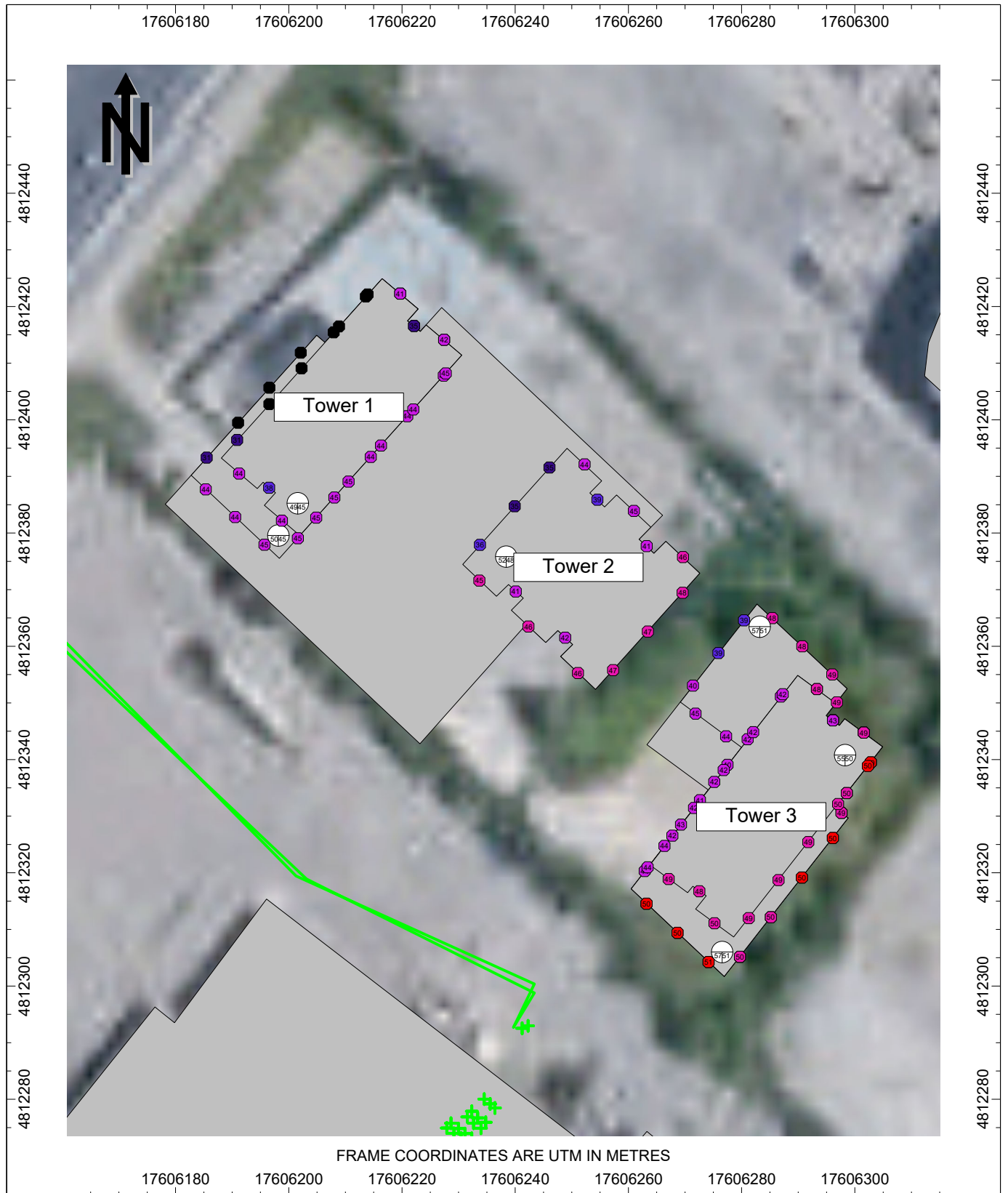
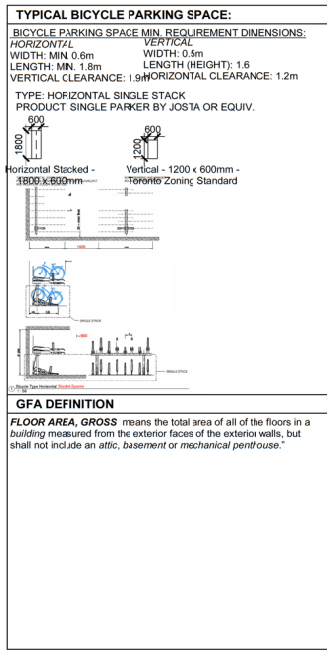
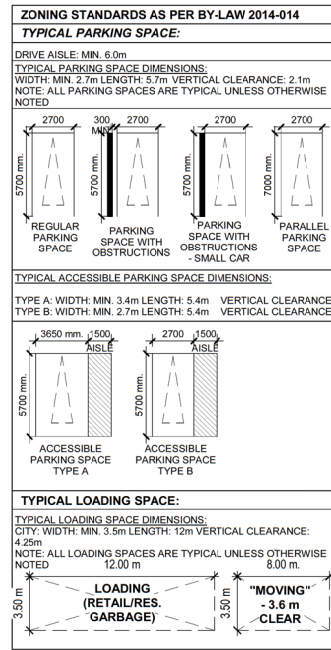
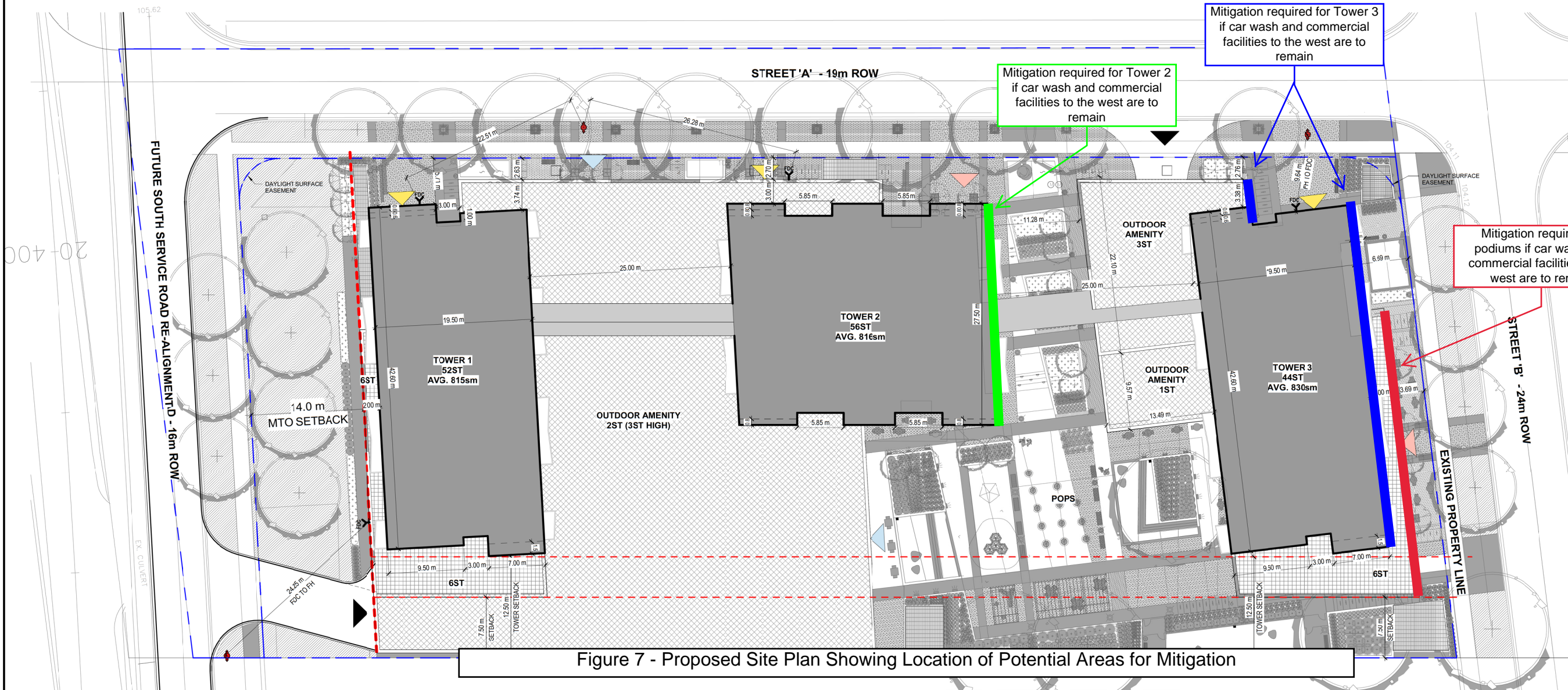


Figure 6: Sound Levels, dBA, Due to Steady Stationary Noise Sources, Nighttime

ZONING STANDARDS

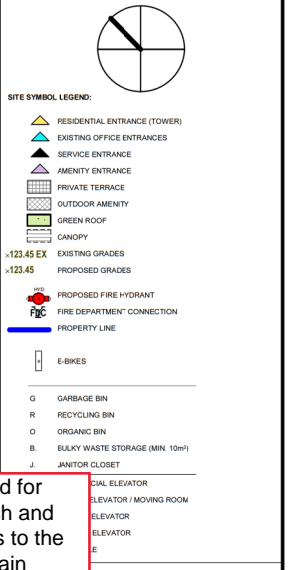


SITE PLAN



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Sweeny & Co Architects
 134 PETER STREET | SUITE 1601
 TORONTO, ONTARIO | M5V 2H2 | CANADA
 P: 416-971-6252 | F: 416-971-5420
 E: info@sweenyandco.com | www.sweenyandco.com

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 PROJ. No.: 2128 DWG No. **AZ100**

Figure 7 - Proposed Site Plan Showing Location of Potential Areas for Mitigation

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APPENDIX A

Road Traffic Data



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NOISE



VIBRATION

Highway	Location Description	Dist (KM)	Year	Pattern Type	AADT	SADT	SAWDT	WADT
QEW			2013	C	187000	206100	203500	168300
QEW			2014	C	206000	226600	220400	185400
QEW			2015	C	210000	231000	224700	189000
QEW			2016	C	215000	236500	230000	193500
QEW			2017	C	205500	224800	224300	186500
QEW			2018	C	208900	229000	227700	188500
QEW			2019	C	212300	232100	230700	192200
QEW	TRAFALGAR RD IC-118	1.4	1988	C	111500	123800	123800	100400
QEW			1989	C	115300	128000	129100	103800
QEW			1990	C	120100	133300	133300	108100
QEW			1991	C	121300	133400	134600	110400
QEW			1992	C	123300	133200	136900	113400
QEW			1993	C	129500	141200	143300	119100
QEW			1994	C	130800	143200	145800	118400
QEW			1995	C	133800	146100	149900	122400
QEW			1996	C	136800	155100	155600	123500
QEW			1997	C	139800	158000	159400	125800
QEW			1998	C	142700	161300	161300	128400
QEW			1999	C	143400	160600	162000	129100
QEW			2000	C	146500	165500	165500	131800
QEW			2001	C	149700	168600	168900	134800
QEW			2002	C	152800	171100	172400	137500
QEW			2003	C	156000	174300	175400	140800
QEW			2004	C	158100	178100	178400	142400
QEW			2005	C	160800	179000	180500	144400
QEW			2006	C	163500	181700	183100	147100
QEW			2007	C	166200	184700	187200	149300
QEW			2008	C	168900	186400	183800	151500
QEW			2009	C	171600	188800	190500	154400
QEW			2010	C	174300	192100	193800	156900
QEW			2011	C	177000	195100	196800	159300
QEW			2012	C	179700	198000	193800	161800
QEW			2013	C	195000	214900	212200	175500
QEW			2014	C	200000	220000	214000	180000
QEW			2015	C	210000	231000	224700	189000
QEW			2016	C	215000	236500	230000	193500
QEW			2017	C	205000	224300	223800	186000
QEW			2018	C	208500	228500	227200	188200
QEW			2019	C	211900	231600	230200	191800
QEW	ROYAL WINDSOR DR (WBL) IC 119	3.1	1988	C	96000	106600	106600	86400
QEW			1989	C	99300	110200	111200	89400
QEW			1990	C	103200	114600	114600	92900
QEW			1991	C	103900	114300	115300	94500
QEW			1992	C	105400	113800	117000	97000
QEW			1993	C	106000	115500	117300	97500

Highway	QEW	Direction	FORT ERIE	Descriptor	WEST OF R	Highway	QEW	Direction	TORONTO	Descriptor					
VDS	Stator	LHRS	OS	VDS	Stator	LHRS	OS	Date	Time	VDS1	Volur	VDS2	Volur	Total	Volun
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	1:00	1393	980	2373					
QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/08/2019	2:00	779	629	1408					
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QEWDE02E	10135	0.7	QEWDE02E	10135	0.7	05/14/2019	23:59	2318	1806	4124

Victor Garcia

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

To Victor Garcia, HGC Engineering

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

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

There is no further breakdown details within these classes.

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

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

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

Good morning,

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

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

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

Thanks,

Victor Garcia, P.Eng
Associate

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

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Victor Garcia

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

Hi Victor,

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

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

Matt

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

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

Hi Matt,

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

Thanks,

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

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

Hi Victor,

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

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

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

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

Site ID: 100323
 Interval: 15 min.

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

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

AM Peak: **3372**

PM Peak: **3746**

24 HR VOLUME: **47408**



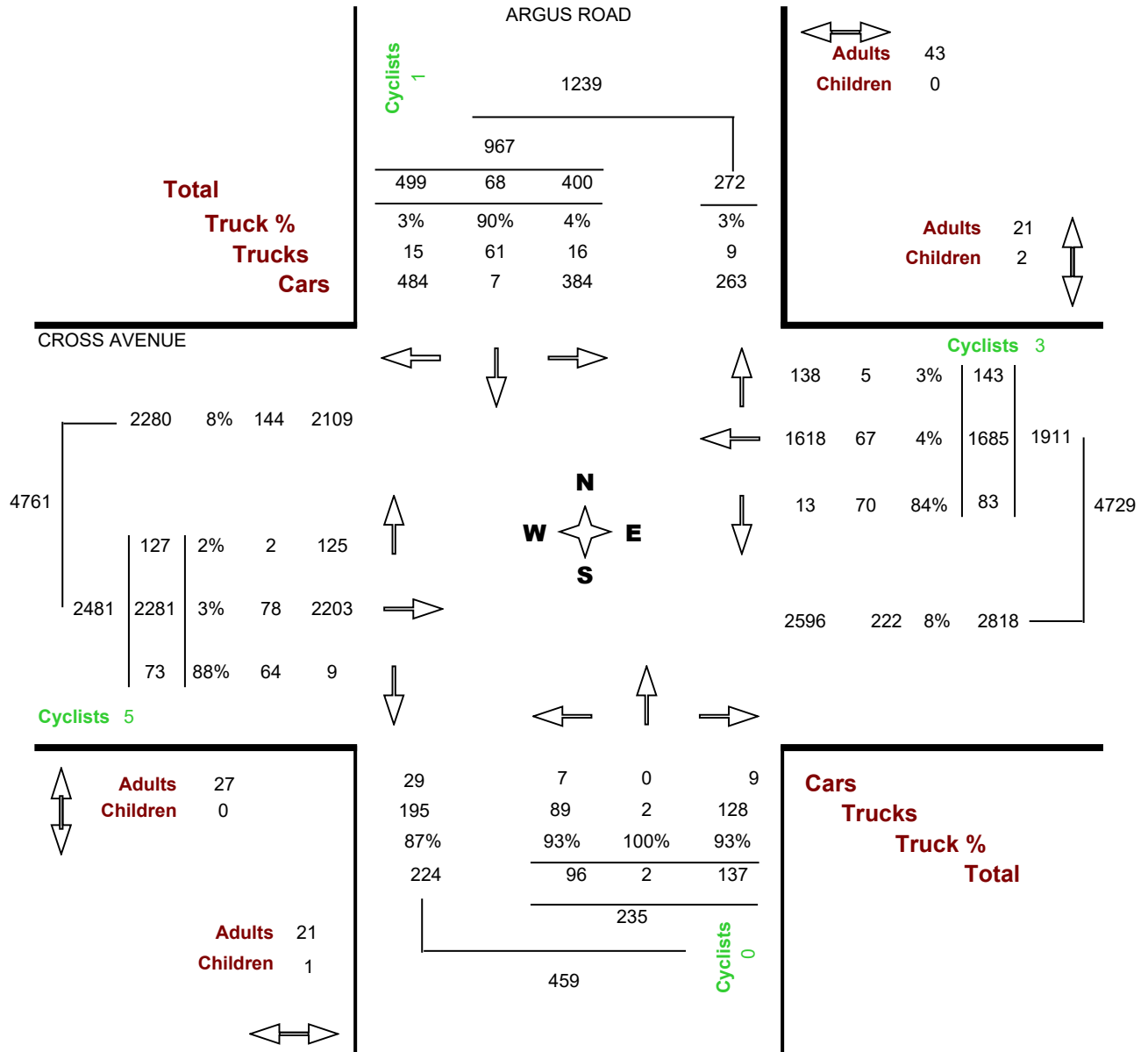
Turning Movements Count - Full Study Report

Location..... CROSS AVENUE @ ARGUS ROAD

Municipality..... OAKVILLE

GeoID..... 30151301

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



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



Turning Movements Report - AM Period

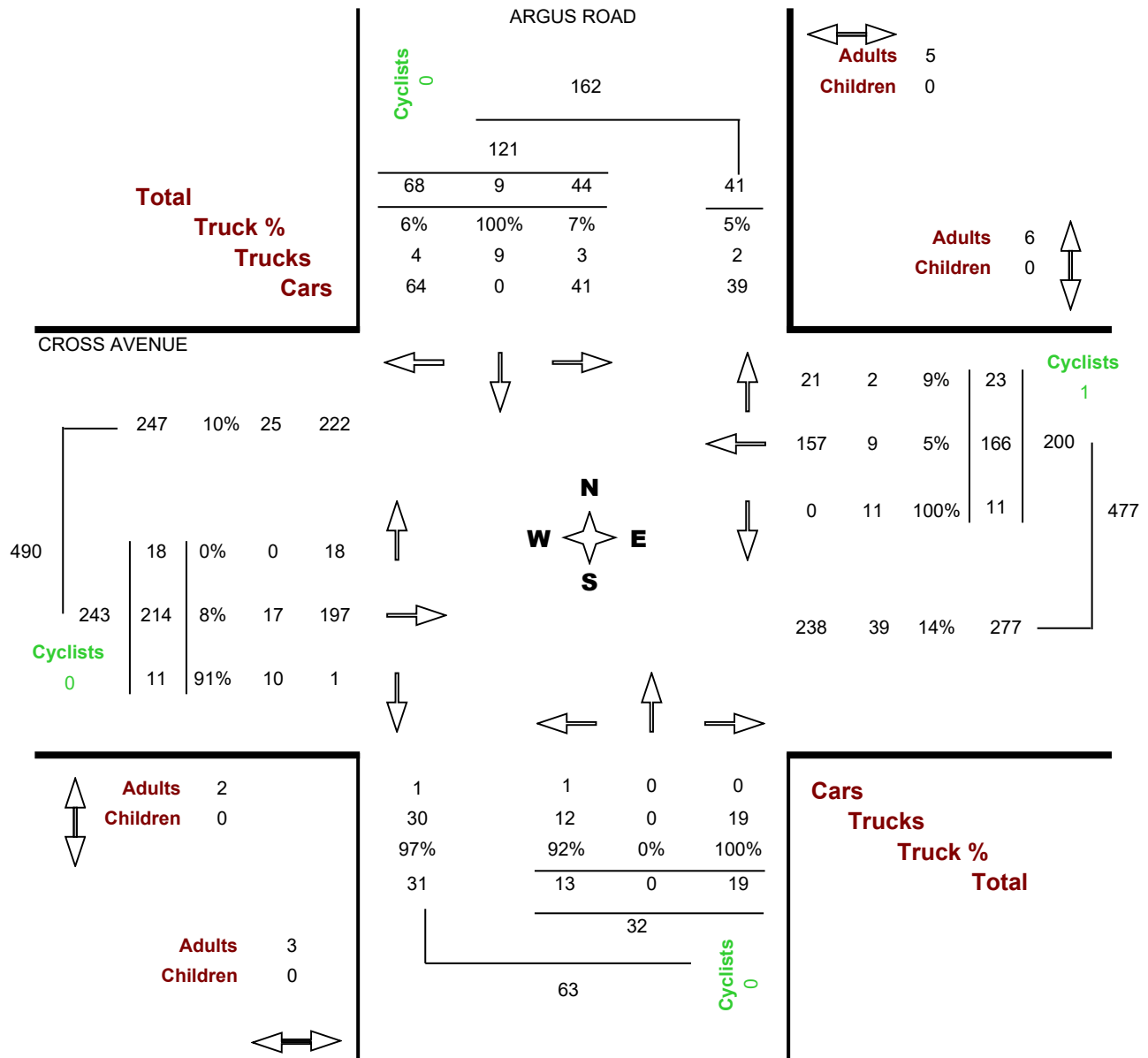
Location..... CROSS AVENUE @ ARGUS ROAD

Municipality..... OAKVILLE

GeoID..... 30151301

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

Peak Hour..... 08:00 AM — 09:00 AM



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

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



Turning Movements Report - MD Period

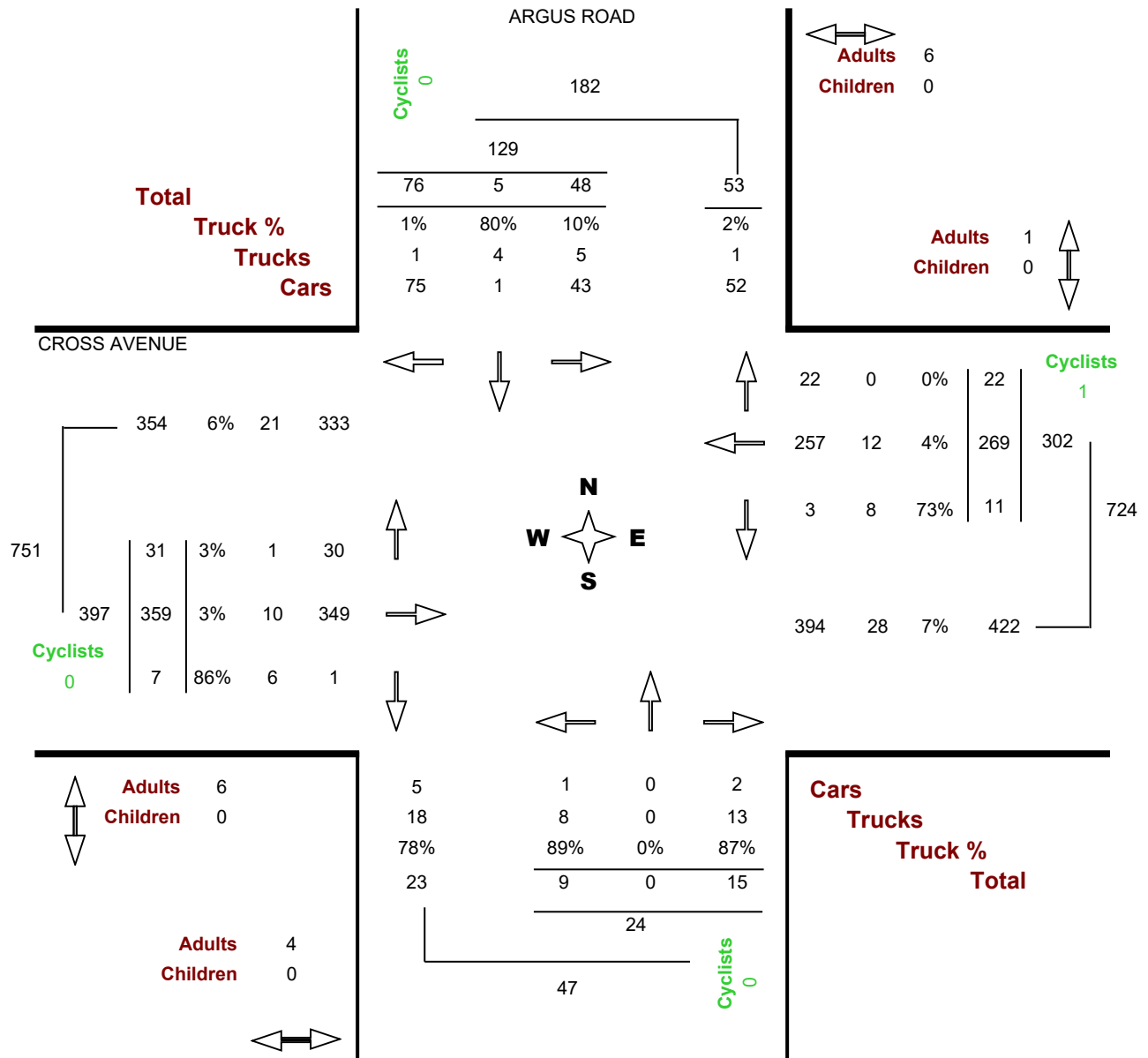
Location..... CROSS AVENUE @ ARGUS ROAD

Municipality..... OAKVILLE

GeoID..... 30151301

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

Peak Hour..... 01:00 PM — 02:00 PM



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

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



Turning Movements Report - PM Period

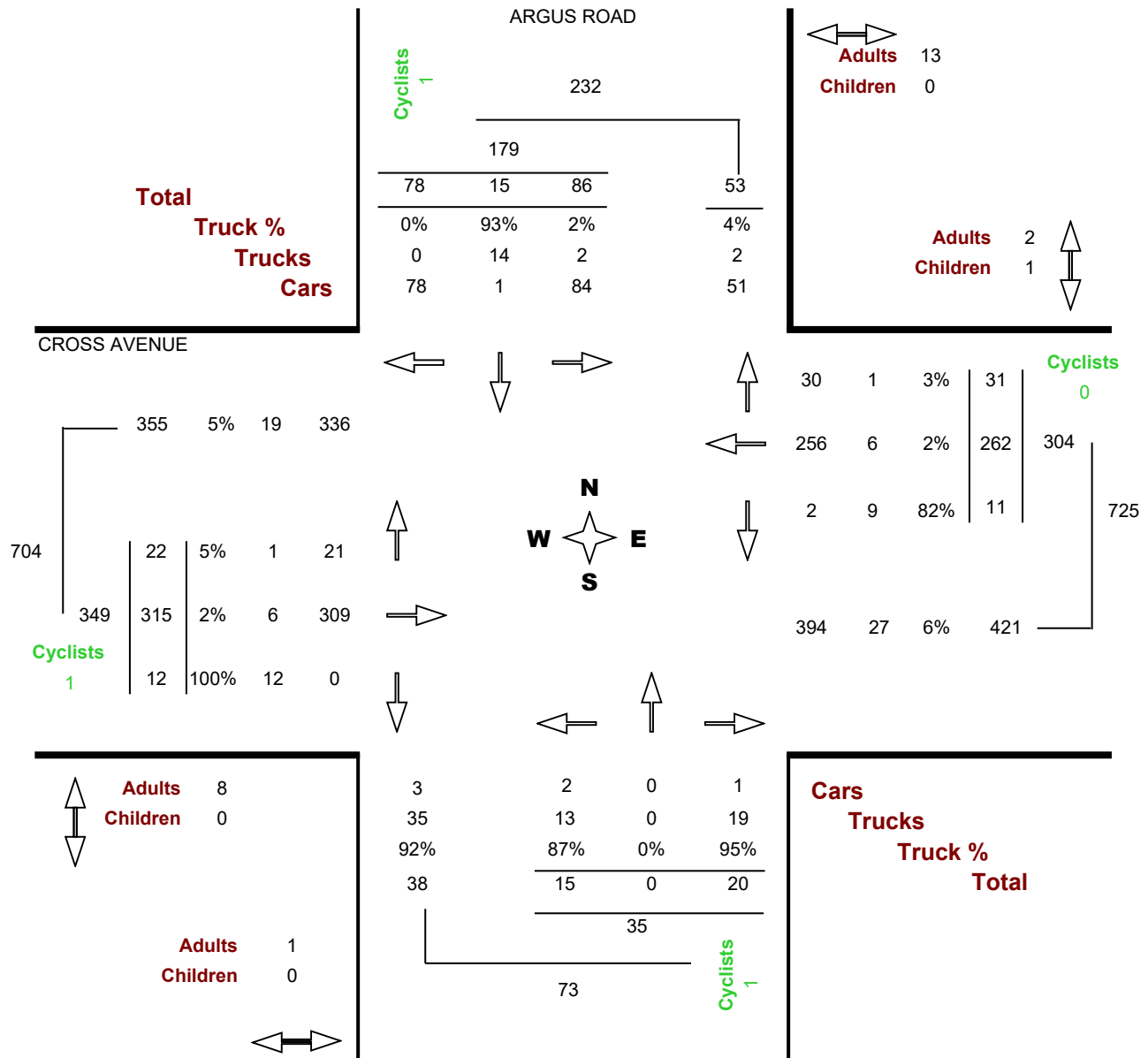
Location..... CROSS AVENUE @ ARGUS ROAD

Municipality..... OAKVILLE

GeoID..... 30151301

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

Peak Hour..... 03:15 PM — 04:15 PM



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

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



Turning Movement Count - Details Report

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

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

APPENDIX B

Rail Traffic Data



ACOUSTICS



NOISE



VIBRATION



Train Count Data

TRANSMITTAL

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

Project : OAK – 21.20 – Cornwall Rd, Oakville ON

Att'n: Victor Garcia

Routing: vgarcia@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 Oakville Subdivision near Cornwall Rd in
Oakville, ON**

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

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

Sincerely,
CN Design & Construction

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

Date: 2021/04/26

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

Dear Victor:

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

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

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

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

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

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

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

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

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There is one (1) at-grade crossing in the immediate vicinity of the study area at Mile 21.97 Kerr St. Anti-whistling bylaws are in effect at this crossing. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

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

The four mainline tracks are considered to be continuously welded rail throughout the study area. The presence of four (4) switches located at Mile 21.85, 21.99, 22.07, and 22.20 may exacerbate the noise and vibration caused by train movements.

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

I trust the above information will satisfy your current request.

Sincerely,

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

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

Yvonne Lo

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

Hi Victor:

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

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

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

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

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

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

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

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

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

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

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

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

Regards,

APPENDIX C

Preliminary Drawings



ACOUSTICS



NOISE



VIBRATION



166 SOUTH SERVICE ROAD EAST

Oakville, Ontario

OWNER:
Distrikt Developments
90 Wingold Ave., Unit 1
Toronto, ON M6B 1P5
416.628.8038

ARCHITECT:
Sweeny & Co Architects Inc.
134 Peter St., Suite 1601
Toronto, ON M5V 2H2
contact: Alexei Guerra
info@sweenyandco.com
(416) 971-6252

CIVIL:
Trafalgar Engineering
#1 - 461 Morden Road
Oakville, Ontario, L6K 3W6
O. (905) 338-3366

STRUCTURAL:
Jablonsky, Ask & Partners
3 Concorde Gate, 4th Floor
Toronto, ON M3C 3N7
416-447-7405

LANDSCAPE ARCHITECT:
Adesso Design
69 John Street S., Suite 250
Hamilton, ON L8N 2B9
t. 905.526.8876

MECHANICAL:
MV Shore Associates
P: 416-443-1995
250 Ferrand Drive, Suite 304
Toronto Ontario M3C 3G8

TRANSPORTATION:
BA Group
95 St. Clair Avenue West, Suite 1000 | Toronto
416 961 7110 x222

ELECTRICAL:
MV Shore Associates
P: 416-443-1995
250 Ferrand Drive, Suite 304
Toronto Ontario M3C 3G8

TRANSPORTATION:
Paradigm Transportation Solutions Limited
5A-150 Pinebush Road, Cambridge ON N1R 8J8
p: 905.381.2229 x303
w: www.ptsl.com

ISSUED FOR REZONING, OLT 2024-03-06

DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

This drawing shall not be used for construction purposes until signed by the consultant responsible. This drawing, as an instrument of service, is provided by and is the property of Sweeny & Co. Architects.

ISSUED

2024-03-06 ISSUED FOR ZBA

Blank lines for revision or notes.

Sweeny&Co Architects

134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Cover Page

DATE: 2024-03-06
SCALE:
DRAWN: MS
CHECKED: AG
PROJ. No.: 2128

DWG No.
AZ000

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ISSUED

2024-03-06 ISSUED FOR ZBA

PROJECT & ZONING INFO

Table with zoning requirements including site type, GFA, FSI, residential amenity, vehicular parking, bicycle parking, and loading/staging details.

CONTEXT PLAN

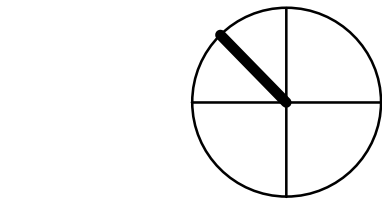


REFER TO BA GROUP'S FEBRUARY, 2024 TRAFFIC IMPACT STUDY (TIS) REPORT FOR DISCUSSION RELATED TO REQUIRED/PERMITTED PARKING RATES VS PROPOSED PARKING RATES INDICATED ON THIS SHEET

PROJECT STATISTICS

Main project statistics table with columns for TFA, Residential, Retail, Commercial, GFA Total, Indoor Amenity, Outdoor Amenity, and Total Residential Unit Count.

*** Areas in square feet are for reference only.



Sweeny & Co Architects

134 PETER STREET | SUITE 1601 TORONTO, ONTARIO | M5V 2H2 | CANADA

PROJ. NAME: 166 South Service Road

OWNER: 166 South Service Inc.

DWG TITLE: Context Plan & Project Statistics

DATE: 2024-03-06 SCALE: 1 : 1 DRAWN: MS CHECKED: AG PROJ. No.: 2128 DWG No.:



C:\Users\lmal\Documents\1208_Oakville_Transit_Hub_Central_New_Inst\FR\ANN.rvt 2024-03-07 1:14:15 PM

ZONING STANDARDS

ZONING STANDARDS AS PER BY-LAW 2014-014

TYPICAL PARKING SPACE:
 DRIVE AISLE: MIN. 6.0m
 TYPICAL PARKING SPACE DIMENSIONS:
 WIDTH: MIN. 2.7m LENGTH: 5.7m VERTICAL CLEARANCE: 2.1m
 NOTE: ALL PARKING SPACES ARE TYPICAL UNLESS OTHERWISE NOTED

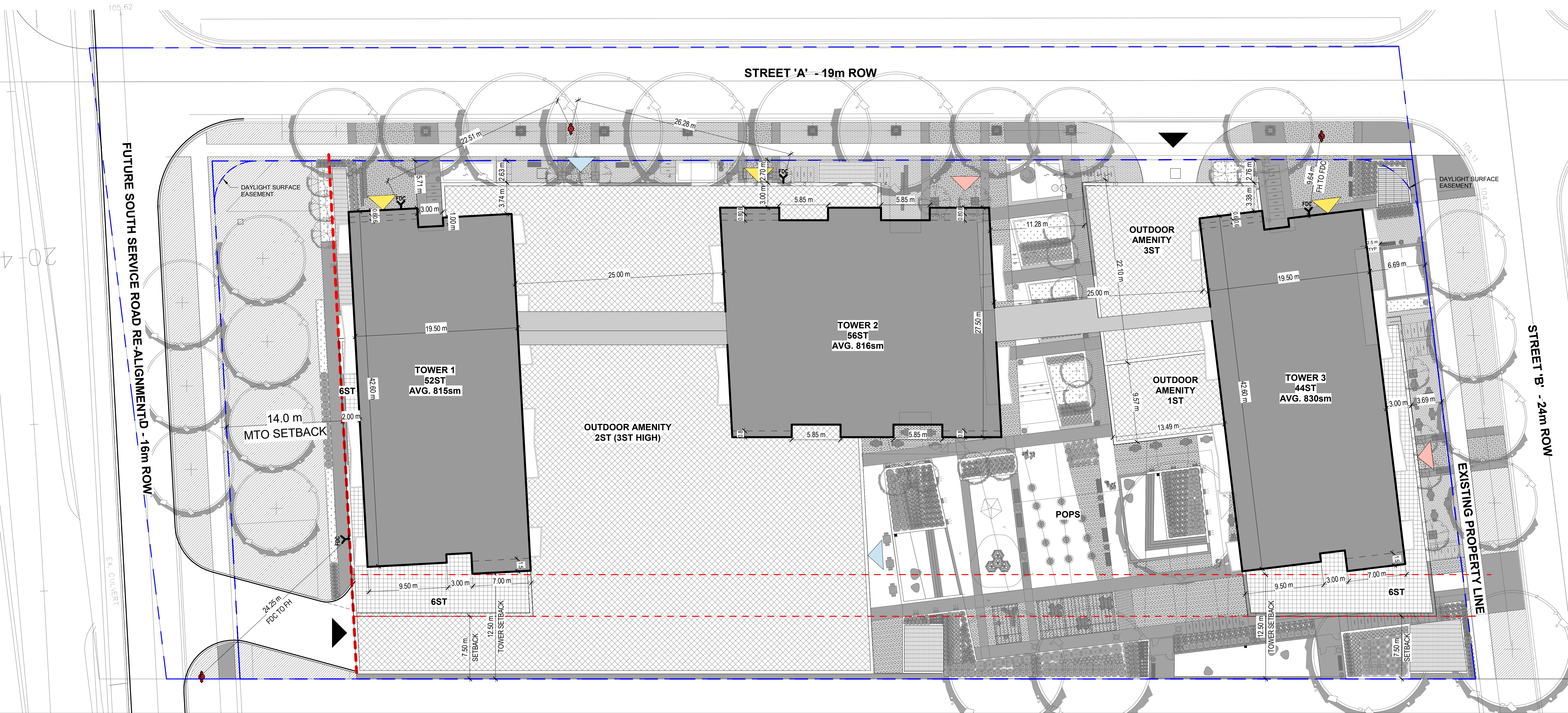
TYPICAL ACCESSIBLE PARKING SPACE DIMENSIONS:
 TYPE A: WIDTH: MIN. 3.4m LENGTH: 5.4m VERTICAL CLEARANCE: 2.1m
 TYPE B: WIDTH: MIN. 2.7m LENGTH: 5.4m VERTICAL CLEARANCE: 2.1m

TYPICAL LOADING SPACE:
 TYPICAL LOADING SPACE DIMENSIONS:
 CITY: WIDTH: MIN. 3.5m LENGTH: 12m VERTICAL CLEARANCE: 4.25m
 NOTE: ALL LOADING SPACES ARE TYPICAL UNLESS OTHERWISE NOTED

TYPICAL BICYCLE PARKING SPACE:
 BICYCLE PARKING SPACE MIN. REQUIREMENT DIMENSIONS:
 HORIZONTAL: WIDTH: MIN. 0.6m LENGTH: MIN. 1.8m VERTICAL CLEARANCE: 1.9m HORIZONTAL CLEARANCE: 1.2m
 VERTICAL: WIDTH: 0.5m LENGTH (HEIGHT): 1.6m
 TYPE: HORIZONTAL SINGLE STACK PRODUCT: SINGLE PARKER BY JOSTA OR EQUIV.

GFA DEFINITION
FLOOR AREA, GROSS means the total area of all of the floors in a building measured from the exterior faces of the exterior walls, but shall not include an attic, basement or mechanical penthouse.

SITE PLAN



DRAWING NOT TO BE SCALED
 Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.
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ISSUED
 2024-03-06 ISSUED FOR ZBA

SITE SYMBOL LEGEND:

- ▲ RESIDENTIAL ENTRANCE (TOWER)
- ▲ EXISTING OFFICE ENTRANCES
- ▲ SERVICE ENTRANCE
- ▲ AMENITY ENTRANCE
- ▲ PRIVATE TERRACE
- ▲ OUTDOOR AMENITY
- ▲ GREEN ROOF
- ▲ CANOPY
- ▲ EXISTING GRADES
- ▲ PROPOSED GRADES
- ▲ EXISTING FIRE HYDRANT
- ▲ PROPOSED FIRE HYDRANT
- ▲ FIRE DEPARTMENT CONNECTION
- ▲ PROPERTY LINE
- ▲ E-BIKES
- ▲ GARBAGE BIN
- ▲ RECYCLING BIN
- ▲ ORGANIC BIN
- ▲ BULKY WASTE STORAGE (MIN. 10m³)
- ▲ JANITOR CLOSET
- ▲ COMMERCIAL ELEVATOR
- ▲ MOVING ELEVATOR / MOVING ROOM
- ▲ SERVICE ELEVATOR
- ▲ SHUTTLE ELEVATOR
- ▲ VESTIBULE

Sweeny&Co Architects

134 PETER STREET | SUITE 1601
 TORONTO, ONTARIO | M5V 2H2 | CANADA
 P: 416-971-6252 | F: 416-971-5420
 E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
 South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Site Plan & Zoning Information

DATE: 2024-03-06
 SCALE: 1:250
 DRAWN: MS
 CHECKED: AG
 PROJ. No.: 2128

DWG No.
AZ100

ZONING STANDARDS

ZONING STANDARDS AS PER BY-LAW 2014-014

TYPICAL PARKING SPACE:
 DRIVE AISLE: MIN. 6.0m
 TYPICAL PARKING SPACE DIMENSIONS:
 WIDTH: MIN. 2.7m LENGTH: 5.7m VERTICAL CLEARANCE: 2.1m
 NOTE: ALL PARKING SPACES ARE TYPICAL UNLESS OTHERWISE NOTED

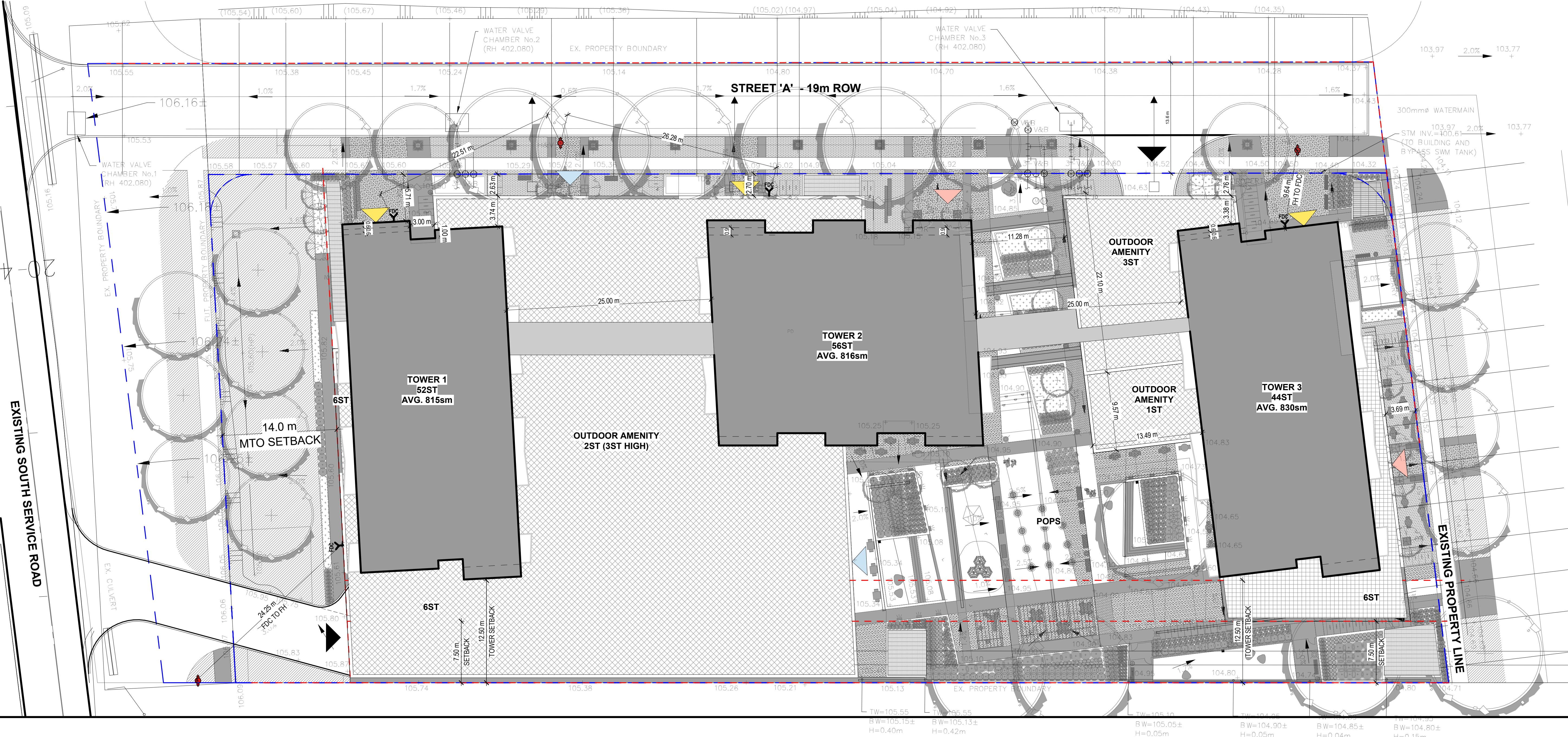
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 TYPE B: WIDTH: MIN. 2.7m LENGTH: 5.4m VERTICAL CLEARANCE: 2.1m

TYPICAL LOADING SPACE:
 TYPICAL LOADING SPACE DIMENSIONS:
 CITY: WIDTH: MIN. 3.5m LENGTH: 12m VERTICAL CLEARANCE: 4.25m
 NOTE: ALL LOADING SPACES ARE TYPICAL UNLESS OTHERWISE NOTED

TYPICAL BICYCLE PARKING SPACE:
 BICYCLE PARKING SPACE MIN. REQUIREMENT DIMENSIONS:
 HORIZONTAL: WIDTH: MIN. 0.6m LENGTH: MIN. 1.8m VERTICAL CLEARANCE: 1.9m HORIZONTAL CLEARANCE: 1.2m
 VERTICAL: WIDTH: 0.5m LENGTH (HEIGHT): 1.6m
 TYPE: HORIZONTAL SINGLE STACK PRODUCT: SINGLE PARKER BY JOSTA OR EQUIV.

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- PRIVATE TERRACE
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- CANOPY
- EXISTING GRADES
- PROPOSED GRADES
- PROPOSED FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- PROPERTY LINE
- E-BIKES
- GARBAGE BIN
- RECYCLING BIN
- ORGANIC BIN
- BULKY WASTE STORAGE (MIN. 10m³)
- JANITOR CLOSET
- COMM. COMMERCIAL ELEVATOR
- M. MOVING ELEVATOR / MOVING ROOM
- S. SERVICE ELEVATOR
- SH. SHUTTLE ELEVATOR
- V. VESTIBULE

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 E: info@sweenyandco.com | www.sweenyandco.com

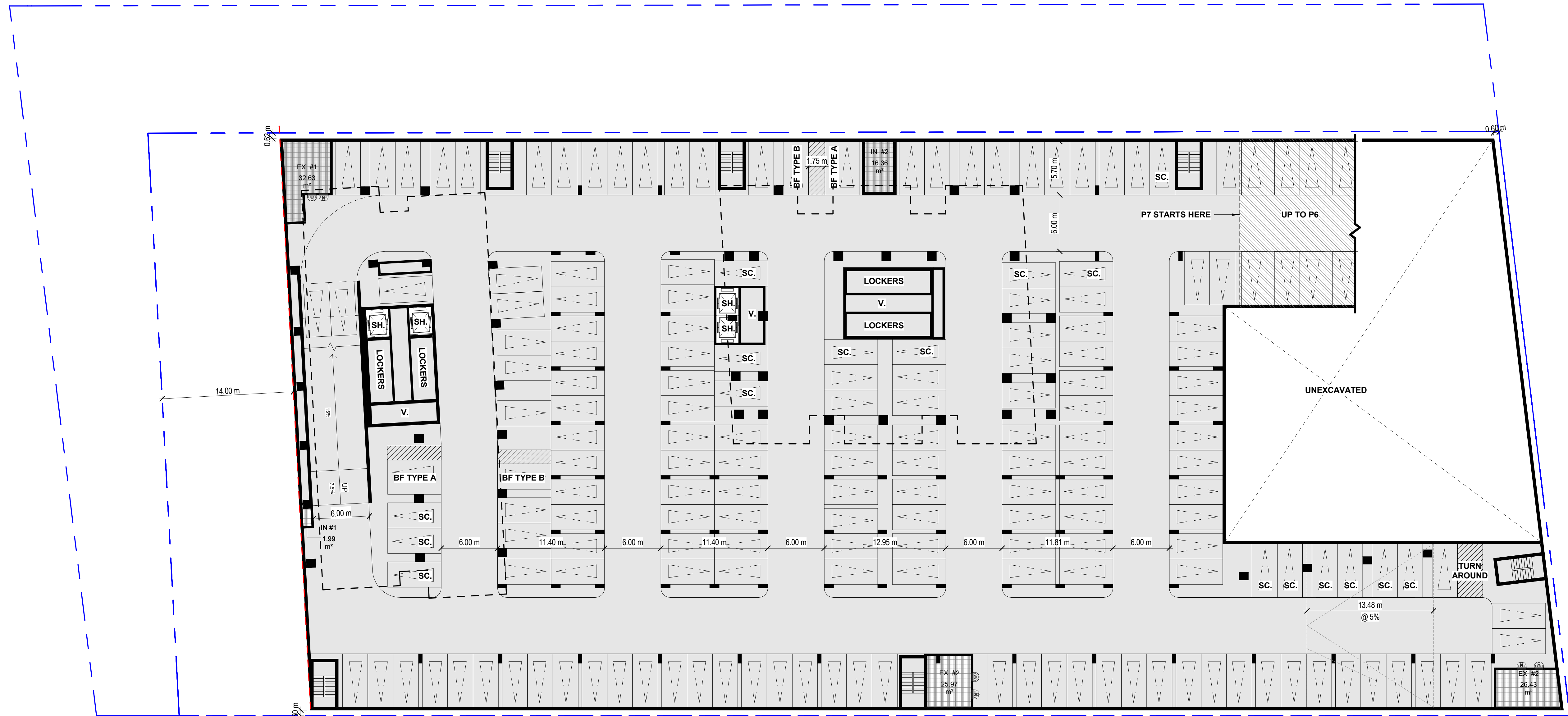
PROJ. NAME
166 South Service Road
 South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Site Plan - Interim Road

DATE: 2024-03-06
 SCALE: 1:250
 DRAWN: MS
 CHECKED: AG
 PROJ. No.: 2128

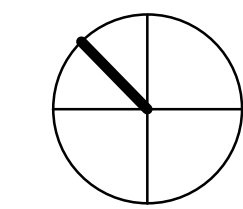
DWG No.
AZ100b



177 Parking Spaces
-residential (17 small cars)

DRAWING NOT TO BE SCALED
Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.
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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level P7

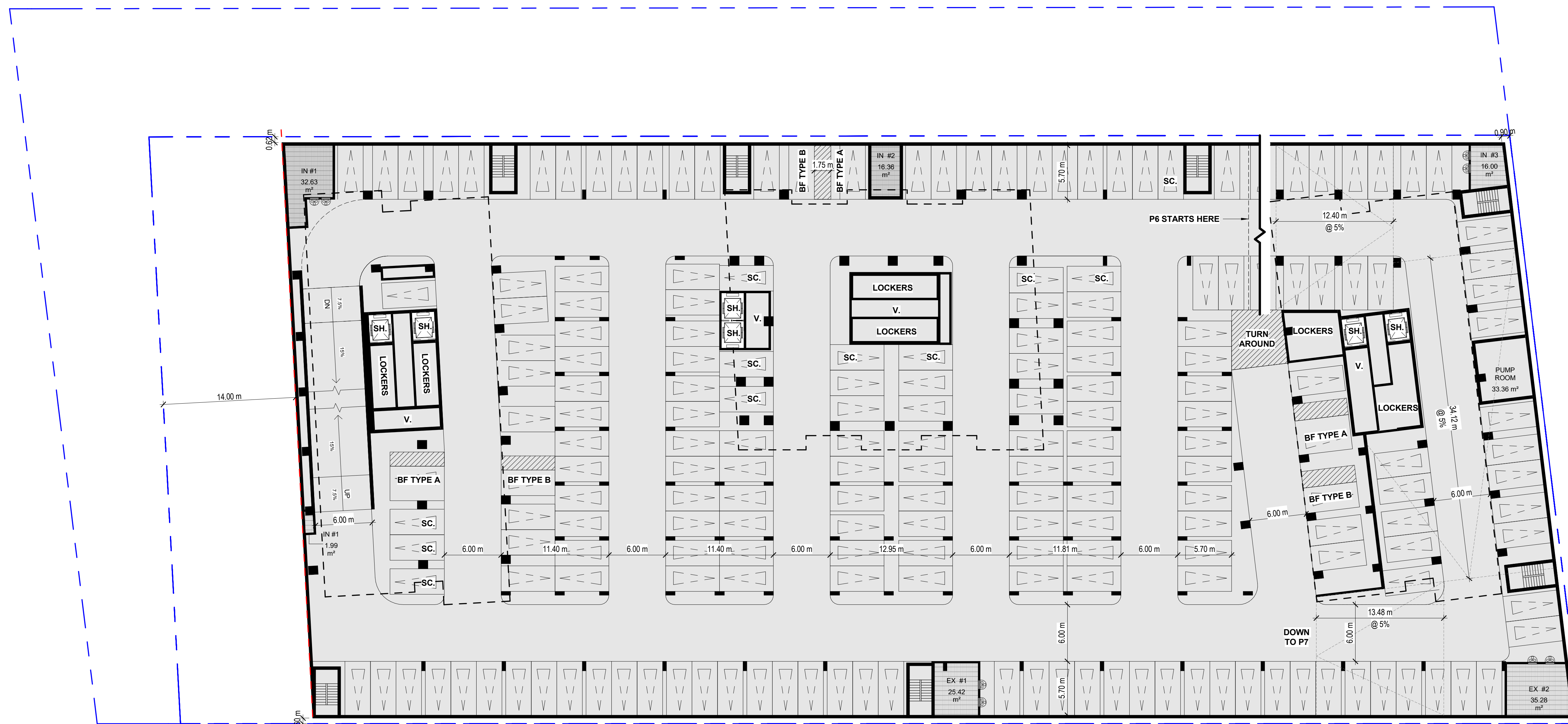
DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.

AZ101

C:\Users\lma\Documents\2128_Colville Transit Hub_Central_New_ImaFRMIN1.rvt

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199 Parking Spaces
-residential (11 small cars)

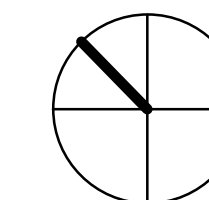
DRAWING NOT TO BE SCALED

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level P6

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No.: 2128

DWG No.

AZ102

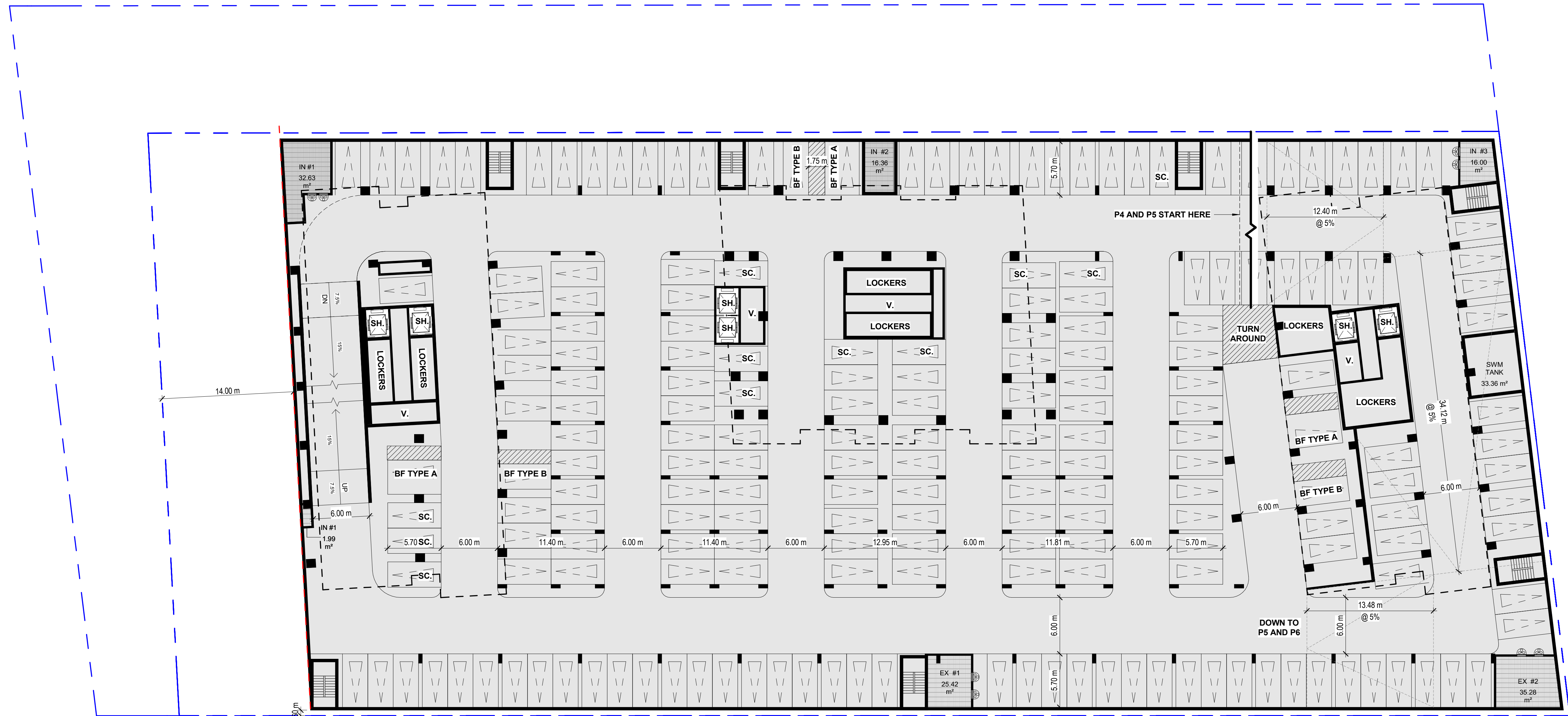
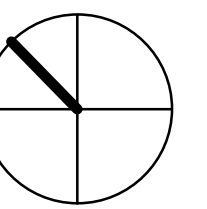
DRAWING NOT TO BE SCALED

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**199 Parking Spaces
-residential (11 small cars)**

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level P5

DATE: 2024-03-06

SCALE: 1 : 250

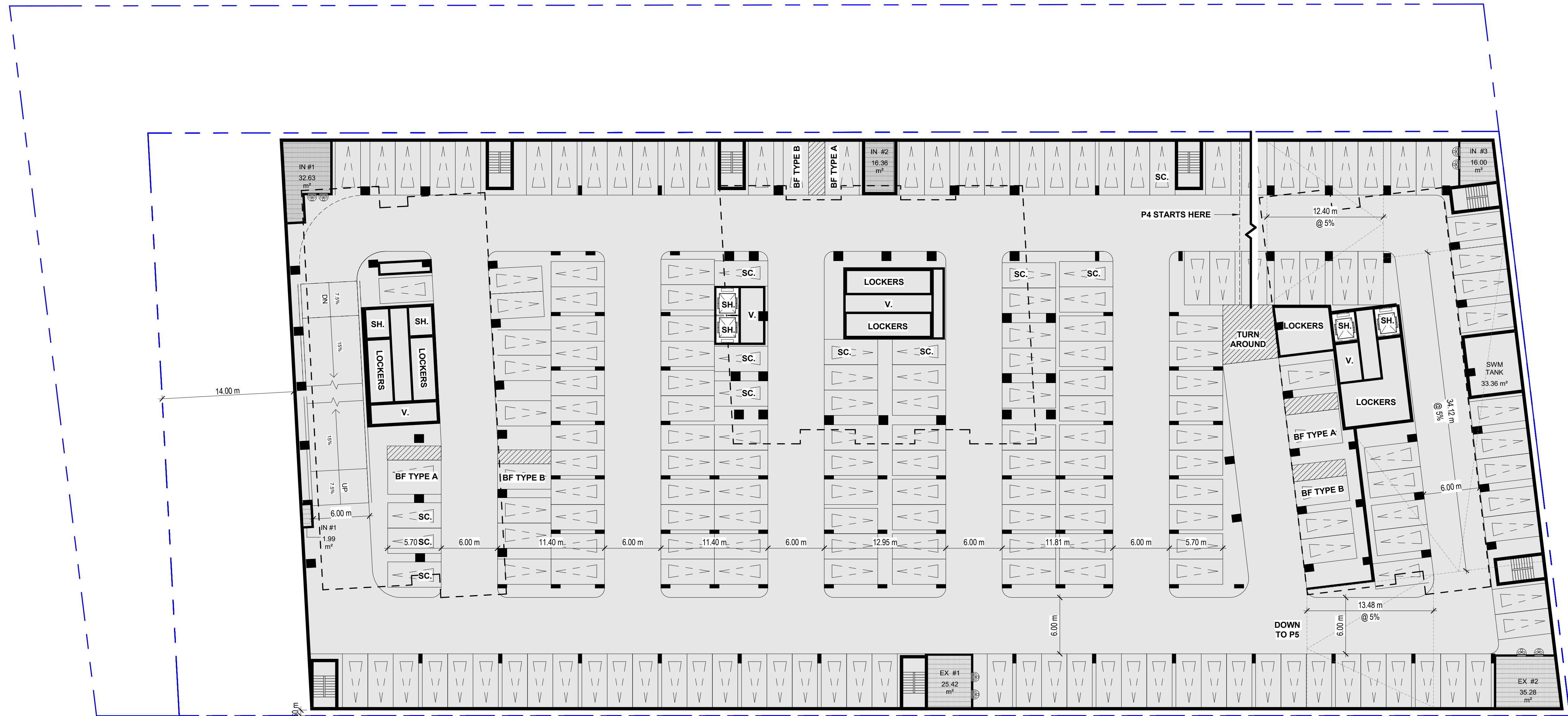
DRAWN :

CHECKED : AG

PROJ. No. : 2128

DWG No.

AZ103



199 Parking Spaces
-residential (11 small cars)

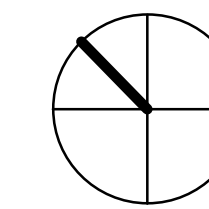
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level P4

DATE: 2024-03-06

SCALE: 1 : 250

DRAWN :

CHECKED : Checker

PROJ. No. : 2128

DWG No.

AZ104

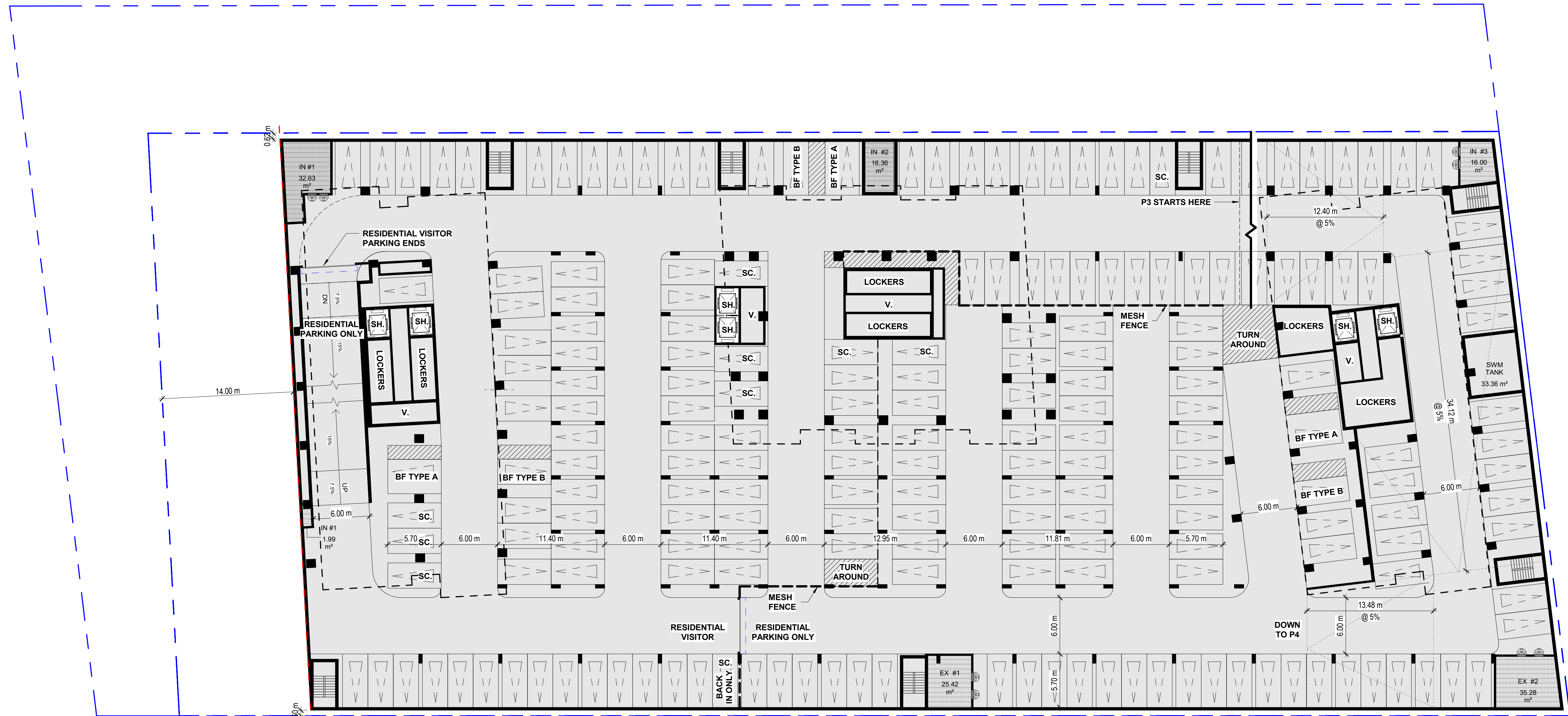
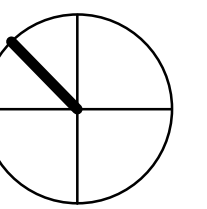
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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202 Parking Spaces
-106 res visitor
-96 res spaces (9 small cars)

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level P3

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.

AZ105

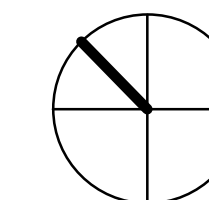
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Levels P2

DATE: 2024-03-06

SCALE: 1 : 250

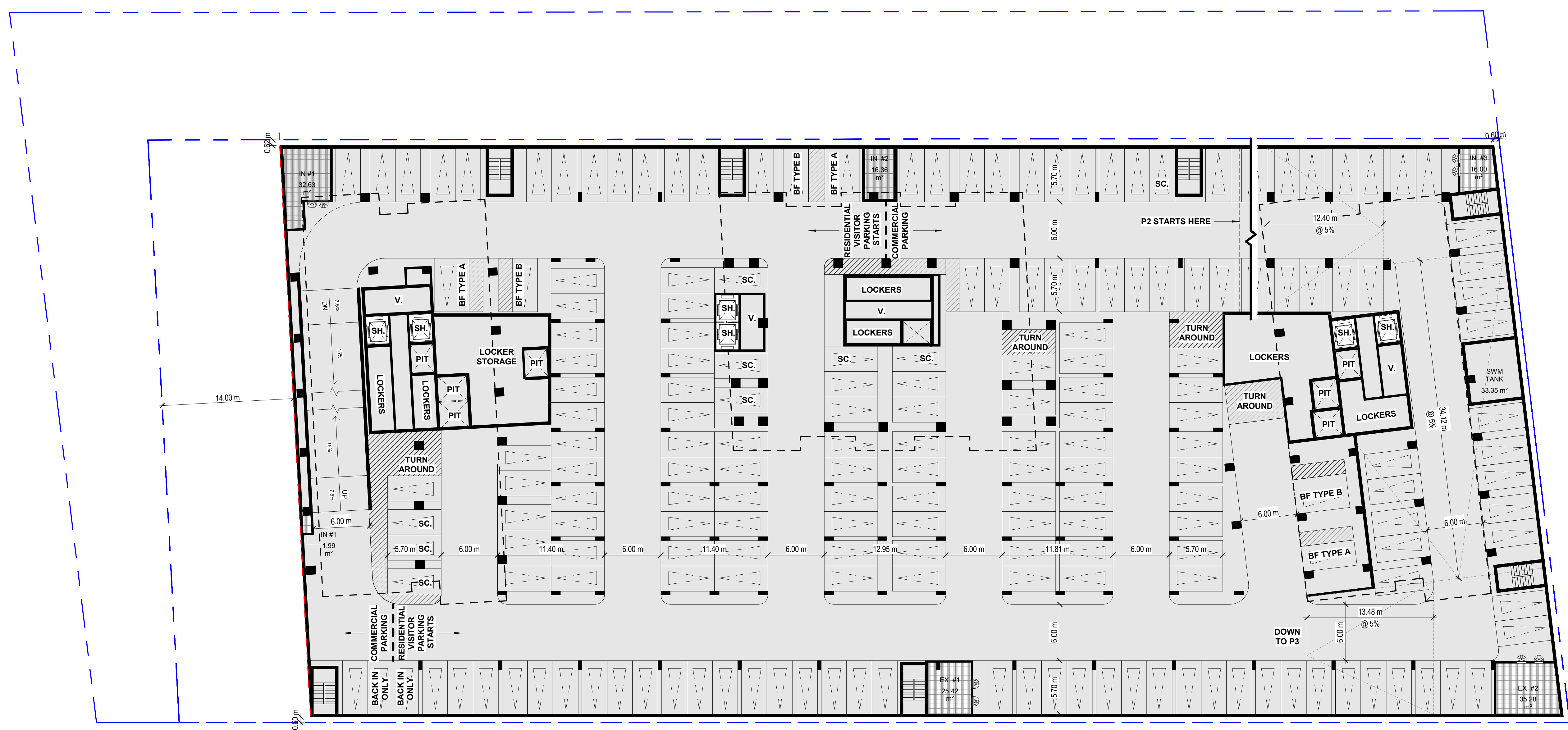
DRAWN :

CHECKED : AG

PROJ. No.: 2128

DWG No.

AZ106



195 Parking Spaces
-23 commercial
-172 res visitor (9 small cars)

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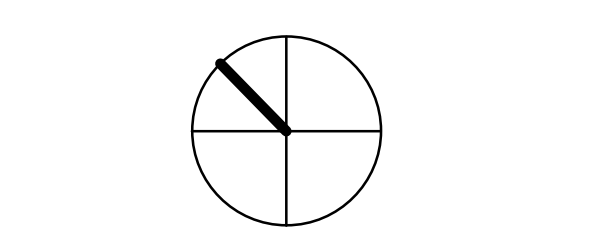
124 Parking Spaces
-commercial (23 small cars)
47x2 = 94+27 = 121
BICYCLE PARKING
LONG TERM = 121

DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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2024-03-06 ISSUED FOR ZBA



- RESIDENTIAL ENTRANCE (TOWER)
- EXISTING OFFICE ENTRANCES
- SERVICE ENTRANCE
- AMENITY ENTRANCE
- PRIVATE TERRACE
- OUTDOOR AMENITY
- GREEN ROOF
- CANOPY
- +123.45 EX EXISTING GRADES
- +123.45 PROPOSED GRADES
- PROPOSED FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- PROPERTY LINE
- E-BIKES
- G GARBAGE BIN
- R RECYCLING BIN
- O ORGANIC BIN
- B BULKY WASTE STORAGE (MIN. 10HP)
- J JANITOR CLOSET
- COM. COMMERCIAL ELEVATOR
- M MOVING ELEVATOR / MOVING ROOM
- S SERVICE ELEVATOR
- SH SHUTTLE ELEVATOR
- V VESTIBULE

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Levels P1

DATE: 2024-03-06
SCALE: As indicated
DRAWN:
CHECKED: AG
PROJ. No.: 2128 DWG No.

GR PLAN NOTES	
Note Number	Note Text
1	WEIGHT CAPACITY OF LOADING AREA (35,000 KG)
2	LOADING AREA HAS +/- 2% GRADE

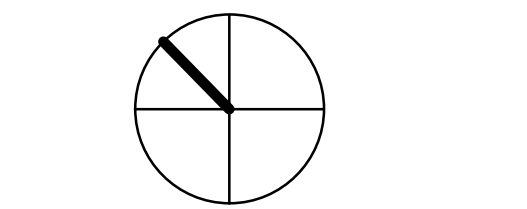
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

This drawing shall not be used for construction purposes until signed by the consultant responsible. This drawing, as an instrument of service, is provided by and is the property of Sweeny & Co. Architects.

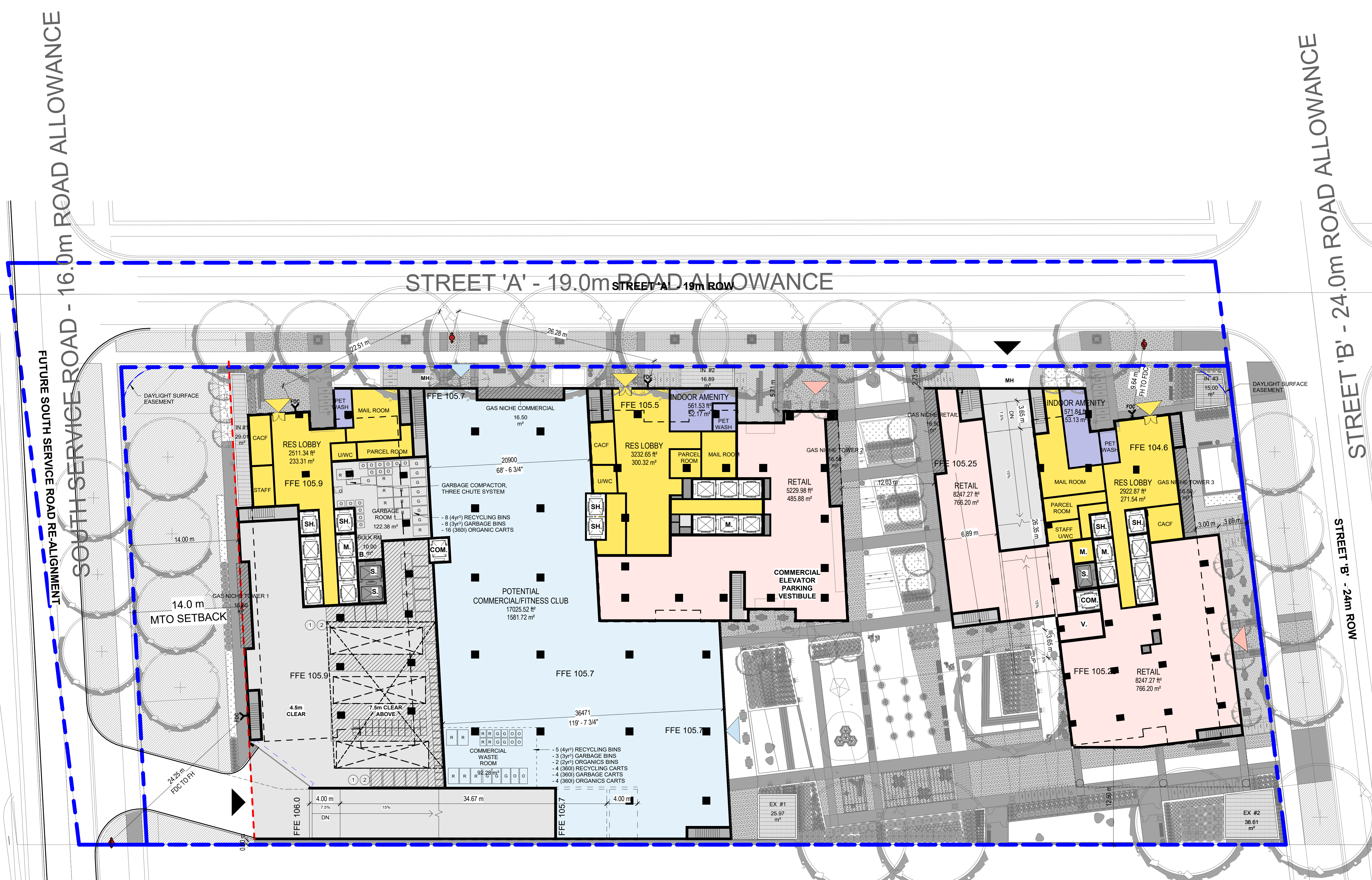
ISSUED

2024-03-06 ISSUED FOR ZBA



SITE SYMBOL LEGEND:

- RESIDENTIAL ENTRANCE (TOWER)
- EXISTING OFFICE ENTRANCES
- SERVICE ENTRANCE
- AMENITY ENTRANCE
- PRIVATE TERRACE
- OUTDOOR AMENITY
- GREEN ROOF
- CANOPY
- +123.45 EX EXISTING GRADES
- +123.45 PROPOSED GRADES
- PROPOSED FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- PROPERTY LINE
- E-BIKES
- G GARBAGE BIN
- R RECYCLING BIN
- O ORGANIC BIN
- B BULKY WASTE STORAGE (MIN. 10HP)
- J JANITOR CLOSET
- COM. COMMERCIAL ELEVATOR
- M MOVING ELEVATOR / MOVING ROOM
- S SERVICE ELEVATOR
- SH SHUTTLE ELEVATOR
- V VESTIBULE



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PROJ. NAME
166 South Service Road
 South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level 1 - Ground Floor Plan

DATE: 2024-03-06
 SCALE: 1:250
 DRAWN:
 CHECKED: AG
 PROJ. No.: 2128

DWG No.
AZ108

GR PLAN NOTES	
Note Number	Note Text
1	WEIGHT CAPACITY OF LOADING AREA (35,000 KG)
2	LOADING AREA HAS +/- 2% GRADE

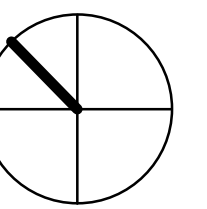
DRAWING NOT TO BE SCALED

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This drawing shall not be used for construction purposes until signed by the consultant responsible. This drawing, as an instrument of service, is provided by and is the property of Sweeny & Co. Architects.

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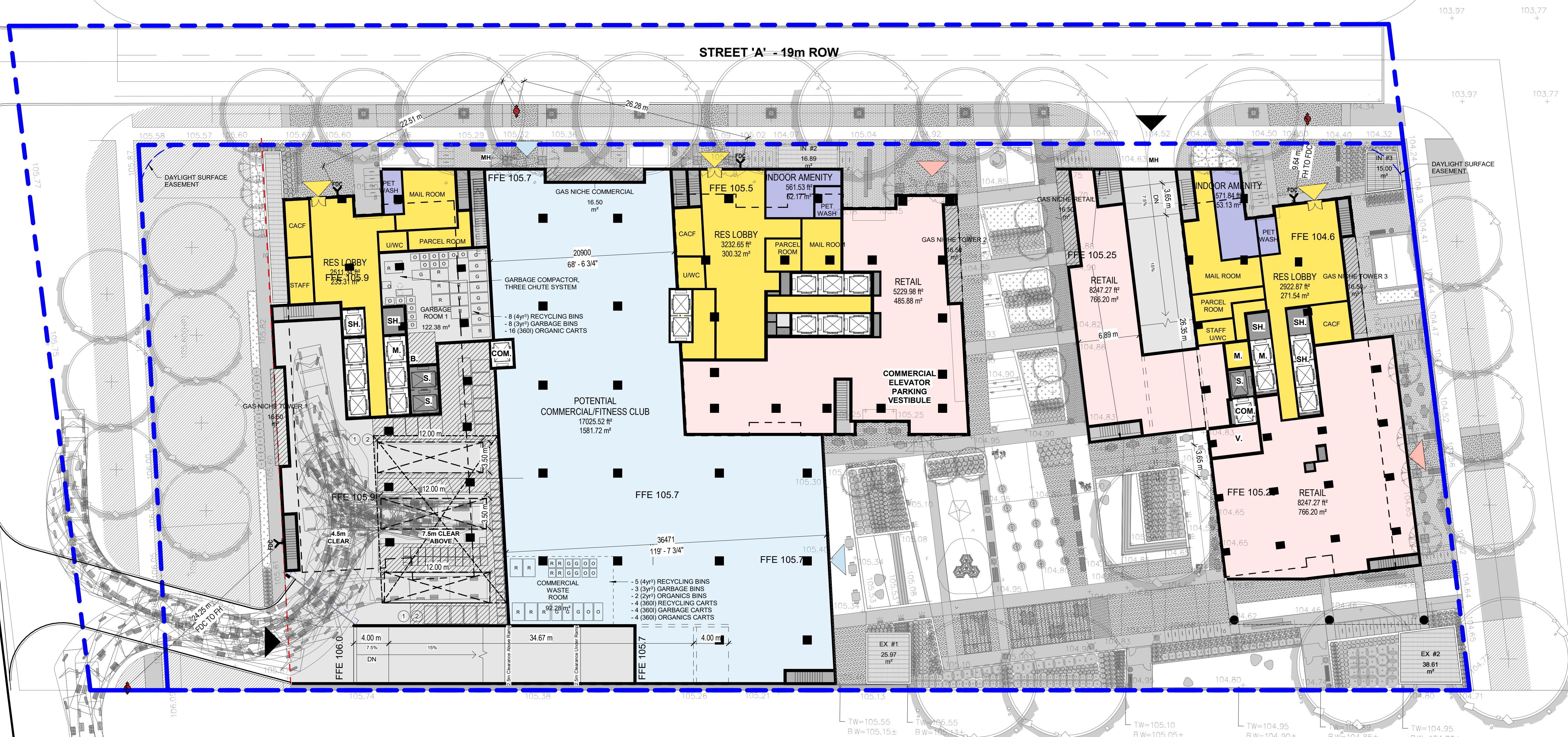
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EXISTING SOUTH SERVICE ROAD



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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level 1 - Ground Floor Plan - Interim Road

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN:
CHECKED: AG
PROJ. No.: 2128

DWG No.
AZ109

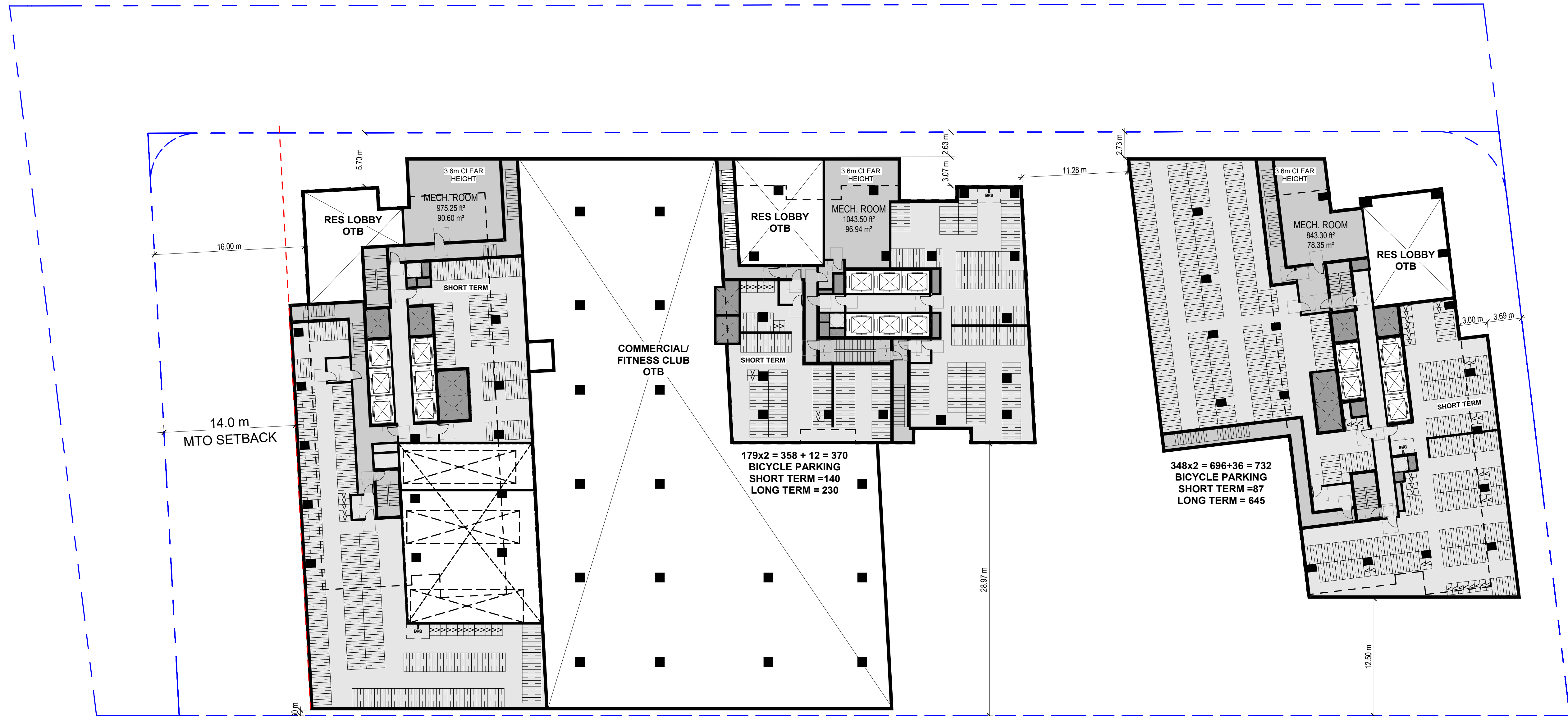
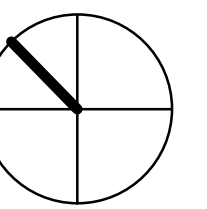
DRAWING NOT TO BE SCALED

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250x2 = 500 + 18 = 518
BICYCLE PARKING
SHORT TERM = 126
LONG TERM = 392

179x2 = 358 + 12 = 370
BICYCLE PARKING
SHORT TERM = 140
LONG TERM = 230

348x2 = 696 + 36 = 732
BICYCLE PARKING
SHORT TERM = 87
LONG TERM = 645

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Mezzanine Level

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.
AZ110

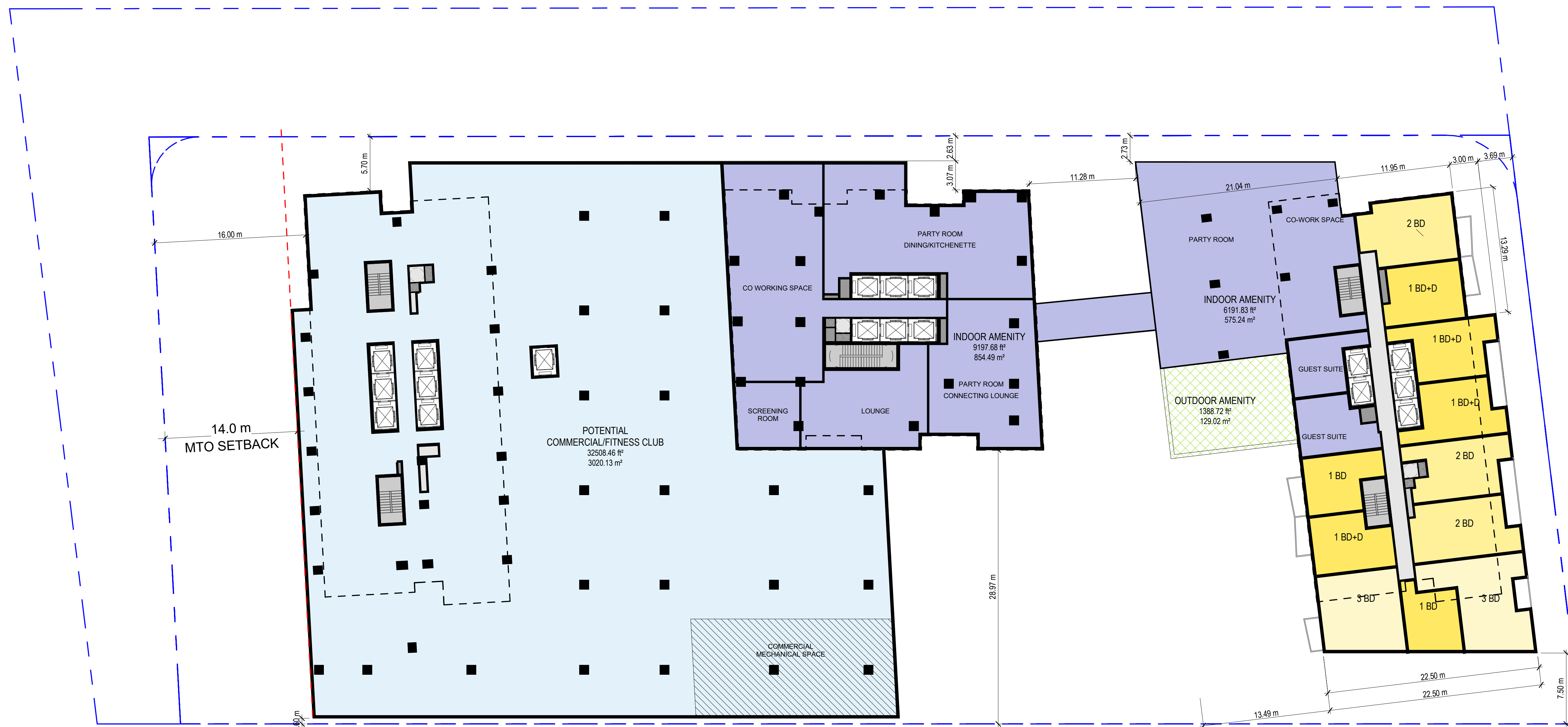
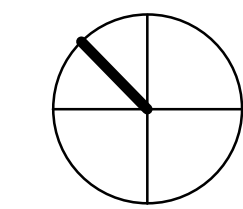
DRAWING NOT TO BE SCALED

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level 2 - Lower Podium

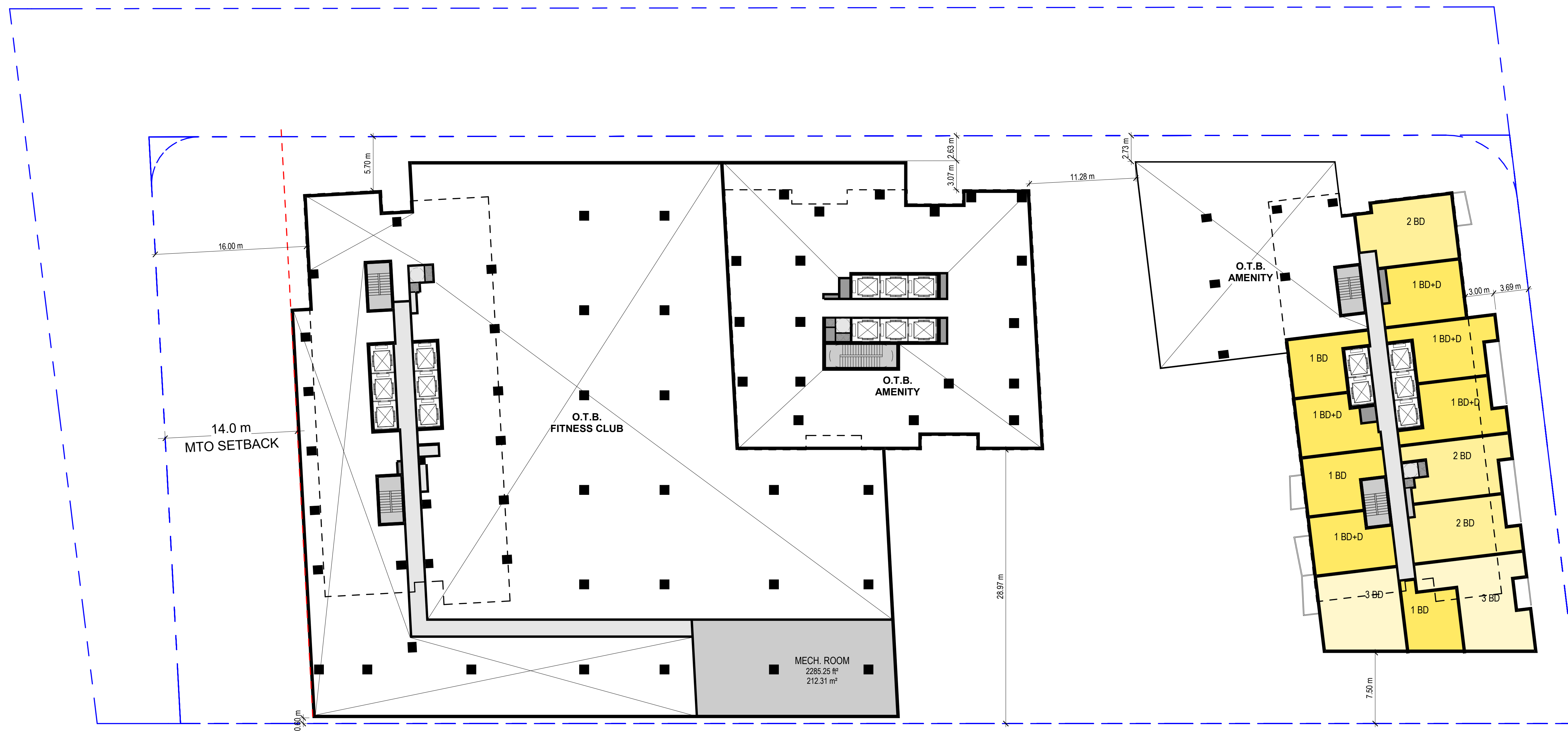
DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.

AZ111

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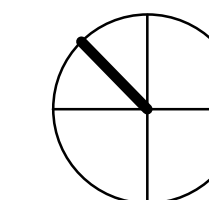
DRAWING NOT TO BE SCALED

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

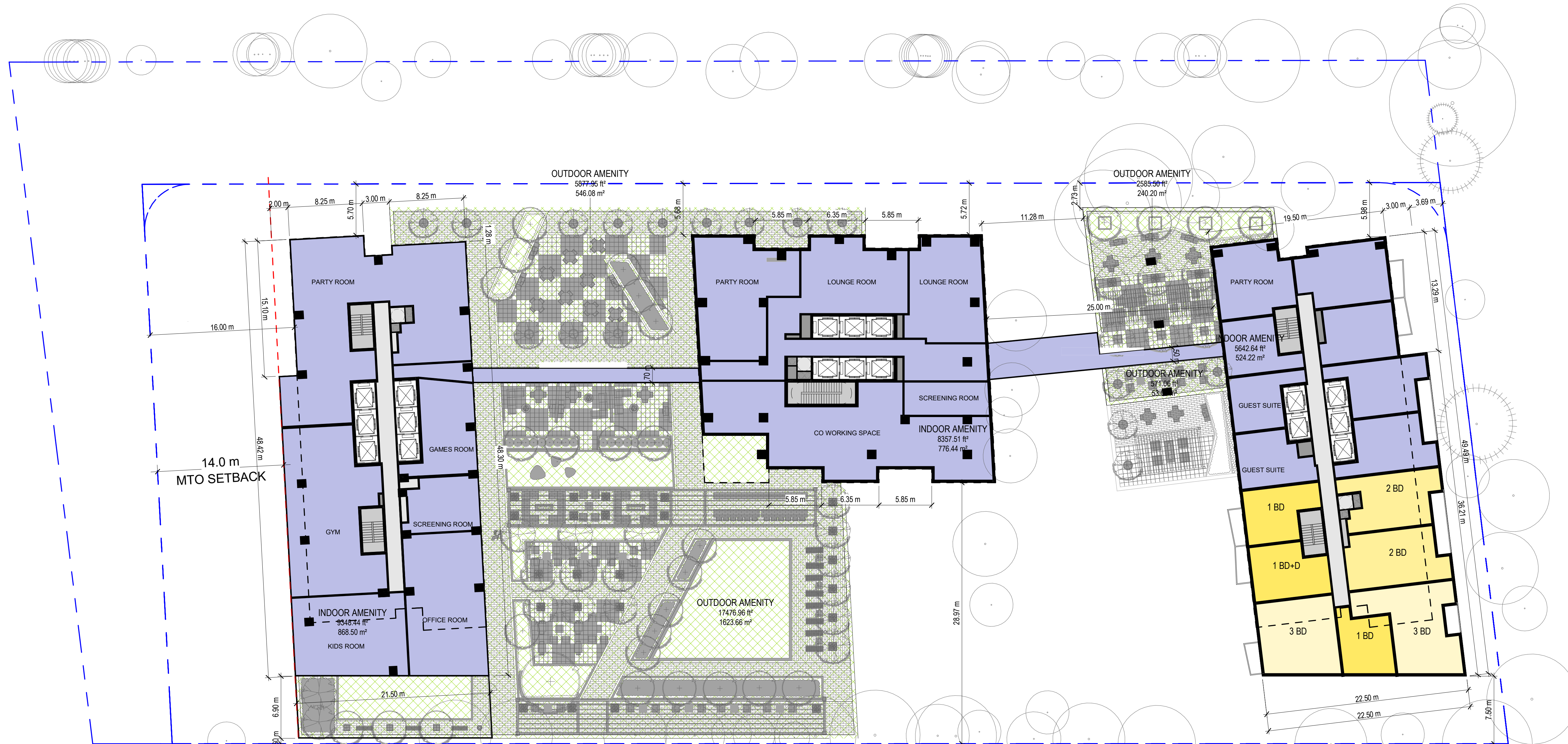
OWNER
166 South Service Inc.

DWG TITLE
Level 3 - Lower Podium

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

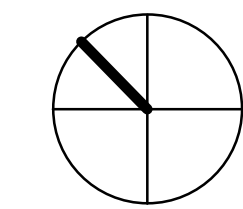
DWG No.

AZ112



DRAWING NOT TO BE SCALED
Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.
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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

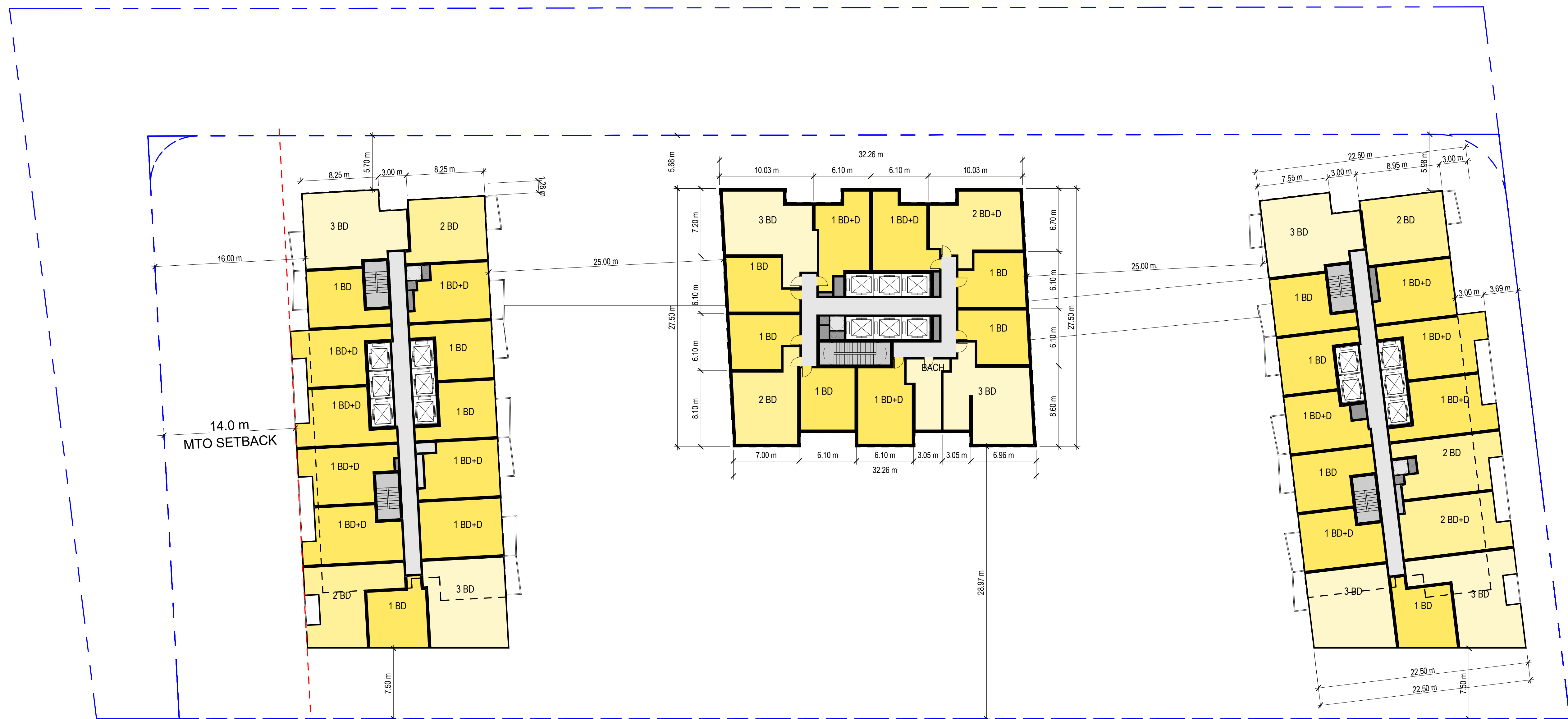
DWG TITLE
Levels 4 - Amenity Level

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.
AZ113

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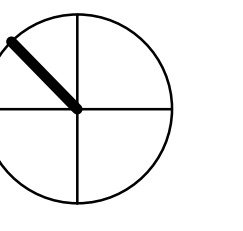
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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Architects**

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Level 5

DATE:	2024-03-06
SCALE:	1 : 250
DRAWN:	
CHECKED:	AG
PROJ. No.:	2128

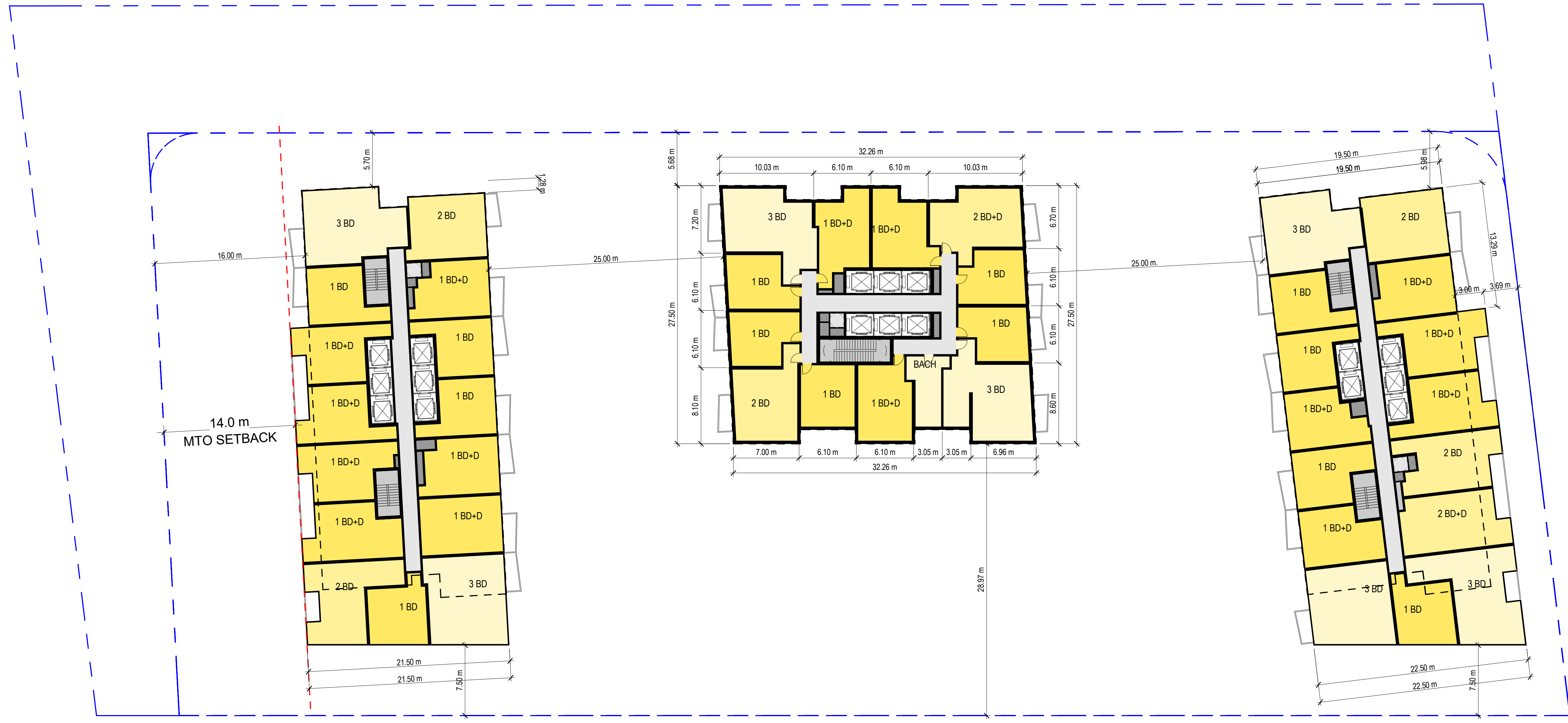
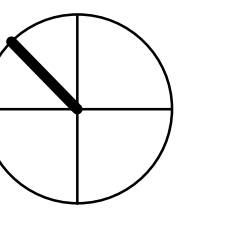
AZ114

DWG No.

DRAWING NOT TO BE SCALED
 Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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 E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
 166 South Service Road
 South Service Road & Trafalgar

OWNER
 166 South Service Inc.

DWG TITLE
 Level 6 - Upper Podium

DATE: 2024-03-06
 SCALE: 1 : 250
 DRAWN :
 CHECKED : AG
 PROJ. No.: 2128

DWG No.
AZ115

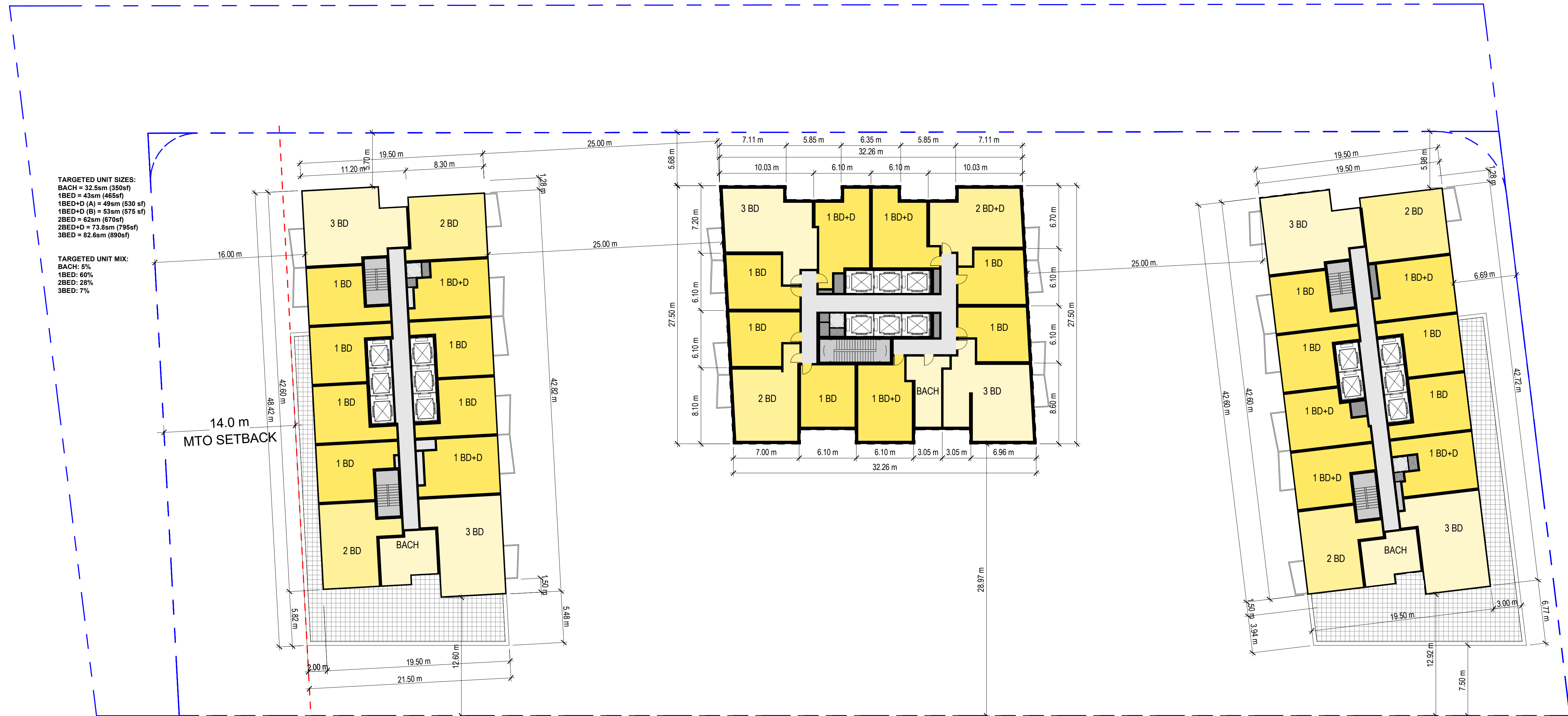
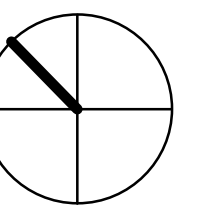
DRAWING NOT TO BE SCALED

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TARGETED UNIT SIZES:
BACH = 32.5m (350sf)
1BED = 43m (465sf)
1BED+D (A) = 49m (530 sf)
1BED+D (B) = 53m (575 sf)
2BED = 42m (473sf)
2BED+D = 73.8m (795sf)
3BED = 82.6m (890sf)

TARGETED UNIT MIX:
BACH: 8%
1BED: 49%
2BED: 28%
3BED: 7%

C:\Users\lma\Documents\2128_Colville Transit Hub_Central_New_lmaFRMNN.rvt
2024-03-07 1:14:36 PM

Sweeny&Co Architects

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E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Tower Floor Plan Type 1 - Level 7

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.
AZ116

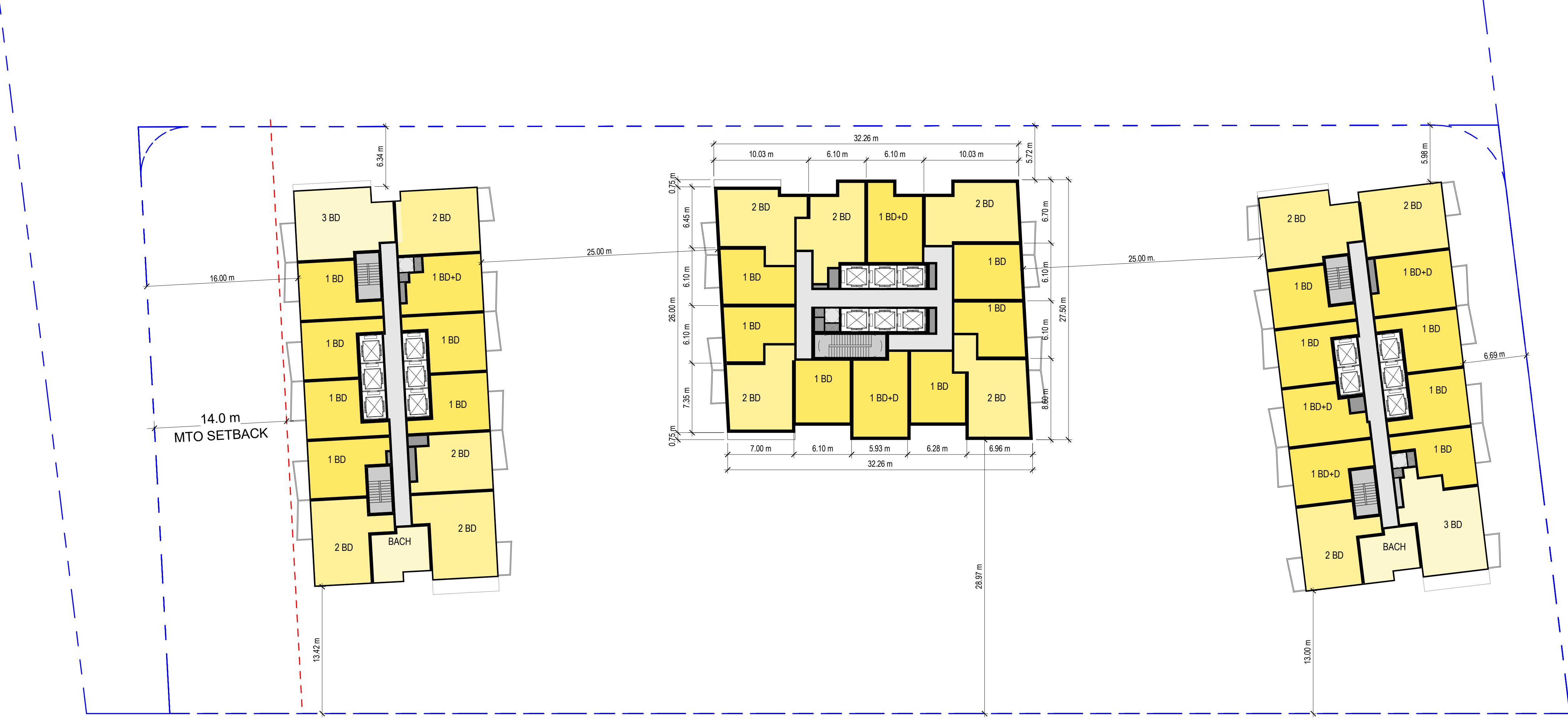
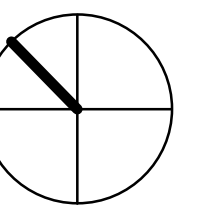
DRAWING NOT TO BE SCALED

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
**Tower Floor Plan Type 2 -
Level 28**

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128 DWG No.

AZ117

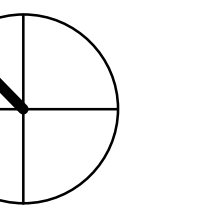
DRAWING NOT TO BE SCALED

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E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
**Tower Floor Plan Type 2 -
Level 29**

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.

AZ118

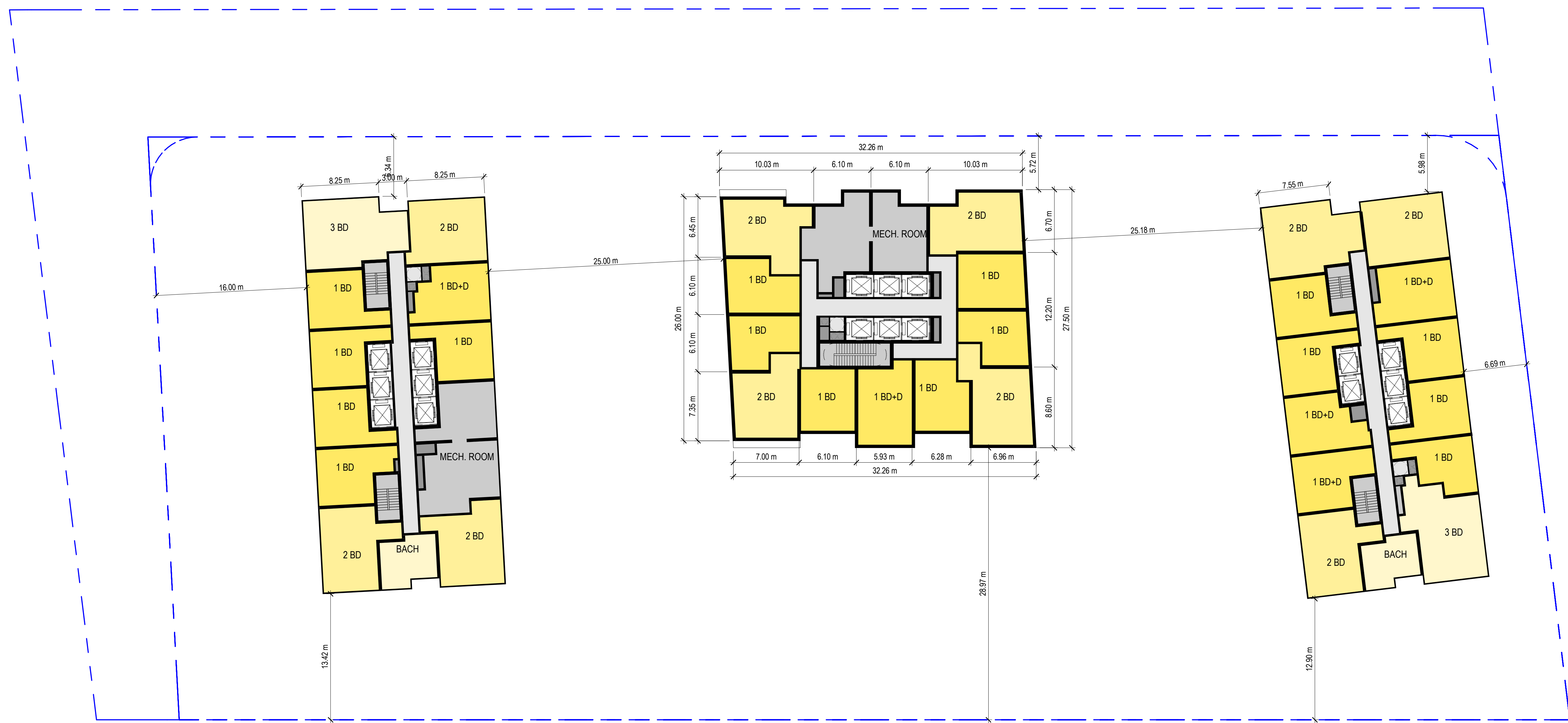
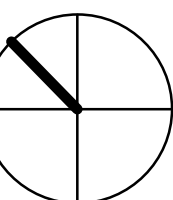
DRAWING NOT TO BE SCALED

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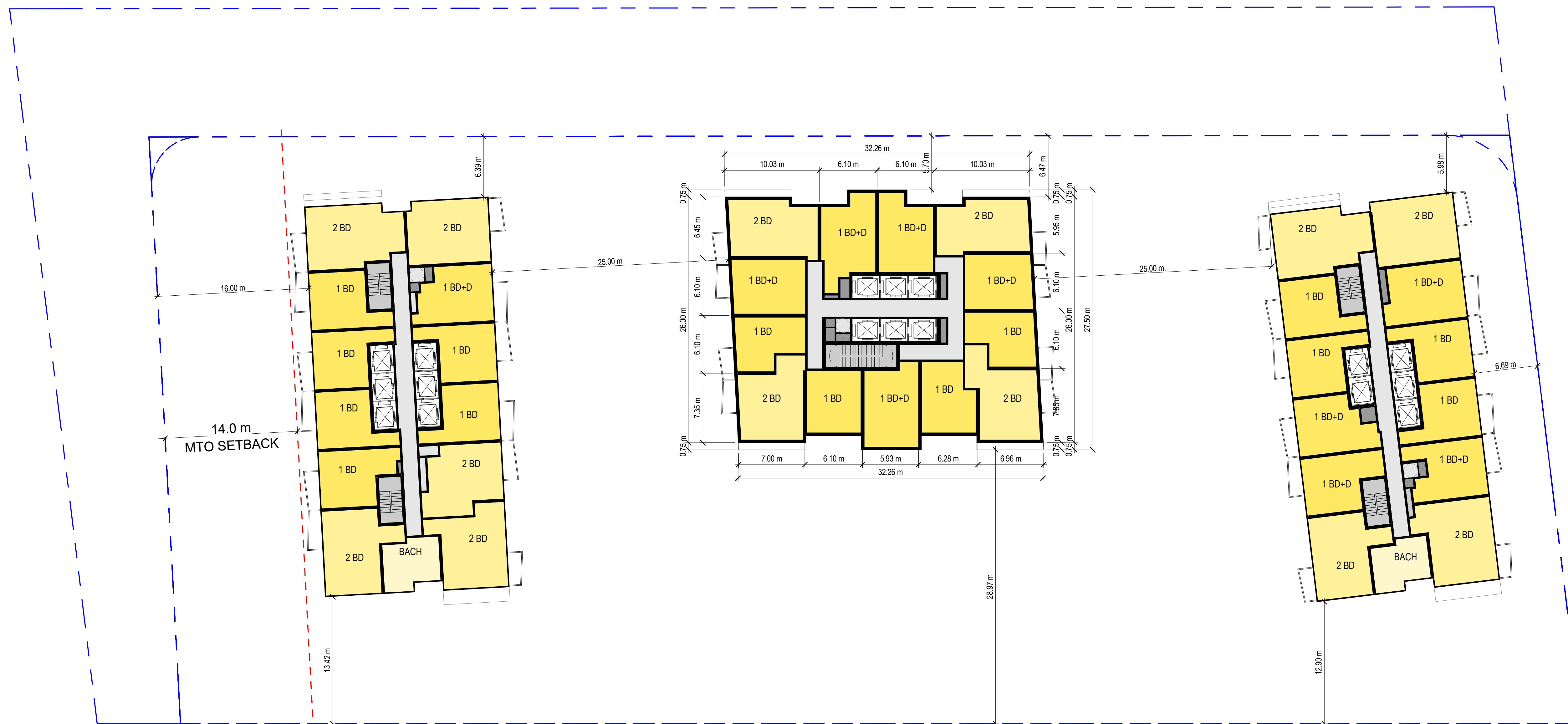
PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Tower Floor Plan Type 2 - Level 30

DATE:	2024-03-06
SCALE:	1 : 250
DRAWN:	
CHECKED:	AG
PROJ. No.:	2128

DWG No.
AZ119



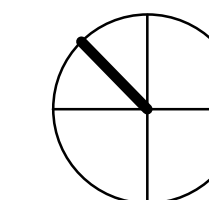
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
**Tower Floor Plan Type 3 -
Level 37**

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128

DWG No.

AZ120

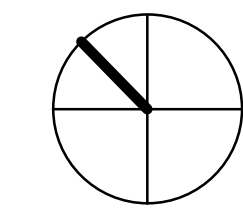
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

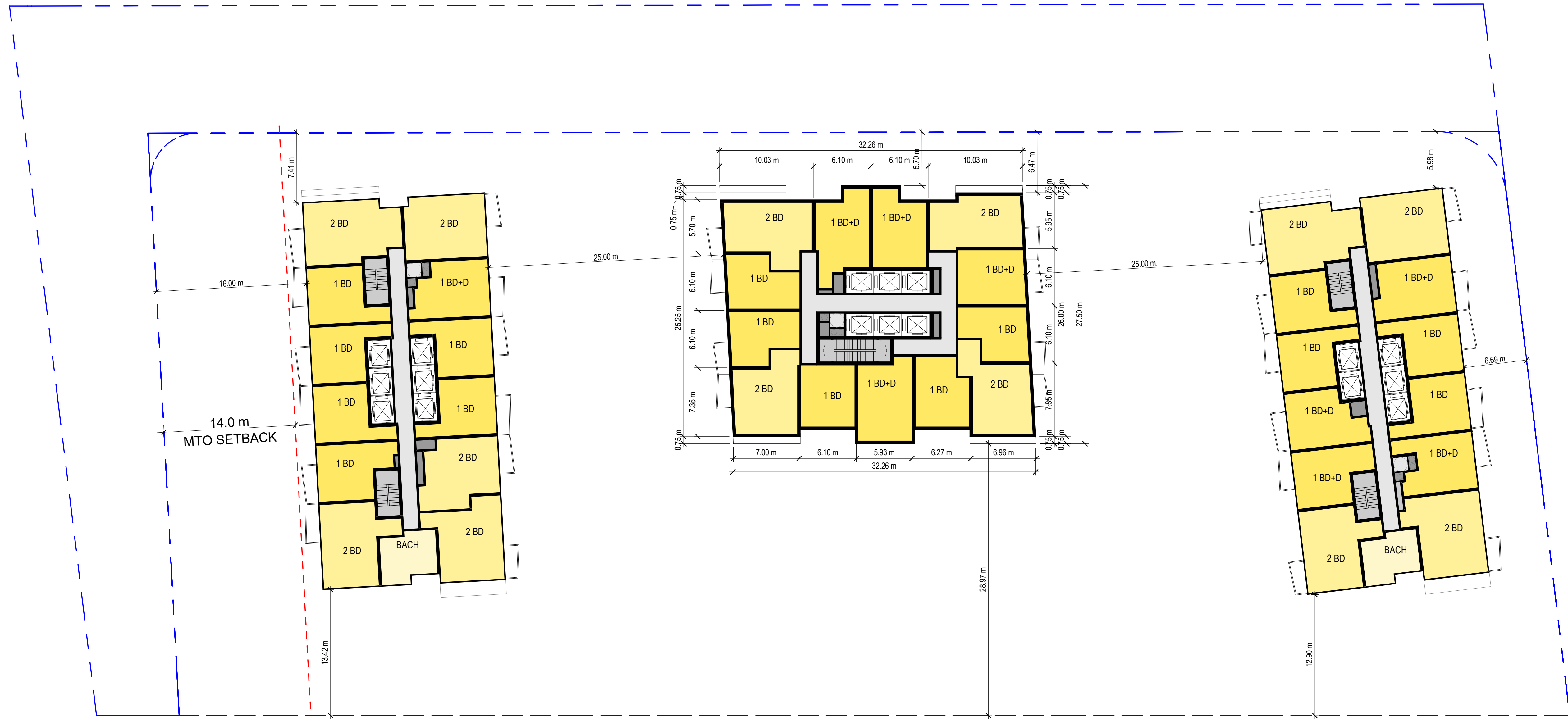
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2024-03-06 ISSUED FOR ZBA



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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Tower Floor Plan Type 4 - Level 43

DATE: 2024-03-06
SCALE: 1 : 250
DRAWN :
CHECKED : AG
PROJ. No. : 2128 DWG No.

AZ121

2024-03-07 1:14:40 PM

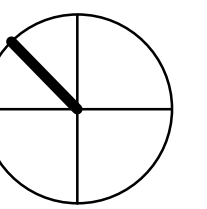
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
**Tower Floor Plan Type 5 -
Level 49**

DATE: 2024-03-06

SCALE: 1 : 250

DRAWN :

CHECKED : AG

PROJ. No. : 2128

DWG No.

AZ122



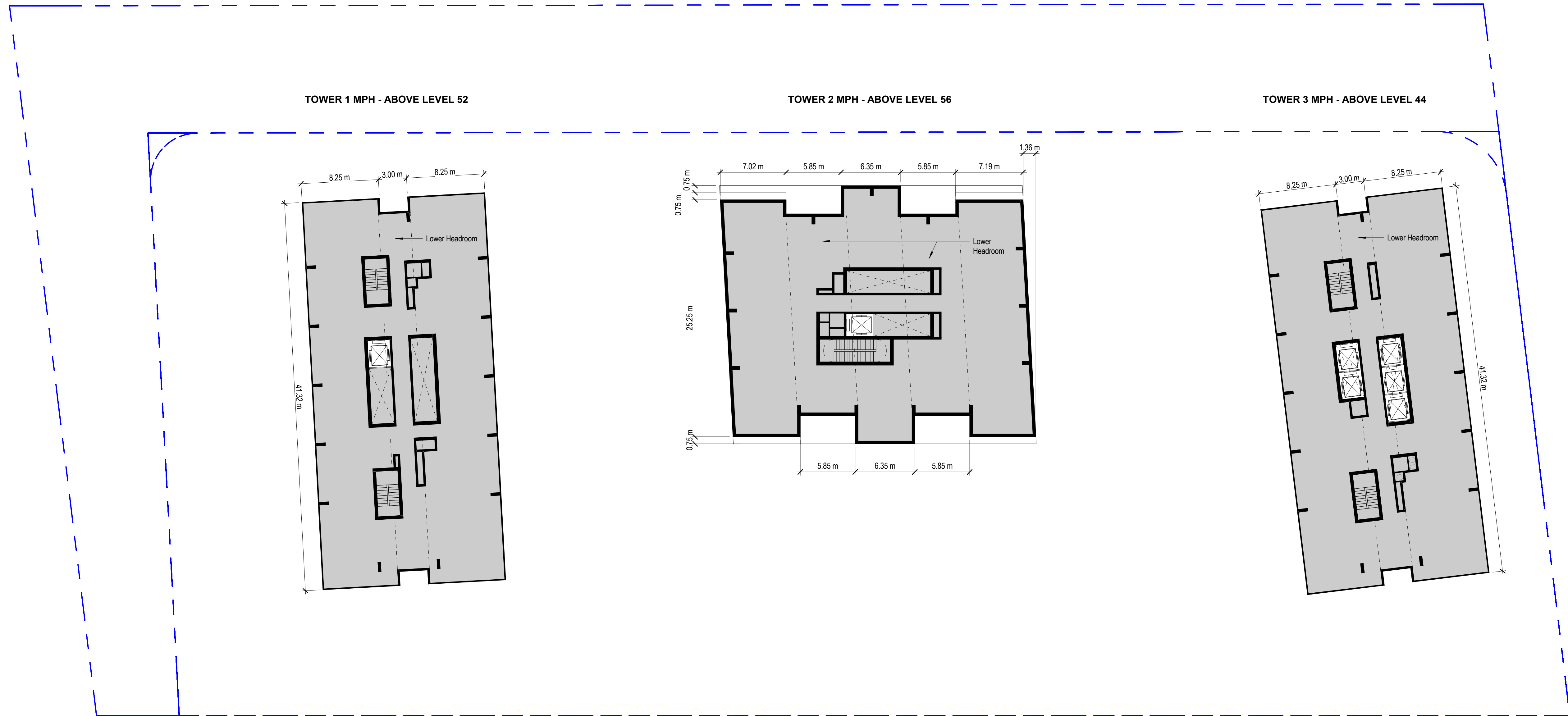
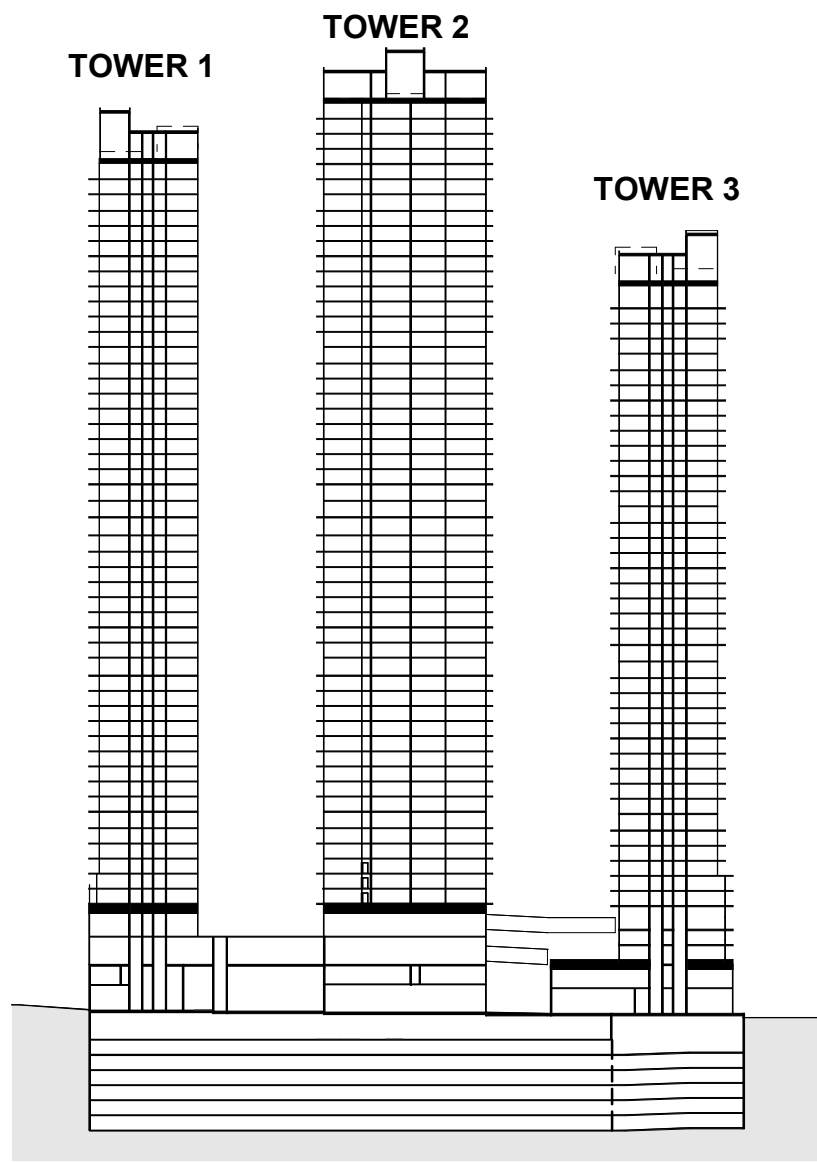
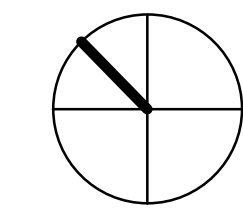
DRAWING NOT TO BE SCALED

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PROJ. NAME
166 South Service Road
 South Service Road & Trafalgar

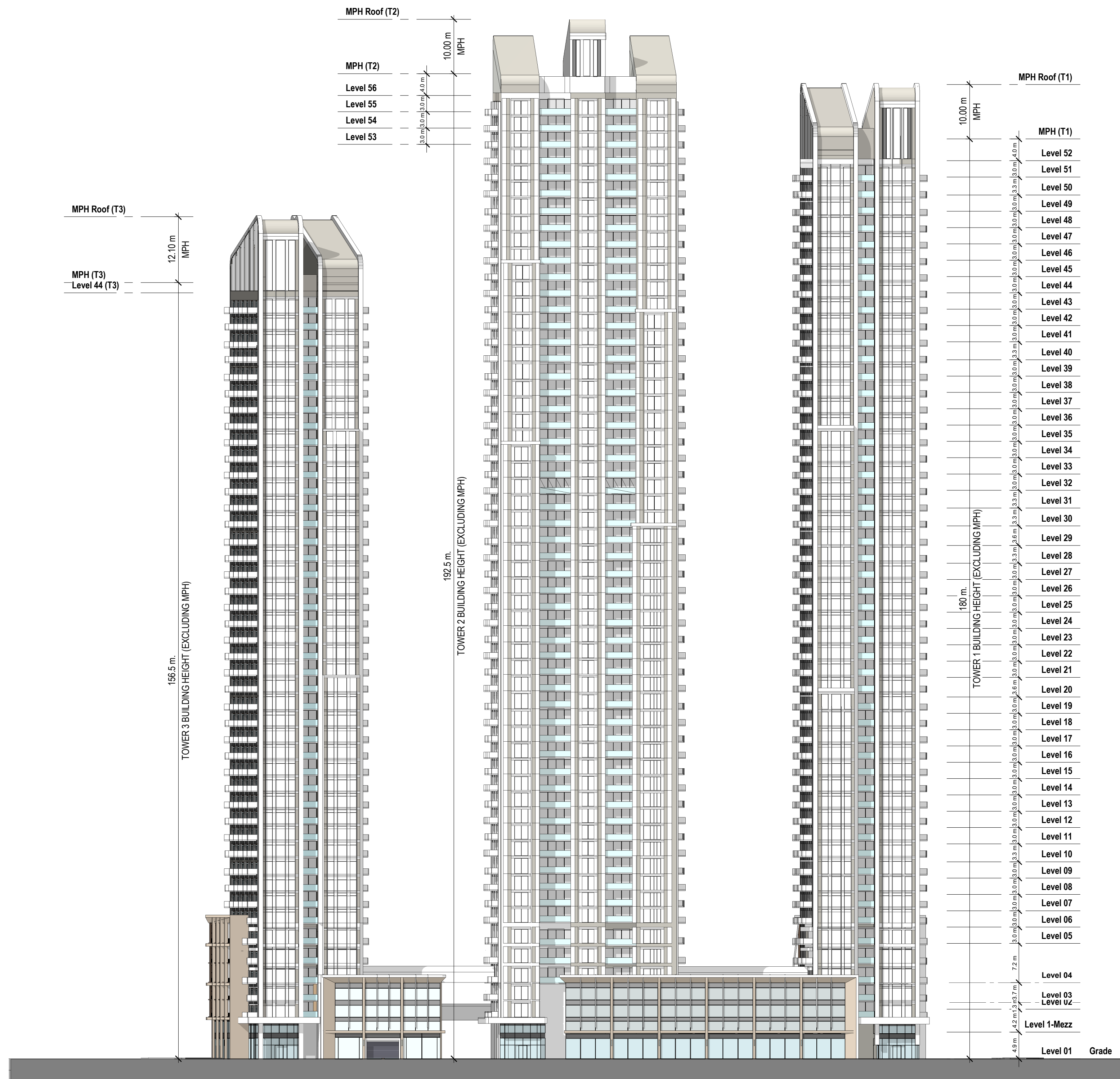
OWNER
166 South Service Inc.

DWG TITLE
Tower Floor Plan - MPH's

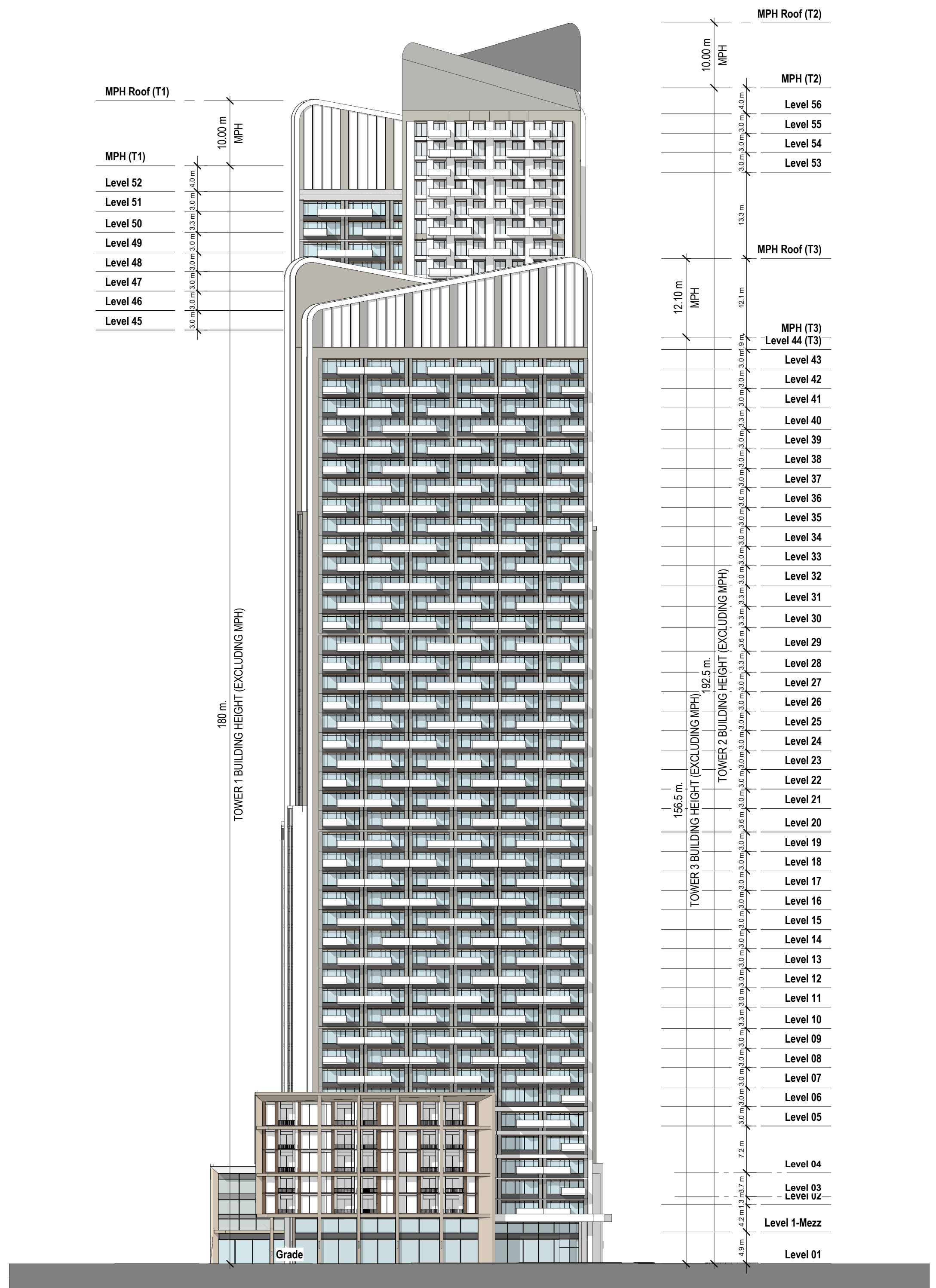
DATE: 2024-03-06
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 CHECKED: AG
 PROJ. No.: 2128

DWG No.

AZ123



1 ZBA_Building Elev_East
AZ400 1:500



2 ZBA_Building Elev_South
AZ400 1:500

Sweeny&Co Architects

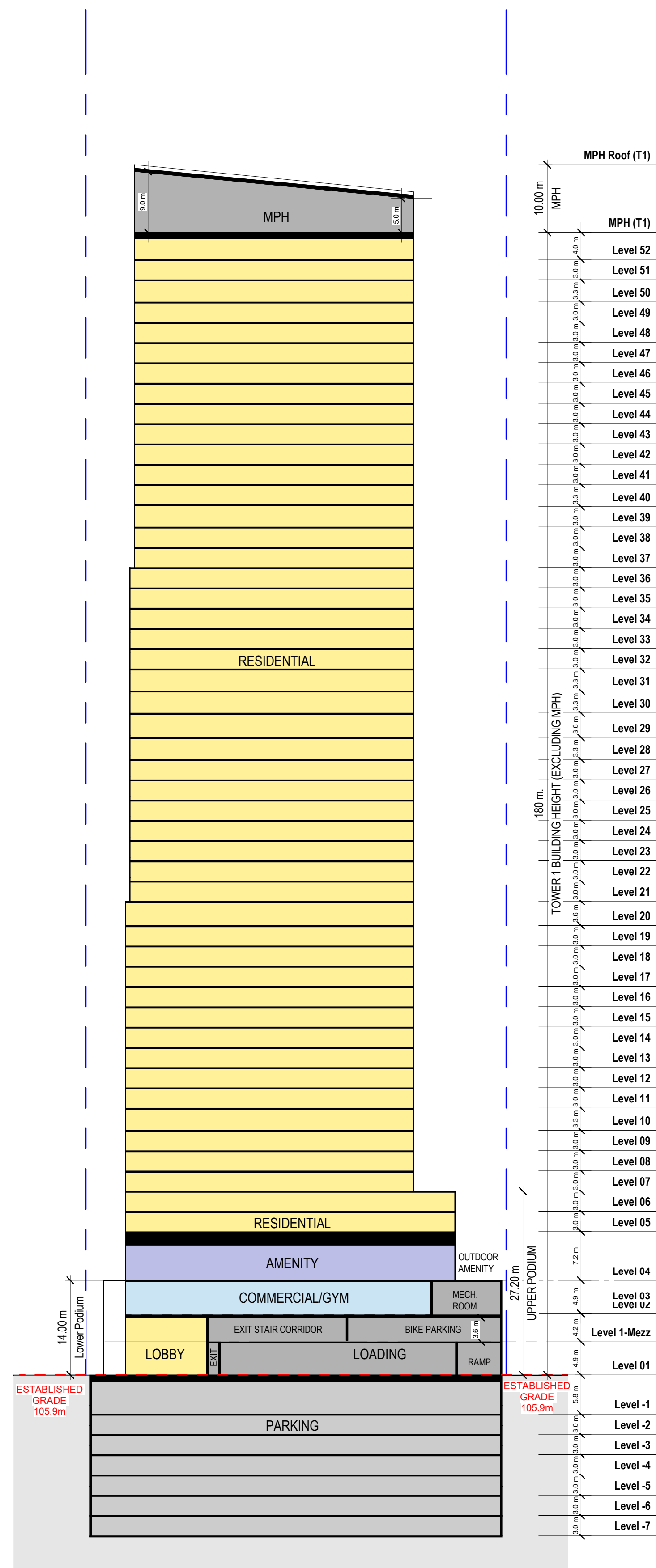
134 PETER STREET | SUITE 1601
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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

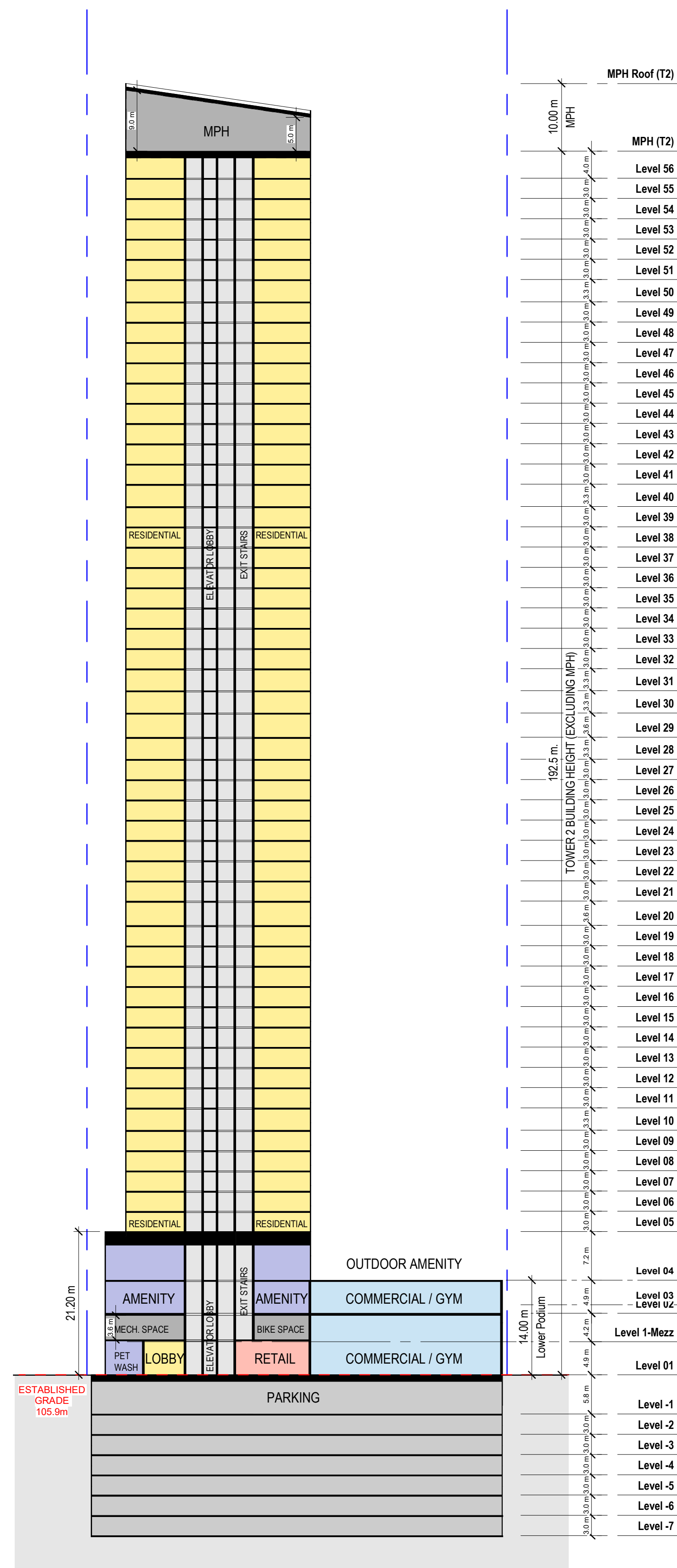
OWNER
166 South Service Inc.

DWG TITLE
Building Elevations (East and South)

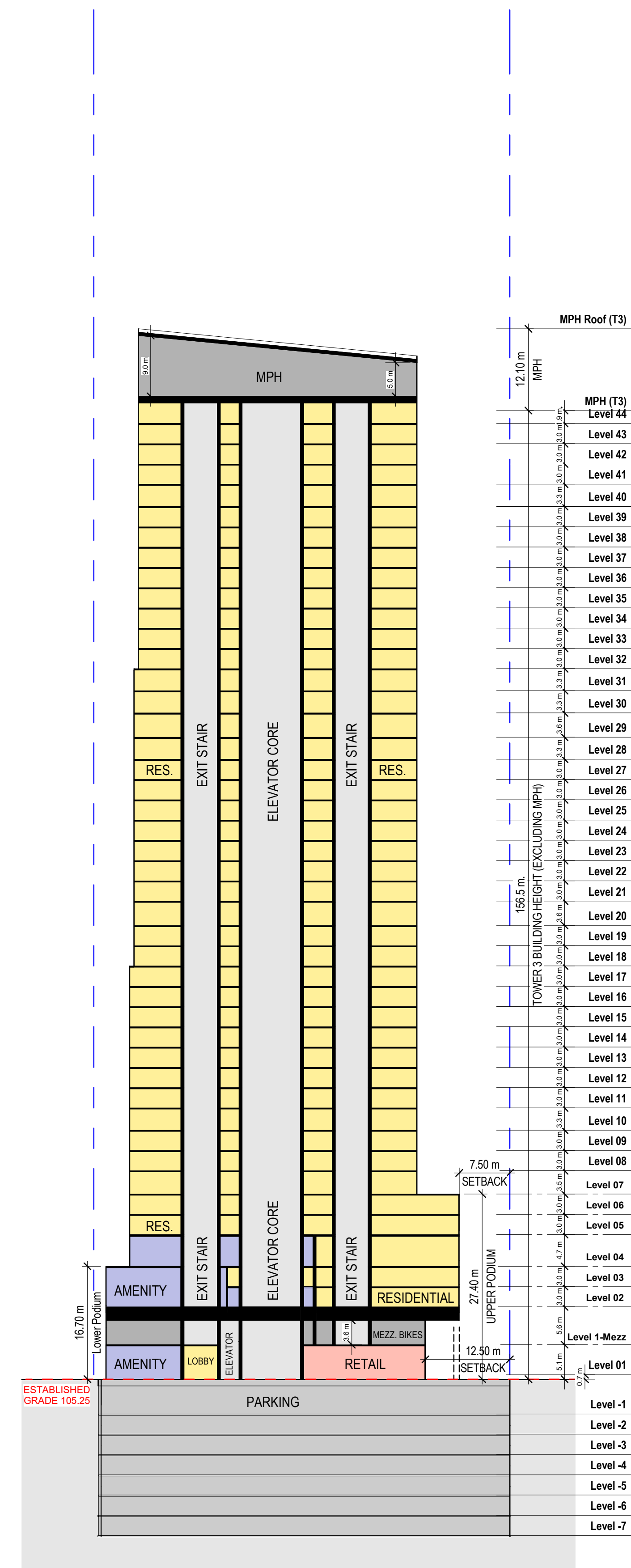
DATE: 2024-03-06
SCALE: 1:500
DRAWN: IB
CHECKED: AG
PROJ. No.: 2128 DWG No.



3 E-W Section - Tower 1
AZ500 1:500



2 E-W Section - Tower 2
AZ500 1:500



1 E-W Section - Tower 3
AZ500 1:500

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E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Building Sections (East-West)

DATE: 2024-03-06

SCALE: 1:500

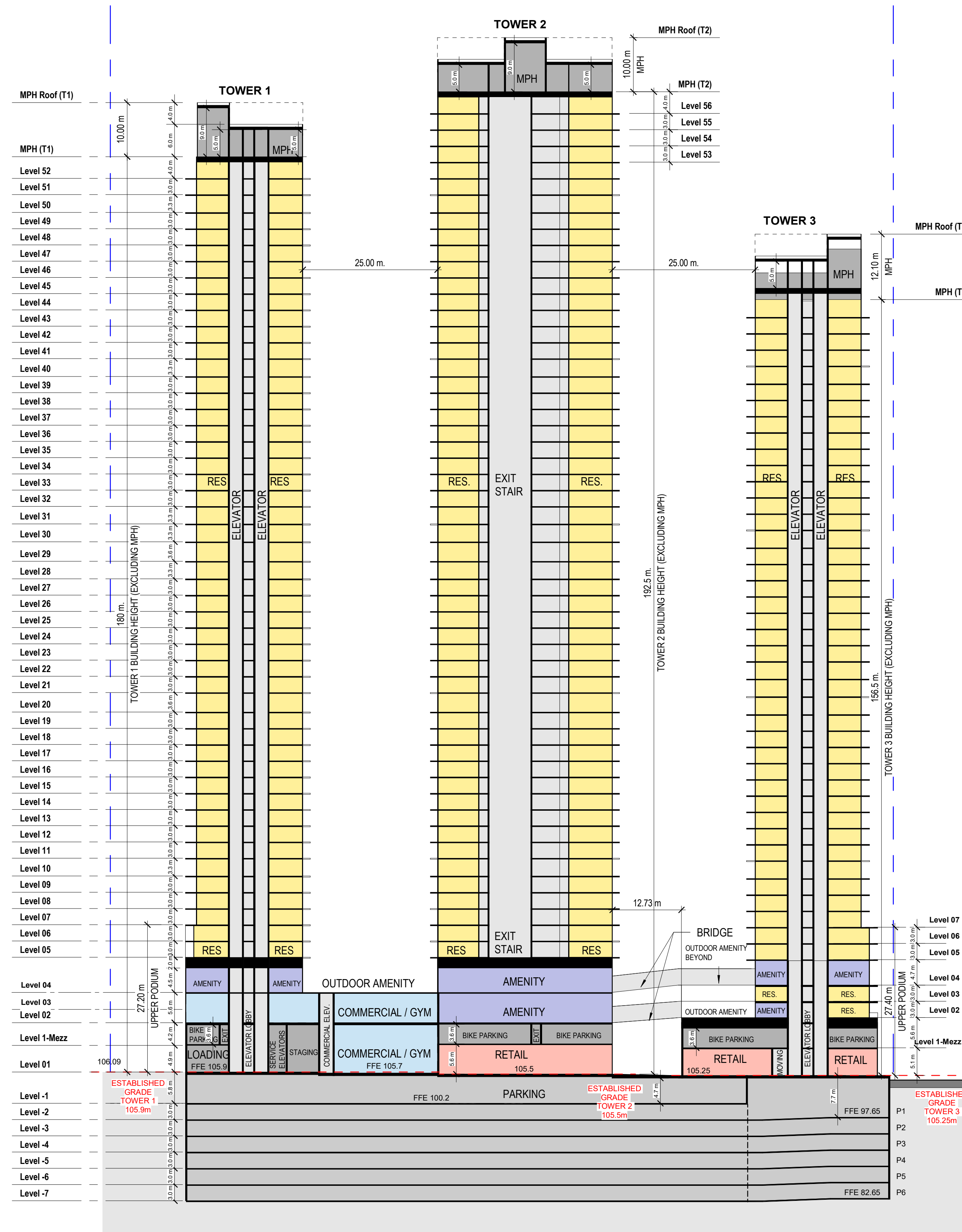
DRAWN:

CHECKED: AG

PROJ. No.: 2128

DWG No.

AZ500



1 N-S Section
 AZ501 1 : 500

DRAWING NOT TO BE SCALED

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PROJ. NAME
166 South Service Road
 South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Building Sections (North-South)

DATE: 2024-03-06
 SCALE: 1 : 500
 DRAWN :
 CHECKED : AG
 PROJ. No.: 2128 DWG No.

AZ501

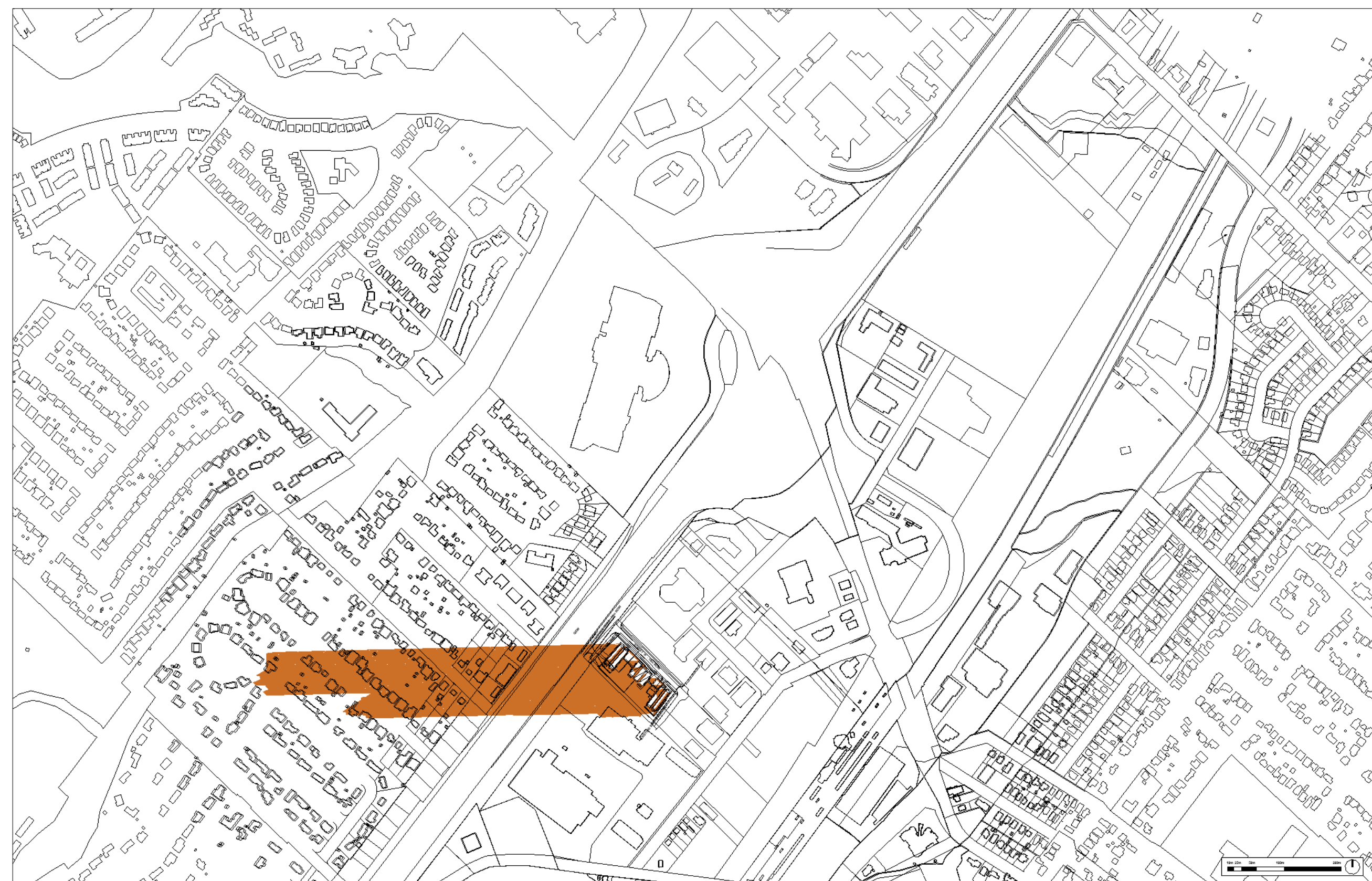
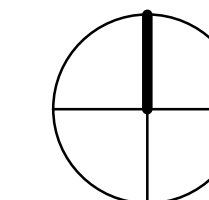
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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April 21 - 08:00 AM - DST



April 21 - 09:00 AM - DST



April 21 - 10:00 AM - DST



April 21 - 11:00 AM - DST

LEGEND

- EXISTING SHADOWS
- PROPOSED SHADOWS

Sweeny&Co Architects

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 E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
 South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Shadow Studies_April

DATE: 2024-03-06
 SCALE: 1 : 1
 DRAWN: IB / MM
 CHECKED: AG
 PROJ. No.: 2128

DWG No.

AZ1100

C:\Users\lma\Documents\2128_Oakville Transit Hub_Central_New_lmaFRMNNL.rvt
2024-03-07 1:15:43 PM



April 21 - 12:00 PM - DST



April 21 - 01:00 PM - DST



April 21 - 02:00 PM - DST



April 21 - 03:00 PM - DST

LEGEND

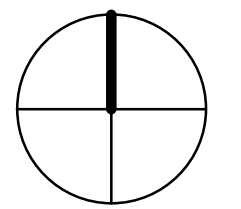
- EXISTING SHADOWS
- PROPOSED SHADOWS

DRAWING NOT TO BE SCALED

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ISSUED



Sweeney & Co Architects

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PROJ. NAME
166 South Service Road
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OWNER
166 South Service Inc.

DWG TITLE
Shadow Studies_April

DATE: 2024-03-06
SCALE: 1 : 1
DRAWN : IB / MM
CHECKED : AG
PROJ. No. : 2128 DWG No.

AZ1101

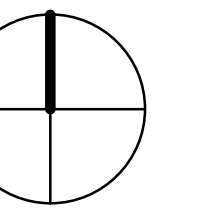
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

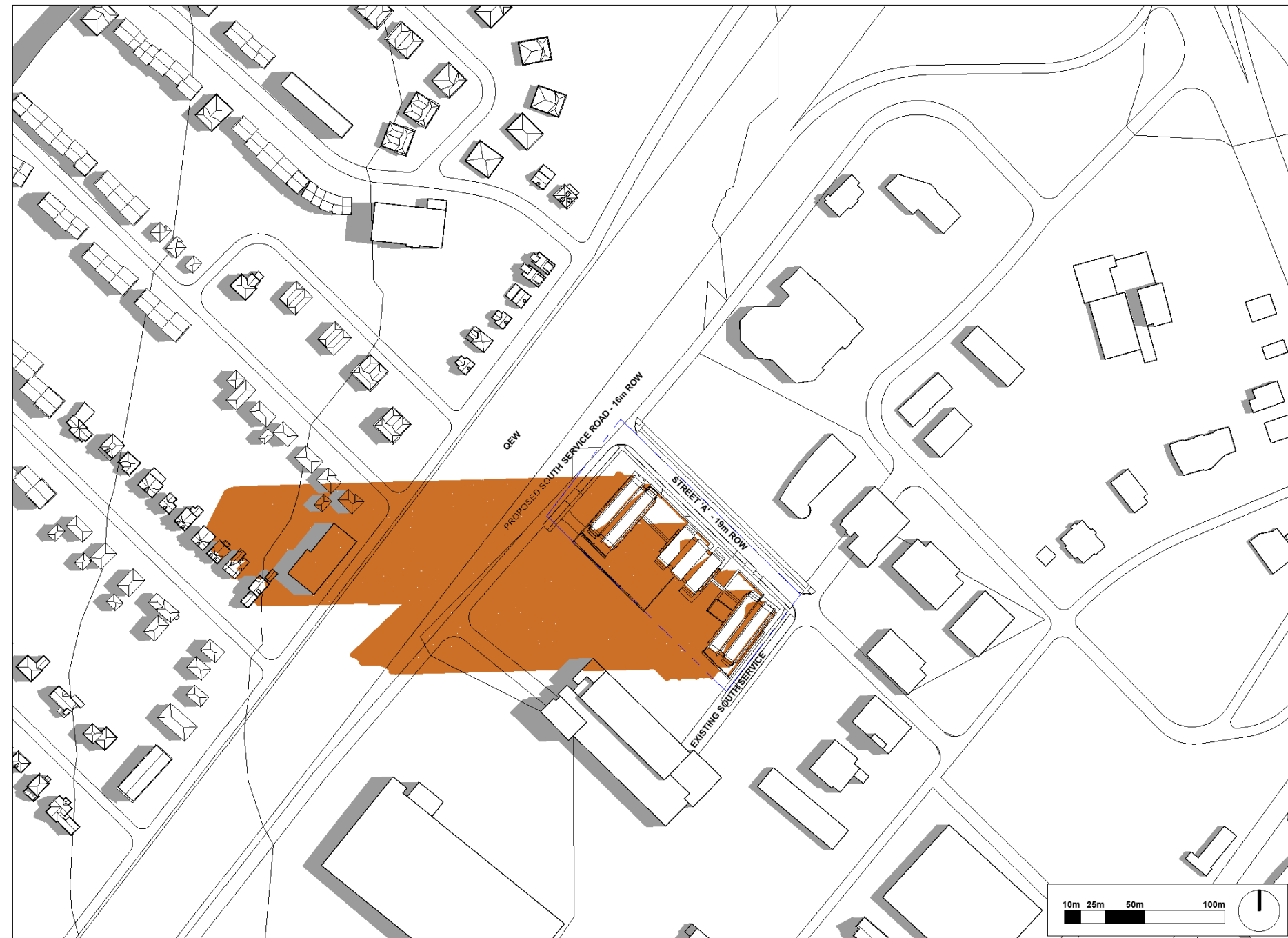
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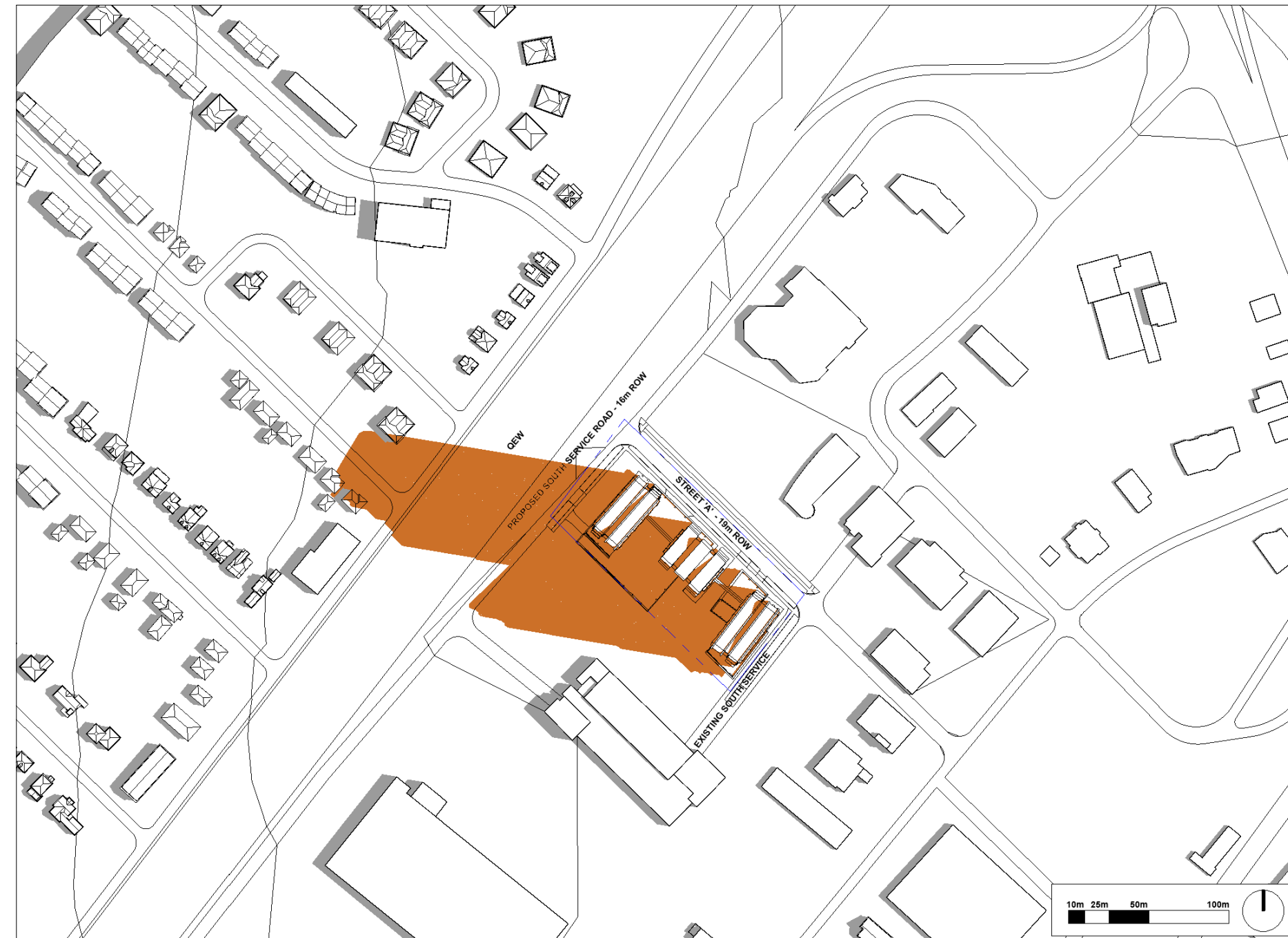
2024-03-06 ISSUED FOR ZBA



Jun 21 - 08:00 AM - DST



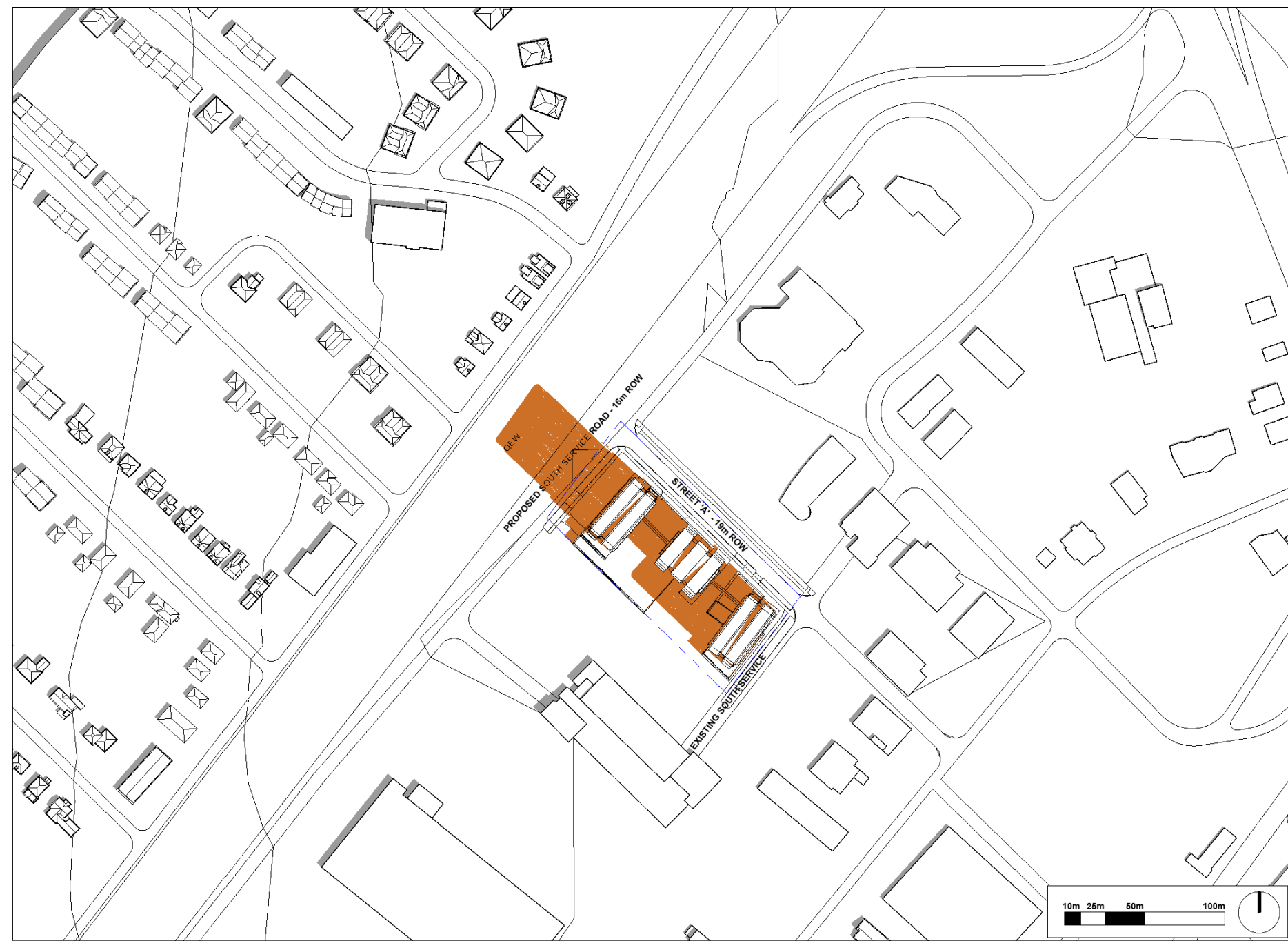
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Jun 21 - 11:00 AM - DST



Jun 21 - 12:00 PM - DST



Jun 21 - 01:00 PM - DST

LEGEND

- EXISTING SHADOWS
- PROPOSED SHADOWS

Sweeny&Co Architects

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PROJ. NAME
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South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Shadow Studies_June

DATE: 2024-03-06
SCALE: 1 : 1
DRAWN : IB / MM
CHECKED : AG
PROJ. No. : 2128 DWG No.

AZ1103

DRAWING NOT TO BE SCALED

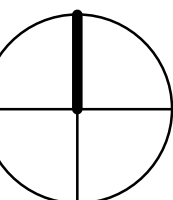
Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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2024-03-06 ISSUED FOR ZBA

Table with 2 columns and multiple empty rows for revision tracking.



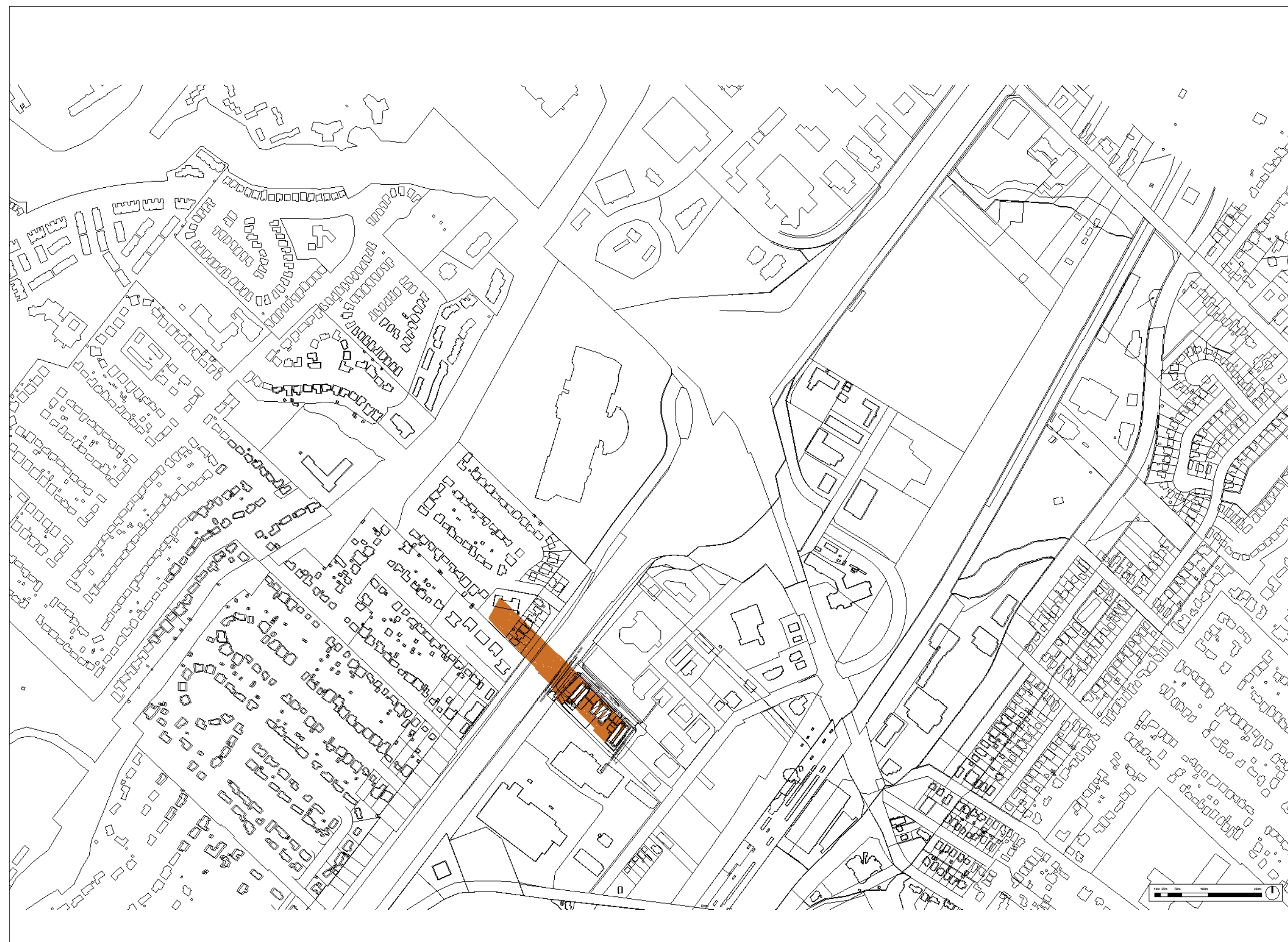
Sep 21 - 08:00 AM - DST



Sep 21 - 09:00 AM - DST





Sep 21 - 10:00 AM - DST



Sep 21 - 11:00 AM - DST

LEGEND

-  EXISTING SHADOWS
-  PROPOSED SHADOWS

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2024-03-07 1:15:44 PM

Sweeny&Co Architects

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PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Shadow Studies_September

DATE: 2024-03-06
SCALE: 1 : 1
DRAWN : IB / MM
CHECKED : AG
PROJ. No.: 2128

DWG No.

AZ1105

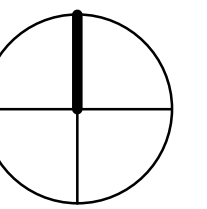
DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

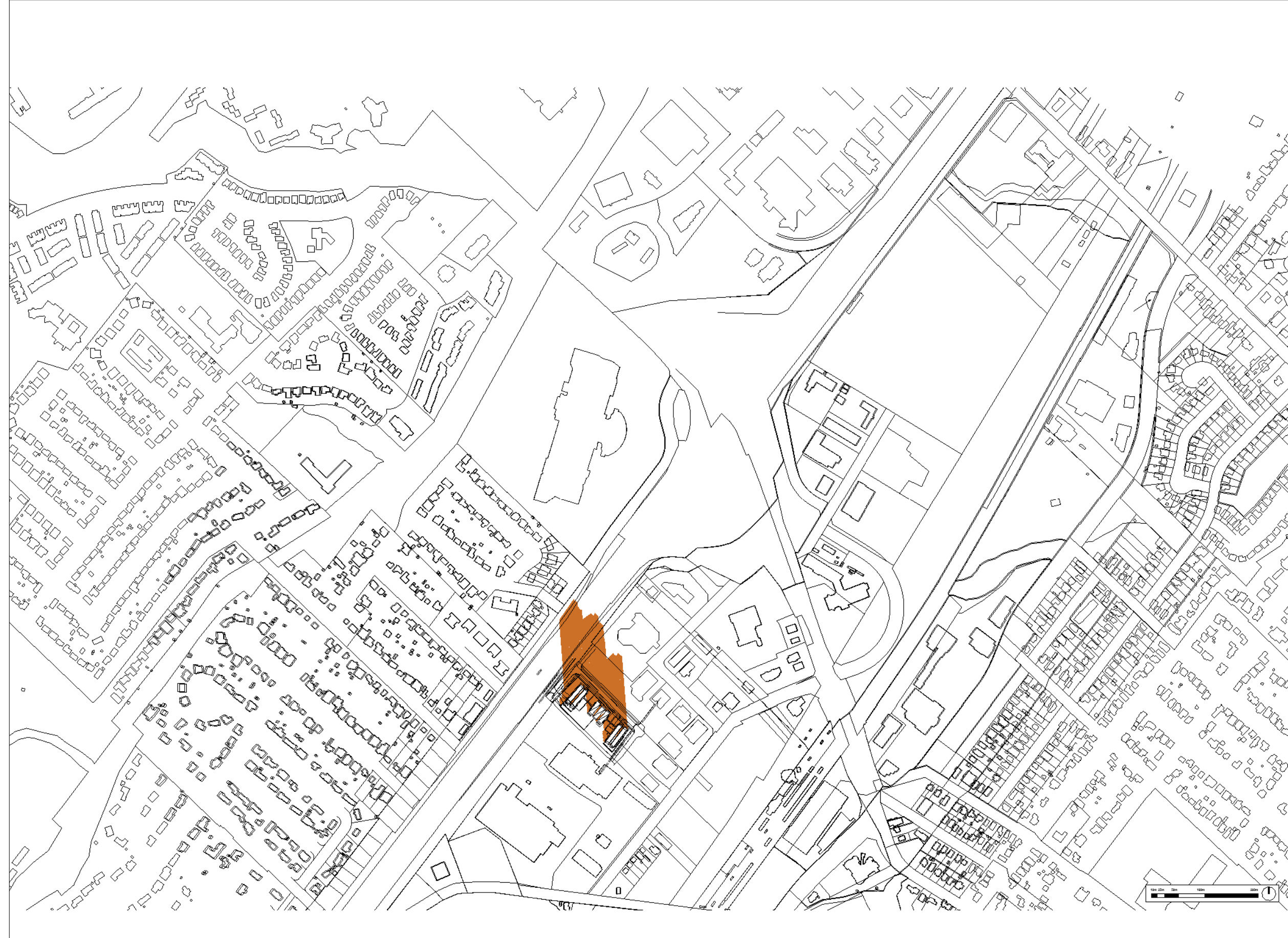
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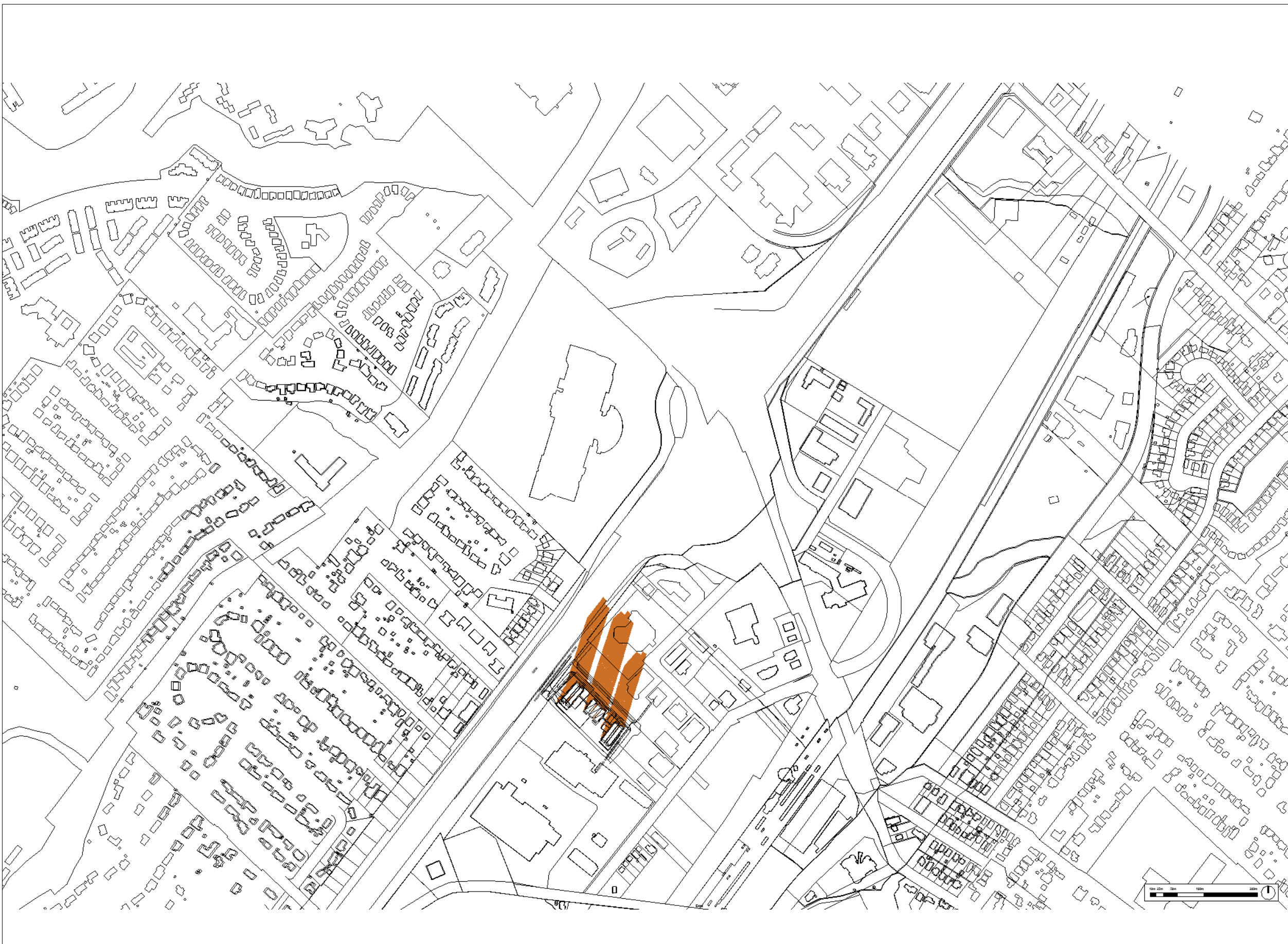
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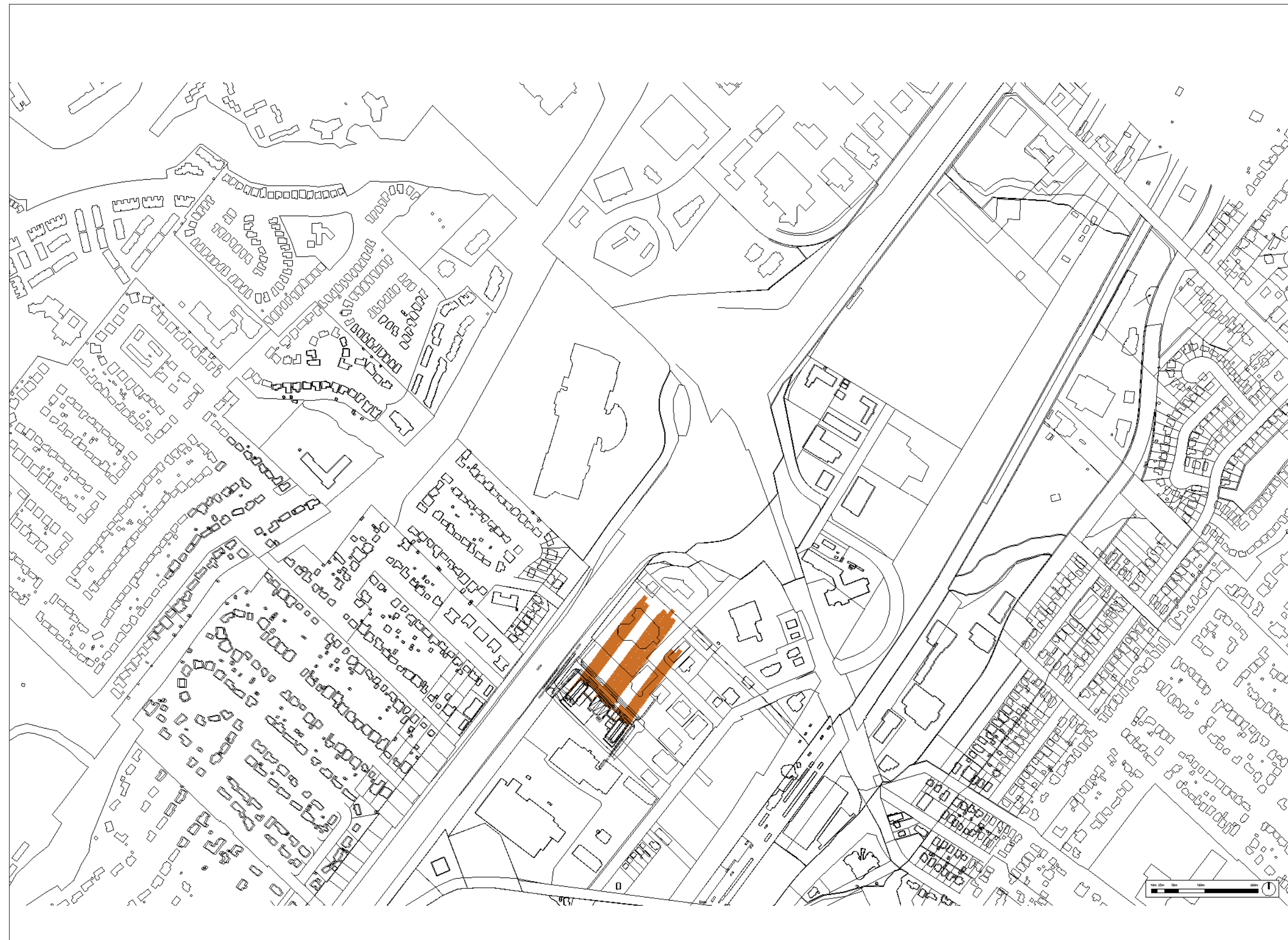
Sep 21 - 12:00 PM - DST



Sep 21 - 01:00 PM - DST



Sep 21 - 02:00 PM - DST



Sep 21 - 03:00 PM - DST

LEGEND

EXISTING SHADOWS PROPOSED SHADOWS

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**Sweeny&Co
Architects**

134 PETER STREET | SUITE 1601 | CANADA
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
Shadow Studies_September

DATE: 2024-03-06
SCALE: 1 : 1
DRAWN : IB / MM
CHECKED : AG
PROJ. No. : 2128 DWG No.

AZ1106



DRAWING NOT TO BE SCALED

Contractor must check and verify all dimensions on the job and report any discrepancies to the architect before proceeding with the work.

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**Sweeney&Co
Architects**

134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
3D Views/Renderings

DATE: 2024-03-06
SCALE :
DRAWN : Author
CHECKED : Checker
PROJ. No. : 2128

DWG No. **AZ2111**

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134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
3D Views/Renderings

DATE: 2024-03-06
SCALE: :
DRAWN: Author
CHECKED: Checker
PROJ. No.: 2128 : DWG No.

AZ2112

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134 PETER STREET | SUITE 1601
TORONTO, ONTARIO | M5V 2H2 | CANADA
P: 416-971-6252 | F: 416-971-5420
E: info@sweenyandco.com | www.sweenyandco.com

PROJ. NAME
166 South Service Road
South Service Road & Trafalgar

OWNER
166 South Service Inc.

DWG TITLE
3D Views/Renderings

DATE :	2024-03-06
SCALE :	
DRAWN :	Author
CHECKED :	Checker
PROJ. No. :	2128

DWG No.
AZ2113

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