

January 10, 2024

Brown Bear Dev Ltd.
200 Consumers Road
Toronto, ON M2J 4R4

Attention: Joe Cimer

Re: Engineering Service – Parking Review and AutoTURN Analysis
Proposed Residential Development
901 Essa Road, City of Barrie
Our Project No. NT-23-245

1.0 INTRODUCTION

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained through Brown Bear Dev Ltd. (the 'Client') to prepare a Parking Review and AutoTURN Analysis in support of the Official Plan and Zoning By-law Amendment Applications for a proposed residential development. The subject site is located at the northwest corner of the Essa Road and Salem Road intersection, municipally addressed as 901 Essa Road in the City of Barrie.

The location of the subject site is illustrated in **Figure 1-1**.

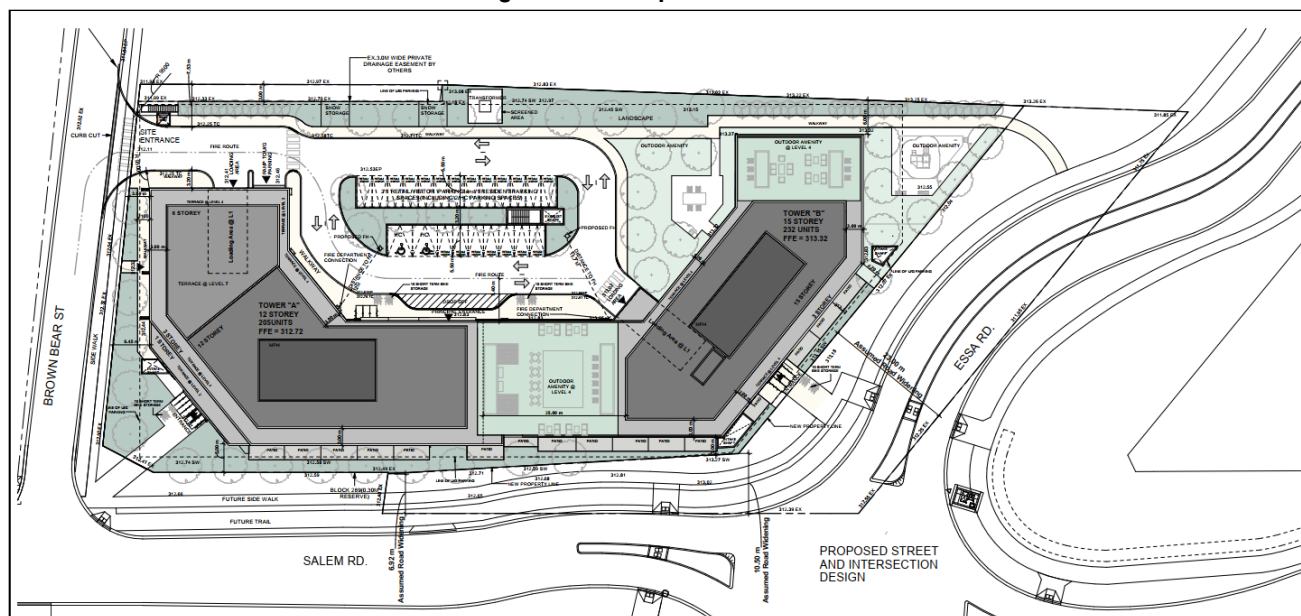
Figure 1-1 – Subject Site Location



The subject property is currently vacant. Based on the site plan provided by Kirkor Architects and Planners, the development proposal is to develop the lands into two (2) buildings with a total of 437 dwelling units and ground floor retail with a proposed GFA of 360 m². A total of 420 vehicular parking spaces (374 residential spaces including 14 barrier free spaces, and 46 visitor/non-residential spaces) are proposed for the development.

The proposed site plan is shown in **Figure 1-2**. The complete site plan is provided in **Appendix A**.

Figure 1-2 – Proposed Site Plan



2.0 PARKING ASSESSMENT

2.1 Vehicle Parking Requirements

The subject lands are subject to the parking provisions provided within the City of Barrie's Zoning Comments dated July 27, 2023. The vehicle parking requirements for the proposed development are detailed in **Table 2.1**.

Table 2.1 – Vehicle Parking Requirements

Use	By-law Parking Rate	No. of Units / GFA	Parking Spaces Required	Parking Spaces Provided	Surplus / Deficit
Residential	1 space per unit	437 units	437 spaces	374 spaces	-63
Visitor	N/A		0 spaces	0 spaces	-
Non-Residential	1 space per 18 m ² of GFA	360 m ²	20 spaces	46 spaces	+26
Total			457 spaces	420 spaces	-37

In accordance with the parking provisions provided within the City of Barrie's Zoning Comments dated July 27, 2023, the proposed site requires 457 vehicular parking spaces. In comparing the parking requirement with the proposed provision of 420 vehicular parking spaces, there is a technical shortfall of 37 vehicular parking spaces (8.1% reduction).

2.2 Barrier-Free Parking Requirements

The accessible parking requirements for the proposed development are detailed in **Table 2.2**.

Table 2.2 – Barrier-Free Parking Requirements

Total Required Number of Parking Spaces	Parking Rate	Type A Spaces Required	Barrier Spaces Required
457	1 Type A + 3% of required parking spaces	1	14

In accordance with the barrier-free parking requirements provided within the City of Barrie's Zoning Comments dated July 27, 2023, the proposed development requires 14 barrier-free parking spaces including one (1) Type A space. The proposed development provides 14 barrier-free parking spaces. As such, the proposed barrier-free parking supply is compliant with the requirements provided within the City of Barrie's Zoning Comments.

2.3 Bicycle Parking Requirements

The bicycle parking requirements for the proposed development are detailed in **Table 2.3**.

Table 2.3 – Bicycle Parking Requirements

Total Required Number of Non-Residential Parking Spaces	Bicycle Parking Rate	Bicycle Parking Required	Bicycle Parking Provided
20	1 space / 7% of required non-residential parking spaces	2	252

In accordance with the bicycle parking requirements provided within the City of Barrie's Zoning Comments dated July 27, 2023, the proposed development requires two (2) bicycle parking spaces. The proposed development provides 252 bicycle parking spaces (30 short-term spaces and 222 long-term spaces). As such, the proposed bicycle parking supply is compliant with the requirements provided within the City of Barrie's Zoning Comments.

2.4 Recommended Vehicle Parking Requirement for the Proposed Development

Table 2.4 summarizes the recommended parking rates for the proposed development, based on the parking justification provided in subsequent sections of this study.

Table 2.4 – Recommended Vehicle Parking Rate for the Proposed Development

Land Use	No. of Units / GFA	Proposed Parking Rate	Parking Requirement	Parking Provided
Residential	437 units	0.80 spaces / unit	350	374
Visitor / Non-Residential		0.1 spaces / unit	44	46
Total			394	420

Based on the recommended vehicle parking rates, the proposed development will require a total of 394 vehicle parking spaces, 350 spaces for residential use and 44 spaces for non-residential uses.

The foregoing proposed parking rates for the subject development are recommended based on the following justification.

2.5 Vehicle Parking Provision Justification

2.5.1 Vehicle Parking Requirements – City of Barrie Draft Zoning By-law

It is Nextrans' understanding that the City of Barrie is currently developing a revised Zoning By-law which provides minimum and maximum parking requirements within the City of Barrie. It is noted that within the Draft Zoning By-law the subject site is located within District 2.

The vehicle parking requirements for the proposed development are detailed in **Table 2.5**.

Table 2.5 – City of Barrie Draft Zoning By-law Vehicle Parking Requirements

Use	Parking Rate		No. of Units / GFA	Parking Spaces Required		Parking Spaces Provided	Surplus / Deficit
	Min.	Max.		Min.	Max.		
Residential	0.7 / unit	1.25 / unit	437 units	306	547	374 spaces	+68
Visitor	0.1 / unit	0.3 / unit		44	131	46 spaces	+2
Non-Residential	-	1 / 40 m ²	360 m ²	0	9		
Total				350	687	420 spaces	+70

Based on the parking requirements stipulated in the City of Barrie's draft Zoning By-law, the subject site must provide a minimum of 350 parking spaces (306 residential spaces, 44 visitor spaces and zero (0) non-residential spaces).

2.3.2 Subject Site Strategic Location to Future Higher Order Transit and Active Transportation

The subject site is proposed along Essa Road. Based on the City of Barrie's Official Plan, Essa Road is considered an intensification corridor. The City of Barrie wants to "provide high-quality transit services and associated facilities, while facilitating transit supportive development in areas that can be served by higher concentrations of people, such as along Intensification Corridors". Continuing to provide widely available automobile jeopardizes the future transit investments.

2.3.3 Residential Housing – Housing and Rental Affordability

Demand for new housing and rentals is high; especially during and following the COVID-19 pandemic. One component that increases the cost of new units in multi-storey residential buildings is the requirement to provide a minimum rate of parking; even in areas well serviced by transit. The cost of providing one underground parking space is at least \$50,000+ per space due to the aggregate impact of land costs, constructability, site constraints and other factors leading to high construction costs.

Furthermore, the more residential or visitor parking spaces that a proposed development has to provide, the more expensive the maintenance costs will be for the owners, in which costs will be passed onto the residents. Monthly maintenance costs for a parking space could be up to \$100 per month, on top of capital costs of a parking space. The provision of less parking can reduce overall maintenance costs and result in lower housing/rental costs and greater housing/rental affordability.

2.3.4 Reduction From Minimum Vehicle Parking Requirements

The reduction (and in some cases, abolition) of minimum parking requirements is consistent with the provincial and City direction.

The Provincial Policy Statement (2020) provides policy direction province-wide on land use planning and development to promote strong communities, a strong economy, and a clean and healthy environment. It includes policies which encourage land use patterns that minimize the length and number of vehicle trips and support current and future use of transit and active transportation.

The City of Barrie Official Plan (2022) contains policies related to reducing dependence on the automobile and promoting and supporting active transportation and transit. Discouraging auto-dependence requires that there are reasonable alternatives to cars available. The City of Barrie is making large investments to improve the transit system in the City of Barrie especially within the surrounding area of the subject site as Essa Road is considered an intensification corridor within the City's Official Plan. Widely available automobile parking, mandated by parking minimums, supports continued widespread automobile use and puts the financial viability of the transit investments at risk.

2.3.5 COVID-19 Pandemic and Work From Home

As the COVID-19 pandemic is still impacting globally, in Canada, the Province of Ontario, and particularly, the City of Barrie, this pandemic will permanently alter the way people work and travel in the future. For example, since the lockdown in March 2020, the Province experienced a significant decrease in peak hour travel on both private vehicles and other trips in general. This is since many office employees and employers elected to continue to work from home.

Based on various reporting from media, the work from home trend for office workers may continue for many after the pandemic is over as both employees and employers have invested significantly in remote working equipment and infrastructures, as well as faster internet and online meeting platforms such as Zoom, Microsoft Teams and Skype for Business.

2.3.6 Reduce Residential Parking Rates to Reduce Car Ownership and Increase Reliance on Transit Usage and Active Transportation

High vehicle parking rates result in more car ownership and more driving (and traffic congestion) while reducing transit usage.

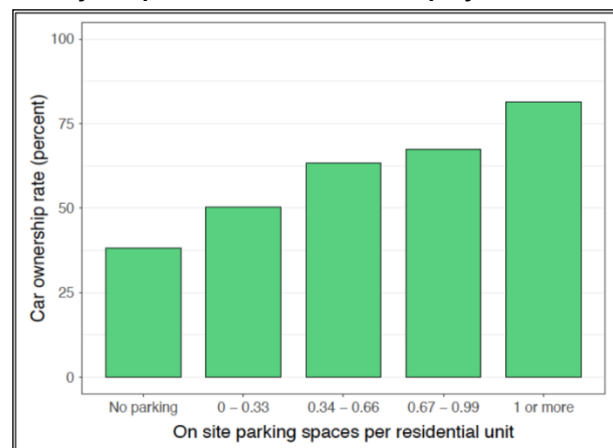
Many municipalities have historically required new development projects to include parking, out of fear that if new developments are not provided with parking, people will park around the local community and this will cause issues. The assumption here, behind both the policy and the pushback on reductions, is that people will always choose to drive, and the urban environment should be designed to accommodate the inevitable choice. But new research shows how that assumption is often backwards – offering the strongest evidence yet that parking doesn't just follow driving in cities but can actually cause it. The new work comes from a group of urban planning scholars at UCLA and UC-Santa Cruz, led by Adam Millard-Ball, and has been published in an issue of the journal *Urban Studies*. Researchers demonstrated that *"increased parking causes more car ownership and more driving while reducing transit use."* They continue: *"In summary, the evidence from our study robustly supports that urban residents' transportation behavior – but not their employment – is affected by local features of the built environment, and particularly so by parking."* The conclusion underscores the importance of urban design in shaping behavior.

The new study distinguishes itself by finding a way to effectively (and ethically) randomize a population: San Francisco's housing lottery. In San Francisco, inclusionary zoning regulations typically require new developments with 10 or more residential units to provide affordable housing, which is offered to income-eligible households through a lottery. This is the gold standard for showing causation through a randomized trial.

In Spring 2019 (pre-pandemic), the researchers mailed a travel behavior survey to housing lottery winners in 197 development projects across San Francisco. The short questionnaire asked about typical travel mode (car, transit, bike, and walking), car-ownership status, and employment status. Roughly 780 households responded.

When researchers matched travel behavior to parking requirements, they found “a clear and substantive trend” as parking supply rose, so did car-ownership. In buildings without any parking, only 38% of respondents owned a car. Car ownership climbed as parking requirements increased, reaching 81% of respondents in buildings that required one parking space per unit. **Figure 4-1** illustrates the survey responses for car ownership by residential parking ratio.

Figure 4-1 – Survey Responses for Car Ownership by Residential Parking Ratio



Owning a car is not the same as using it, but further analysis found a statistically significant relationship between parking supply and driving, too. Generally speaking, households that lived near public transit, or that had good walking or cycling access, tended to use those options more often than households that did not. But when it came to using transit, in particular, the effect of a building's parking ratio was “more than twice as large” as that of its transit access.

In other words, even in buildings with transit access, parking supply was the stronger pull – increasing driving behavior by the same amount it reduced transit use. When buildings provide ample parking, residents buy a car and drive. But when buildings have transit access without easy parking, residents use other ways to get around.

“Where streets are relatively walkable and transit service is frequent,” writes the research team, “parking emerges as the key factor shaping household travel behavior.”

One final critical result: the researchers found no connection at all between parking supply and full-time employment status. That's very important, because it suggests that reducing or eliminating parking spaces won't negatively impact a household's ability to keep a job, as is often feared.

The study represents a significant step forward for urban mobility policy and offers robust, conclusive and definitive evidence through a controlled study that parking minimums do indeed cause more driving. In alignment with this study, San Francisco

eliminated parking minimums. And likewise, supported by this study, San Jose, Cambridge, Massachusetts; Culver City, California; Lexington, Kentucky; and Anchorage, Alaska have all eliminated parking minimums.

Hence, a reduction in vehicular parking for the proposed development will reduce traffic congestion from site-generated traffic volumes and increase transit and active transportation usage, especially for an intensification corridor with a key goal of parking reduction.

2.3.7 Reduction to the Minimum Vehicle Parking Requirements Increases Affordable Housing Supply

Increasing the supply of affordable housing is a Provincial, Regional and City priority. Parking minimums increase the cost of housing, by adding to construction costs which may in turn be passed on to renters. Typical underground parking costs in the hundreds of dollars per square foot. The ability to avoid the cost of parking by choosing housing without parking is limited by the existence of minimum parking requirements. Many municipalities in Ontario, Canada, and abroad have acknowledged that current automobile parking standards represent a barrier to a municipality achieving its housing vision and have recently made decisions to severely reduce and/or eliminate parking minimums in areas well-served by transit, including the following.

City of Toronto

The City of Toronto has recognized that the requirement of excessive parking is a barrier to achieving the City's housing needs and objectives, auto-independence and promoting other modes of transportation such as public transit, walking, and cycling. In March 2022, the City of Toronto Council adopted Zoning By-law amendments that removed the minimum parking requirement for most uses. Instead, the Zoning By-law only speaks to the maximum parking rates that can be applied to a proposed development.

City of Edmonton

In June of 2020, the City of Edmonton Council voted unanimously to change the Zoning By-law with no minimum vehicle parking requirements. Maximum parking requirements will remain in effect downtown and are being expanded in transit-oriented developments and main street areas.

Other Cities in the United States

- City of Buffalo, 2017
- City of Minneapolis, 2021
- City of San Diego, 2021
- City of San Jose, 2022
- City of San Francisco, 2018
- City of Portland, 2023
- City of Berkeley, 2021
- City of Sacramento, 2021
- City of South Bend, 2021
- City of Alameda, 2021
- City of Richmond, 2021
- City of St. Paul, 2021
- City of Emeryville, 2019

- City of Raleigh, 2022
- City of Ann Arbor, 2022
- City of Canandaigua, 2020
- City of Jackson, 2021
- Culvert City, 2022
- City of Dunwoody, 2019
- City of Lexington, 2022
- City of Albemarle, 2021
- City of Hudson, 2019

City of Vaughan

The City of Vaughan Council passed Zoning By-law 001-2021 in October 2021, that includes a reduction in the minimum number of parking spaces required.

City of Ottawa

The City of Ottawa Zoning By-law parking requirements were revised to eliminate minimum parking requirements for developments within 600 meters of an LRT station, and similar to the City of Toronto, it adopts a maximum allowable parking rate for new developments. This is to support the new major transit investment of the Confederation Line which opened in December 2019 and services through the downtown area.

City of Brampton

The City of Brampton has adopted Zoning By-law Amendment No. 45-2021 to Zoning By-law No. 270-2004 for the Downtown, Central Area, and Hurontario/Main Street Corridor. The By-law states that, notwithstanding any minimum parking requirement prescribed in Sections 10.9.2(a), 10.9.3, 20.3.1 and 30.5, there shall be no minimum required parking for any use within the boundaries of the affected areas.

City of Barrie

The City of Barrie Zoning By-law parking requirements were revised to reduce minimum parking requirements and introduce maximum parking requirements for new developments.

Summary of Reduced Minimum Parking Requirements in Zoning By-laws

Nextrans recommends the proposed new development have a lower parking rate, similar to the aforementioned municipalities and areas.

The municipalities that have severely reduced and/or removed parking minimums have not re-imposed them, noting that they have been successful. They have found that the reduction to the minimum automobile parking requirements does not remove or prohibit parking in new developments but rather recognizes that parking minimums embedded in their prevailing Zoning By-laws may not be nuanced enough or be updated frequently enough to be applicable in all situations. Equitable access, including accessible parking, can still be maintained.

2.3.8 General Benefits to the Reduction of Minimum Parking Requirements

A reduction in the minimum parking requirements which decreases vehicle trips and increases transit usage (as proven via the UCLA study previously noted) also provides the following benefits:

- Reduced traffic congestion in the area
- Reduced GHG emissions
- Safer streets for all road users, other drivers, bicyclists, pedestrians. Theoretically, the more bikes there are, the more drivers are aware of bikes on the road and can coexist safely with cyclists.

2.3.9 Unbundled Parking

As parking is the best TDM incentive for residents to take alternative modes of transportation, it is recommended that the proposed development unbundle parking sales from the residential units.

2.3.10 Conclusion Vehicle Parking Rate Reduction Justification

Based on the comprehensive justifications provided above, it is concluded that reduction to the residential parking rates is justified, desirable and would support a more equitable, balanced multi-modal transportation network.

The proposed parking rate reductions would be consistent with the PPS, the Official Plan and the approaches followed by many municipalities in Ontario including the City of Barrie. In particular, the experience in these other cited municipalities demonstrates that automobile parking minimums can be eliminated and still achieve Official Plan policies which require adequate or sufficient parking off-street or on-site.

Given these considerations, the proposed reduction to the minimum automobile parking requirements is justified, desirable and will better support the City's vision to: create compact complete communities, encourage transportation alternatives to automobiles be consistent with policies aimed at reducing auto-dependence support, and encourage land- and cost-efficient forms provide for efficient use of land next to existing and planned transit.

3.0 SITE PLAN REVIEW

3.1 Site Circulation

AutoTURN was used to generate a vehicular turning template to confirm the accessibility of the proposed development. AutoTURN analysis demonstrates that a City of Barrie Front Loading West Collection Vehicle can access the proposed loading spaces and maneuver internally through the site without conflict. Vehicle turning diagrams are shown in **Figure 3-1** and **Figure 3-2**.

4.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system.

4.1 TDM Strategies

Transit:

Public transit includes various services using shared vehicles to provide mobility to the public, these generally include:

- Light Rail Transit – moderate size, medium-speed trains, operating mainly on separate rights-of-way, with variable distances between stations, providing service between urban neighbourhoods and commercial centers;
- Streetcars – relatively small, lower-speed trains, operating primarily on urban streets, with frequent stops which provide service along major urban corridors;
- Conventional bus transit – full-size buses on fixed routes and schedules;
- Bus Rapid Transit – premium quality bus service with features that typically include grade separation, frequent service, attractive stations, quick loading, and attractive vehicles; and,
- Express commuter bus – direct bus service from residential to employment areas.

To encourage transit usage, it is recommended that an information package be provided for future residents, which includes transit service information (i.e., transit system maps and service / schedule times) to assist residents in planning their trips. In addition, pre-loaded Presto cards / Barrie Transit passes should also be considered by the City of Barrie.

Walkability:

Walkability reflects overall walking conditions in an area. It considers the quality of pedestrian facilities, roadway conditions, land use patterns, community support, security and comfort for walking.

Generally, walkability can be evaluated at various scales:

- Site scale – affected by the quality of pathways, building accessways and related facilities;
- Street or neighbourhood level – affected by the existence of sidewalks and crosswalks, and roadway conditions (road widths, traffic volumes and speeds); and,
- Community level – affected by land use accessibility, such as the relative location of common destinations and the quality of connections between them.

Pedestrian walkways are incorporated into the site design providing a safe and convenient connections to the public sidewalk system along Brown Bear Street and the retail/commercial and recreational uses on-site.

Cycling:

There are many specific ways to improve bicycle transportation, including the following:

- Improving paths and bike lanes;
- Correcting specific roadway hazards (potholes, cracks, narrow lanes, etc.);
- Improving road, road shoulder and path management and maintenance;
- Improving bicycling parking facilities;
- Develop a more connected street network and clustered development;
- Establish public bike systems that provide convenient rental bicycles for short utilitarian trips;
- Safety education, law enforcement and encouragement programs; and,

- Integration with transit.

As stated previously, 252 bicycle parking spaces (222 long-term spaces and 30 short-term spaces) are provided. In addition, there are proposed cycling connections along Essa Road and Salem Road.

4.2 TDM Checklist

A TDM checklist for the proposed development is provided in **Table 4.1**.

Table 4.1 – TDM Checklist

TDM Measure	Responsibility	Estimated Cost
Transit Incentives (i.e., Pre-loaded Presto Cards, Barrie Transit Monthly Pass)	City of Barrie to Consider	TBD
TDM information package (i.e., Barrie Transit maps, GO schedules, Cycling maps, etc.)	City of Barrie to Consider	TBD
Communications strategy and physical location to deliver Presto Cards/Barrie Transit Monthly Pass and Information Packages	City of Barrie to Consider	\$1,500
TDM Monitoring	Applicant	\$5,000
Pedestrian Connections	Applicant	The associated cost is included in the site plan agreement
Cycling Connections	Applicant	The associated cost is included in the site plan agreement
Bicycle Repair Station	Applicant	The associated cost is included in the site plan agreement
Bicycle Parking	Applicant	The associated cost is included in the site plan agreement
Real Time TV Screen	Applicant	The associated cost is included in the site plan agreement

5.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of this Parking Review and AutoTURN analysis are summarized as follows:

- In accordance with the parking provisions provided within the City of Barrie's Zoning Comments dated July 27, 2023, the proposed site requires 457 parking spaces (437 residential spaces, zero (0) visitor spaces and 20 non-commercial spaces). In comparing the parking requirement with the proposed provision of 420 parking spaces, there is a technical shortfall of 37 parking spaces.
- Nexttrans recommends a lower vehicular parking rate given the robust vehicular parking provision justification provided within Section 2.5.
- AutoTURN was used to generate a vehicular turning template to confirm the accessibility of the proposed development. AutoTURN analysis demonstrates that a City of Barrie Front Loading West Collection Vehicle can access the proposed loading spaces and maneuver internally through the site without conflict. Vehicle turning diagrams are shown in **Figure 3-1** and **Figure 3-2**.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

Nexttrans Consulting Engineers

A Division of NextEng Consulting Group Inc.

Prepared by:

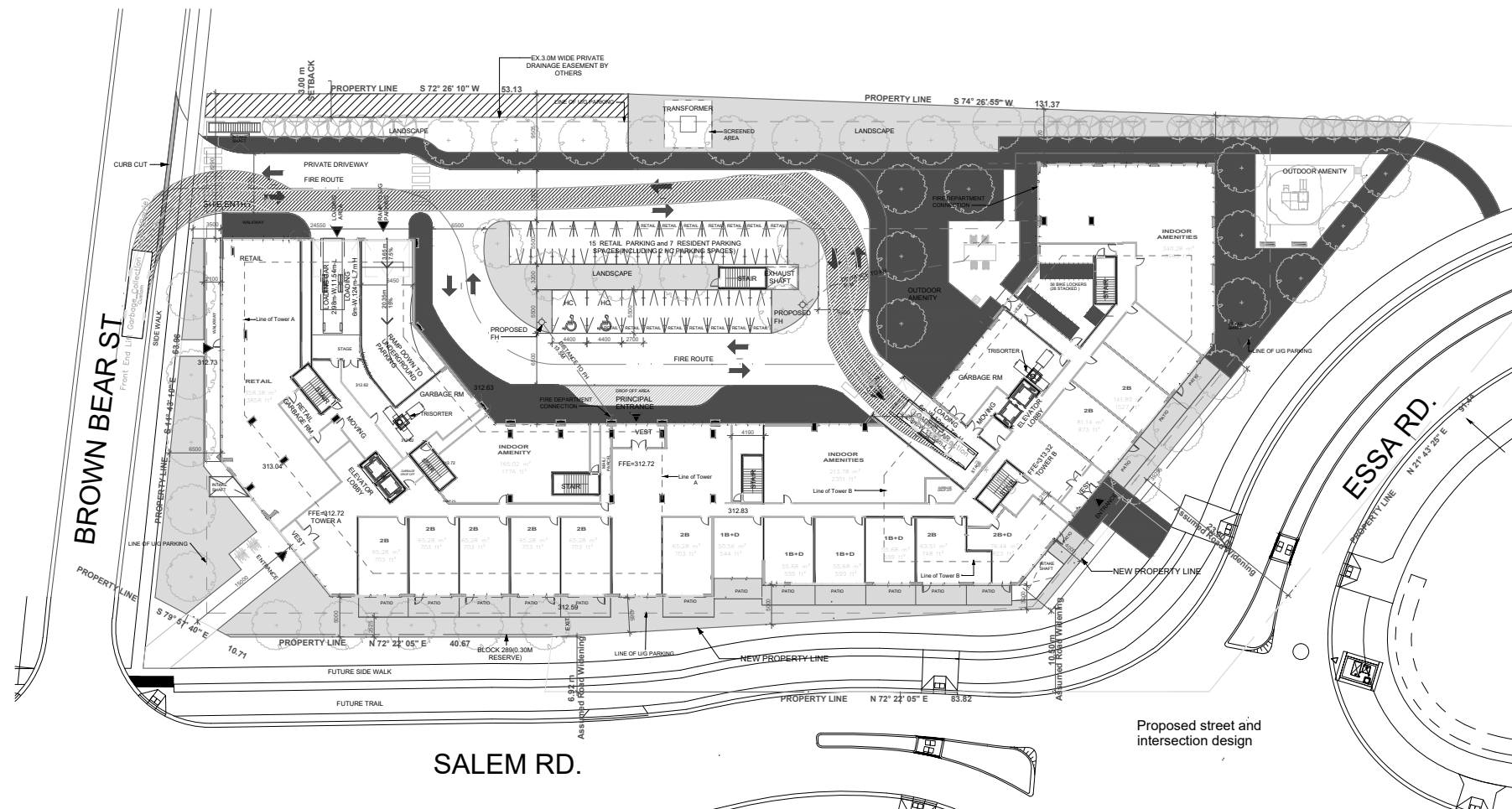


Marc Dimayuga
Transportation Analyst

Approved by:

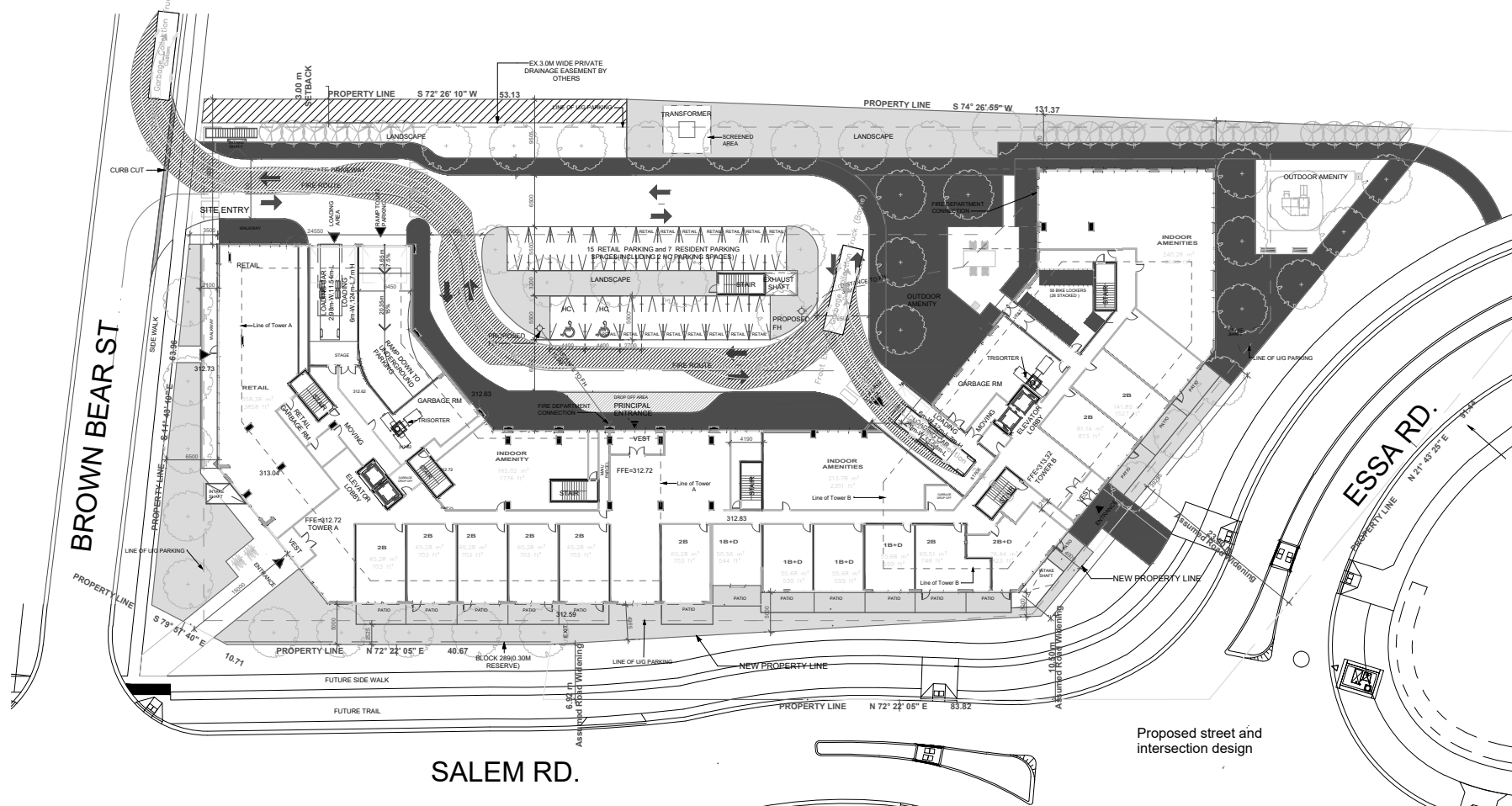


Richard Pernicky, MITE
Principal



SALEM RD.

Proposed street and intersection design



SALEM RD.

Proposed street and intersection design

KEY PLAN

BENCHMARK

REVISIONS

NO REVISION DATE

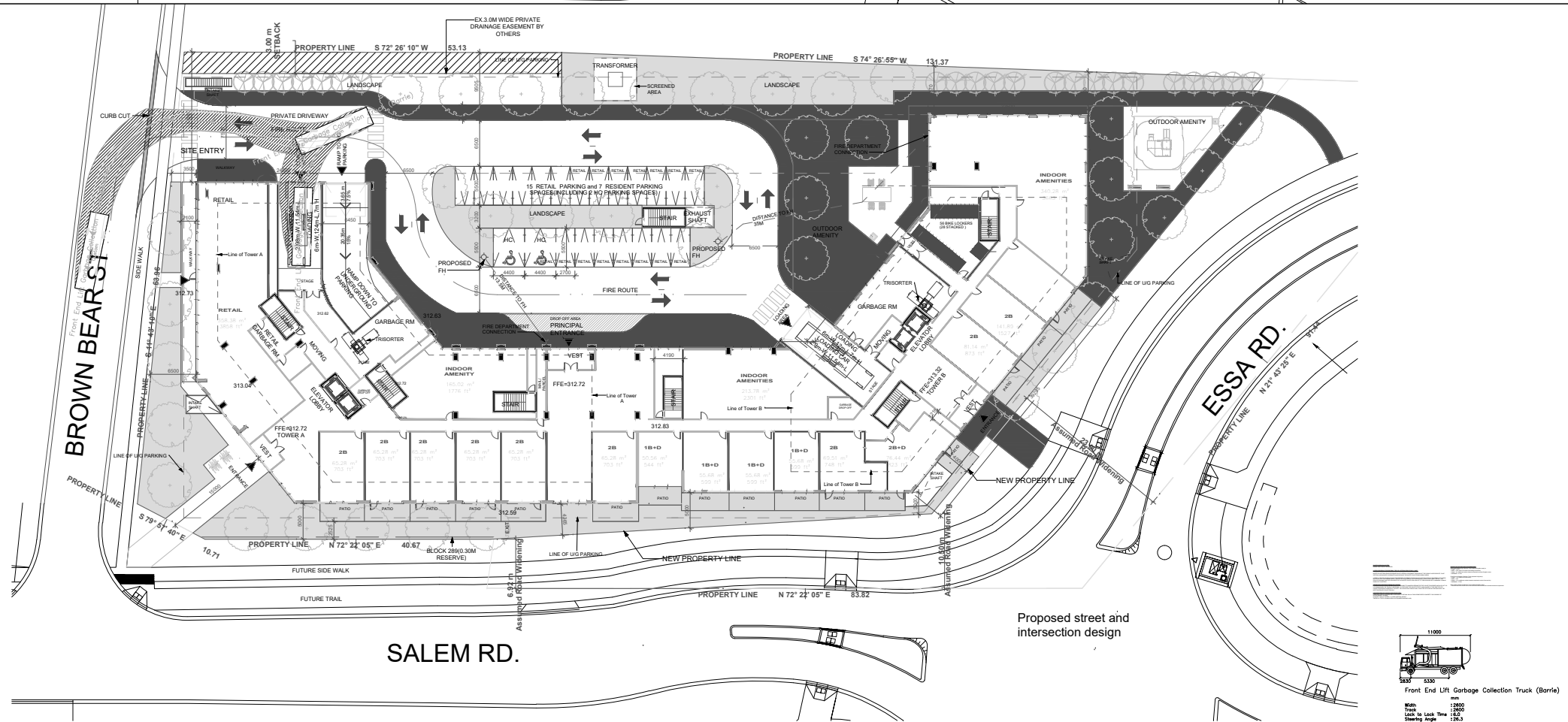
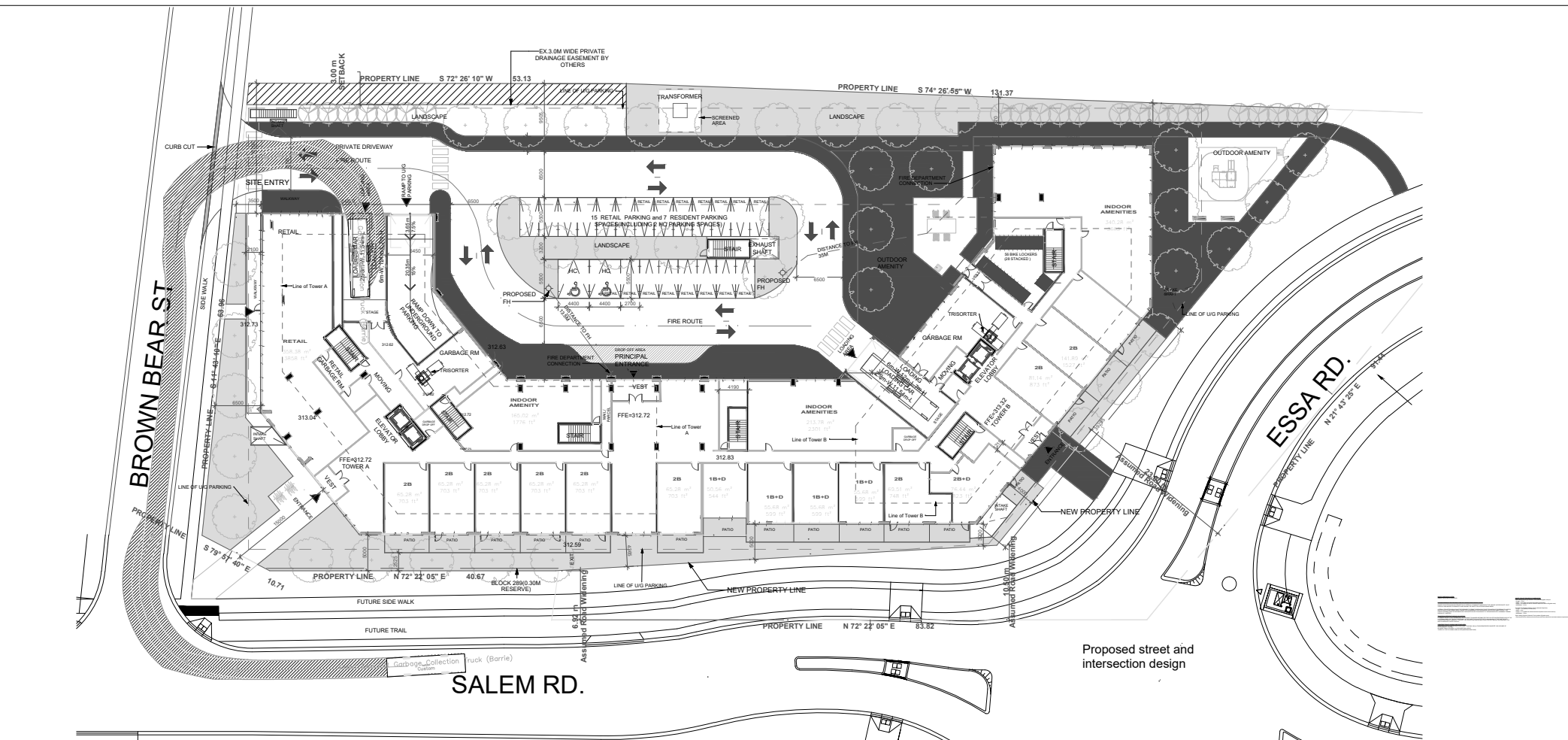
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PROJECT NAME:
Residential Development
901 Essa Road
City of Barrie

DRAWING TITLE:
AutoTURN Analysis
Front Loading Waste
Collection Vehicle (East)

DESIGN BY: K.A.	DATE: December 22, 2023
CHECKED BY: R.P.	PROJECT NO. NT-23-245
DRAWN BY: K.A.	
SCALE: NTS	DRAWING NO. Figure 3-1



KEY PLAN



BENCHMARK

REVISIONS

NO.	REVISION	DATE	BY

STAMP

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PROJECT NAME:
Residential Development
901 Essa Road
City of Barrie

DRAWING TITLE:
AutoTURN Analysis
Front Loading Waste
Collection Vehicle (West)

DESIGN BY: K.A.	DATE: December 22, 2023
CHECKED BY: R.P.	PROJECT NO. NT-23-245
DRAWN BY: K.A.	DRAWING NO.
SCALE: NTS	Figure 3-2



Front End Lift Garbage Collection Truck (Barrie)

Width 5330 mm
Turn 12000 mm
Lock to Lock Time 15.0 s
Steering Angle 135.0

Appendix A - Proposed Site Plan

901 ESSA ROAD

Proposed Mixed-Use Development



DRAWING LIST			
Sheet Number	Sheet Name	Issued#1 (Nov 30, 2022)	Issued#2 (Jan 04, 2024)
dA0.00	COVER SHEET	■	■
dA1.01	SITE STATISTICS/AUTOTURN	■	■
dA1.02	SITE PLAN	■	■
dA2.01	LEVEL P2 FLOOR PLAN & PARKING LEGEND	■	■
dA2.02	LEVEL P1 FLOOR PLAN & PARKING LEGEND	■	■
dA2.03	LEVEL 1 FLOOR PLAN	■	■
dA2.04	LEVELS 2 & 3 FLOOR PLANS	■	■
dA2.05	LEVELS 4 & 5-6 FLOOR PLANS	■	■
dA2.07	MPH FLOOR & ROOF PLANS	■	■
dA3.01	ELEVATIONS	■	■
dA3.02	ELEVATIONS	■	■
dA4.01	BUILDING SECTIONS	■	■
dA4.02	BUILDING SECTIONS	■	■
dA5.01	SHADOW STUDY - APRIL	■	■
dA5.02	SHADOW STUDY - JUNE	■	■
dA5.03	SHADOW STUDY - SEPTEMBER	■	■
dA5.04	SHADOW STUDY - DECEMBER	■	■
dA6.01	PERSPECTIVES	■	■
dA6.02	PERSPECTIVES	■	■

Authorities Having Jurisdiction

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Date:

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ARCHITECTS AND PLANNERS

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Revisions:		
No.:	Revision:	Date:

No. :02	Issued For OPA & ZBA Submission	Date:Jan_04,2024
No. :01	Issued For OPA & ZBA Submission	Date:Nov_30,2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Mixed Use Development

Drawing Title:
COVER SHEET

Scale:

Drawn by:
D.N
Checked by:
N.D
Project No.:
22125
Date:
Jan 04,2024
Drawing No.:

dA0.00

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SOIL ENGINEER

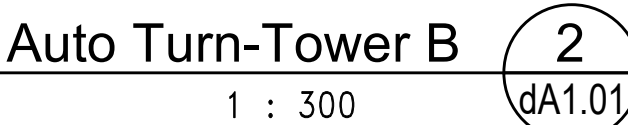
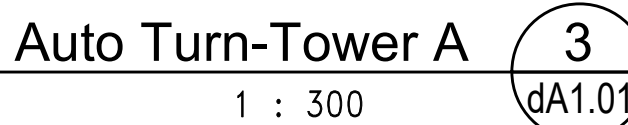
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Samuel Oyedokun

ARCHEOLOGICAL CONSULTANT

NAME: AECOM
ADDRESS: glenn.kearsley@aecom.com
T: (647)274-6772
Glenn Kearsley

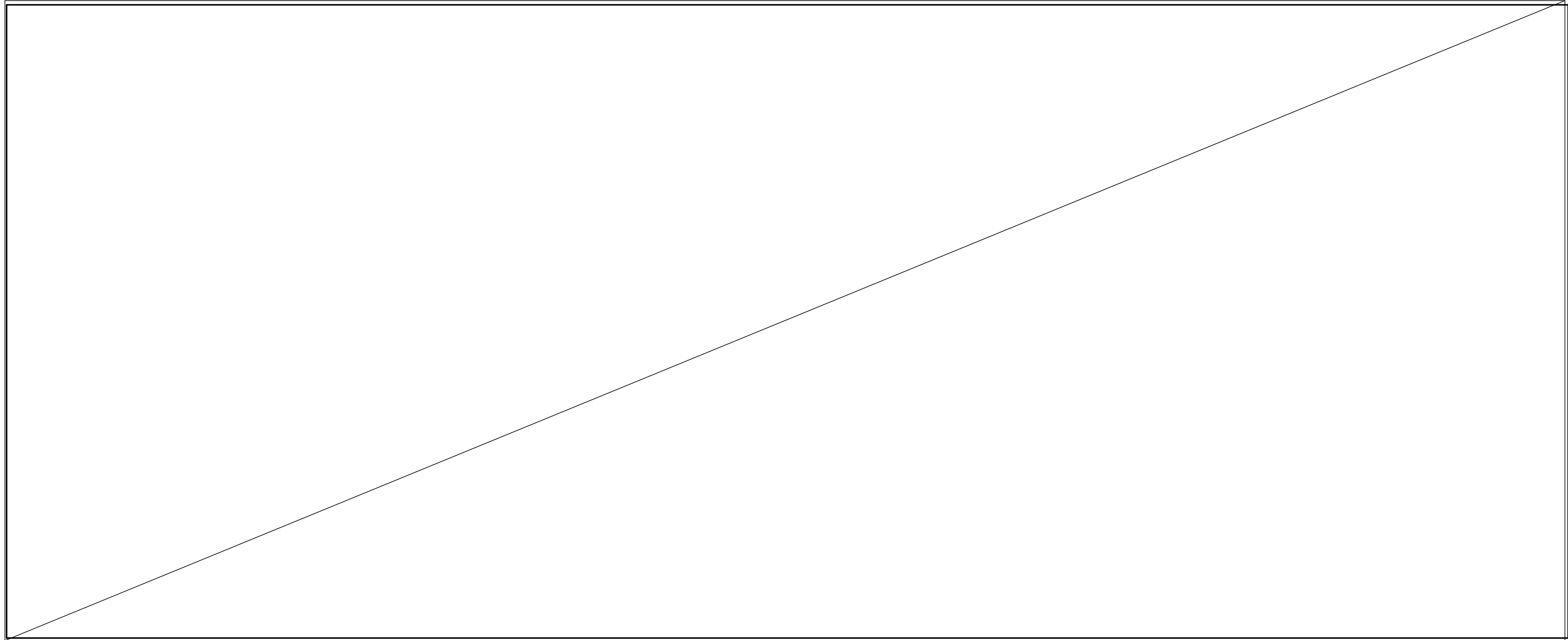
ARBORIST

NAME: Azimuth Environmental Consulting Inc.
ADDRESS:
drew@azimuthenvironmental.com
ADDRESS:
lisa@azimuthenvironmental.com
T: (705)794-8451
Drew West

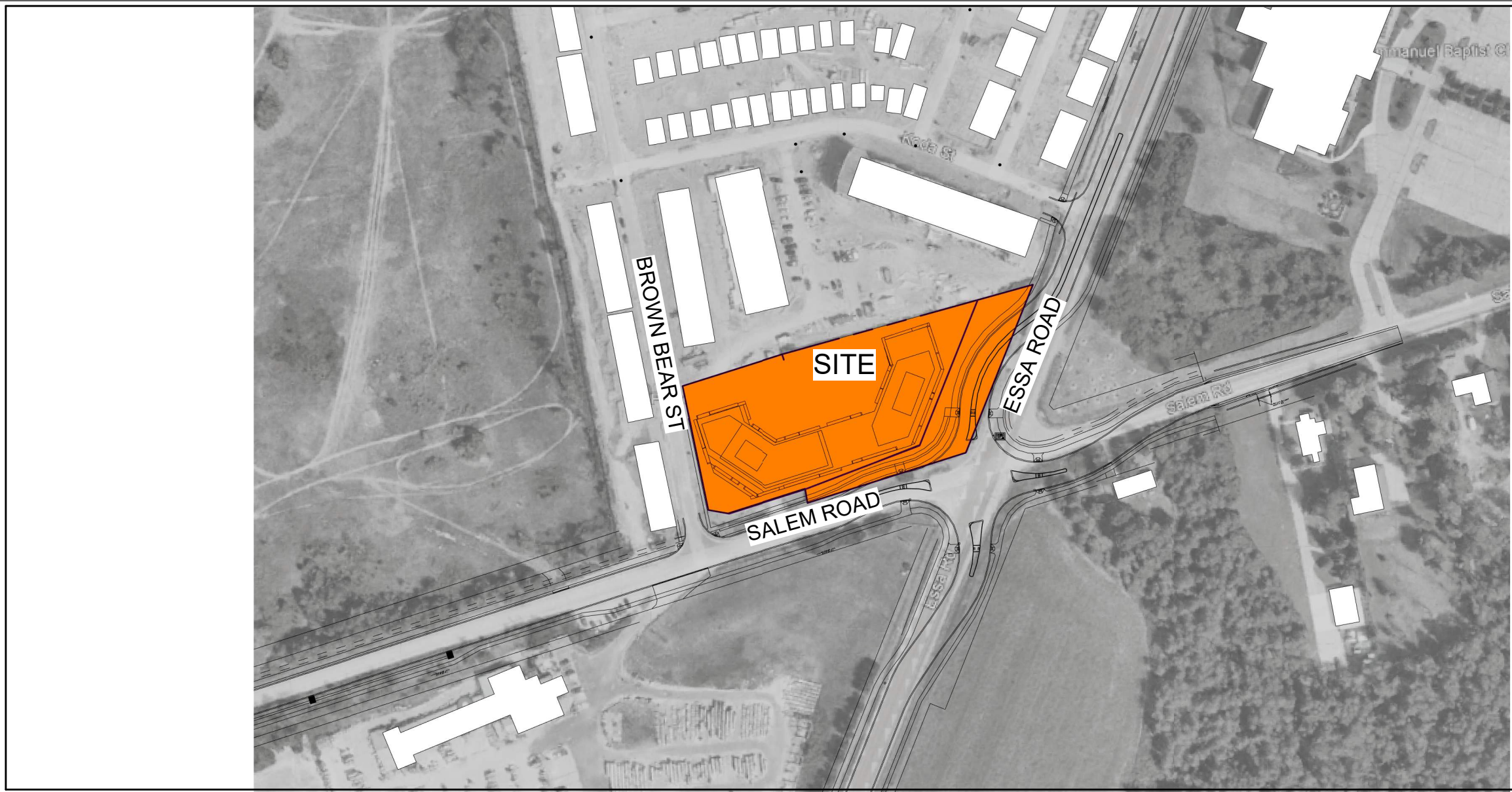


Project Statistics

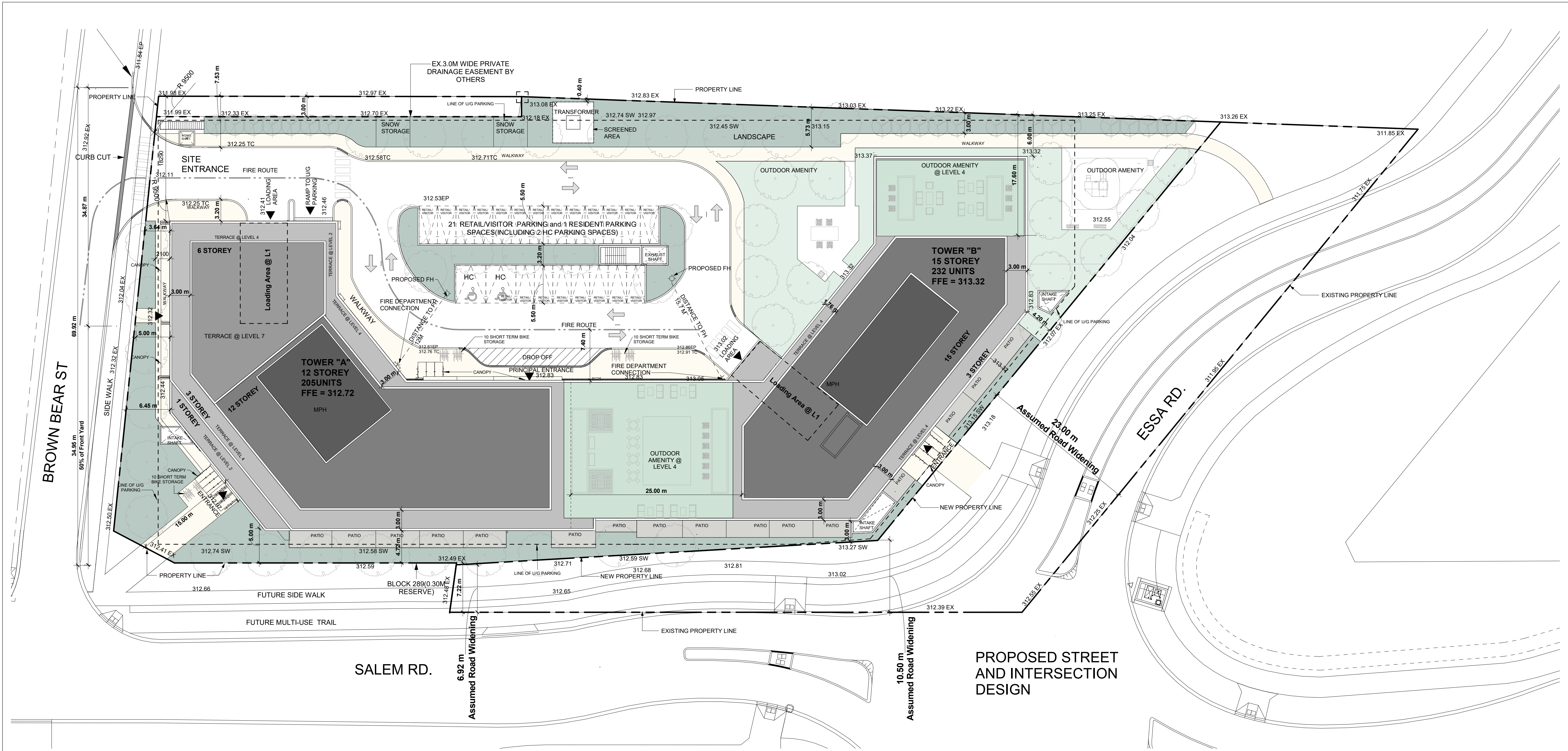
dA1.01



Reserved for OBC Matrix
NTS
2
dA1.02



Context Plan
NTS
3
dA1.02



Site Plan
1 : 300
1
dA1.02

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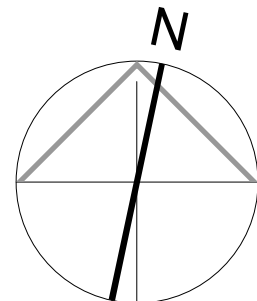
Revisions:
No.: Revision: Date:

No.:02 Issued For OPA,ZBA SUBMISSION Date:Jan 04,2024
No.:01 Issued For OPA,ZBA SUBMISSION Date:Nov.30,2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
SITE PLAN



Scale:
As indicated
Drawn by:
D.N
Checked by:
N.D
Project No.:
22125
Date:
Jan 04,2024
Drawing No.:

dA1.02

GENERAL NOTES:

1. Maximum Height Development Standards are measured are measured to the tallest point of the proposed buildings.
2. In Fire route,Load support will be sufficient to support the expected loads imposed by fire fighting equipment, meet the requirements of the Canadian Highway Bridge Design Code, CAN/CSA-S6, and will be surfaced in order to be accessible under all climatic conditions.
3. Trained onsite staff will be available to manoeuvre bins for the collection driver and a flagman when truck is reversing.
4. For landscape details please refer to MHBC Landscape Architects Inc. drawings.
5. For Grading and Site Servicing details please refer to IBI Group drawings .
6. For Traffic Signage plan other Traffic information please refer to NexTrans Consulting drawings.

WASTE DIVERSION SYSTEM
SINGLE CHUTE WITH TRI-SORTER

ACCESS DRIVEWAY FOR DRIVEWAY FOR COLLECTION VEHICLES WILL HAVE:

WASTE COLLECTION VEHICLES REQUIRE 5M OF VERTICAL CLEARANCE THROUGHOUT THE VEHICLE ACCESS ROUTE, 7M OF VERTICAL AND 6M WIDE CLEARANCE IN AND AROUND THE WASTE COLLECTION/LOADING AREAS.

INTERNAL PRIVATE ROADWAYS MUST BE DESIGNED TO PERMIT CONTINUOUS COLLECTION WITHOUT REVERSING TO ACCESS WASTE COLLECTION/LOADING AREAS. WHERE THE REQUIREMENT FOR CONTINUOUS COLLECTION CANNOT BE MET, THE PRIVATE ROADWAY MUST BE DESIGNED FOR THE WASTE COLLECTION VEHICLE TO TURN AROUND WITH A MINIMUM TURNING RADIUS OF 13 METERS.

TRAINED ON SITE STAFF DURING COLLECTION

A TRAINED ON-SITE STAFF MEMBER WILL BE AVAILABLE TO MANOEUVRE BINS FOR THE COLLECTION DRIVER AND ALSO ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT THE ON-SITE STAFF IS UNAVAILABLE AT THE TIME THE CITY COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY..

CONSTRUCTION OF LOADING AND STAGE AREA

CONSTRUCTION OF LOADING AND STAGE AREA TO BE MIN. 200 mm THICK REINFORCED CONCRETE PAD CAPABLE OF WITHSTANDING 35,000kg
NO MORE THAN 2% SLOPE 6.1 m CLEAR VERTICAL HEIGHT
THERE IS 2 TYPE G LOADING AREA IN SITE(UNDER BUILDING A& B)

WASTE COLLECTION VEHICLE DIMENSIONS

Side Loading Recycling Collection Truck (collects 95-gallon carts):cc

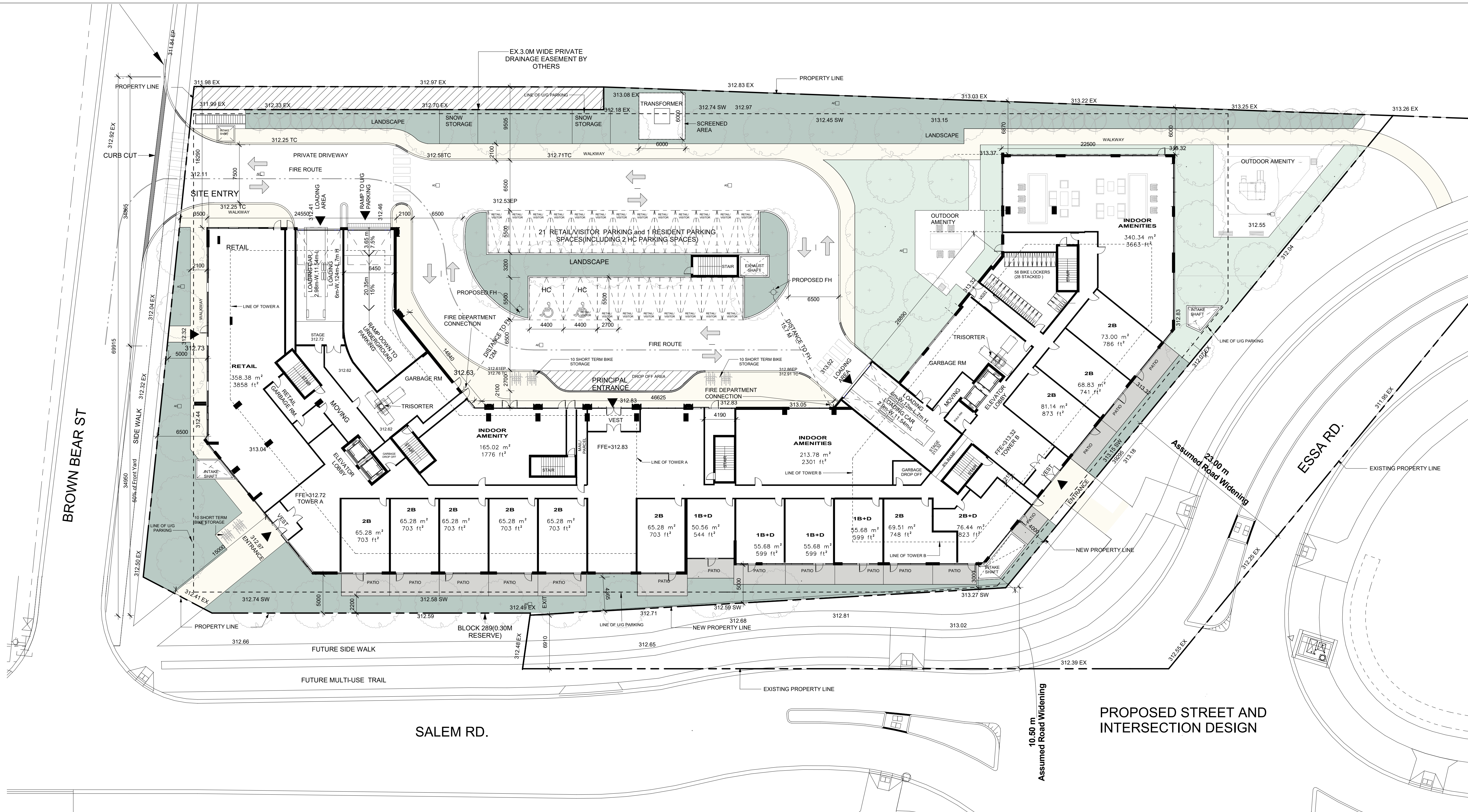
- Length – 11.5m
- Width – 2.6m (does not include side loading mechanism)
- Height – 4m (additional vertical clearance required to service 95-gallon carts)
- Wheelbase – 6.12m

Front End Lift Garbage Collection Truck (collected 2-8yd bins):

- Length – 11m (does not include forks)
- Width – 2.6m
- Height – 4.1m (additional vertical clearance required to service front end bin)
- Wheelbase – 5.33m

Rear Loading Organics Collection Truck (collects 35-gallon carts):

- Dimensions for this vehicle are like the front-end lift truck without the overhead clearance requirement.



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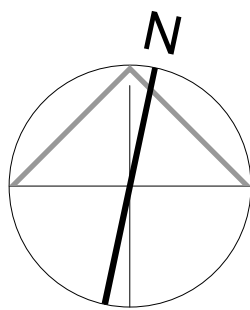
No.:02	Issued For:OPA,ZBA SUBMISSION	Date:Jan 04,2024
No.:01	Issued For:OPA,ZBA SUBMISSION	Date:Nov.30,2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
LEVEL 1 FLOOR PLAN

Scale:
As indicated
Drawn by:
D.N
Checked by:
N.D
Project No.:
22125
Date:
Jan 04,2024
Drawing No.:



dA2.03

Floor Plan Level 1
1 : 250

1
dA2.03

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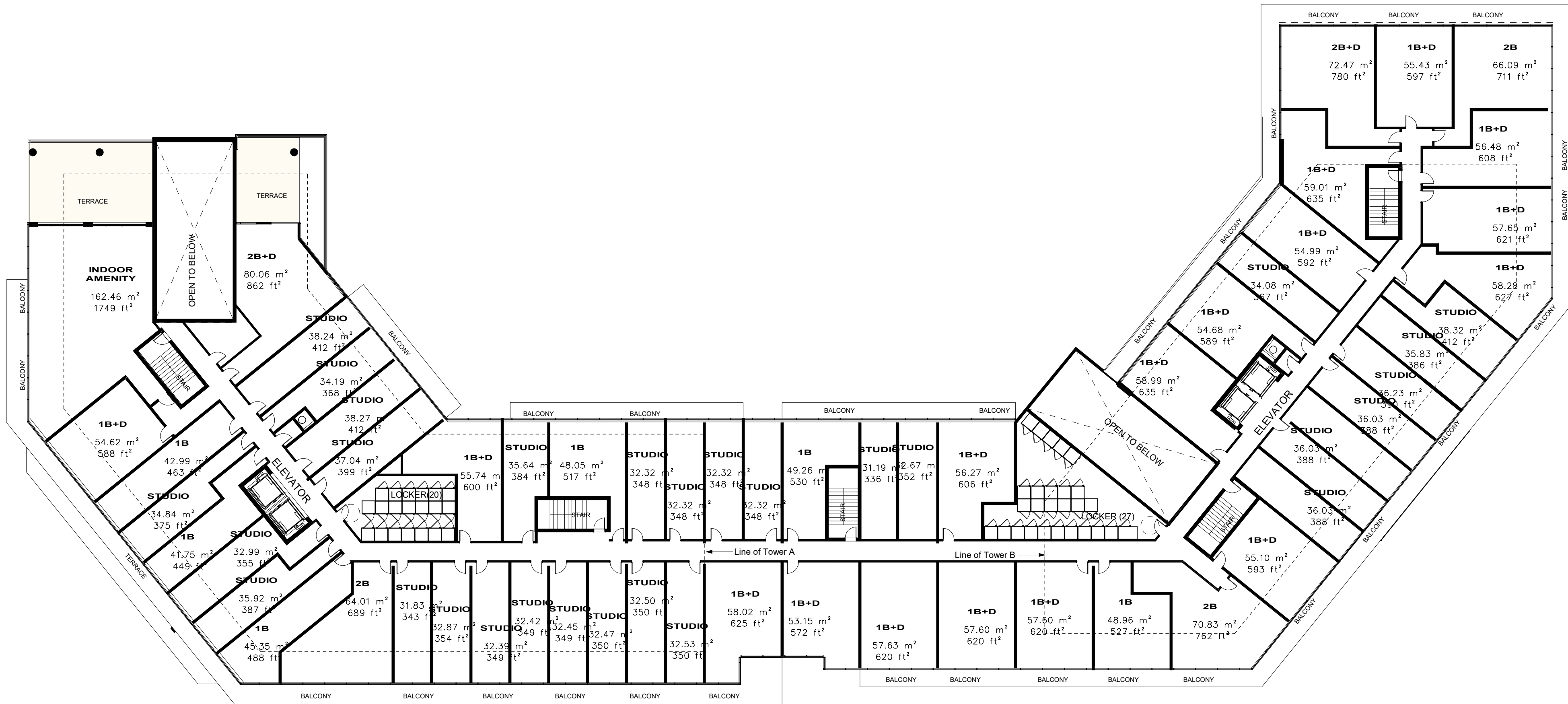
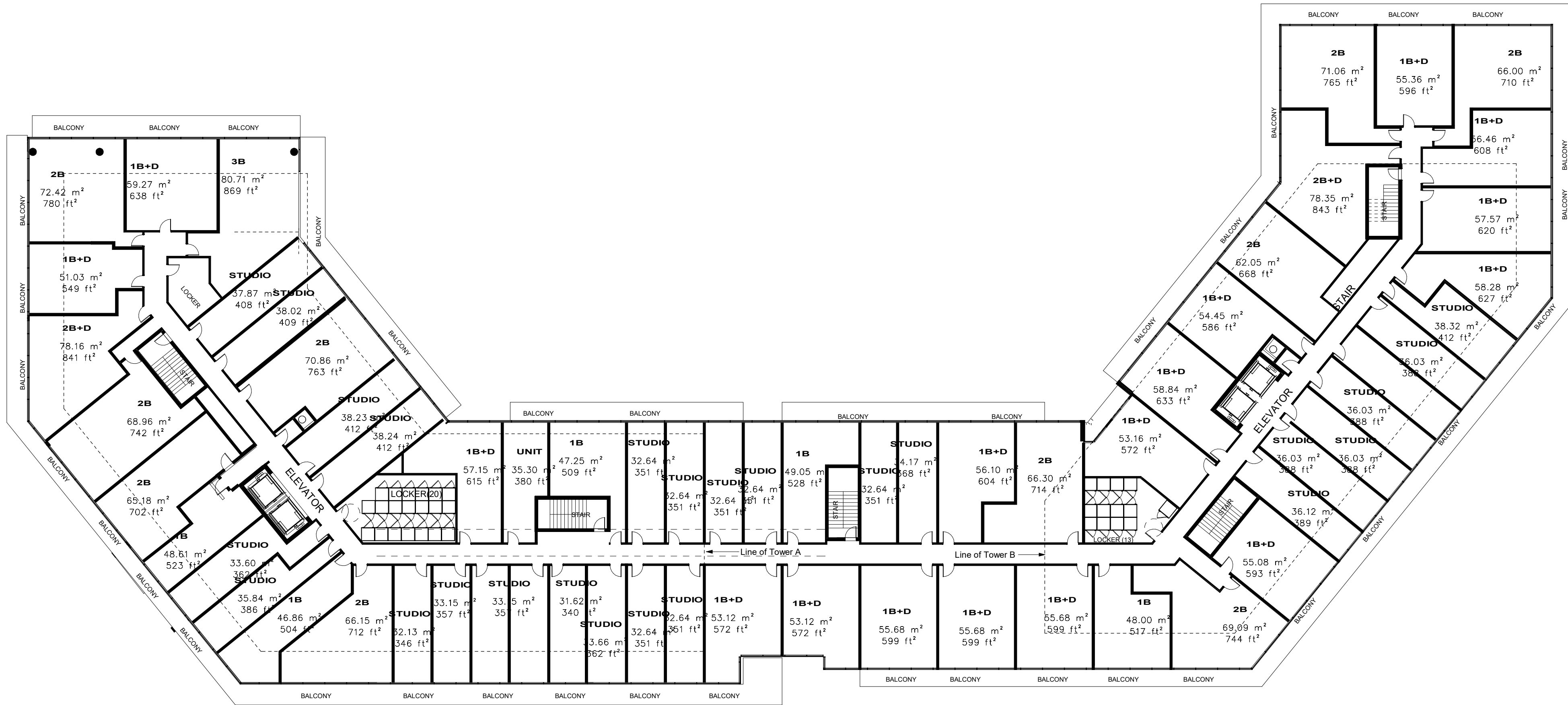
Revisions:

No.:	Revision:	Date:

Floor Plan - Level 3

2
dA2.04

1 : 250



Floor Plan Level 2

1
dA2.04

1 : 250

No. :02	Issued For OPA,ZBA SUBMISSION	Date: Jan 04, 2024
No. :01	Issued For OPA,ZBA SUBMISSION	Date: Nov.30, 2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
LEVELS 2 & 3 FLOOR PLANS

Scale:

1 : 250

Drawn by:

D.N

Checked by:

N.D

Project No.:

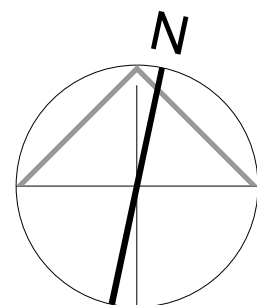
22125

Date:

Jan 04, 2024

Drawing No.:

dA2.04



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Revisions:

No.:	Revision:	Date:

Floor Plan - Level 5-6

2
dA2.05

1 : 250



Floor Plan - Level 4

1
dA2.05

1 : 250

No. :02	Issued For OPA,ZBA SUBMISSION	Date: Jan 04, 2024
No. :01	Issued For OPA,ZBA SUBMISSION	Date: Nov.30,2022

Client:
ACE Development

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Proposed Residential Development

Drawing Title:
LEVELS 4 & 5-6 FLOOR PLANS

Scale:

1 : 250

Drawn by:

D.N

Checked by:

N.D

Project No.:

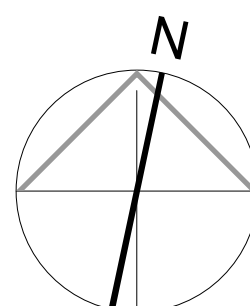
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Date:

Jan 04, 2024

Drawing No.:

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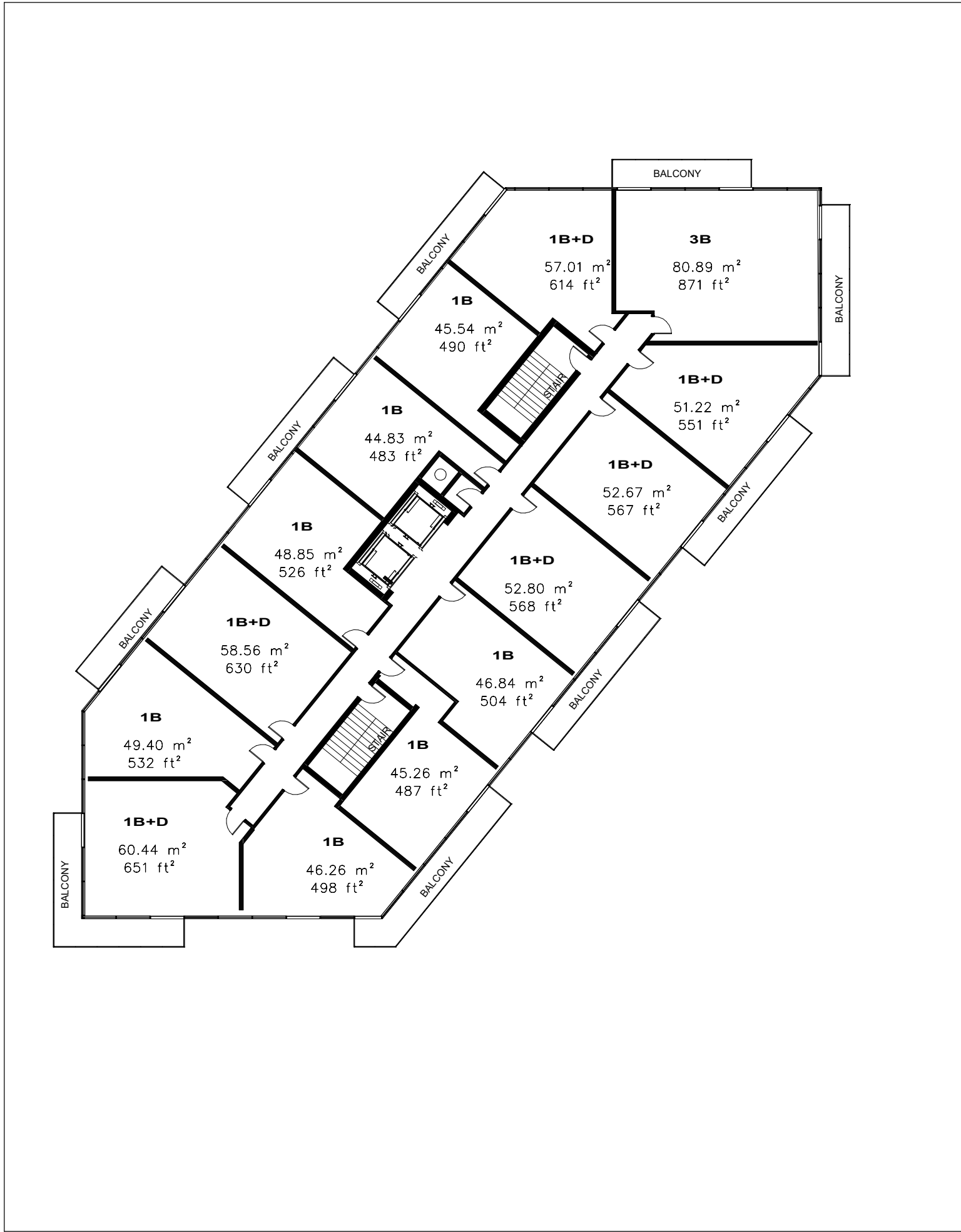


LEVEL 8-12

2

1 : 250

dA2.06

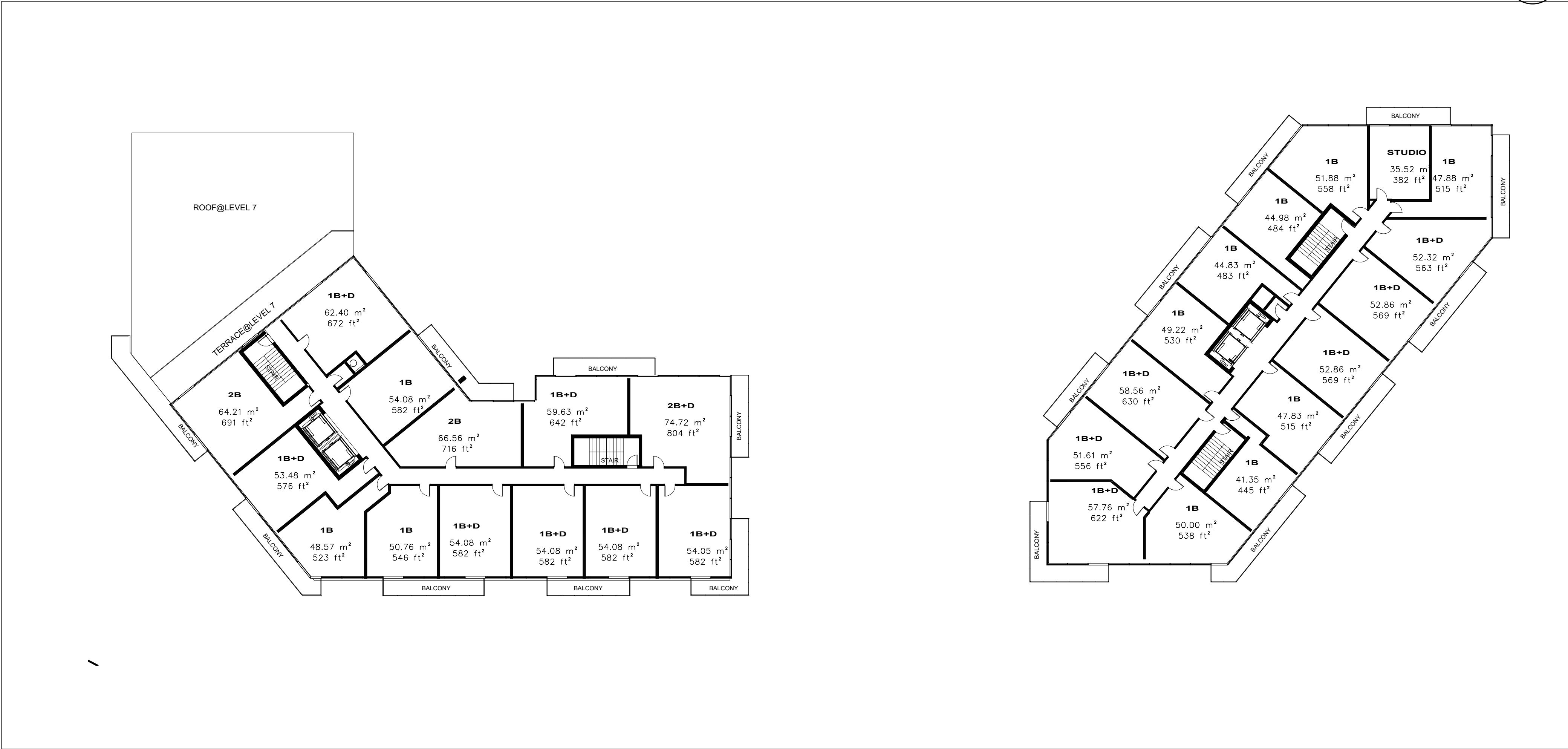


Level 13-15

3

1 : 250

dA2.06



LEVEL 7

1

1 : 250

dA2.06

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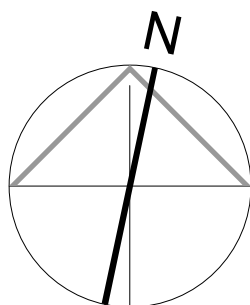
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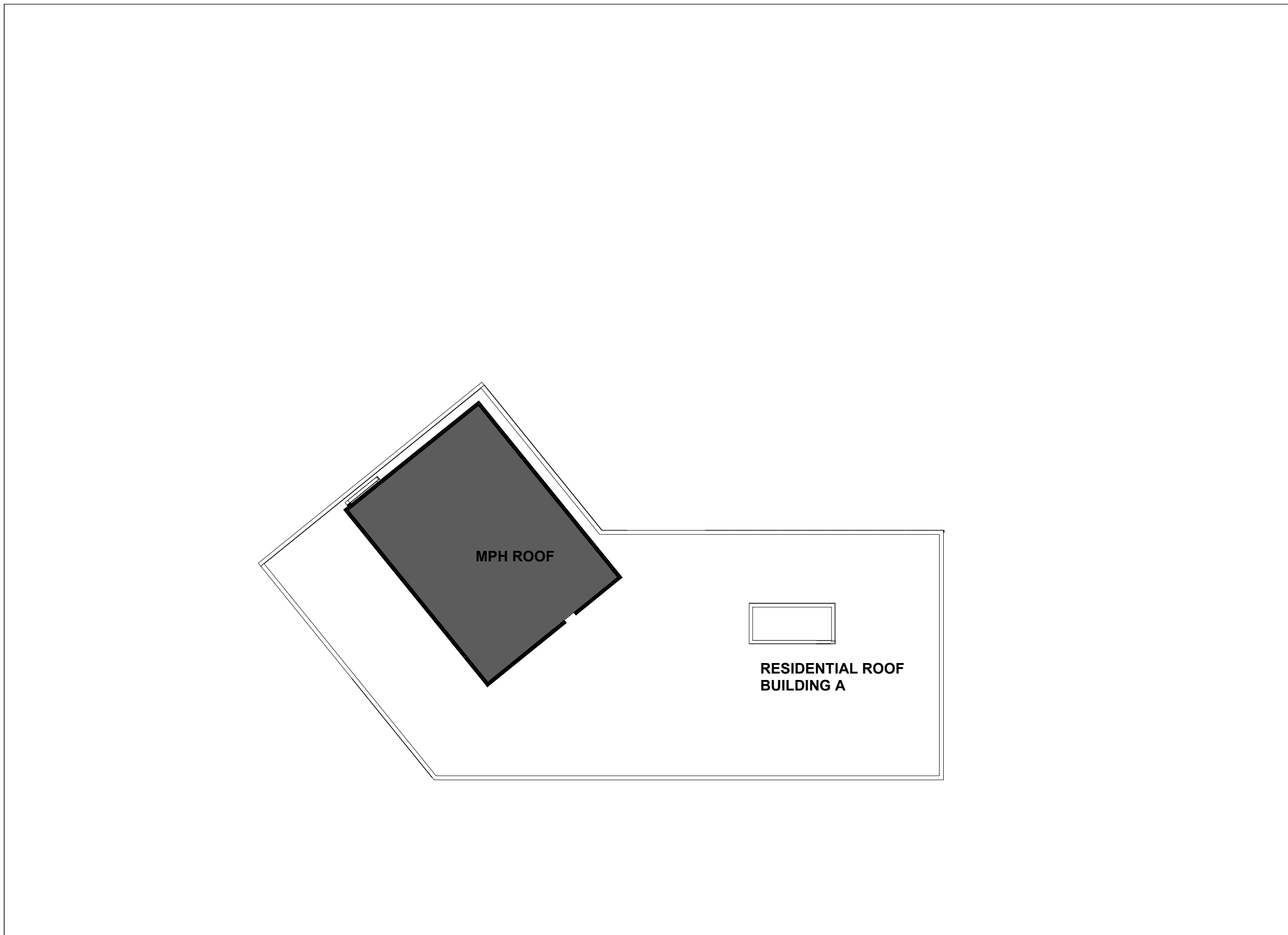
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**Floor Plans -Level
7-9,10-12,13-15**

Scale:
1 : 250
Drawn by:
Author
Checked by:
Checker
Project No.:
22125
Date:
Jan 04,2024
Drawing No.:

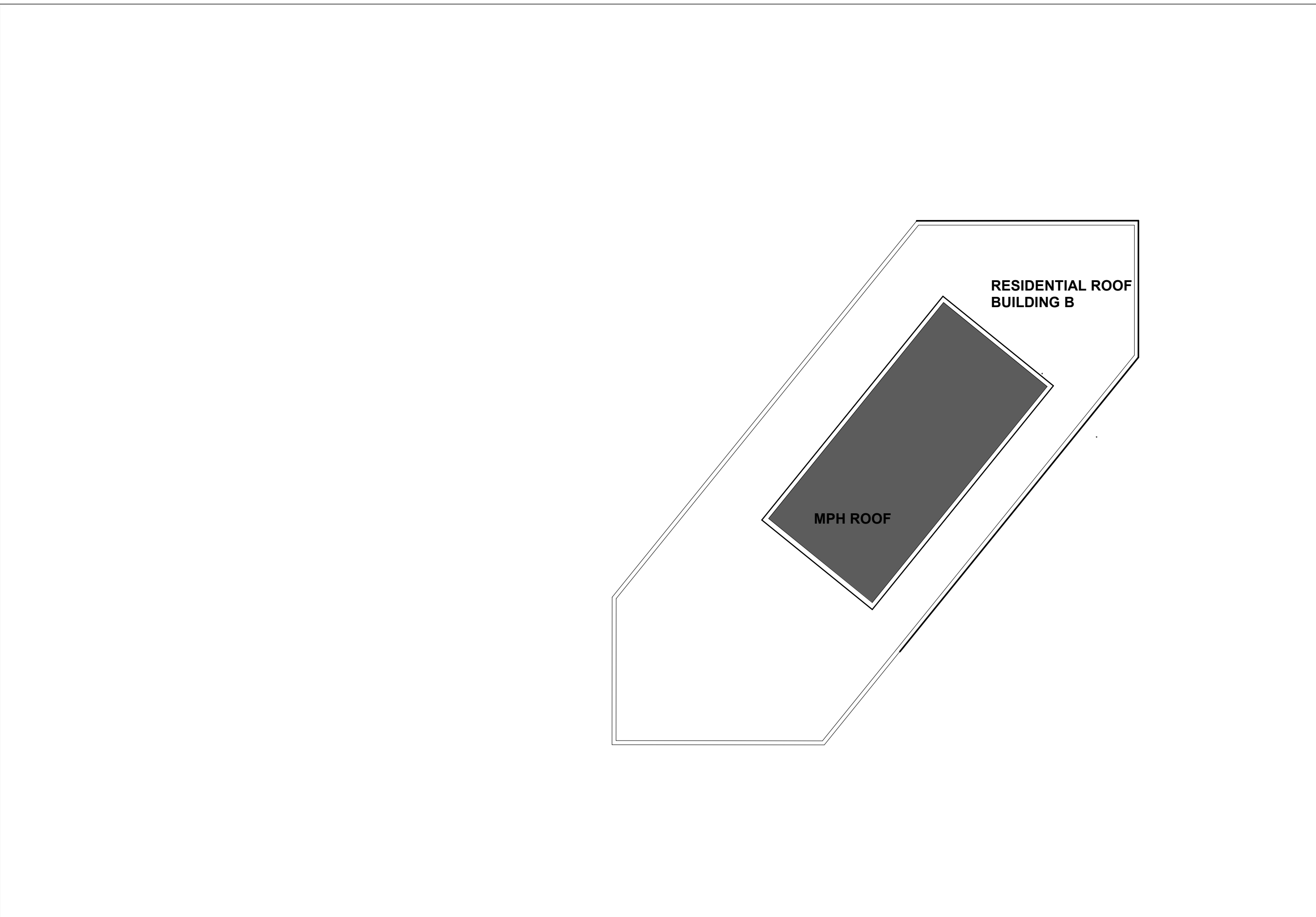


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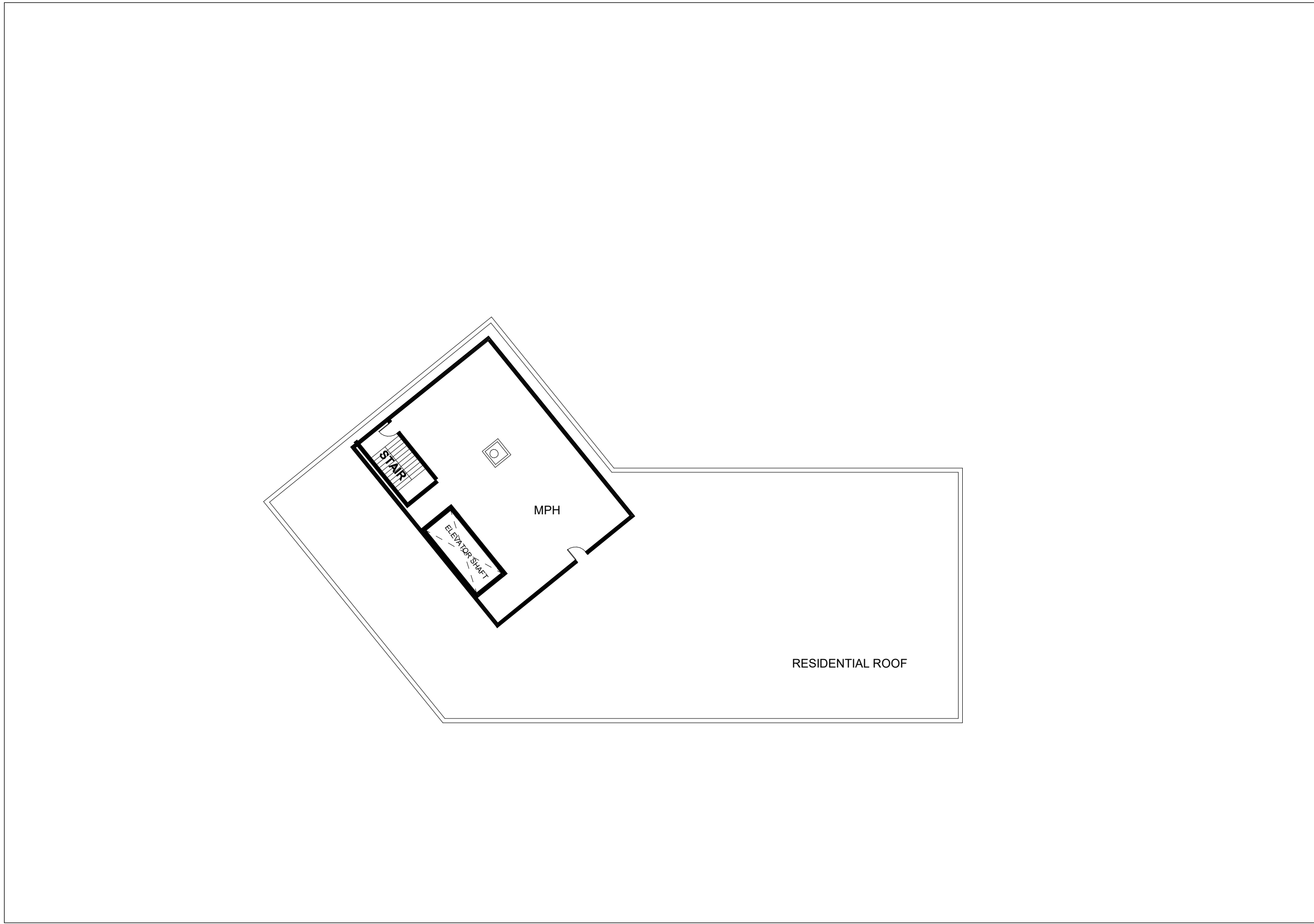
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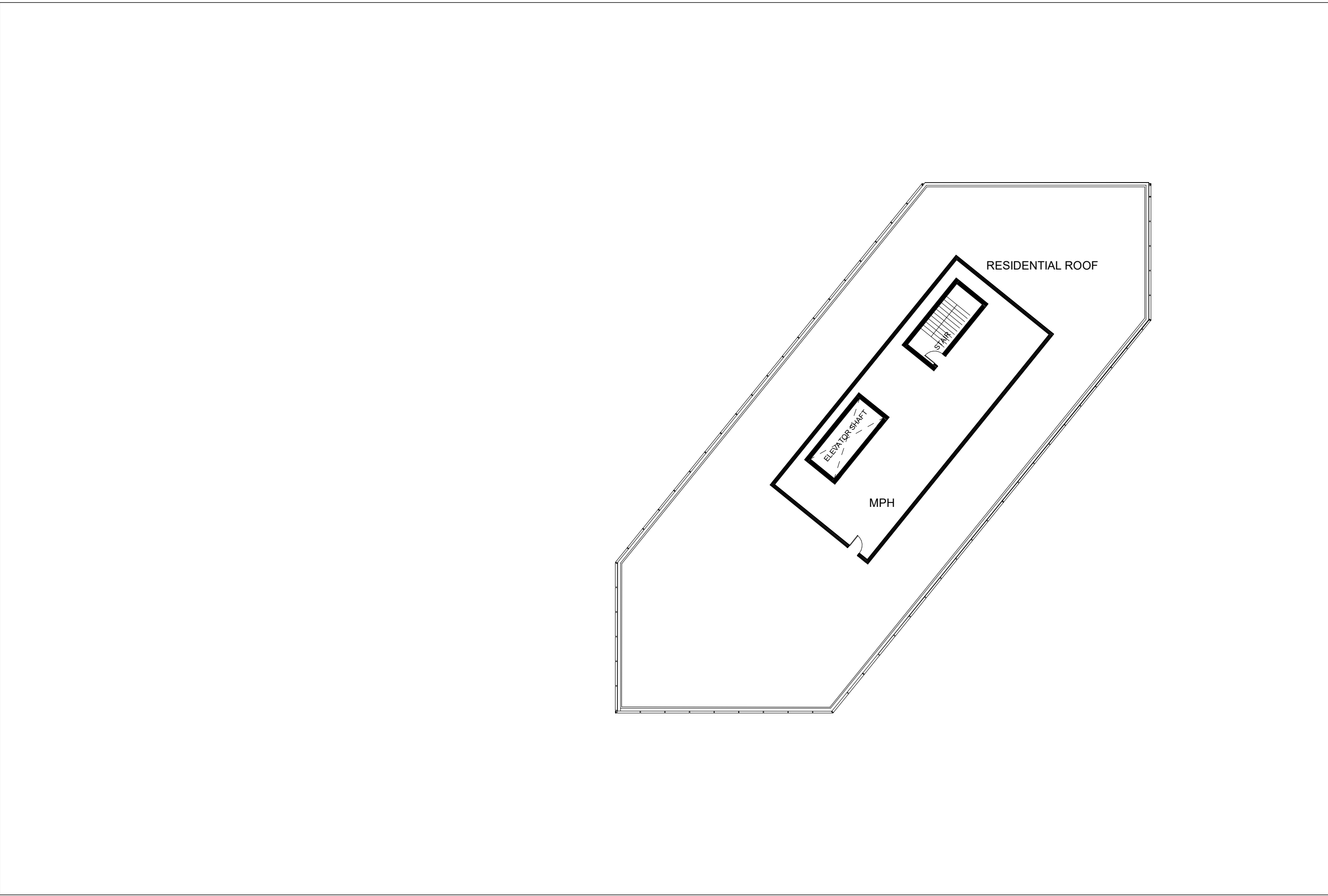
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1 : 250 dA2.07



MPH Roof-Building B 3
1 : 250 dA2.07



MPH Floor Plan-Building A 2
1 : 250 dA2.07



MPH Floor Plan-Building B 1
1 : 250 dA2.07

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Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
MPH FLOOR & ROOF PLANS

Scale:

1 : 250

Drawn by:

D.N

Checked by:

N.D

Project No.:

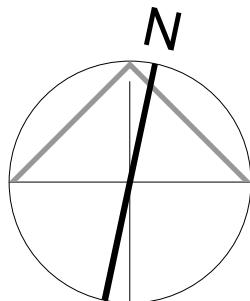
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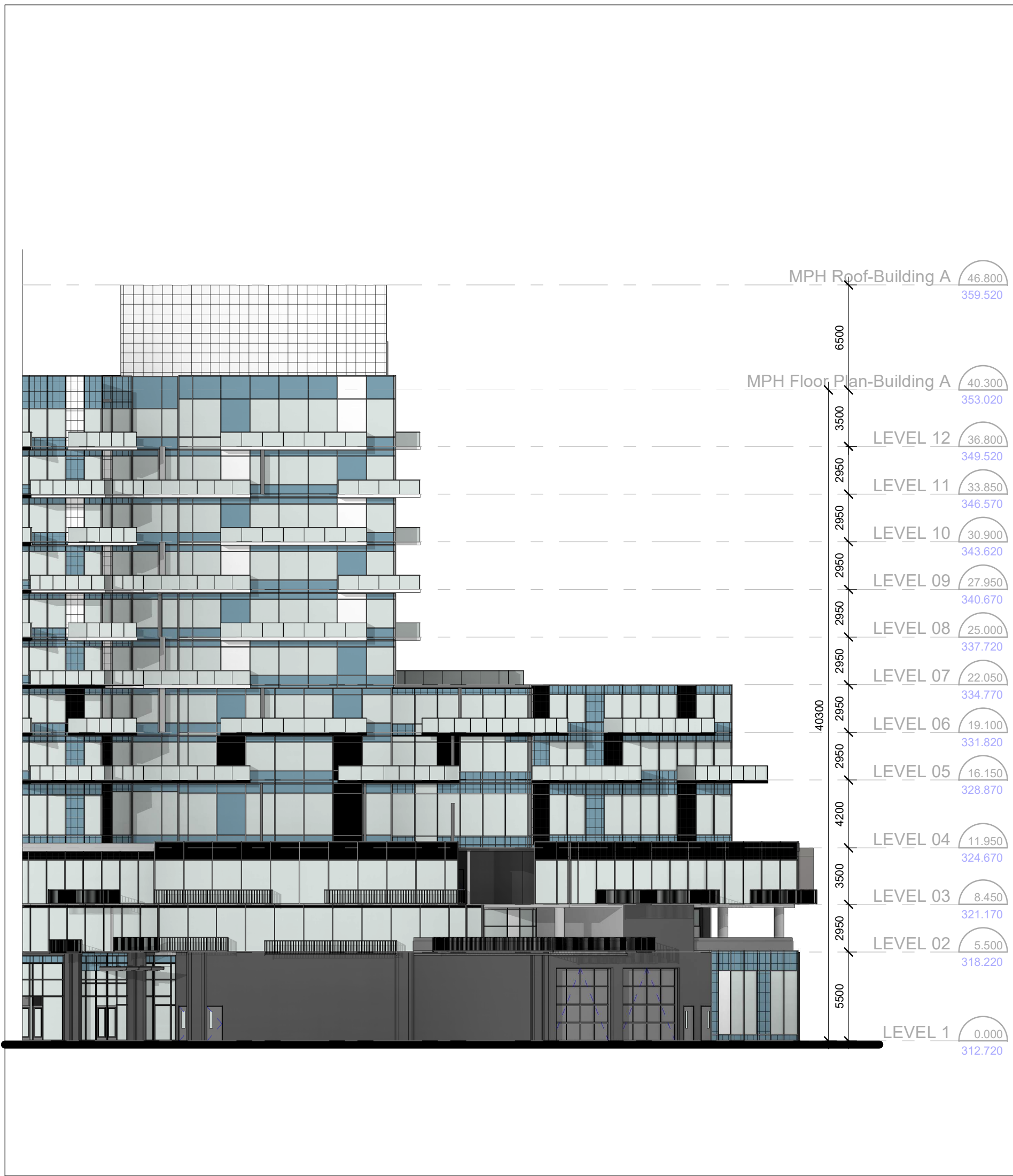
Date:

Jan 04,2024

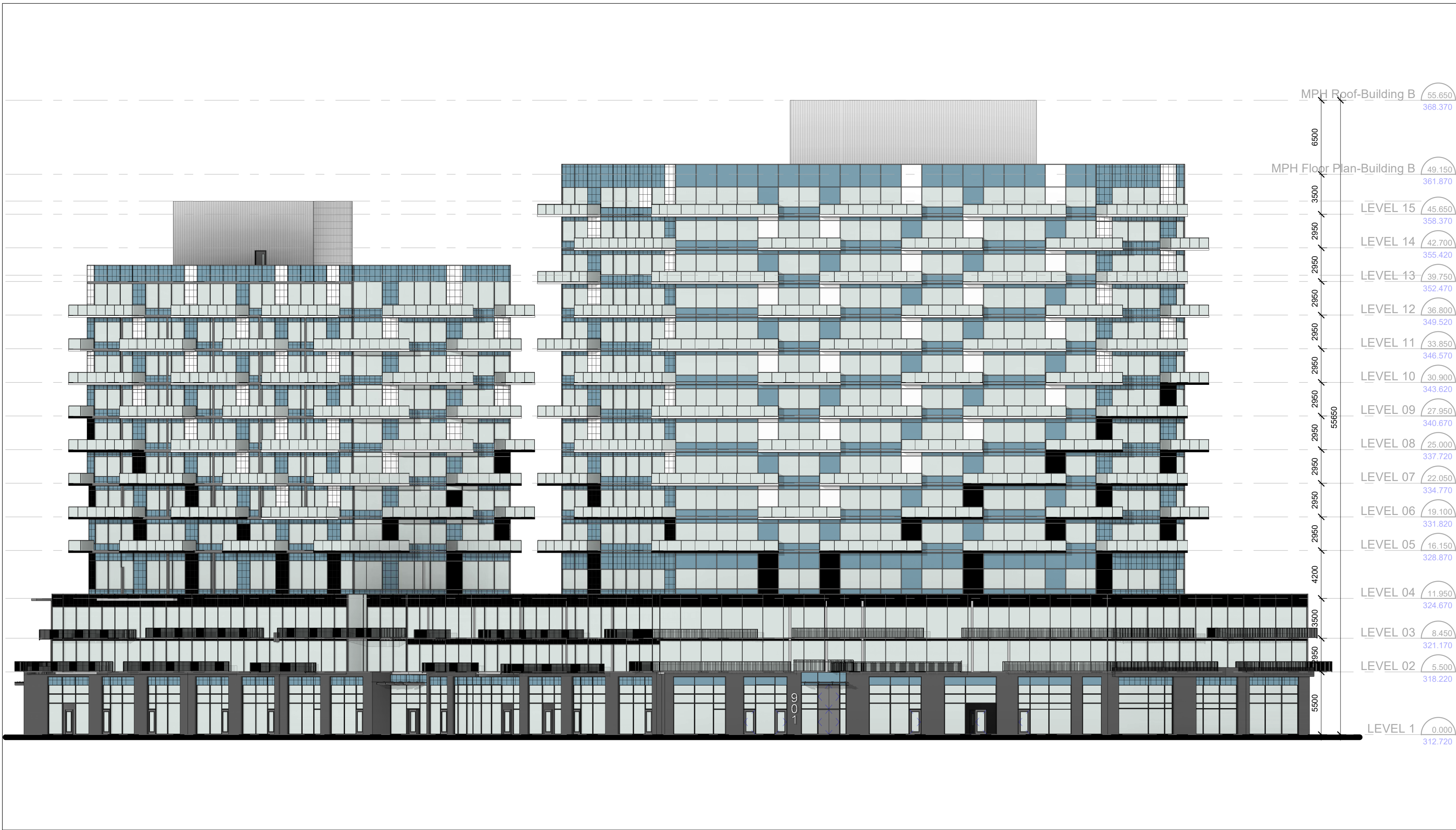
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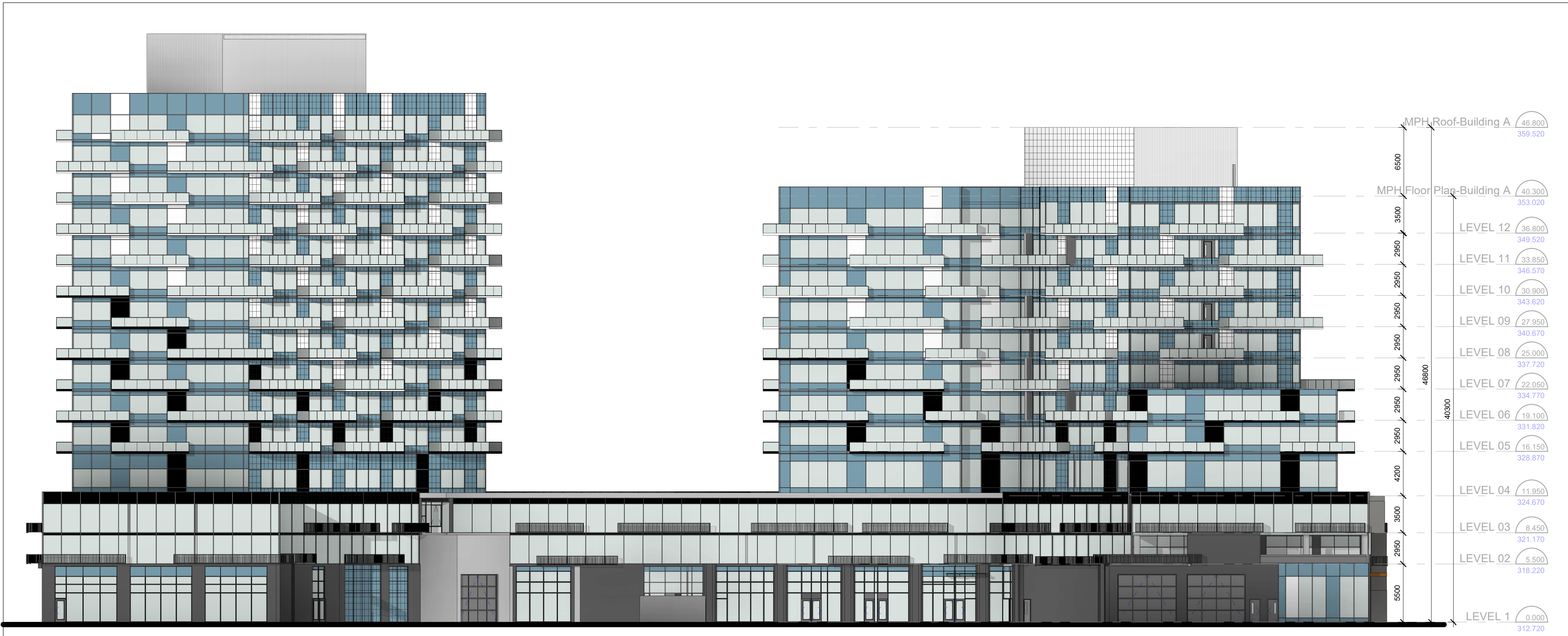




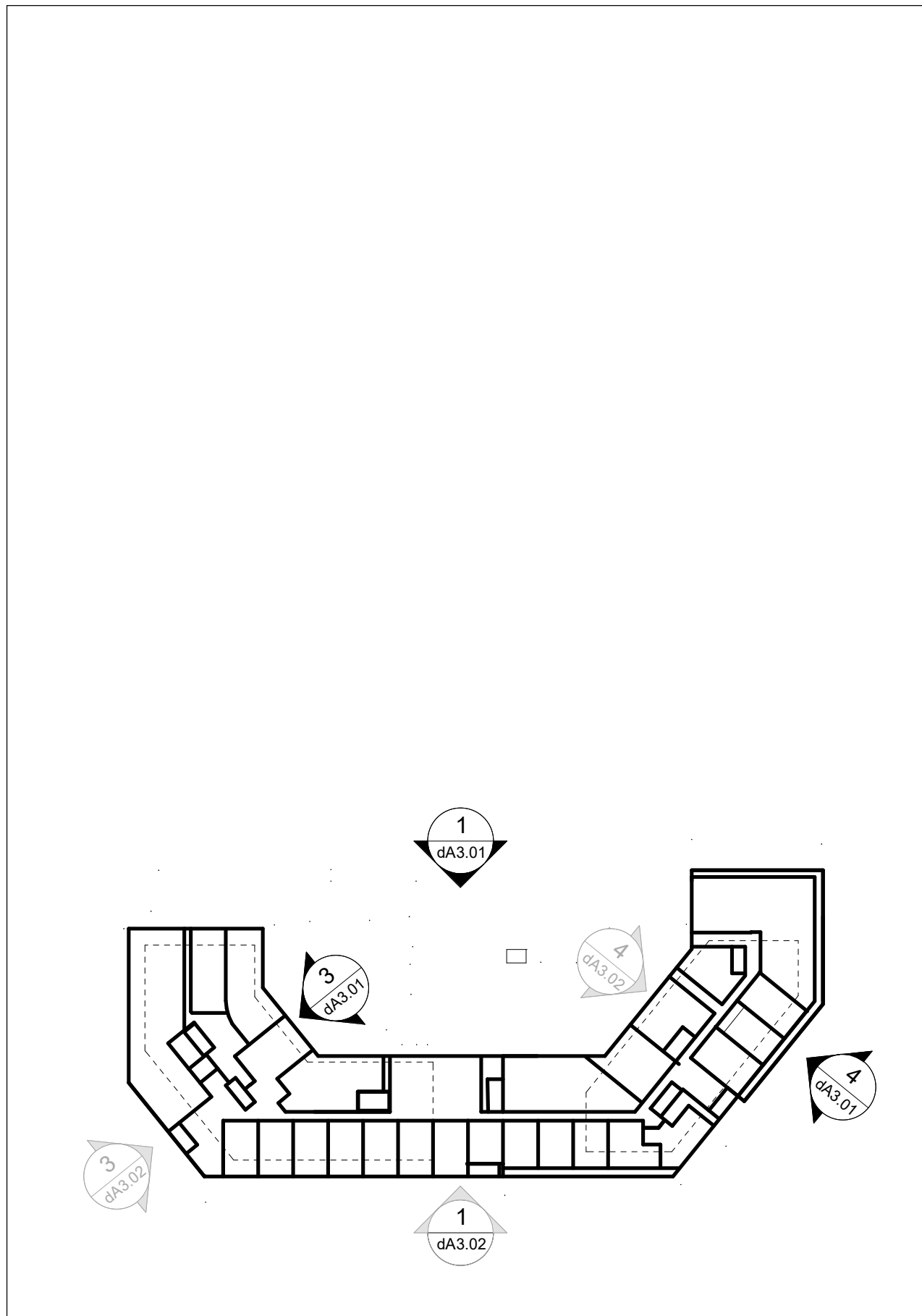
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1 : 250 dA3.01



Elevation F 4
1 : 250 dA3.01



Elevation A 1
1 : 250 dA3.01



Elevation - Key Plan 2
1 : 1000 dA3.01

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ACE Development
901 Essa Road, BARRIE, ON
Proposed Residential Development

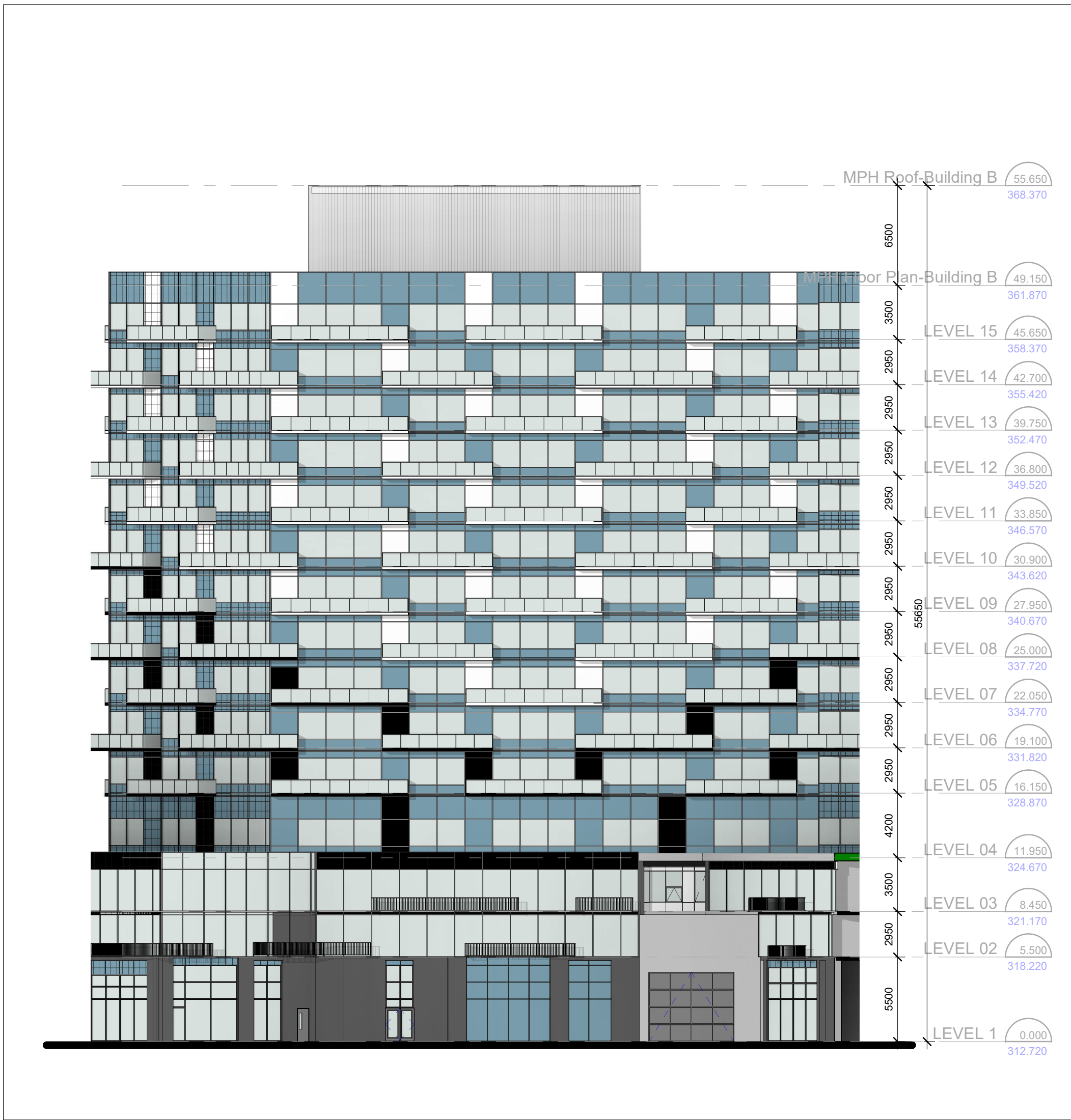
Drawing Title:
ELEVATIONS

Scale:
As indicated
Drawn by:
D.N
Checked by:
N.D
Project No.:
22125
Date:
Jan 04, 2024
Drawing No.:

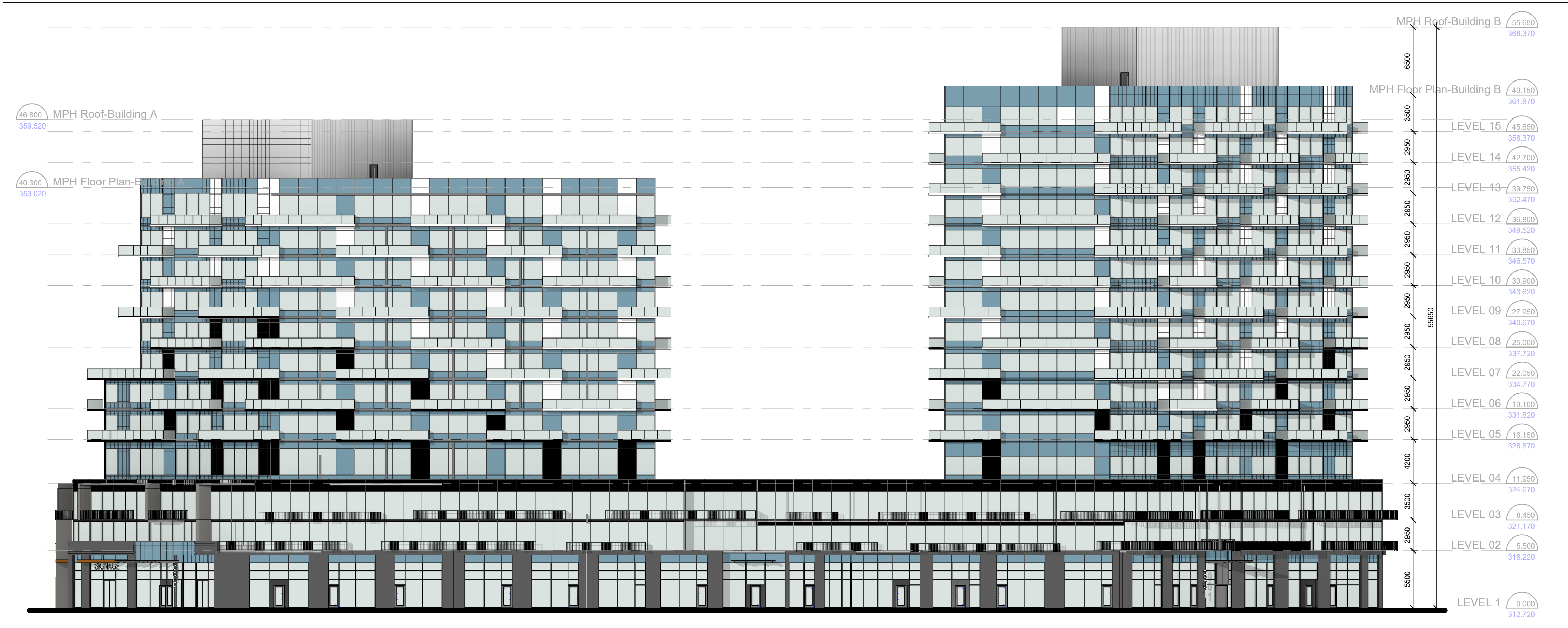
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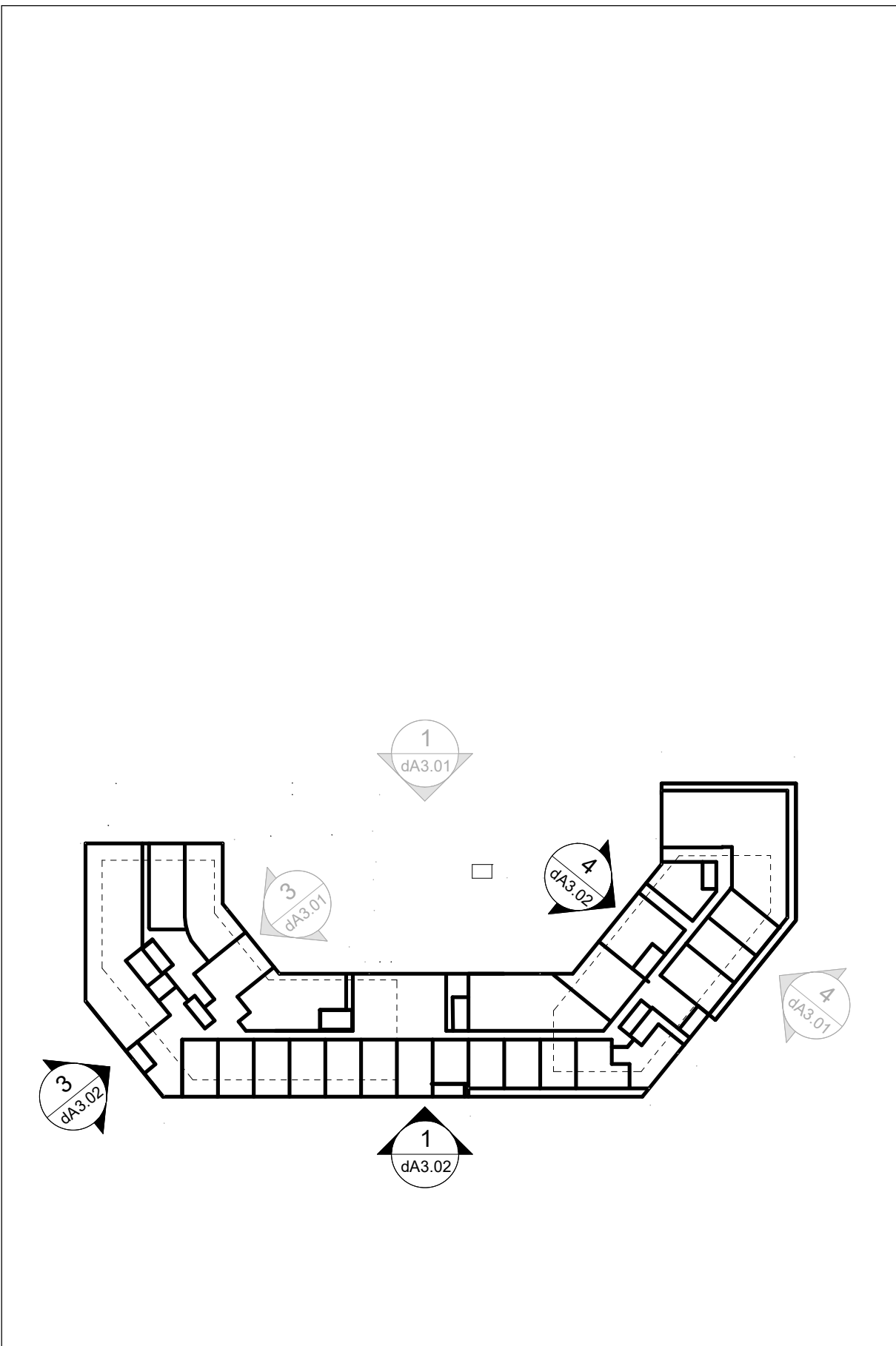
Elevation E 3
1 : 250
dA3.02



Elevation C 4
1 : 250
dA3.02



Elevation D 1
1 : 250
dA3.02



Elevation - Key Plan 2
1 : 1000
dA3.02

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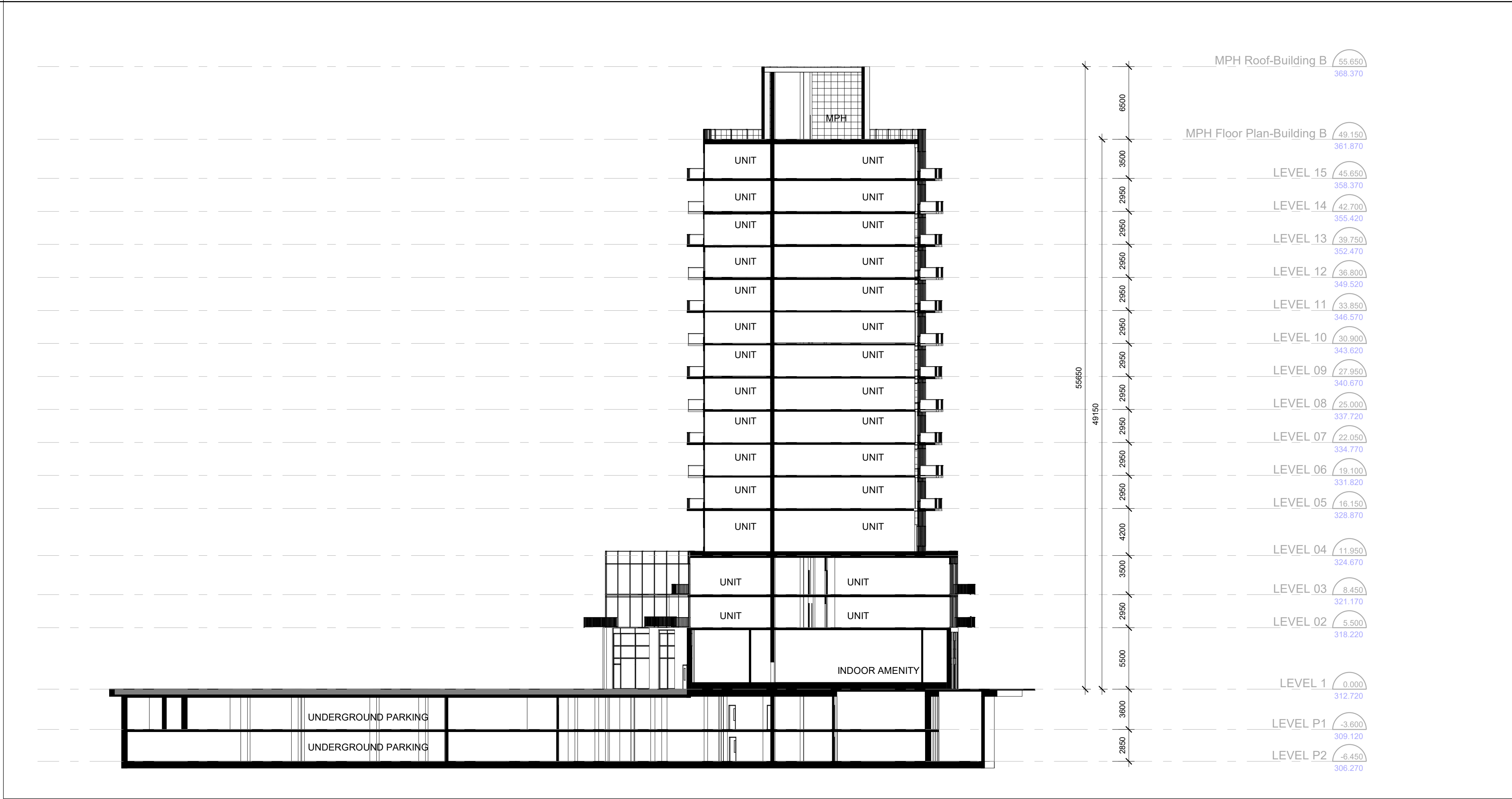
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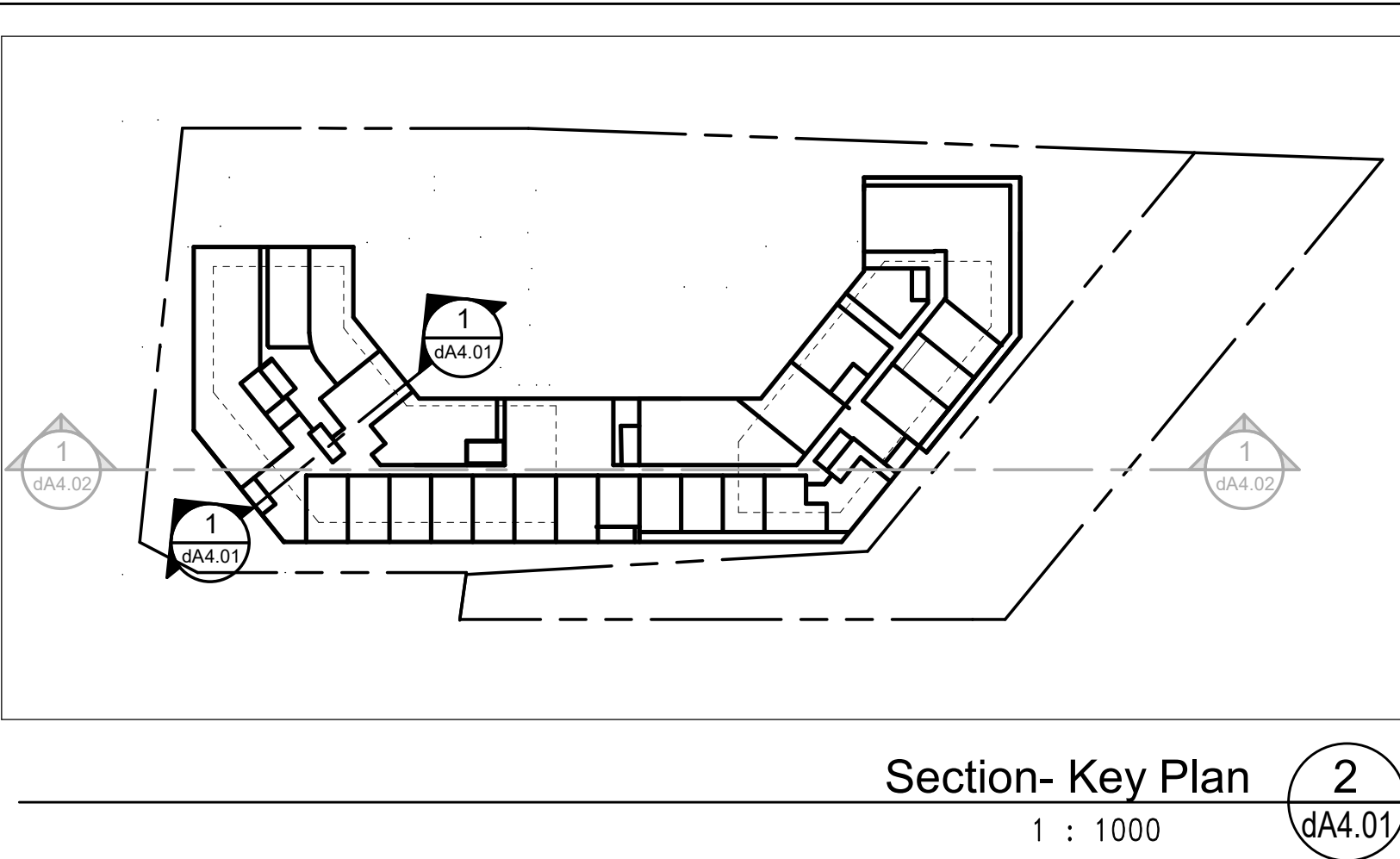
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Scale:
As indicated
Drawn by:
D.N
Checked by:
N.D
Project No.:
22125
Date:
Jan 04, 2024
Drawing No.:

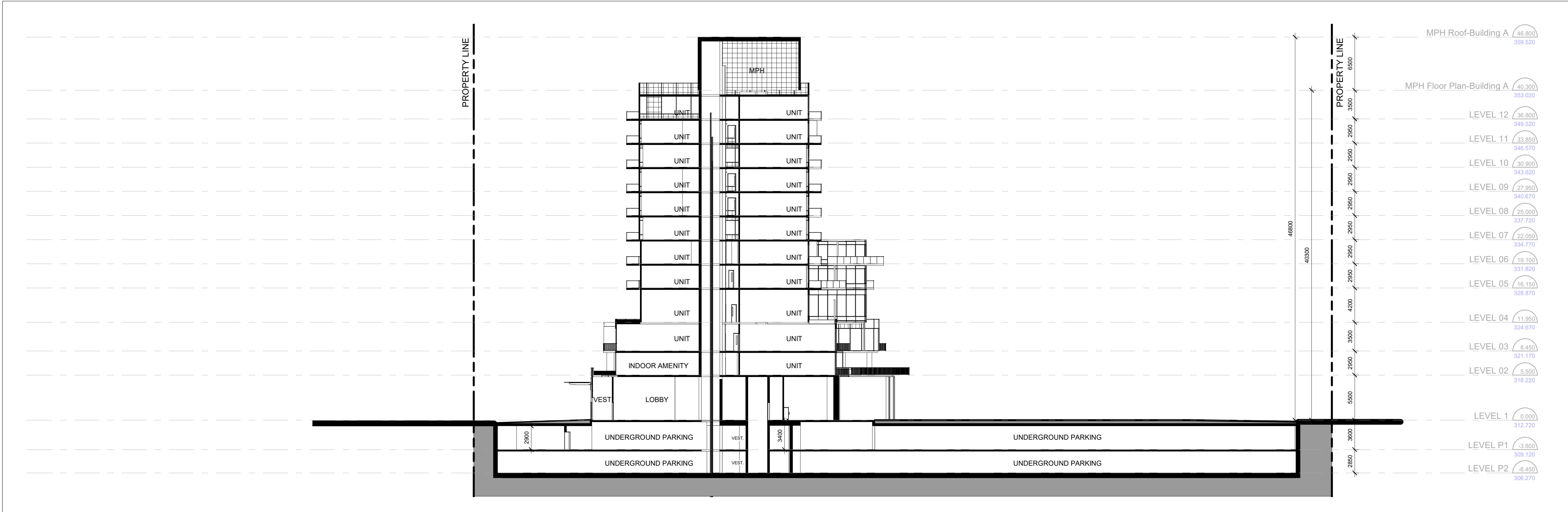
dA3.02



Section B 3
1 : 250
dA4.01



Section- Key Plan 2
1 : 1000
dA4.01



Section A 1
1 : 250
dA4.01

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No.:01	Issued For:OPA,ZBA SUBMISSION	Date: Nov.30,2022

Client:

ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:

BUILDING SECTIONS

Scale:

As indicated

Drawn by:

D.N

Checked by:

N.D

Project No.:

22125

Date:

Jan 04,2024

Drawing No.:

dA4.01

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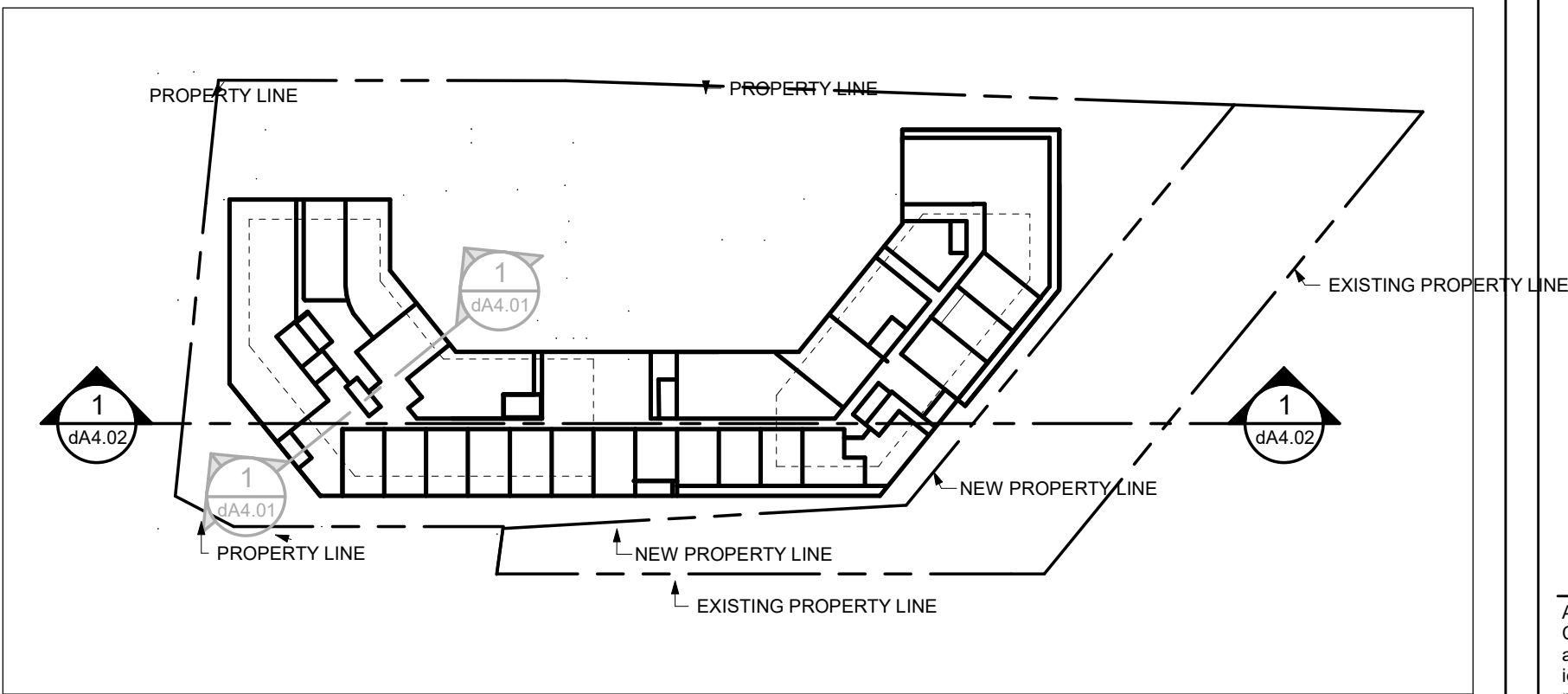
Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

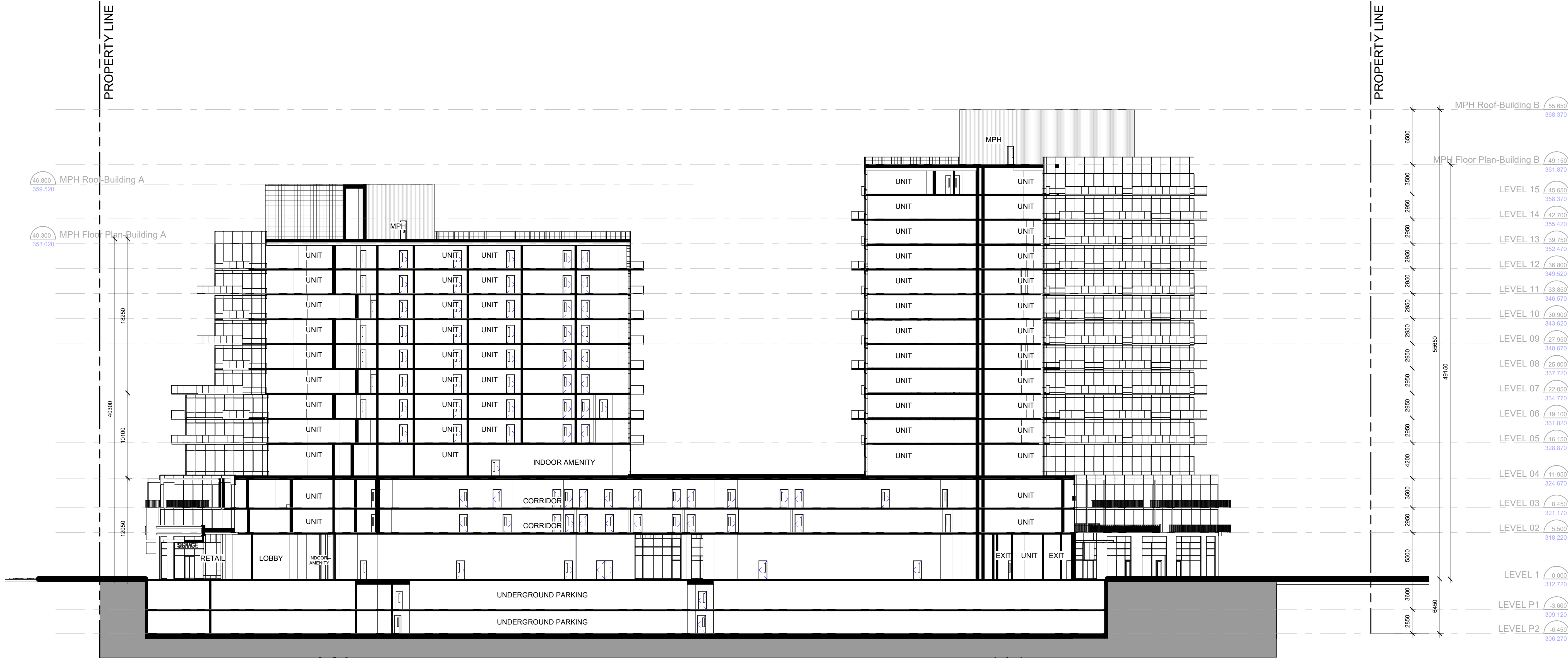
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BUILDING SECTIONS

Scale:
As indicated
Drawn by:
D.N
Checked by:
N.D
Project No.:
22125
Date:
Jan 04,2024
Drawing No.:
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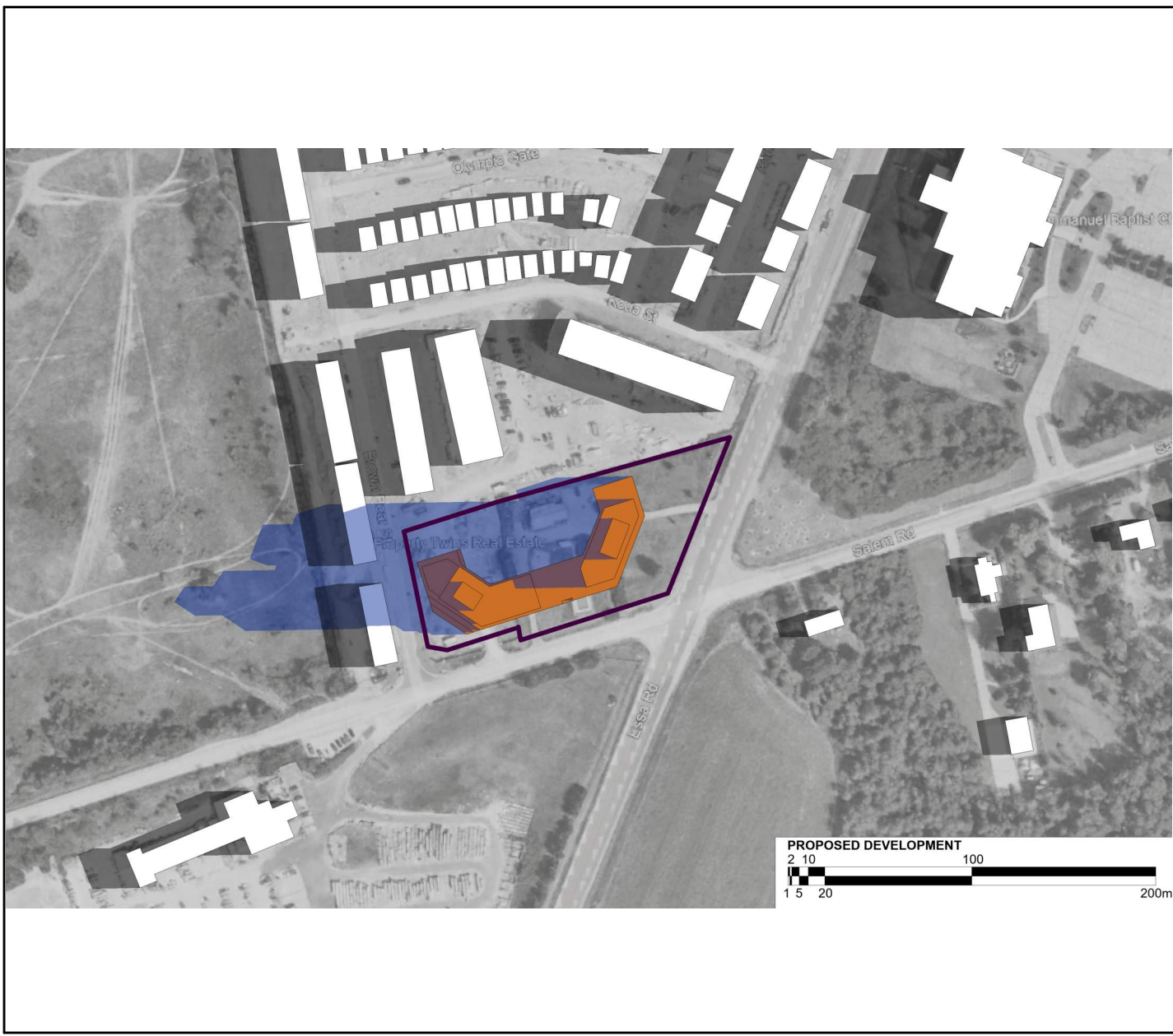
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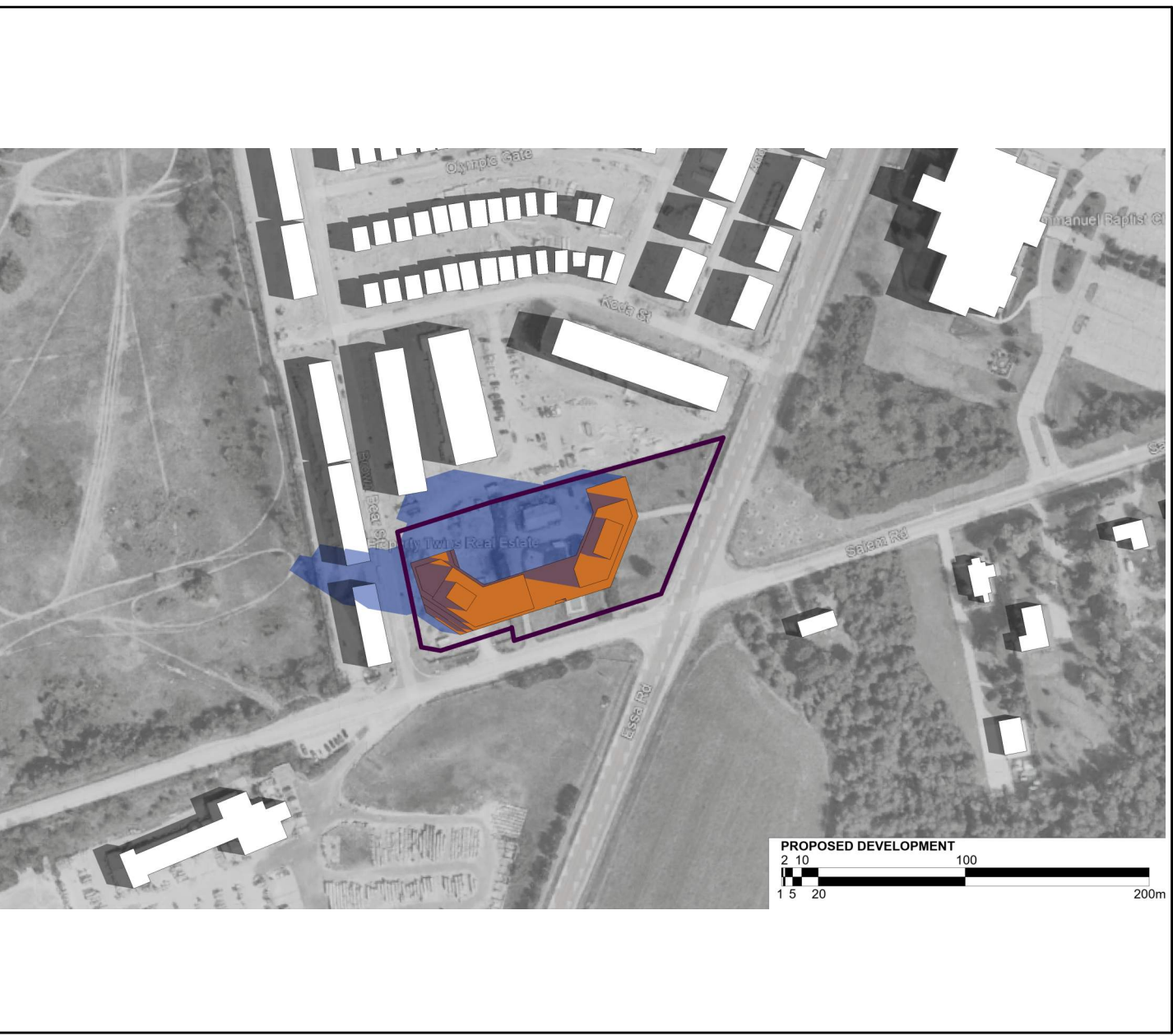
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1 : 1000
dA4.02



Section C **1**
1 : 250
dA4.02



April 21 @ 8:01am 1
NTS dA5.01



April 21 @ 9:01am 2
NTS dA5.01



April 21 @ 10:01am 3
NTS dA5.01



April 21 @ 11:01am 4
NTS dA5.01



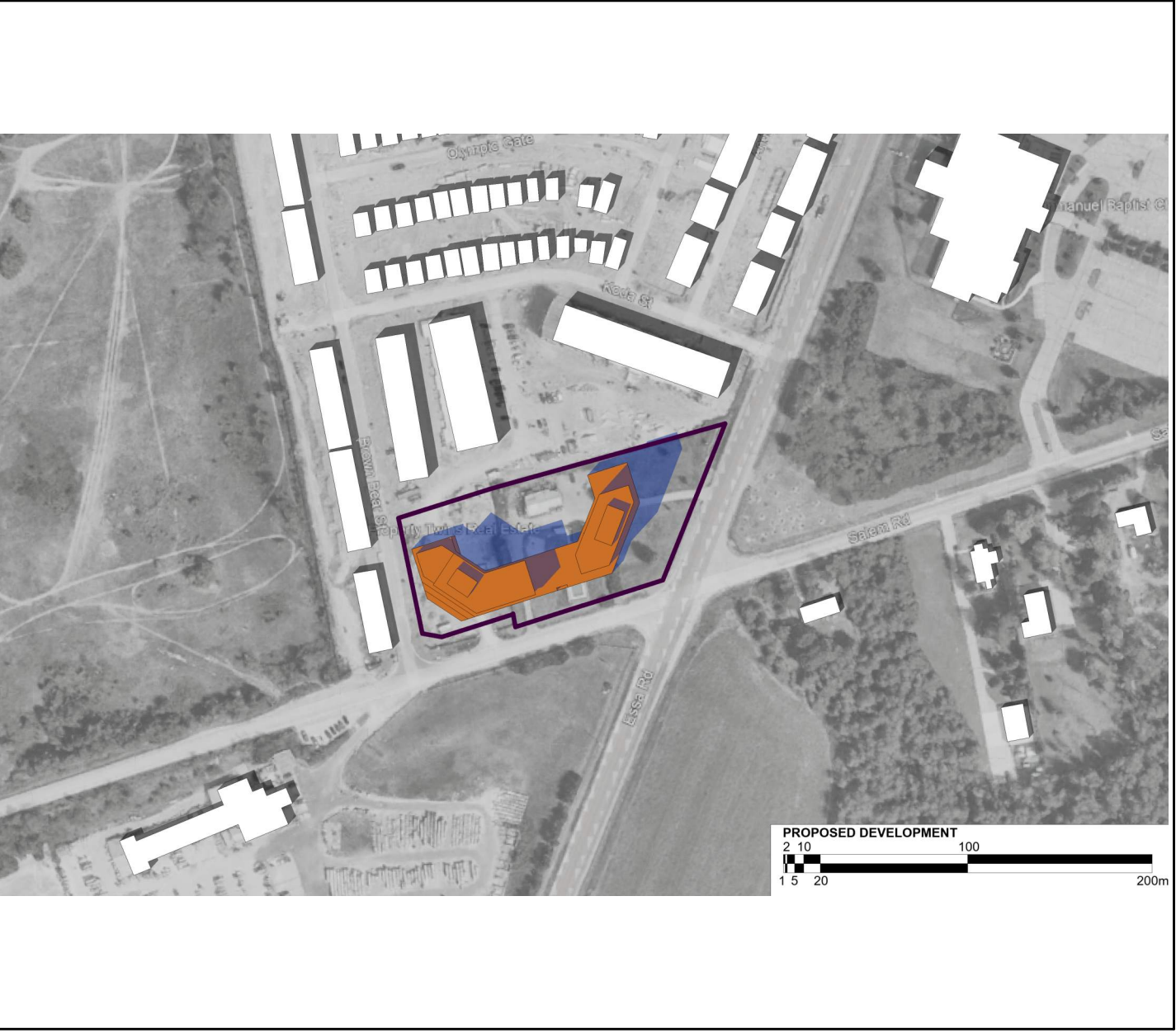
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NTS dA5.01



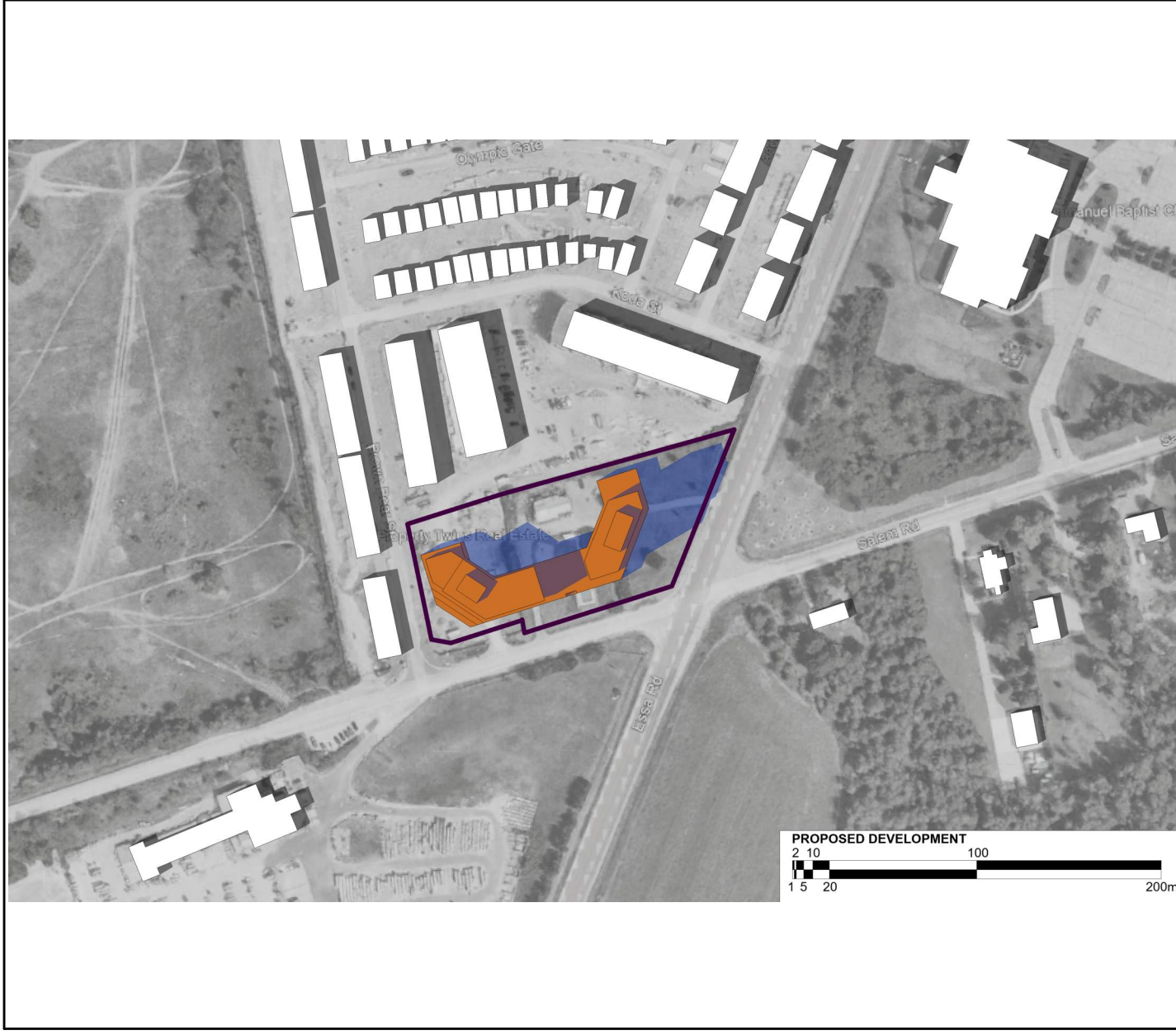
April 21 @ 1:01pm 6
NTS dA5.01



April 21 @ 2:01pm 7
NTS dA5.01



April 21 @ 3:01pm 8
NTS dA5.01



April 21 @ 4:01pm 9
NTS dA5.01



April 21 @ 5:01pm 10
NTS dA5.01



April 21 @ 6:01pm 11
NTS dA5.01

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Date:

KIRKOR
ARCHITECTS AND PLANNERS

20 De Boers Drive Suite 400
Toronto ON M3J 0H1

Revisions:

No.:	Revision:	Date:
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No. :02	Issued For OPA,ZBA SUBMISSION	Date: Jan 04, 2024
No. :01	Issued For OPA,ZBA SUBMISSION	Date: Nov. 30, 2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
SHADOW STUDY - APRIL

Scale:

Drawn by:

D.N

Checked by:

N.D

Project No.:

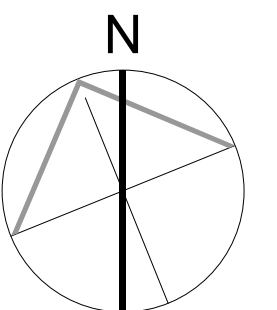
22125

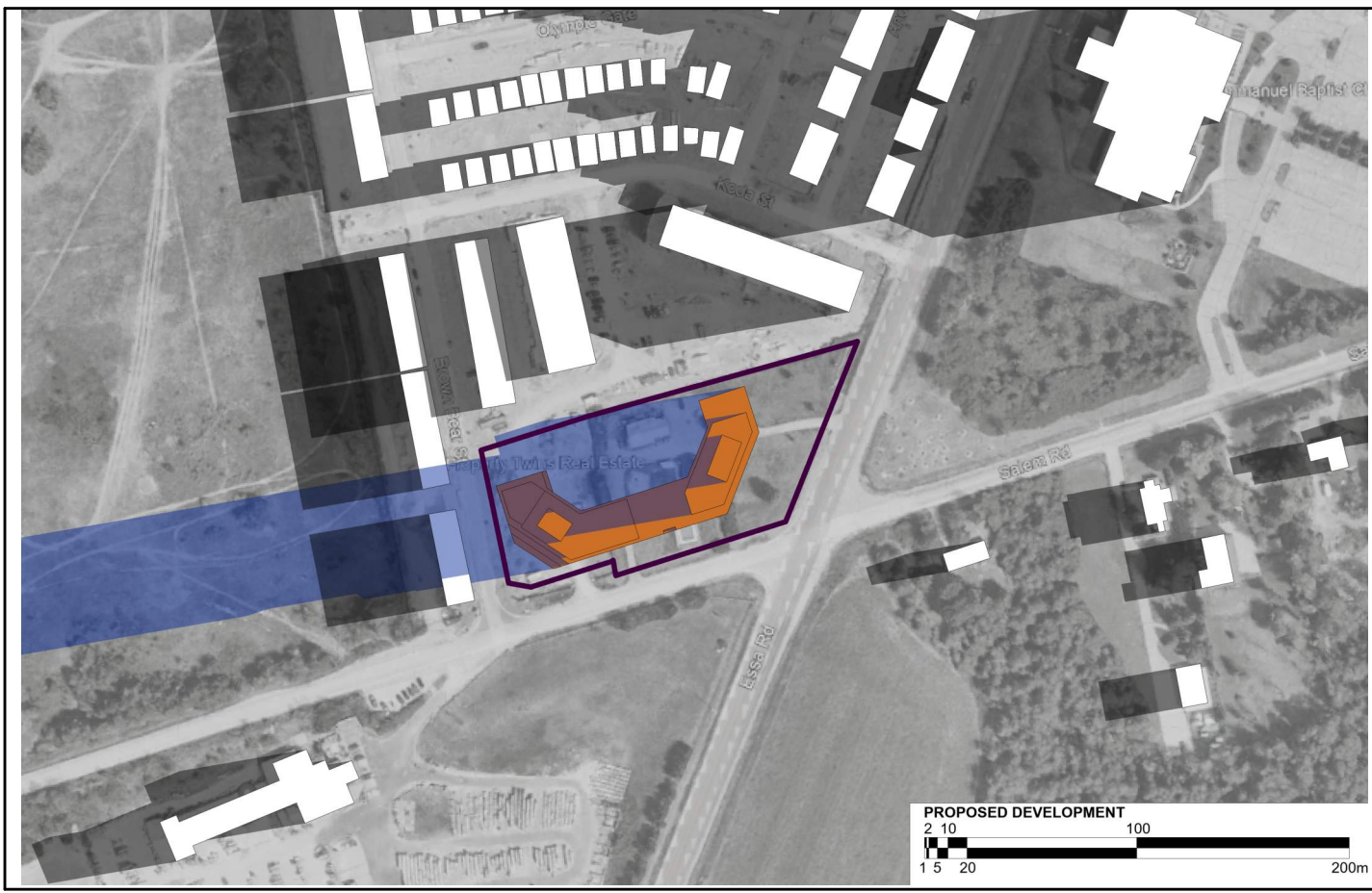
Date:

Jan 04, 2024

Drawing No.:

dA5.01

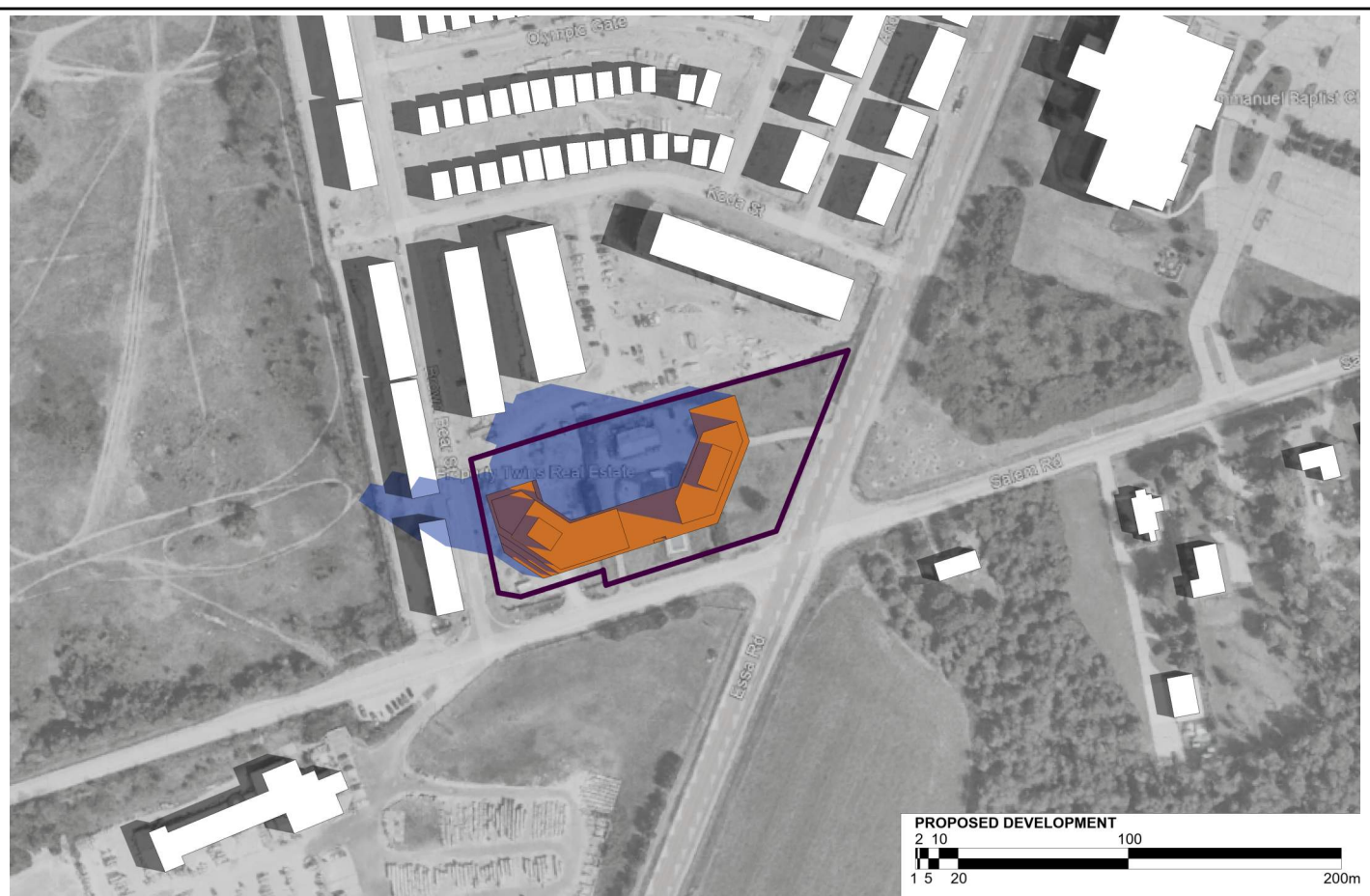




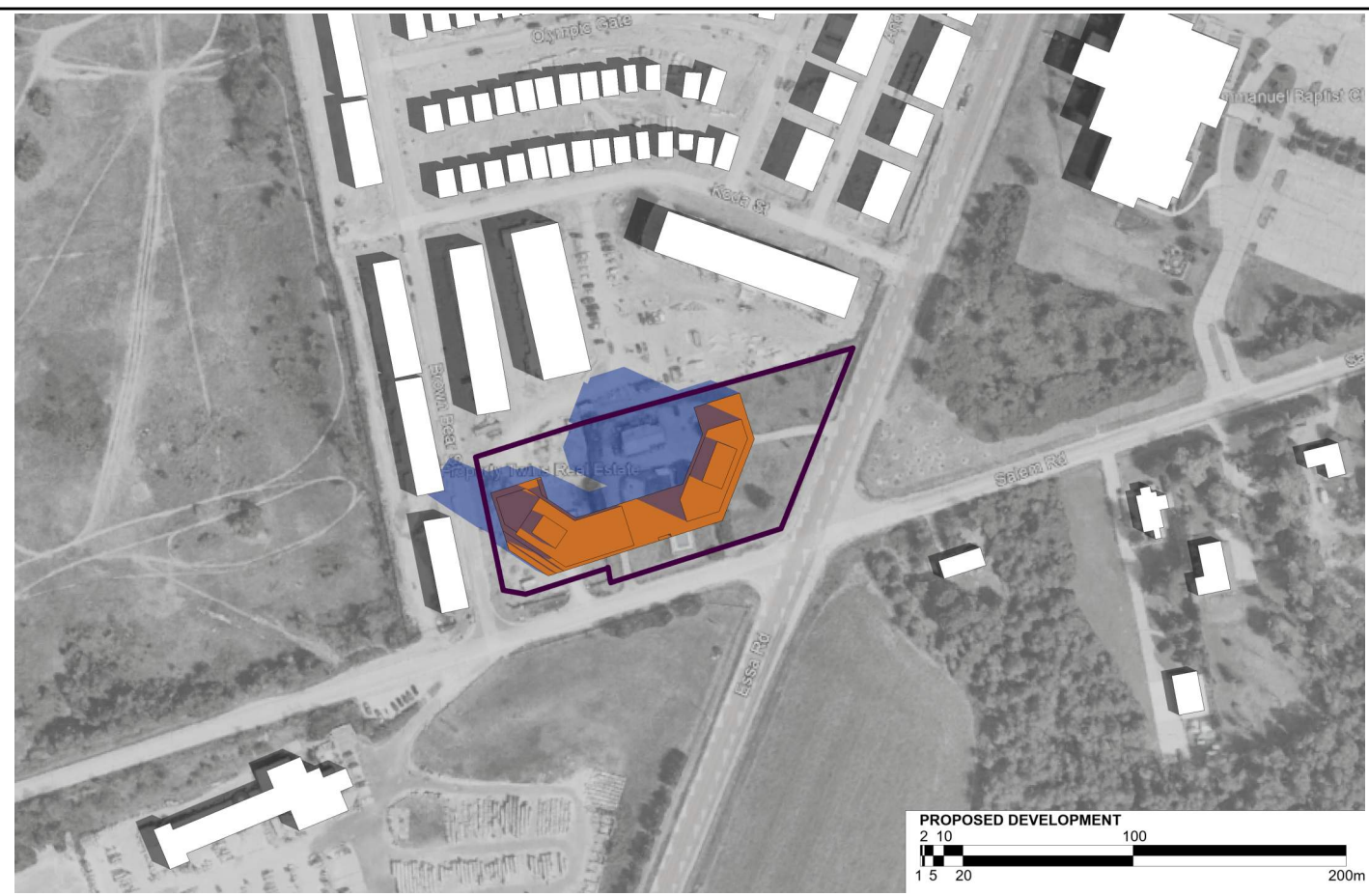
June 21 @ 7:05am 1
NTS dA5.02



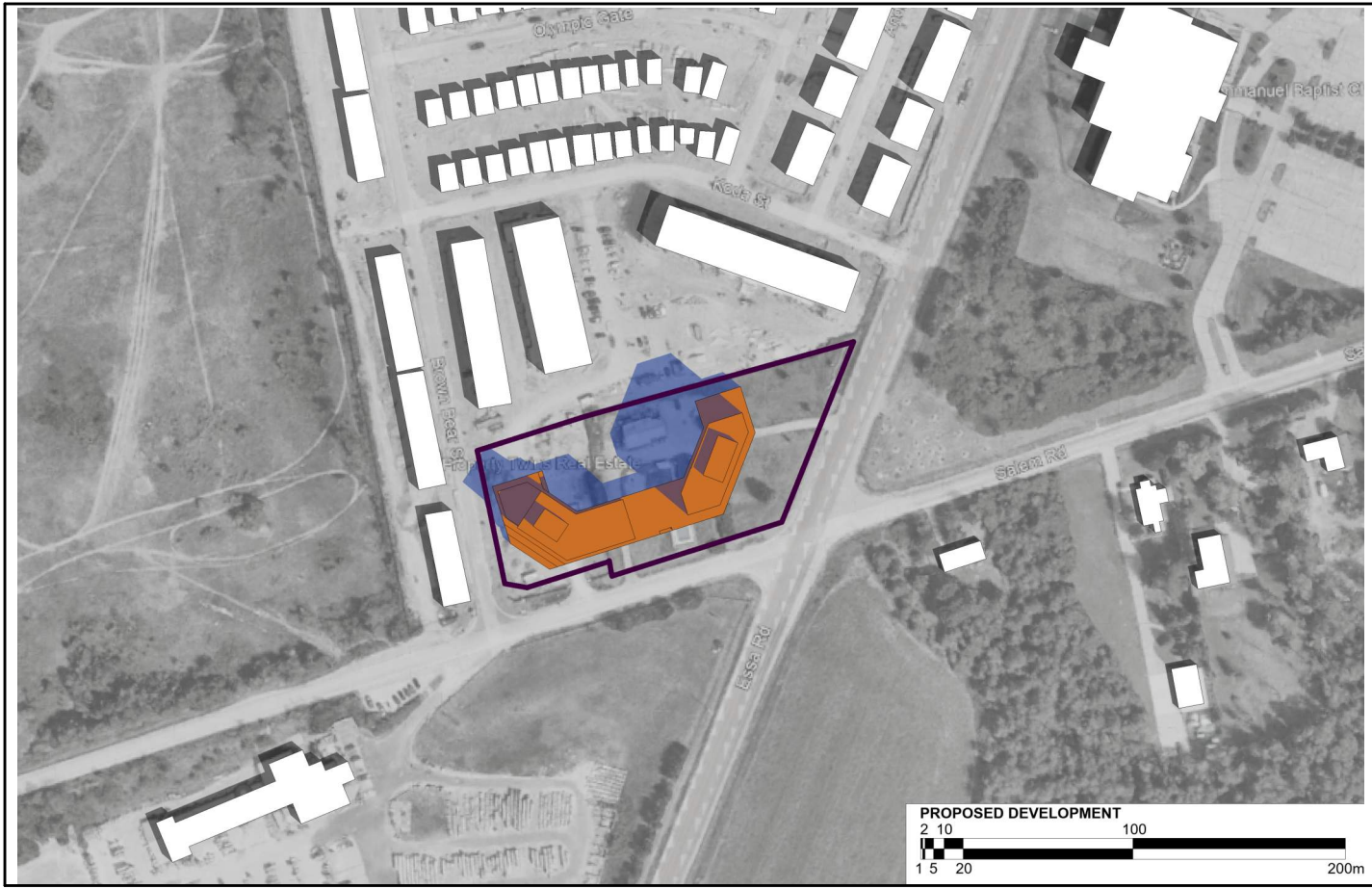
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NTS dA5.02



June 21 @ 9:05am 3
NTS dA5.02



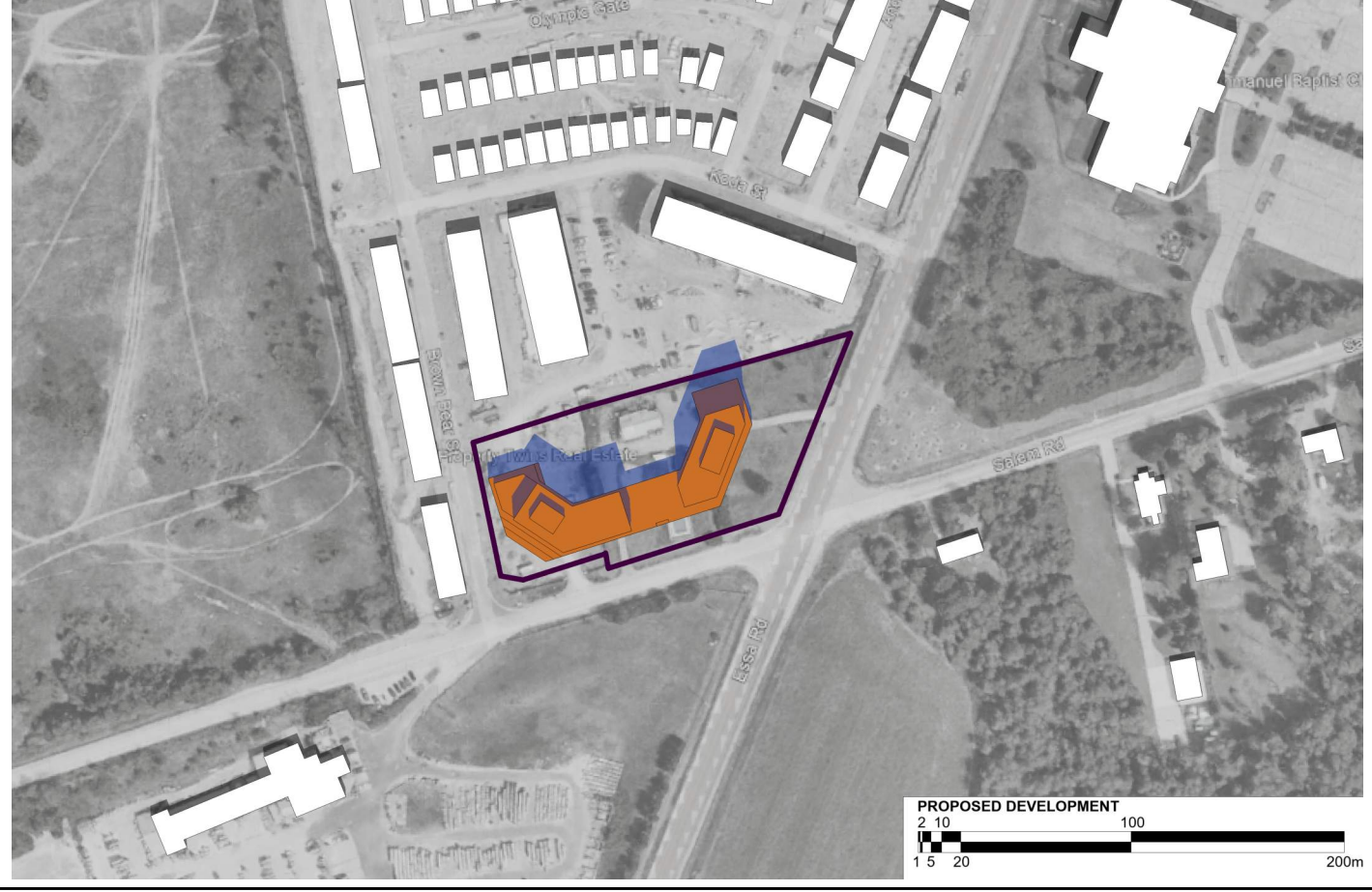
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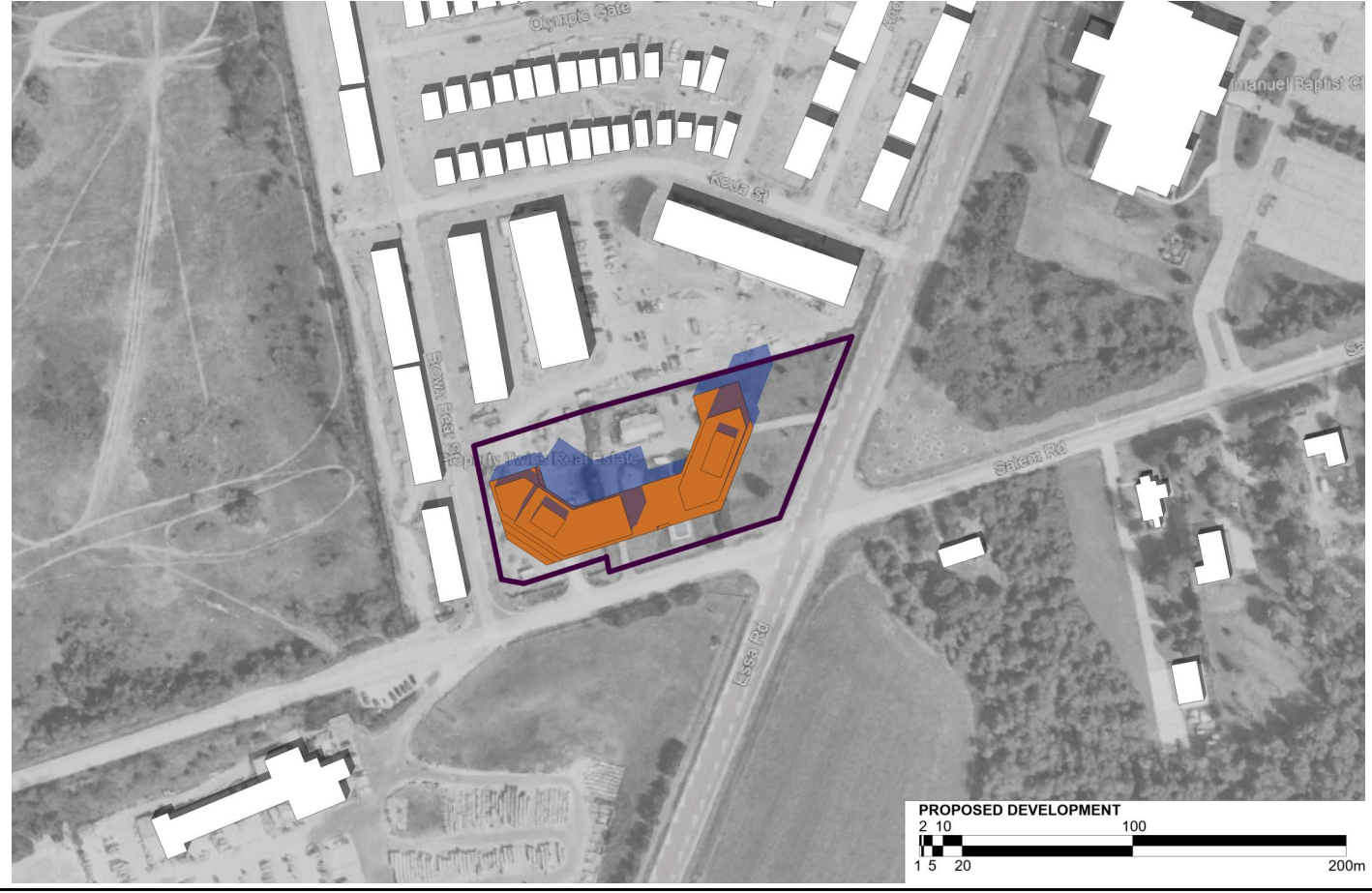
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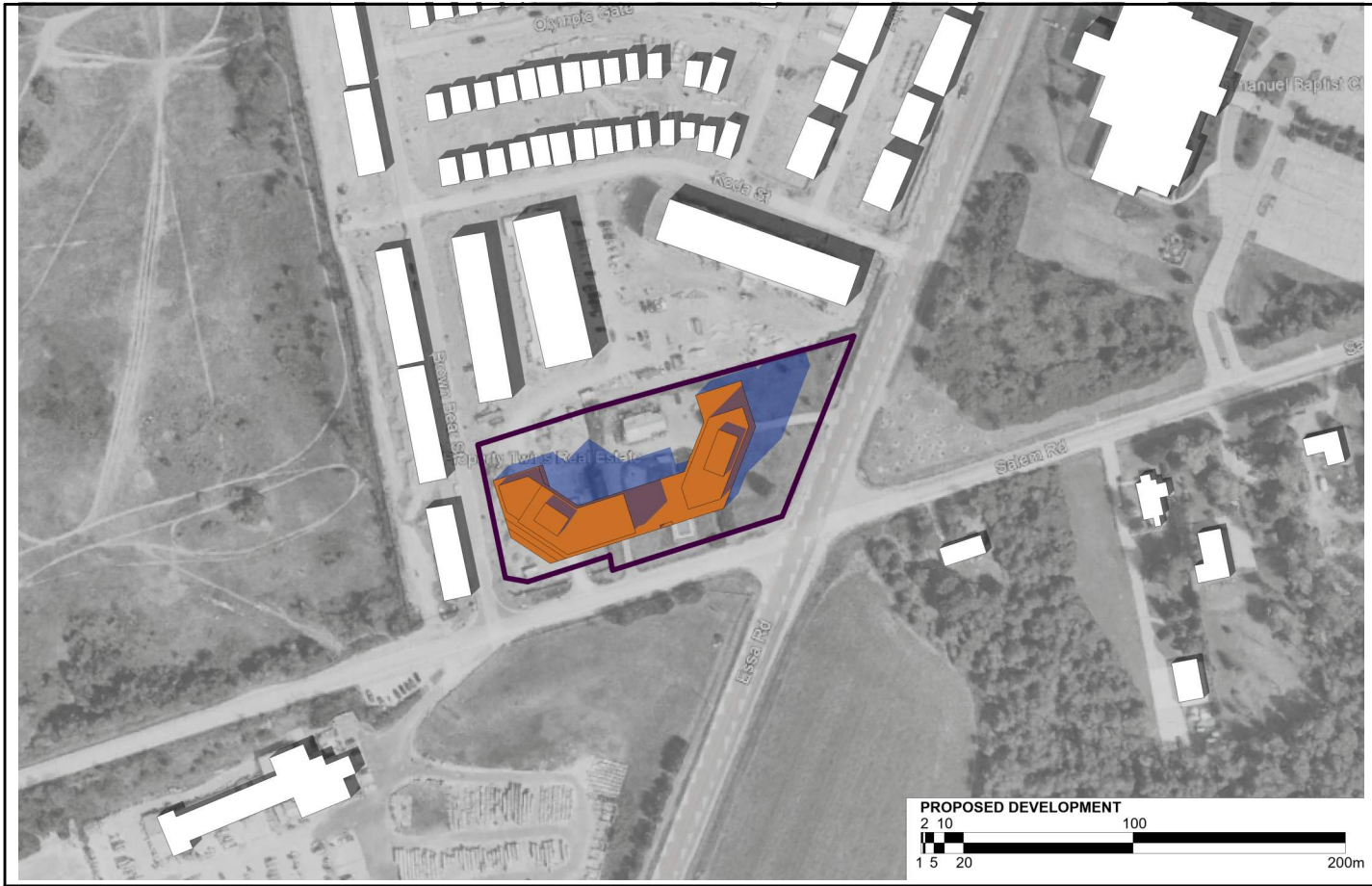
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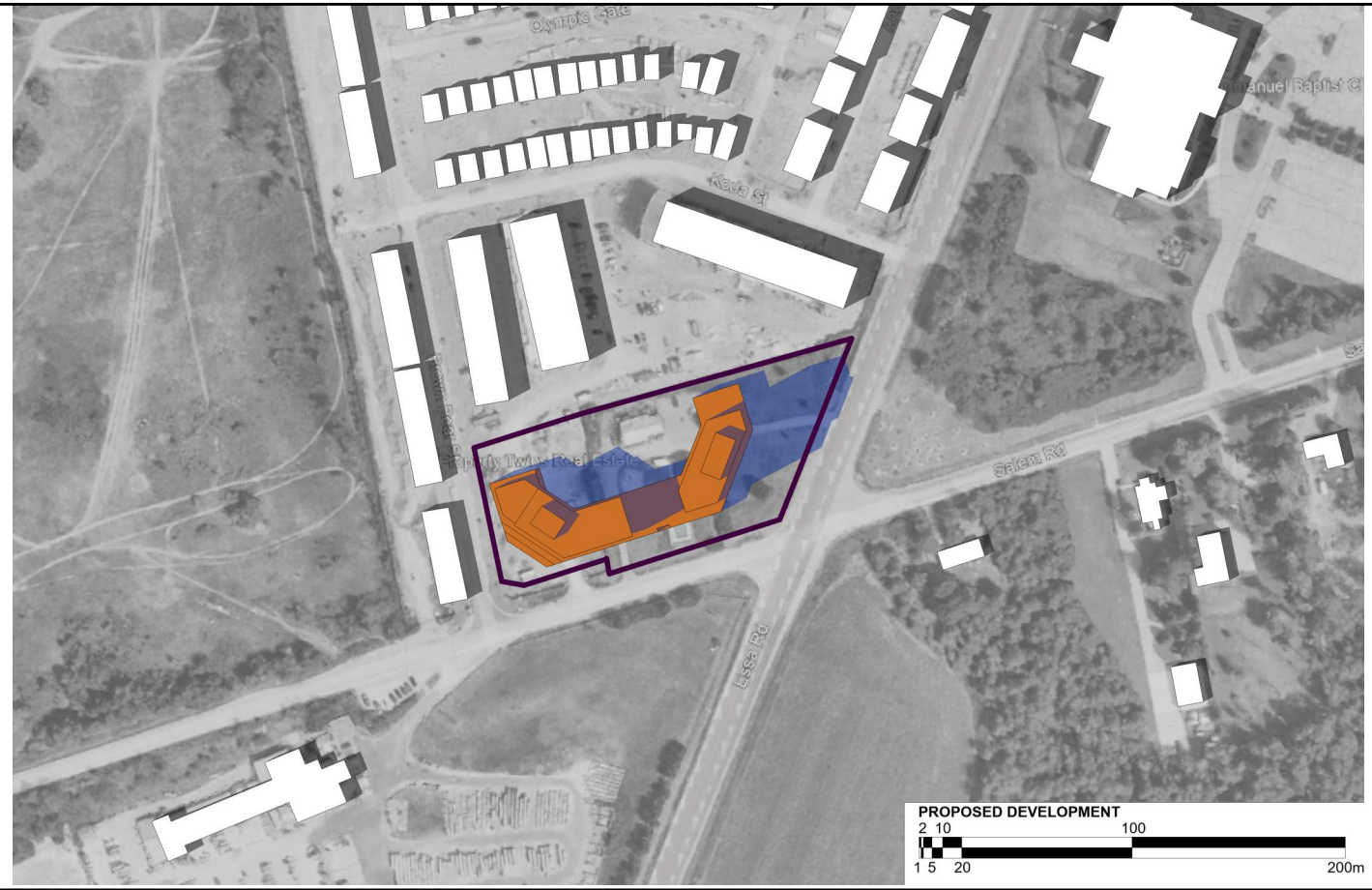
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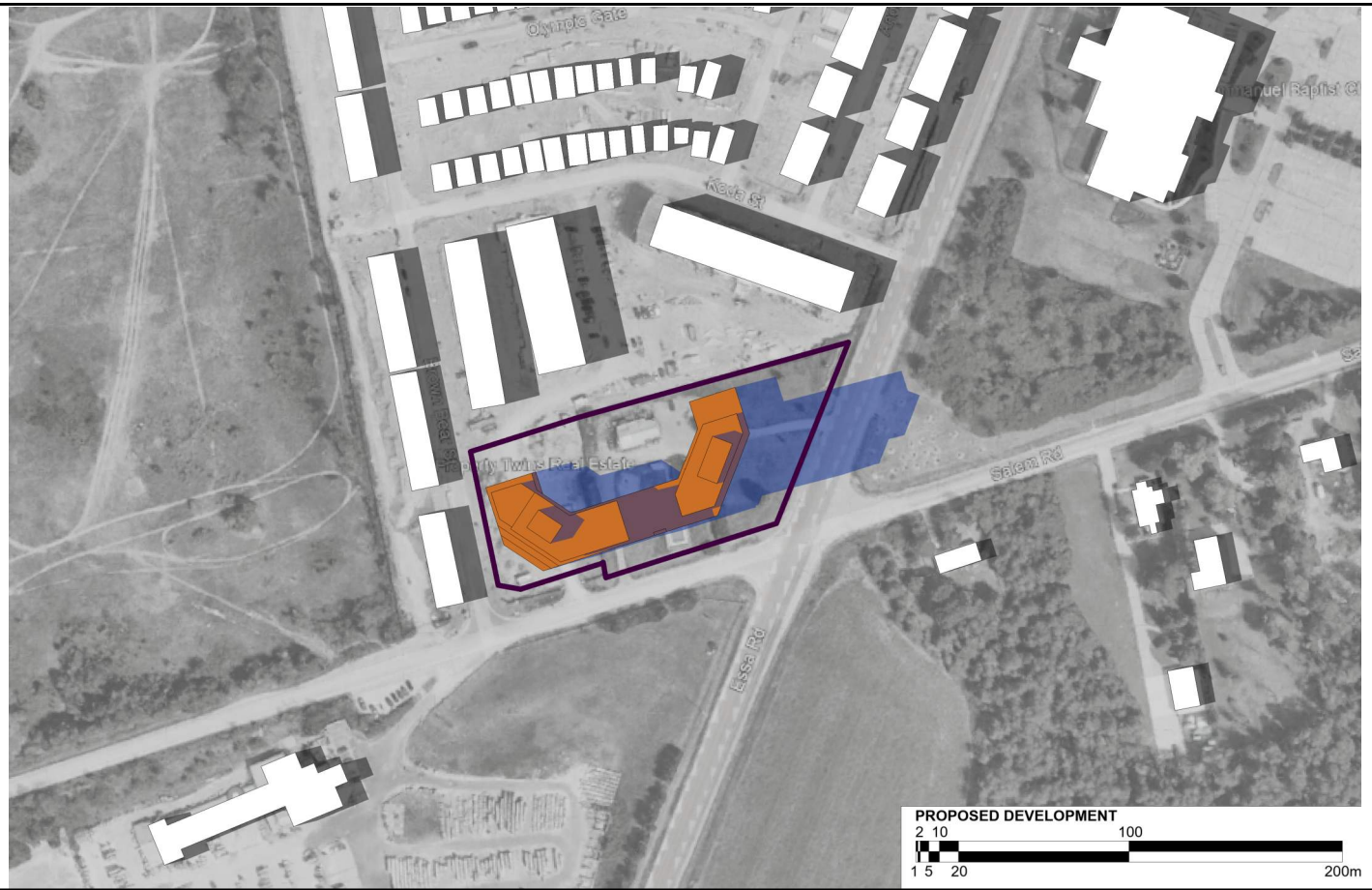
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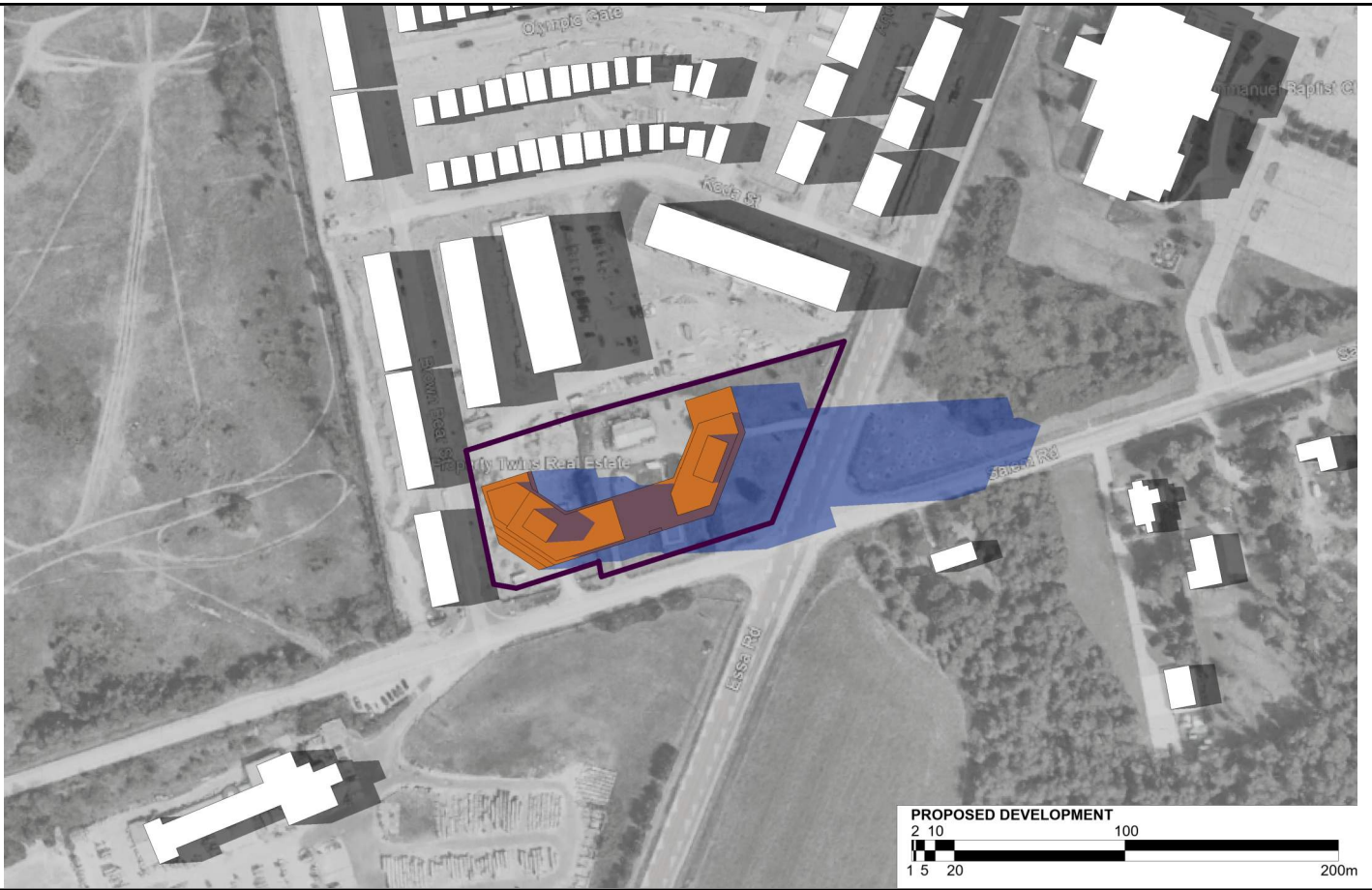
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NTS dA5.02



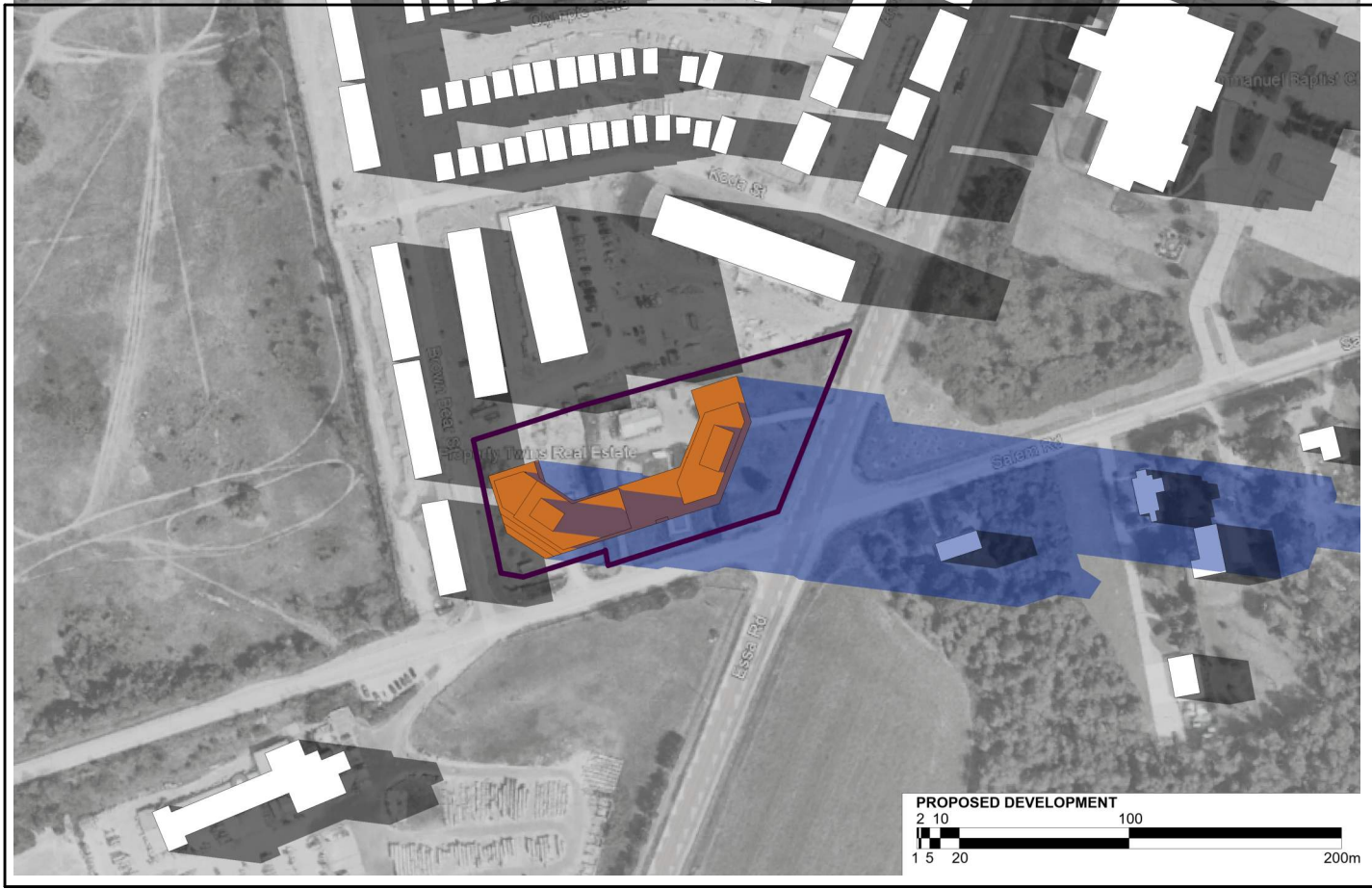
June 21 @ 4:05pm 10
NTS dA5.02



June 21 @ 5:05pm 11
NTS dA5.02



June 21 @ 6:05pm 12
NTS dA5.02



June 21 @ 7:05pm 13
NTS dA5.02

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Date:

KIRKOR
ARCHITECTS AND PLANNERS

20 De Boers Drive Suite 400
Toronto ON M3J 0H1

Revisions:		
No.:	Revision:	Date:

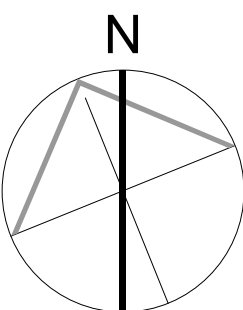
No.:02	Issued For OPA,ZBA SUBMISSION	Date:Jan 04,2024
No.:01	Issued For OPA,ZBA SUBMISSION	Date:Nov 30,2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
SHADOW STUDY - JUNE

Scale:	
Drawn by:	D.N
Checked by:	N.D
Project No.:	22125
Date:	Jan 04,2024
Drawing No.:	

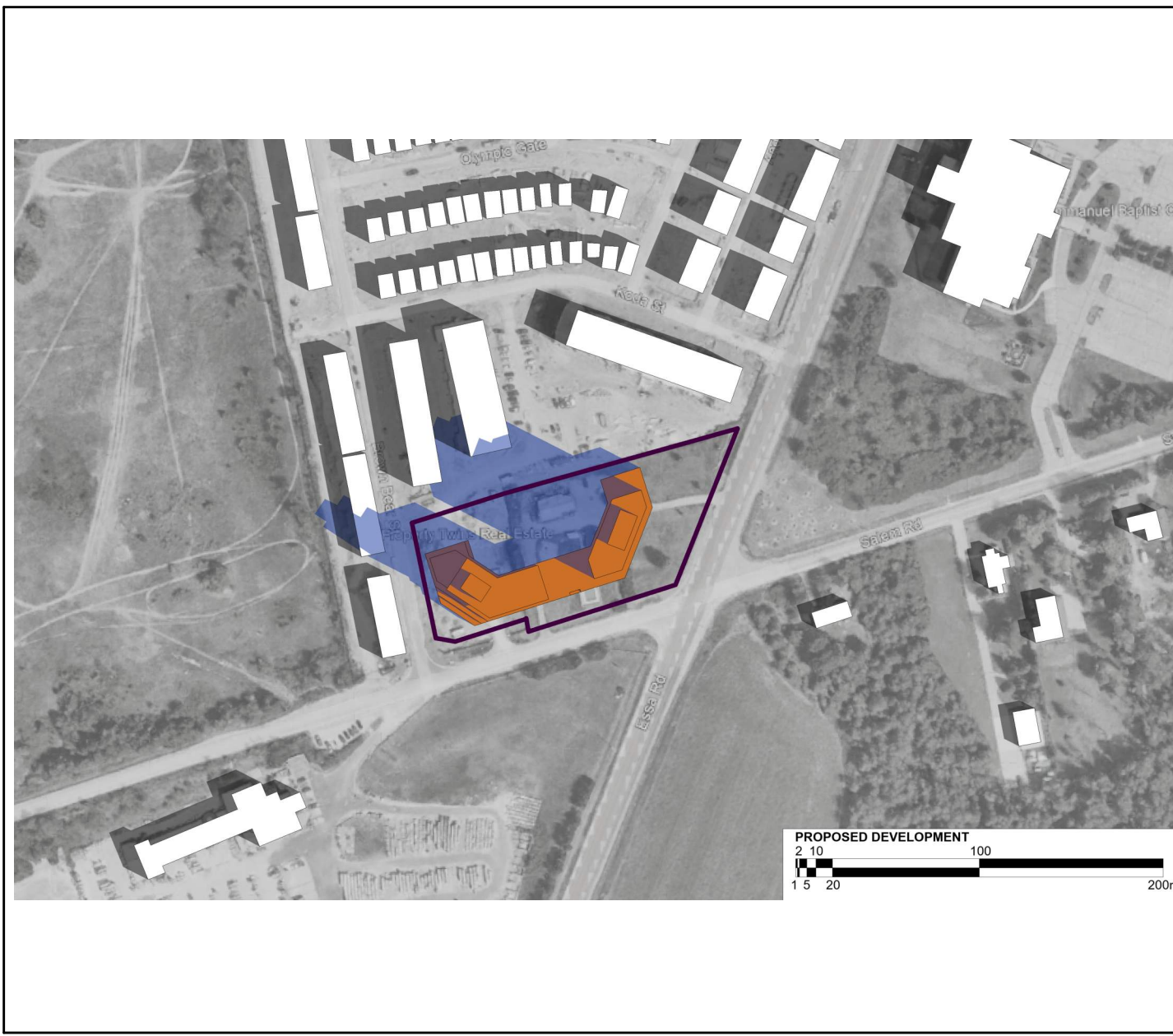


dA5.02



September 21 @ 8:34am
NTS

1
dA5.03



September 21 @ 9:34am
NTS

2
dA5.03



September 21 @ 10:34am
NTS

3
dA5.03



September 21 @ 11:34am
NTS

4
dA5.03



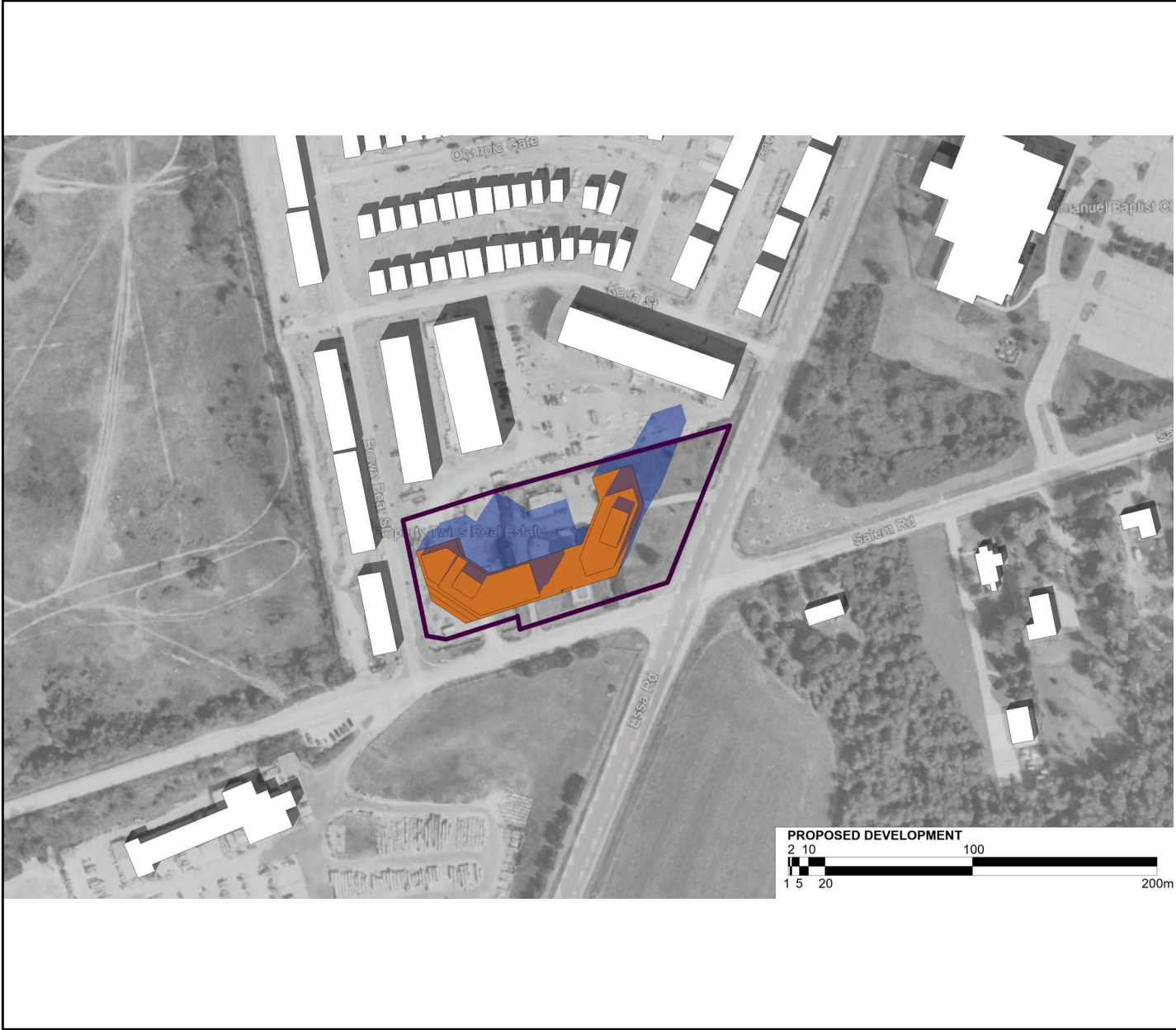
September 21 @ 12:34pm
NTS

5
dA5.03



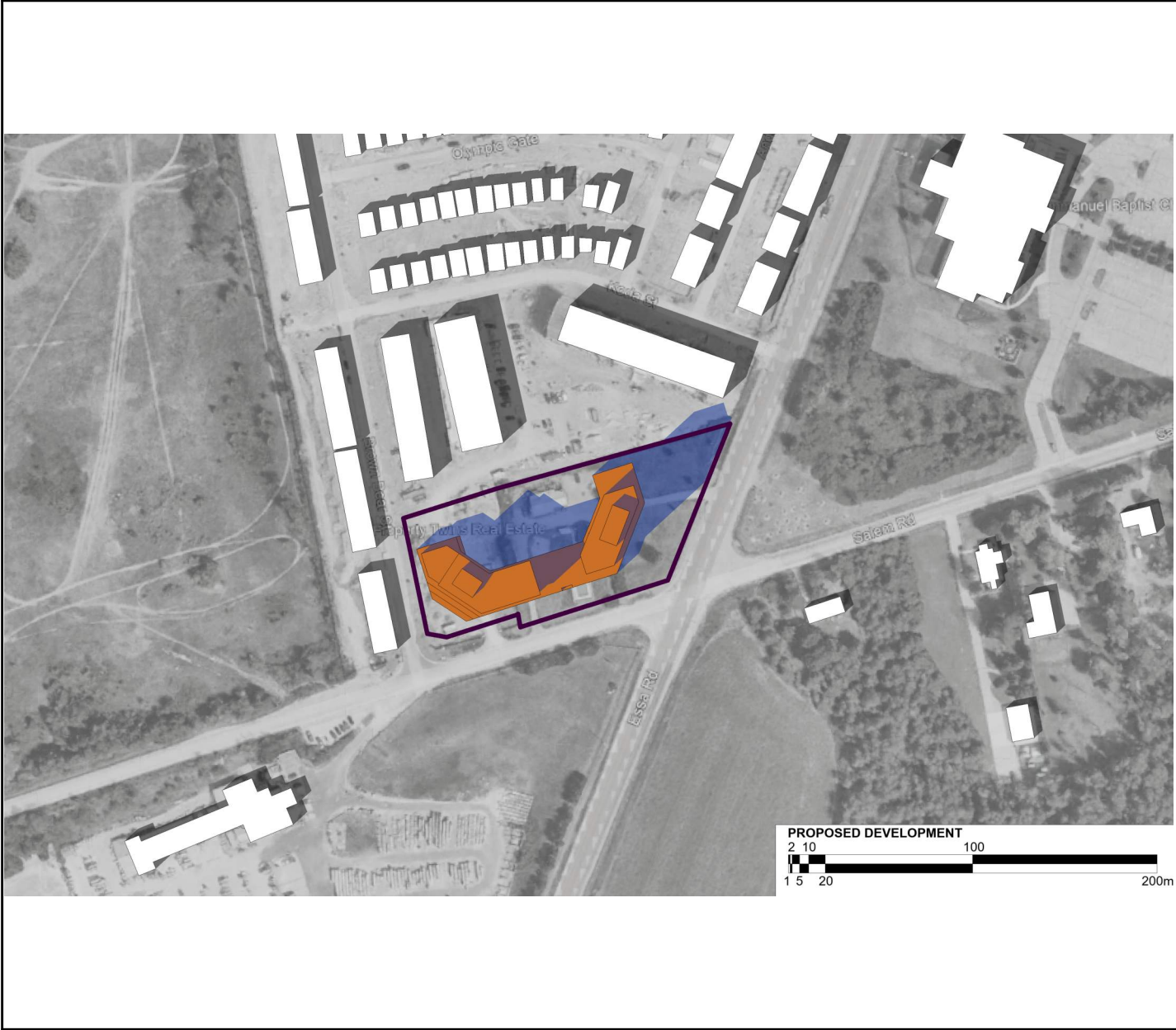
September 21 @ 1:34pm
NTS

6
dA5.03



September 21 @ 2:34pm
NTS

7
dA5.03



September 21 @ 3:34pm
NTS

8
dA5.03



September 21 @ 4:34pm
NTS

9
dA5.03



September 21 @ 5:34pm
NTS

10
dA5.03

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Toronto ON M3J 0H1

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No. :01	Issued For: OPA, ZBA SUBMISSION	Date: Nov. 30, 2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
**SHADOW STUDY -
SEPTEMBER**

Scale:

Drawn by:

D.N

Checked by:

N.D

Project No.:

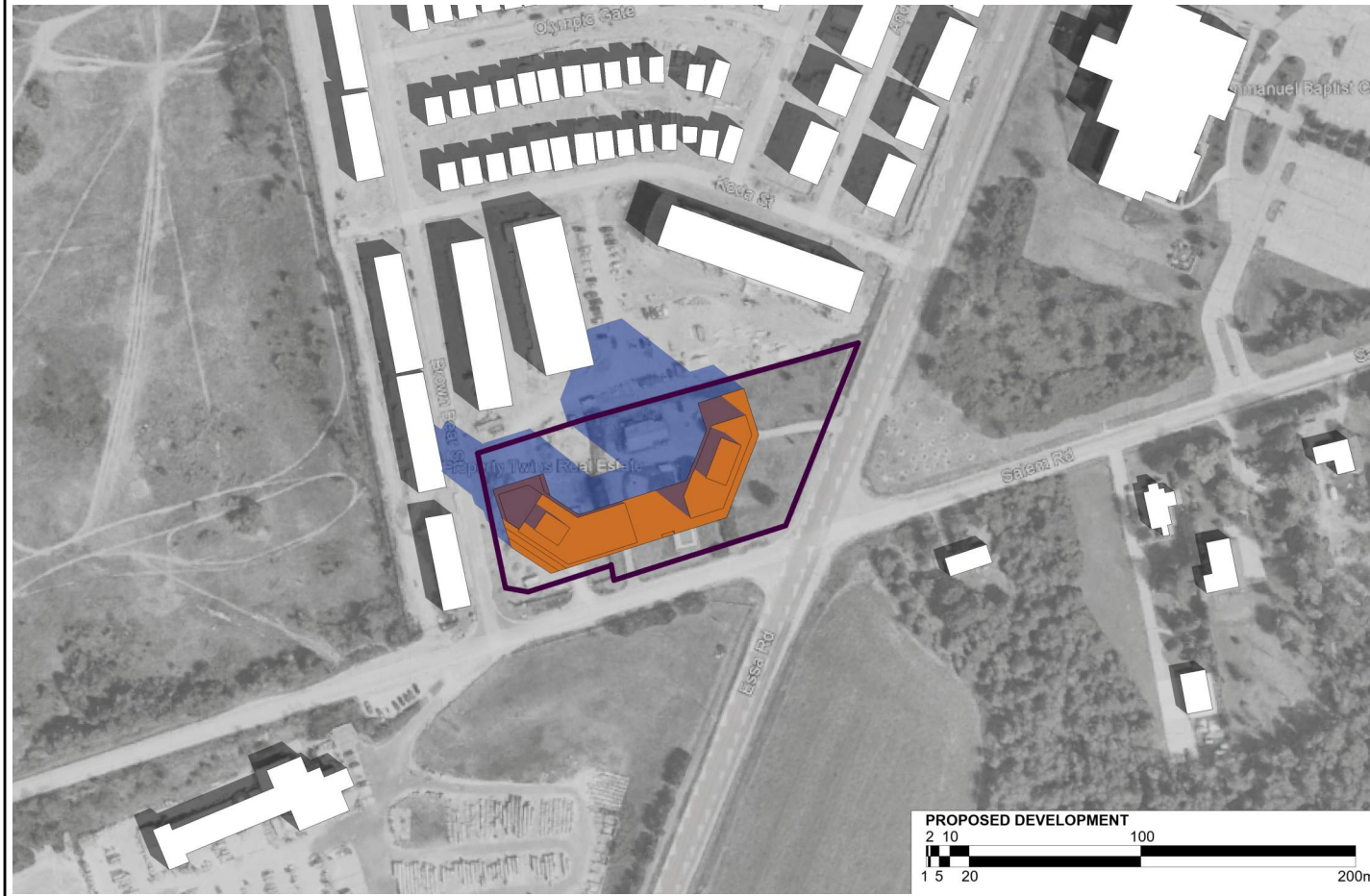
22125

Date:

Jan 04, 2024

Drawing No.:

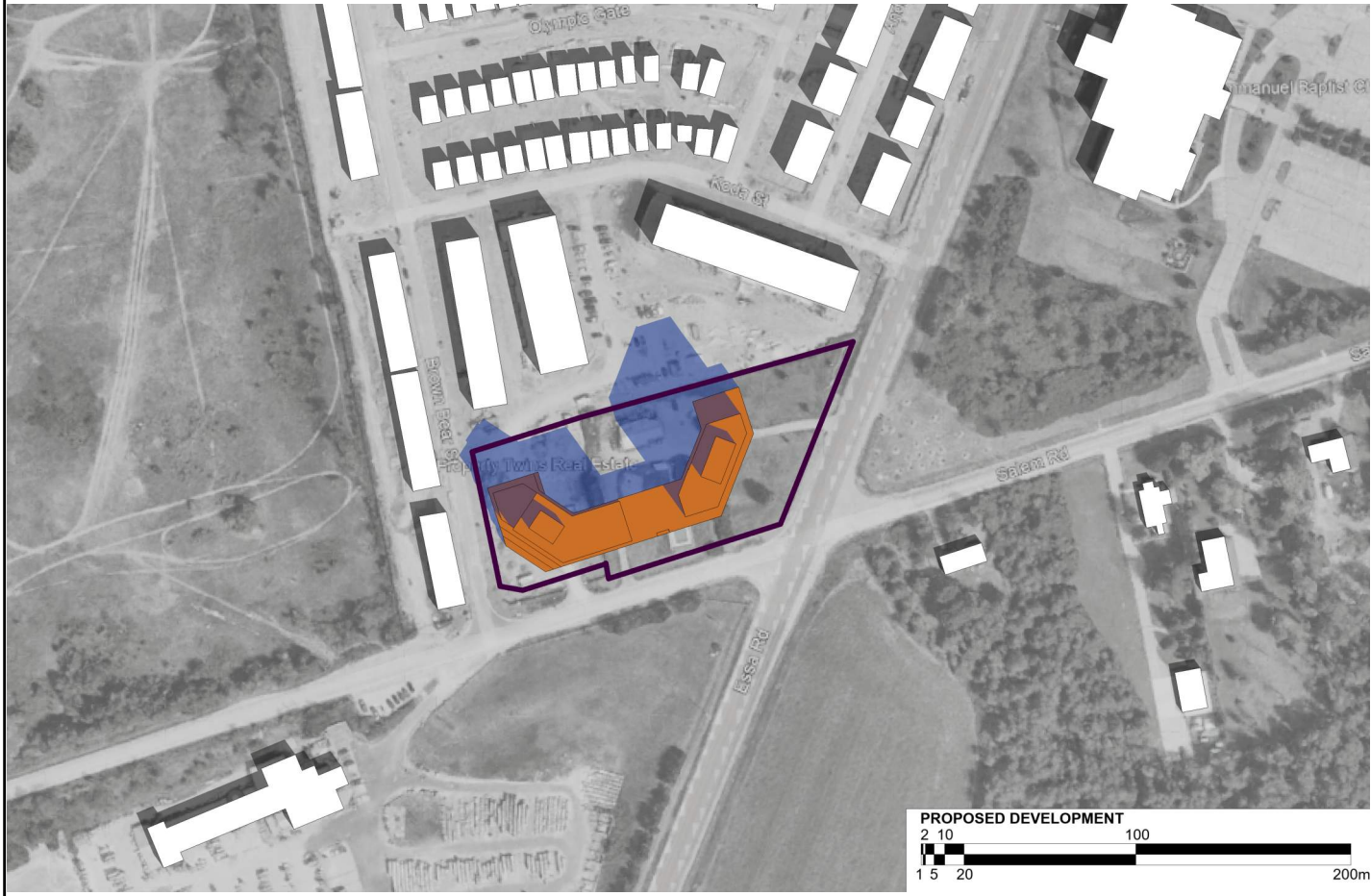
dA5.03



December 21 @ 10:27am

1
dA5.04

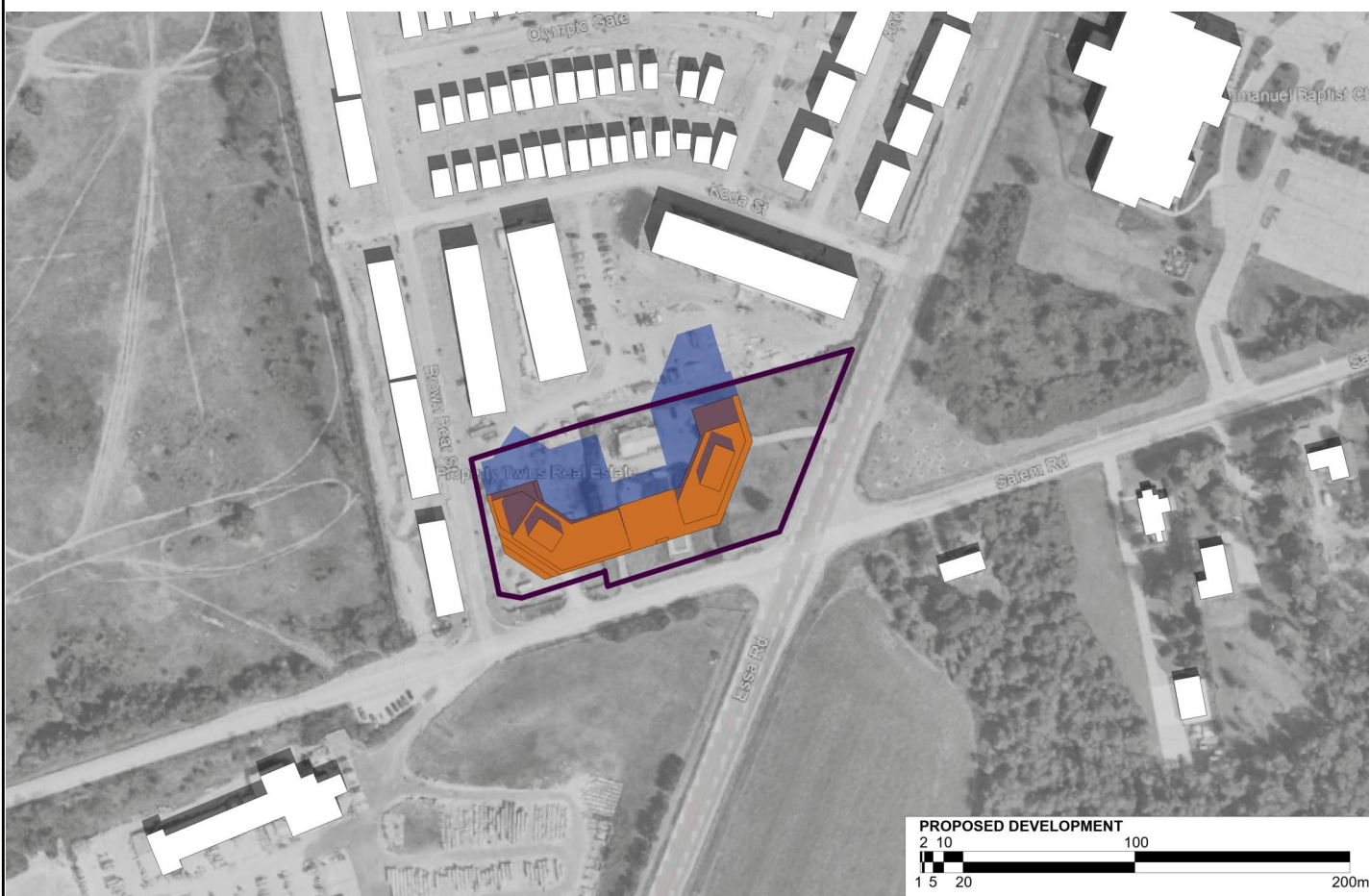
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December 21 @ 11:27am

2
dA5.04

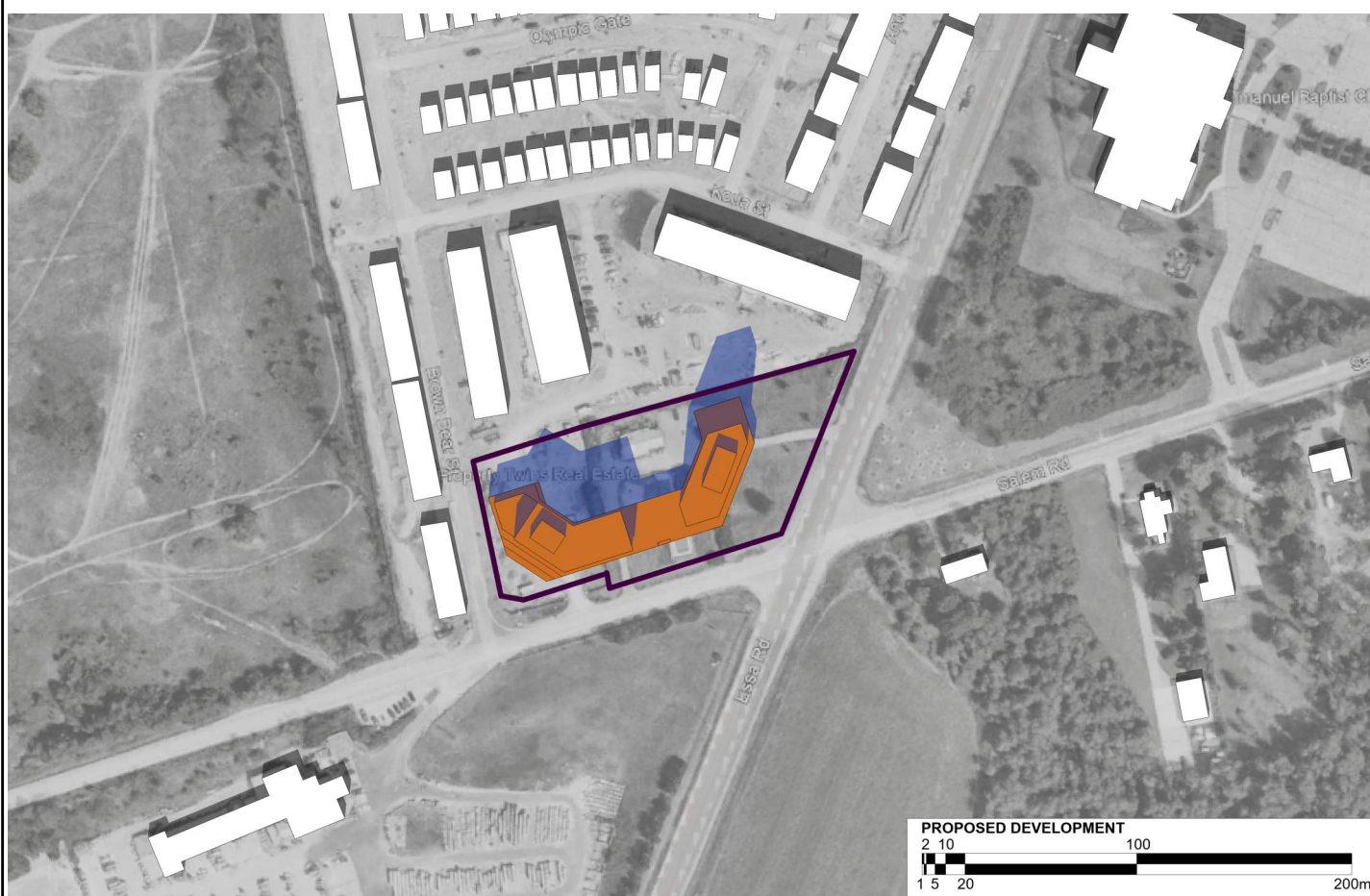
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December 21 @ 12:27pm

3
dA5.04

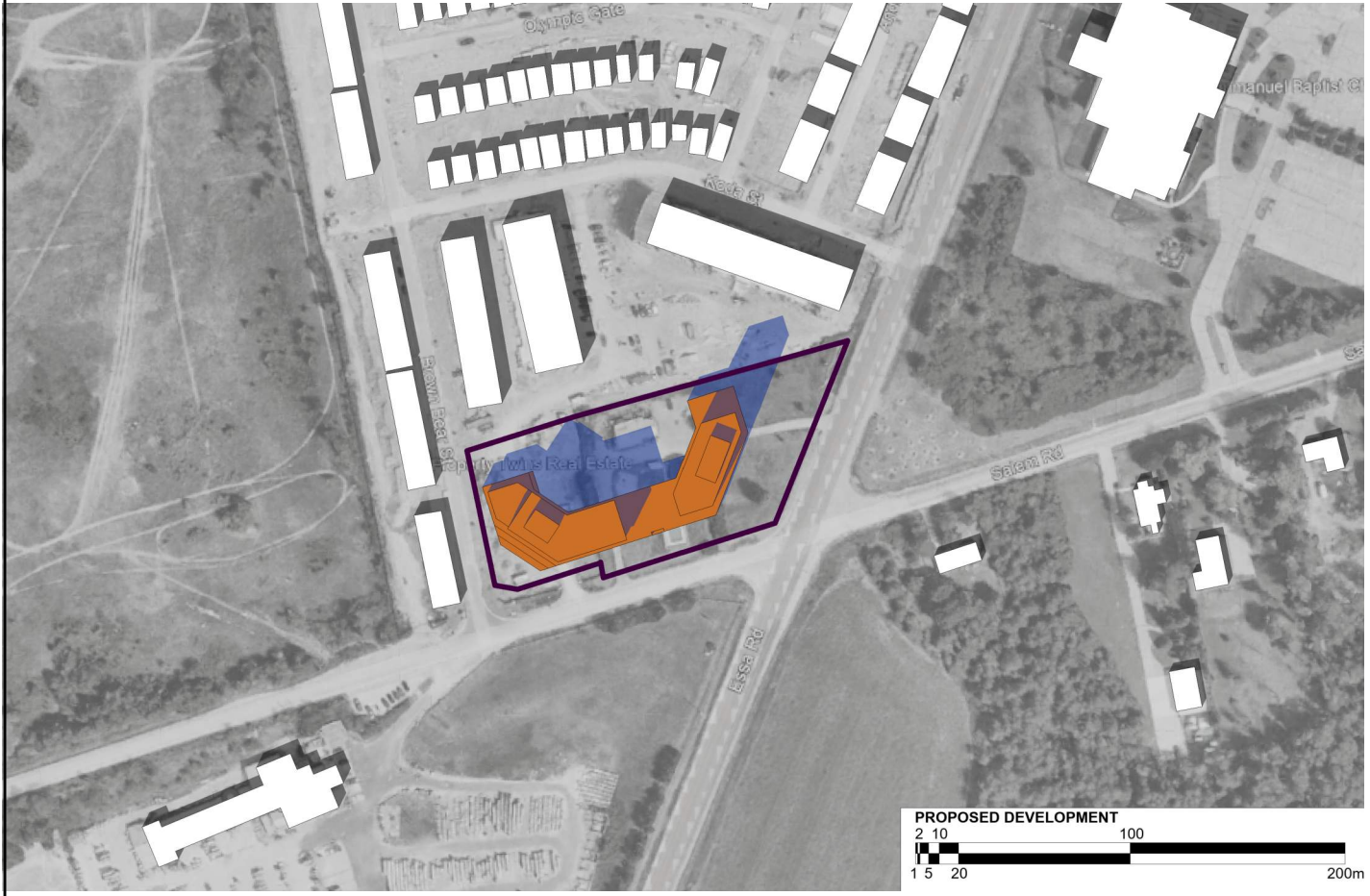
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December 21 @ 1:27pm

4
dA5.04

NTS



December 21 @ 2:27pm

5
dA5.04

NTS



December 21 @ 3:27pm

6
dA5.04

NTS

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No.:01	Issued For:OPA,ZBA SUBMISSION	Date:Nov.30,2022

Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
**SHADOW STUDY -
DECEMBER**

Scale:

Drawn by:

D.N

Checked by:

N.D

Project No.:

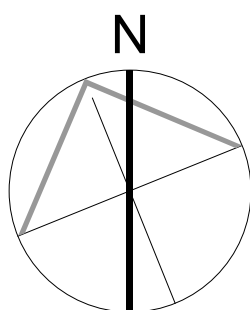
22125

Date:

Jan 04,2024

Drawing No.:

dA5.04





Perspective 3- View from Essa Rd. & Salem Rd. Intersection

2

NTS

dA6.01



Perspective 4

3

NTS

dA6.01



Perspective -Drop Off Area

1

NTS

dA6.01

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Client:
ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:
PERSPECTIVES

Scale:

Drawn by:
D.N
Checked by:
N.D
Project No.:
22125
Date:
Jan 04, 2024
Drawing No.:

dA6.01

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ACE Development

901 Essa Road, BARRIE, ON
Proposed Residential Development

Drawing Title:

PERSPECTIVES

Scale:

Drawn by:

D.N

Checked by:

N.D

Project No.:

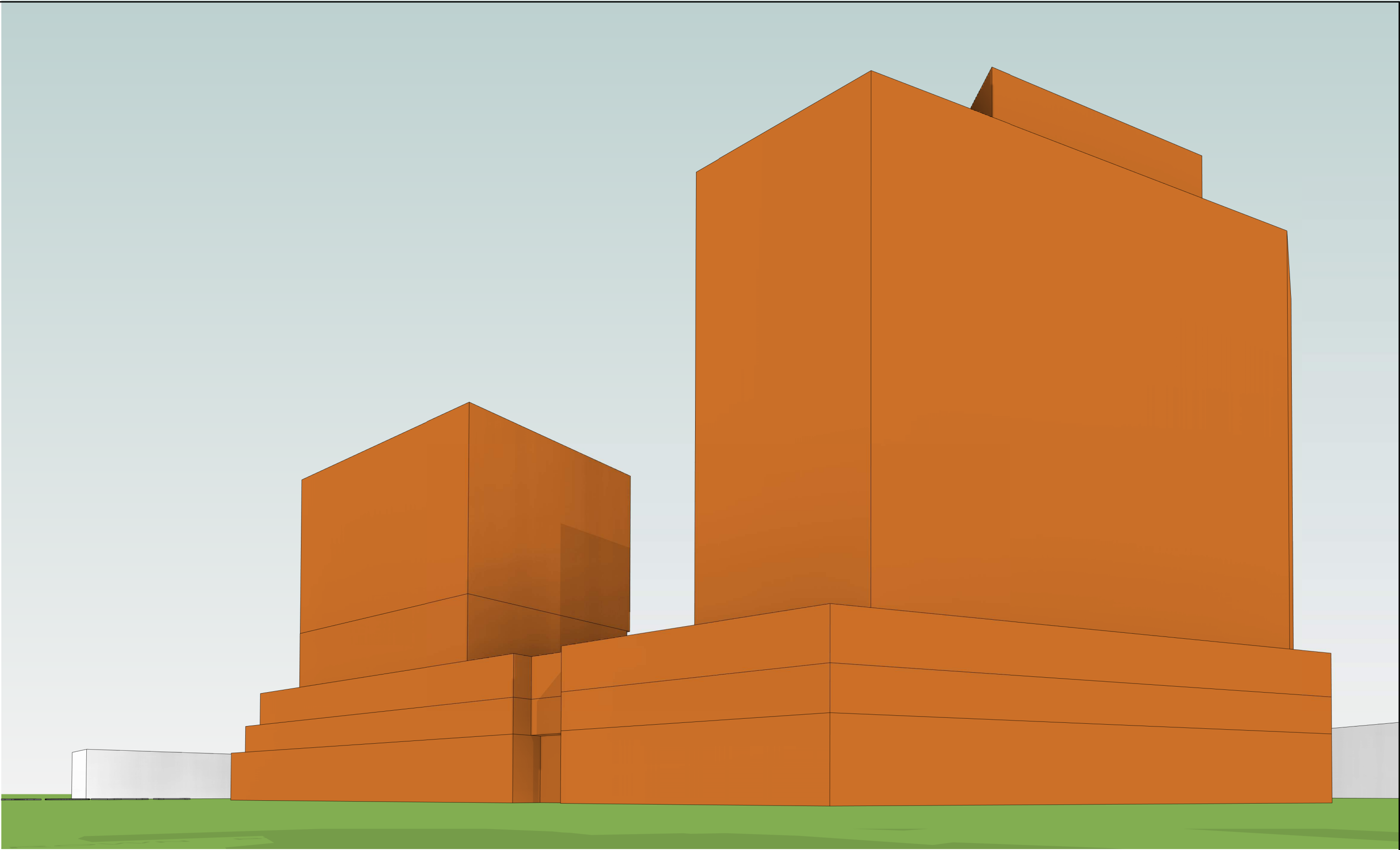
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Date:

Jan 04,2024

Drawing No.:

dA6.02

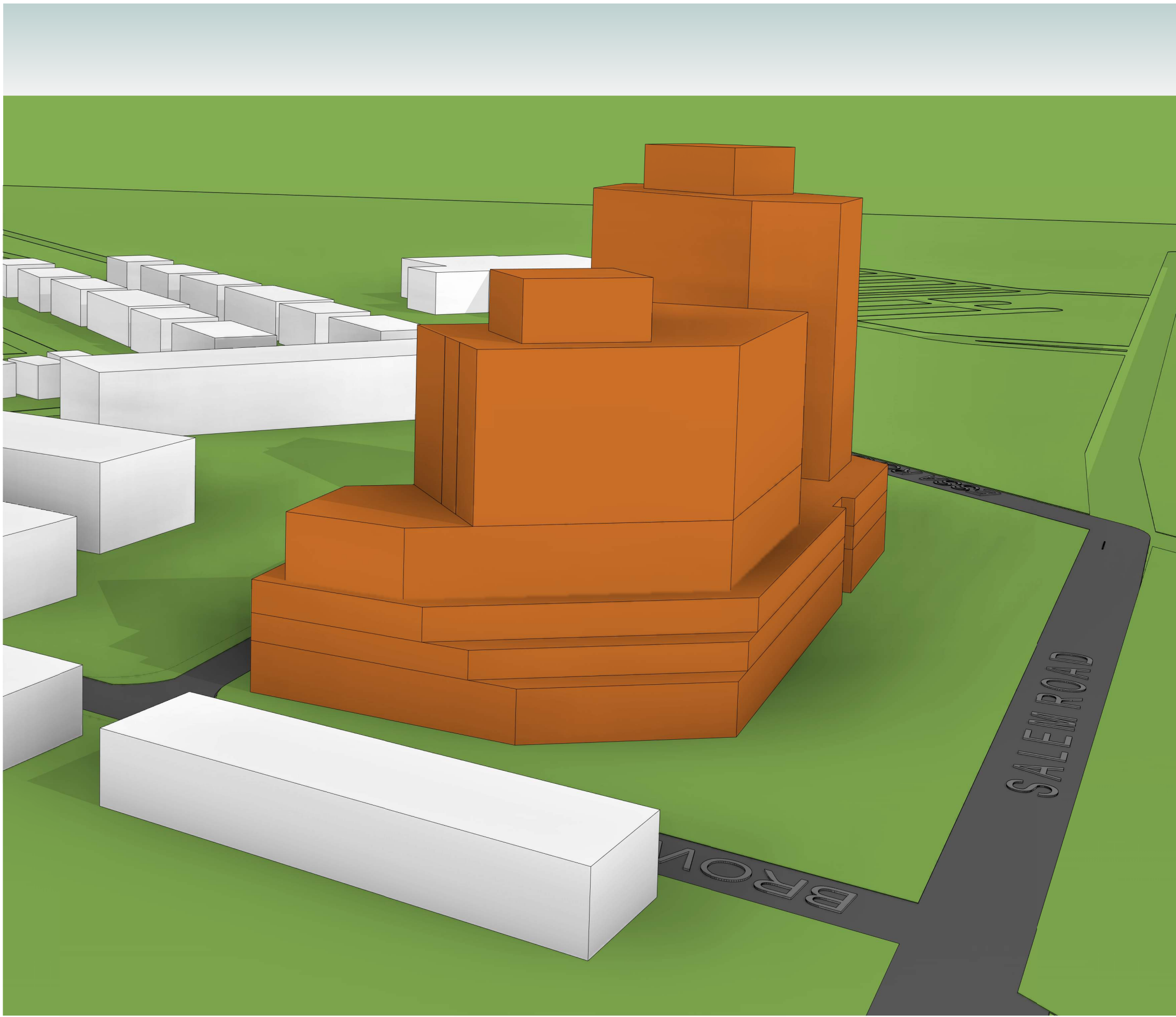


Perspective 3- View from Essa Rd. & Salem Rd. Intersection

NTS

3

dA6.02



Perspective 4-Brown Bear Street & Salem Rd. Intersection

NTS

4

dA6.02



Perspective 1-Angular Plane

NTS

1

dA6.02



Perspective 2-Angular Plane

NTS

2

dA6.02