

828-832 Richmond Street West, City of Toronto

Functional Servicing and Stormwater Management Report

Initial Issue: June 22, 2022 Revised: July 17, 2023 ZBA No.: 22 175863 STE 10 OZ



Prepared for: HM PF (822-838 Richmond) LP

822-838 Richmond Street West, City of Toronto

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1.0 INTRODUCTION

HM PF (822-838 Richmond) LP ("the owner") referred to as HM herein, is proposing the redevelopment of 822-838 Richmond Street West in the City of Toronto.

R.V. Anderson Associates Limited (RVA) has been retained by HM to prepare a Site Servicing and Stage 1 Stormwater Management (SWM) Report in support of a Zoning By-Law Amendment (ZBA) and Official Plan Amendment (OPA) application for the proposed site redevelopment.

The scope of this report specifically includes:

- Identification and review of existing municipal storm, sanitary and water services available for the site;
- Identification of the City of Toronto criteria with respect to sanitary, water and storm servicing including stormwater management criteria for the redevelopment of the site, in accordance with the City of Toronto Wet Weather Flow (WWF) Guideline criteria and targets;
- Estimate water, sanitary and storm demands that will result from the redevelopment;
- Investigation of the capacity of existing municipal watermains and sewers;
- Calculation of allowable post-development peak storm discharge rates;
- Provide a summary of proposed servicing of the site with water, sanitary and storm services; and
- Recommendation and description of proposed stormwater management (SWM) system for the site to address water balance, water quality, and discharge rate targets.

2.0 BACKGROUND

2.1 Existing Conditions

The site is located on the north side of Richmond Street West in the City of Toronto, bound by Lane South Queen West Walnut to the north, Walnut Avenue to the east, Richmond Street West to the south, and residential properties to the west. The 0.1396-hectare site is more generally surrounded by low to mid-rise residential/commercial properties to the north and east, and low to mid-rise residential to the south and west. Refer to Figure 2.1 for the site location.

The site is presently occupied by a three (3) storey commercial building (822 Richmond Street West), and a one (1) storey commercial building (828 Richmond Street West) with surface vehicular parking occupying the remaining site area west of the existing buildings. Vehicular access to the parking lot is provided exclusively off of Richmond Street West.

For the purposes of this application, the existing 3-storey commercial building (822 Richmond Street West) is to remain unchanged in the post-development conditions, and as such it will be taken out of the site area for analysis purposes. The actual site area for analysis purposes is 0.0748 ha.



Figure 2.1 – Site Location

2.2 Proposed Redevelopment

The proposed site redevelopment is comprised of a new eight (8) storey residential building with a basement level, and vehicular parking via car stackers accessible from the laneway north of the site. The ground floor will be occupied by a common entrance for the residential units off of Richmond Street West, indoor and outdoor amenity areas, residential units, and the vehicular car stackers accessible through the laneway at the north of the site.

In addition to the above, there is a 1.17 m proposed laneway conveyance along the north boundary of the site to be conveyed to the City of Toronto. The total area to conveyed to the City is 28 m². As such, the total effective site area is further reduced from 0.075 ha to 0.072 ha for the development.

The building roof and terrace areas will effectively extend to the limits of the property line, apart from landscaped areas at grade along the east and west property limits, and the aforementioned conveyance along the north property line. There will be a ground floor setback on the south side of the site (Richmond Street West frontage) to allow for access to the City's control manholes, and the proposed stormwater management system for the site. This area at grade will be covered by the building overhang above.

Refer to Appendix A for the architectural site plans.

2.3 Background and Resource Information

In preparing this report, the following information was obtained and reviewed:

- Toronto Sewer and Water Atlas Maps of surrounding underground infrastructure, dated January 9, 2010;
- Hydrant Flow Tests prepared by Lozzi Aqua Check dated June 6, 2021;
- City As-built Plan and Profile Drawings:
 - o Richmond Street West Watermain Drawing WE-254
 - o Richmond Street West Storm Sewer Drawing R-267
 - Walnut Avenue Storm Sewer Drawing W-290
 - Lane S Queen W Walnut Drawing L-2969
- A site visit undertaken by R.V. Anderson Associates Limited staff on June 18, 2021. The site visit included a general examination of the existing site to observe surface features that are representative of underground servicing and current surface drainage, and a supervised visit of the existing buildings underground mechanical rooms. Photos were taken of the entire site and the perimeter in order to document the pre-development conditions;
- Combined Sewer Video Inspection of 150 mm and 200 mm Ø Combined Sewer, prepared by Aquaflow Technology, dated July 9, 2021.
- Topographic Plan of Survey of All of Lots 13, 14 and 15 and Part of Lane prepared by R. Avis Surveying Inc., signed October 22, 2021;

- Hydrogeological Investigation prepared by Palmer Environmental Consulting Group, dated July 8, 2022 and
- Site plan and project statistics prepared by Atelier Barda.

3.0 SERVICING INVESTIGATION

Information with respect to existing municipal services and utilities was determined from PUCC drawings, record plan and profile drawings, sewer and water atlas maps obtained from the City of Toronto and a site visit undertaken in June 2021.

The following sections address water, sanitary, and storm related servicing related to the redevelopment of the site.

3.1 Water Servicing

3.1.1 Water Servicing Criteria

The City of Toronto's Design Criteria for Sewers and Watermains (January 2021) was used to analyze the water demand from the proposed development. The City criteria are generally summarized as follows:

- Water supply systems should be designed to satisfy the greater of maximum day demand plus fire flow or peak hour demand;
- Average domestic water demands of 190 litres per capita per day for high-rise or low-rise apartment buildings and condominiums with greater than six (6) units; and
- Maximum day and peak hour factors for apartments are 1.30 and 2.50 respectively.

3.1.2 Existing Water Servicing

Based on City records, there is a 150 mm Ø watermain located along the north side of Richmond Street West, fronting the site. The local distribution network in the area is primarily 150 mm Ø in size and interconnected with a 300 mm Ø watermain north of the site within the Queen Street West right of way (ROW), which then connects to a larger 600 mm Ø feeder-main at Niagara Street and Richmond Street West.

There is an existing fire hydrant located within the south boulevard of the Richmond Street West ROW, where the street intersects Stanley Terrace, 16 m \pm south of the site. Additionally, there is a second existing fire hydrant 30 m \pm northeast of the site on the

west side of the Walnut Avenue ROW. Both hydrants in front of the site can provide coverage of the entire site within 90 m.

Based on a site visit undertaken in June 2021, a domestic water service enters the building from Richmond Street West at approximately the centre of the single storey building located at 828 Richmond Street West.

3.1.3 Proposed Water Servicing

3.1.3.1 Domestic Water Demand Analysis

The total estimated average daily flow rates, maximum day, and peak demand rates required for the proposed development are estimated to be as follows:

	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)
Residential	0.11	0.14	0.27
TOTAL	0.11	0.14	0.27

Table 3.1 – Estimated Water Demand

Refer to Appendix B for water demand analysis calculations.

3.1.3.2 Fire Flow Analysis

In accordance with the Fire Underwriters Survey (FUS), reiterated in the City of Toronto Design Criteria for Sewers and Watermains, fire flows shall not be less than 80 L/s (4,800 L/min) for a 2-hour duration in addition to maximum daily domestic demand with a residual pressure of not less than 140 kPa (20 psi).

Calculations using the Fire Underwriters Survey (FUS) indicate a maximum required fire flow of 130.00 L/s (7,800 L/min) for the entire development (based on fire resistive construction with a sprinkler system designed to NFPA).

Refer to Appendix B for fire flow analysis calculations.

As described in Section 3.1.1, the water supply system should be designed to satisfy the greater of peak hour demand or maximum day demand plus fire flow. Therefore, the maximum day demand plus fire flow rate (i.e., 0.14 L/s + 130.00 L/s = 130.14 L/s (7808.6 L/min)) is the governing requirement.

3.1.3.3 Proposed Watermain Service Connections

In accordance with the City of Toronto Municipal Watermain Code new domestic water services are required for each property and all existing services must be removed. It is currently envisioned that there will be one (1) domestic water service for the proposed building. Since the building configuration is comprised of a single mid-rise structure, a single water service is in accordance with the City's Servicing Requirements for New Developments.

A fire service will also be required for the building sprinkler system. The OBC requires two fire services to service a building that is 84 m or higher in height, which would not be applicable here.

The new 150 mm \emptyset fire water services will be connected to the existing 150 mm \emptyset watermain located on the north side of the Richmond Street West ROW. Approximately 2.0 m in front of the property line, a 100 mm \emptyset PVC domestic water service will be branched off of the 150 mm \emptyset fire services in an "h" configuration. This configuration will provide the required one (1) domestic water service connections and one (1) fire service connection.

Refer to Appendix A for the Basement Level Plan, and Appendix E for the Conceptual Servicing Plan which show the proposed water servicing configuration.

3.1.4 Capacity of Existing Watermain System

A hydrant flow test was performed by Lozzi Aqua Check on June 6, 2021, on the flow hydrant fronting 828 Richmond Street West, on the south side of the Richmond Street West ROW. The hydrant test indicates that the existing 150 mm Ø watermain is capable of providing 209.8 L/s (3,324 US GPM) at 20 psi. Refer to Appendix B for the hydrant flow test results.

As the capacity of the municipal watermain is greater than the estimated maximum domestic and fire demand, outlined in Section 3.1.3.2, it is concluded that there is sufficient capacity to support the proposed development.

3.2 Foundation Drainage

A Hydrogeological Investigation prepared by Palmer, dated July 8, 2022, has been completed for the site. This report indicates that the groundwater table is approximately 3.2 to 9.6m below grade. Based on samples taken and analyzed for water quality, the groundwater is suitable for discharge to the sanitary sewer but not to storm (i.e. Municipal Code Chapter 681, Table 1 and Table 2 respectively). Therefore, pre-

treatment would be required prior to discharge into the storm sewer system. However, discharging into the sanitary sewer system would not require pre-treatment.

The maximum groundwater level observed during the investigation was 3.23 m below ground surface (mbgs). Accounting for City of Toronto fluctuation allowance of 1.3m, the maximum anticipated groundwater level is 1.93 mbgs, higher than the foundation depth of 2.62 mbgs. The current City Sewer Code and Foundation Drainage Policy prohibits the discharge of long-term foundation drainage from within the saturated zone of the ground, to a municipal sewer, for new applications submitted after January 2022. As such, it is currently envisioned that there will be no permanent foundation drainage system proposed by the builder/developer, and the foundation shall be of watertight construction. No long-term PWDA application will be proposed to be submitted in support of the development application.

Regarding short-term discharge for the development, the Palmer's Hydrogeological Investigation estimates a short-term average discharge rate of 11,576 L/day (0.13 L/s) based on the assumption of a one-level basement of 2.6m below ground with foundations, and with a safety factor of 2, the discharge rate is estimated to be 23,151 L/day (0.27 L/s). Accounting for a 25mm storm event over the excavation footprint would result in approximately 20,150 L/day (0.23 L/s), the total short term dewatering rate is estimated to be 43,301 L/day (0.50 L/s). Based on the samples taken and analyzed for water quality, the groundwater is suitable for discharge into sanitary/combined sewer system, but exceeds parameters for storm sewer system (Chapter 681, Table 1 and Table 2 respectively). As such, the short-term discharge will be directed to the combined sewer on Richmond Street West.

The short-term peak dewatering flow rate must be limited to a maximum of allowable flow rate to the combined sewer for the entire site (6.81 L/s) in order to comply with the combined sewer capacity analysis discussed in Section 3.3.4 of this report.

To facilitate construction dewatering, a short-term Private Water Discharge Agreement (PWDA) application will be submitted to the Environmental Monitoring & Protection (EM&P) Unit of Toronto during construction.

3.3 Sanitary Servicing

3.3.1 Sanitary Servicing Criteria

The City of Toronto's Design Criteria for Sewers and Watermains (January 2021) was used to analyze the sanitary demand from the proposed development. The City criteria are generally summarized as follows:

- Average domestic residential sewage flows of 450 litres per capita per day for design flows for new or infill developments;
- The peak domestic sewage flow to be calculated by utilizing a calculated Harmon Peaking Factor of [M = 1 + 14 / (4+P^{0.5})];
- Average commercial/industrial/institutional flows of 180,000 litres per floor hectare per day for new or infill developments (peaking factor included in average flow);
- A dry weather peak infiltration allowance of 0.26 L/s/ha is required for all sewers; and
- Combined sewer flows will include dry weather domestic flows plus the runoff from a 2-year storm event.

3.3.2 Existing Sanitary Servicing

A review of the City's Sewer Atlas Mapping indicates that the site is located in an area of Toronto that was originally serviced by combined sewer systems, that over the course of time has been progressively separated through the construction of newer storm sewers. Based on these records and other City record drawings, a 300 mm Ø combined sewer is located within the Richmond Street West ROW fronting the site. This combined sewer system is located in the north side of the ROW, and flows west on Richmond Street West, prior to discharging into a 450 mm Ø combined sewer within Strachan Avenue.

With respect to existing sanitary service connections, a site visit undertaken in June 2021, along with dye-test completed by Aquaflow Technology in July 2021 (available in Appendix C) and Subsurface Utility Engineering (SUE) Investigation by Telecon in March 2022 established that two (2) sewer service laterals exit the existing single storey building along the Richmond Street West frontage of the site, and connect to the aforementioned 300 mm Ø combined sewer. Based on the CCTV and field investigations, the 150mm PVC connection was used to convey sanitary, and the 200mm PVC connection was used to convey storm drainage from the building, respectively.

The peak sanitary discharge rate from the existing site is estimated to be 0.08 L/s (refer to Appendix C for calculations).

3.3.3 Proposed Sanitary Servicing

3.3.3.1 Sanitary Demand Analysis

Based on a per capita demand of 240 L/cap/day, the proposed site redevelopment will result in an estimated total peak sanitary flow rate of 0.62 L/s, which represents an estimated increase of 0.54 L/s over the existing sanitary flow rate. The estimated breakdown of peak sanitary discharge from the redevelopment is as follows:

	Sanitary Flow (L/s) @ 240 L/c/d
Residential	0.60
Infiltration Allowance	0.02
TOTAL	0.62

Table 3.2 – Estimated Sanitary Demand

Refer to Appendix C for sanitary servicing analysis calculations.

3.3.3.2 Proposed Sanitary Service Connection

In accordance with the City of Toronto sewer code, new sanitary services are required for each property and all existing services must be removed. It is currently envisioned that there will be one (1) sanitary service connection for the building. In a similar manner to the proposed single domestic water service, a single sanitary service is in accordance with the City's Servicing Requirements for New Developments.

In accordance with the City Sewer Code, a sanitary control maintenance hole (MH) will be provided near the property line for City sampling purposes. This MH will be incorporated into the basement structure where the basement extends out from the building at grade along the Richmond Street West frontage.

The single sanitary service is proposed to be 150 mm Ø in size and will connect to the control MH outlined above on the upstream end and the 300 mm Ø municipal combined sewer system on the downstream end. A gravity connection to the 300 mm Ø Richmond Street West combined sewer is physically possible based on a review of the City's drawing information. Further subsurface utility investigating may be undertaken to review the location and depths of buried utilities and the City watermain and combined sewer systems. This would identify whether any relocations will be required to facilitate the connections. Refer to Appendix E for the Conceptual Servicing Plan which show the proposed sanitary servicing configuration.

The capacity of the receiving combined sewer is discussed in section 3.3.4 of this report.

3.3.4 Capacity of Existing Combined Sewer System

As indicated in Section 3.3.3.1, the proposed redevelopment will result in an increase in sanitary demand on the municipal combined sewer. Based on 240 L/c/d, this increase is estimated to be 0.54 L/s. The City requires an assessment of the impact of the development on their sewer system, in accordance with City of Toronto *Sewer Capacity Assessment Guidelines* dated July 2021. In addition, where combined sewers are involved, the City of Toronto requires the MOECC Procedure F-5-5 be reviewed for compliance.

Procedure F-5-5 outlines the requirements for determining treatment requirements for municipal and private combined sewers. With respect to new sanitary connections to combined sewer systems, the procedure requires that where a system is deficient, additional development be curtailed. In the City of Toronto where combined sewer systems exist without any sewer separation through the existence of dedicated storm sewers, combined sewer systems can often be considered deficient. As a result, in the absence of a combined sewer overflow study, to ensure compliance with procedure F-5-5 it must be demonstrated that no additional flow is being introduced into the municipal combined sewer system as part of a redevelopment. Additionally, as per Section 2.1 of the City's *Sewer Capacity Assessment Guidelines*, due to no increase in flows in the post-development condition it can be reasonably concluded that there is adequate local system capacity, and the Guidelines are satisfied.

In consideration of the above, while the redevelopment of the site will result in an increase in sanitary demand, the implementation of stormwater management as part of the redevelopment will allow the site to be controlled to offset the additional sanitary demand.

Therefore, the assessment of the existing combined sewer system capacity will be based on a net zero or net negative impact approach in which the redevelopment site will employ measures to mitigate any additional discharge to the combined sewer from the existing condition. The assessment is conducted based on Table 2 of Sewer Capacity Assessment Guideline, with residential average wastewater flow of 240 L/c/d plus peak factor, and the result is summarized in the following table:

	Pre- Development (L/s)	Post-Development (Residential Sanitary @240L/c/d) (L/s)	Difference (Residential Sanitary @240L/c/d) (L/s)
2 Year Storm Flow (L/S)	6.81	5.53*	-1.28
Sanitary Flow (L/s)	0.08	0.62	0.54
TOTAL (L/s)	6.89	6.89	0.00

Table 3.3 – Estimated Peak Flow Directed to Combined Sewer

*Peak storm flow of 5.53 L/s is based on the peak discharge rate of vortex orifice control device Hydro Brake Optimum. Refer to Section 4.0

Table 3.3 demonstrates that as a result of controlling the peak storm discharge from the site to comply with the WWFM guidelines, there is possibility for a net reduction to the total storm and sanitary discharge to the Richmond Street combined system in the post-development condition.

The net zero approach in peak flow to the Richmond Street West combined sewer reasonably addresses the requirements of Procedure F-5-5 and the City's Sewer Capacity Assessment Guidelines.

3.4 Storm Servicing

3.4.1 Existing Storm Servicing

There are no municipal storm sewers along the frontage of the site. As indicated in Section 3.3.2 of this report, only a municipal combined sewer exists across the frontage of the site within the Richmond Street West ROW, up to approximately midpoint of the subject site. There is however a 300 mm Ø municipal storm sewer within the laneway at the back of the site, which drains east to the 375 mm Ø municipal storm sewer flowing south on Walnut Avenue, prior to continuing east along Richmond Street West.

With respect to existing storm service connections, a site visit undertaken in June 2021 as well as a CCTV Investigation completed by Aquaflow Technology in July 2021 (available in Appendix C) established that two (2) sewer service laterals exit the existing single storey building along the Richmond Street West frontage of the site and connect to the 300 mm Ø combined sewer within Richmond Street West. It is reasonable to assume that one of these connections conveys storm collected from the drains visible on the buildings roof. Additionally, based on visual observation and a review of the topographic survey, the surface parking lot occupying the west portion of the site drains overland onto Richmond Street West. As no catchbasins exist immediately in front of the site, flow is directed overland east where it is ultimately captured by street catchbasins

located at the Richmond Street West and Walnut Avenue intersection. These catchbasins are connected to the aforementioned storm sewer on Richmond Street West, east of the site.

Using the Rational Method Equation Q = CiA, the existing 2-year storm event existing peak storm discharge rates from the site can be calculated as follows:

$$Q_{2yr Building} = 2.78 x CiA = 2.78 x 0.90 x 88.20 mm/hr x 0.0309 ha = 6.81 L/s$$

 $Q_{2yr Parking} = 2.78 x CiA = 2.78 x 0.90 x 88.20 mm/hr x 0.0440 ha = 9.70 L/s$

In summary 6.81 L/s of storm flow is directed from the existing building to the municipal combined sewer on Richmond Street West, and 9.70 L/s is directed from the existing parking lot to the storm sewer at Walnut Avenue and Richmond Street West during a 2-year storm event. Refer to Figure D.1 in Appendix D for the existing drainage plan.

3.4.2 Proposed Storm Servicing

3.4.2.1 Storm Demand Analysis

Based on the WWFM Guidelines, the allowed peak discharge from the site is to be based on controlling the discharge rate to the existing condition with a maximum runoff coefficient of C=0.5 or the existing capacity of the receiving sewer. Since the existing site is 100% impervious, a runoff coefficient of C=0.5 would therefore apply to the site and the allowed peak discharge rate from the redeveloped site can be calculated as follows:

$$Q_{allowable} = 2.78 \ x \ CiA = 2.78 \ x \ 0.50 \ x \ 88.20 \ mm/hr \ x \ 0.0721 \ ha = 8.83 \ L/s$$

In reference to Section 3.3.4, although the allowable release rate based on the WWFM Guidelines is 8.83 L/s for the site, the capacity of the municipal combined sewer fronting the site must also be considered. As can be seen in Table 3.3 the implementation of SWM control measured will inherently result in a proposed storm discharge rate of 5.53 L/s, which is less than or, at worst, equal to the existing peak discharge rate. Therefore, it can be concluded that redevelopment of the site will not have a negative impact on the City's storm sewer system.

3.4.2.2 Proposed Storm Service Connection

It is noted that the City Municipal Code, Chapter 681 generally prohibits a storm connection from a site to the municipal sewer. However, in the case of site developments other than single family residential buildings, a storm service connection is required to meet WWFM Guidelines and implement the required SWM plan. The SWM plan serves as a request through the City of Toronto for a storm service connection and exemption from the associated requirements in the Sewer Code.

As required by the City municipal code with respect to sewers, a new storm service connection will be required, and the existing service connection will be required to be removed. Additionally, in accordance with the City Sewer Code, a storm control MH will be provided near the property line for City sampling purposes. This MH will be incorporated into the basement structure where the basement extends out from the finished portion of the above ground building. Refer to Appendix A for the Basement Level Plan which shows the proposed location for the MH.

A single 150 mm Ø storm sewer service connection is proposed for the site. A gravity connection to the 300 mm Ø combined sewer is physically possible based on a review of the City's drawing information. It is currently proposed to connect the storm service directly to the existing combined MH fronting the site, in a similar condition to the existing conditions. However, further subsurface utility investigating may be undertaken to review the location and depths of buried utilities and the City watermain and combined sewer systems. Refer to Appendix E for the Conceptual Servicing Plan which show the proposed sanitary servicing configuration.

The capacity of the receiving storm sewer is discussed in section 3.3.4 of this report.

The storm service connection will convey controlled drainage from the on-site SWM system that will be employed to meet the City's stormwater discharge requirements. A detailed (Stage 2) SWM Plan will be prepared to support the Site Plan Approval (SPA) application for the proposed development. The general SWM plan concept is presented in section 4.0 of this report.

3.5 Utilities

It is anticipated that Richmond Street West will contain the necessary utilities associated with electrical power supply, street lighting, communications, and gas to service the proposed site redevelopment. PUCC drawing information for the roadways fronting the site and the results of the subsurface utility engineering investigation indicate the presence of gas, hydro, and Bell. This information is reflected in the Conceptual Site Servicing Plan in Appendix E of the report. As such, the provision of gas, hydro and communications services for the proposed redevelopment are not anticipated to be a concern.

4.0 CONCEPTUAL STORMWATER MANAGEMENT PLAN

As outlined in Section 2.2. the configuration of the proposed development will effectively extend to the limits of the property line, apart from landscaped areas at grade along the east and west property limits, and the land conveyance to the City along the north property line. The roof will be comprised of mechanical roofs, and balconies/terraces.

With respect to the area designated as laneway conveyance to the City, this area will become public right-of-way and accordingly drain uncontrolled to the north of the site without a dedicated stormwater management plan.

With respect to the site, in order to meet the peak discharge rate requirements of the City's WWFM Guidelines, a stormwater detention tank of 38.7m³ in volume will be incorporated into the building basement to control the 100-year post development peak discharge rate of the site to the post development rate outlined in Section 3.3.4. The tank will be located along the Richmond Street West frontage of the site, with access at grade where the ground floor of the building is setback from the property line at grade. The tank access will be provided through a grated manhole cover so that it will also serve as an emergency spillover to the roadway during storm events where the capacity of the tank is exceeded (i.e., events greater than the 100-year design storm). Additionally, as the required peak storm discharge from the site is a relatively low rate of flow, a conventional orifice plate or tube would result in a diameter that would be smaller than generally accepted within the City of Toronto (less than 75mm). Consequently, a vortex orifice control device has been proposed to meet the site requirements. This type of flow restrictor will allow for a larger effective opening which will reduce the potential for clogging. A preliminary sizing of the vortex unit has been provided in Appendix D of this report, as well as a preliminary Visual Otthymo model outlining the required volume for the site.

With respect to stormwater quality, green roofs and conventional flat ballasted roofs are generally considered to inherently meet the City's water quality targets. Additionally, the landscaped areas at grade are enclosed on all four sides resulting in no vehicular loading being possible within these areas, and as a result these areas will be considered to inherently meet the City's water quality targets in the same manner as a green roof above grade. As the site is effectively comprised entirely of roof area and inherently clean areas at grade, the City's total suspended solids (TSS) water quality target minimum of 80 % will be achieved. This information is summarized in Table 4.1 below.

Directed to/Catchmer	nt Surface	Area (m²)	% Area of Catchment	Effective TSS Removal (%)	Weighted TSS Removal (%)
	Green Roof	179	24.83	80.00	19.9
	Amenity at Grade	105	14.56	80.00	11.7
SWM Tank	Conventional Roof	416	57.70	80.00	46.2
SVVIVI TATIK	Pervious at Grade	0	0.00	80.00	0.0
	Impervious at Grade	21	2.91	80.00	2.3
	Subtotal	721	100.0%		80.0

Table 4.1 – Proposed Site Areas and TSS Removal Targets

With respect to the City's water balance criteria, a rainwater harvesting cistern of 2 m³ in volume will be provided below the stormwater detention tank. As the runoff directed to this tank will be entirely from relatively "clean" surfaces, separation between the rainwater harvesting cistern and the stormwater detention tank is not warranted and the two requirements will be combined in a single rainwater harvesting/detention SWM tank. The volume located above the gravity draining storm service connection from the SWM tank will serve as the detention storage required for discharge rate control and the volume of the SWM tank located below the gravity outlet will serve the volume requirements for rainwater harvesting. The SWM tank will discharge through an orifice upstream of the storm control manhole at the property line and to the City storm sewer system, via the sewer lateral outlined in Section 3.4.2.2 of the report.

The City of Toronto WWFM Guidelines target for water balance is to retain stormwater on-site, to the extent practicable, to achieve the same level of annual volume of overland runoff from the site in the pre-development (existing) condition, with a maximum allowable annual volume of overland runoff of 50% of the total average annual rainfall depth.

Using Figure 2 from the WWFM Guidelines, and an existing imperviousness of almost 100%, greater than 50% of the average annual rainfall depth leaves the site as runoff. As a result, the maximum allowable volume of overland runoff is 50% of the annual depth of rainfall.

Figure 1a from the WWFM Guidelines, was used to determine the percentage of average annual rainfall retained on the site through initial abstraction of the surfaces alone. Table 4.1 was prepared to summarize the average annual rainfall "captured" over the site through initial abstraction. The site was divided according to surface condition (column 1), and respective areas of each surface condition (columns 2 and 3).

Furthermore, an initial abstraction (I.A.) value (column 4) was derived for each surface condition. The initial abstraction effectively represents the depth of daily rain that falls on the surface and is not converted to runoff. The surface IA values were compared to Figure 1a of the WWFM guidelines, and a percent of the total annual average rainfall was derived from each surface (column 7). This was then weighted over the total site (column 8) so that a total average annual capture can be totaled. This weighted percentage of average annual rain captured through initial abstraction equates to 50.0% of the average annual rainfall.

Lastly, the site areas to be directed to cistern were multiplied by their initial abstractions (column 9) and the total volume are to be reused by irrigation or grey-water, which is to be determined at detailed design stage.

Based on the calculation methodology above, a water harvesting volume of 1.96m³ will be captured over the entire site, equates to 50% of total annual average rainfall. Refer to Table 4.1 for a summary of the surface conditions, initial abstraction values, corresponding areas and rainfall captured through initial abstraction.

The harvested rainwater will require a use that will generate sufficient demand to use up the required volume within 72 hours on average. At this time, it is anticipated that either toilet flushing associated with the residential units, infiltration into the native soil, or irrigation of the proposed landscaped areas will be employed to utilize harvested rainwater.

Surface	Area (m²)	% Total Site Area	Surface IA (mm)	Depth Directed to Cistern (mm)	Total Effective IA (mm)	% of Total Annual Average Rainfall (%)	% of Total Annual Average Rainfall Over Site	Cistern Size (m³)
Green Roof	179	24.83	5.0	0.0	5.0	50.0	12.4	0.00
Amenity at Grade	105	14.56	3.0	2.0	5.0	50.0	7.3	0.21
Conventional Roof	416	57.70	1.0	4.0	5.0	50.0	28.8	1.66
Pervious at Grade	0	0.00	5.0	0.0	5.0	50.0	0.0	0.00
Impervious at Grade	21	2.91	1.0	4.0	5.0	50.0	1.5	0.08
Total	721	100.0					50.0	1.96

5.0 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

Measures are to be taken during construction to ensure that erosion and/or transportation of sediments off-site is controlled. Mitigation measures include:

- Erection of sediment control fence prior to construction, and maintenance throughout construction activities;
- Construction of a clear-stone "mud-mat" at construction site exists to control the tracking of sediments off-site from the tires of vehicles;
- Use of watering for dust control; and
- Application to the City for a permit to discharge construction water, including the testing and sediment removal pre-pumping measures required to meet the City permit requirements and sewer use bylaw;

6.0 CONCLUSION

With respect to the proposed redevelopment at 828-838 Richmond Street West, the proposed site servicing and stormwater management system will address the requirements of the City of Toronto, as follows:

Water

The proposed redevelopment will result in an estimated peak water demand of 130.14 L/s (7809 L/min) comprised of maximum day demand plus fire flow. Hydrant flow test performed by Lozzi Aqua Check on June 6, 2021, indicate that the existing 150 mm \emptyset watermain fronting the site has the sufficient capacity to service the redevelopment. It is currently anticipated that a single domestic water service and a single fire service for the subject development will be connected to this watermain.

Foundation Drainage

In accordance with the current City Foundation Drainage Policy, there will be no associated long-term foundation drainage discharge from the proposed development. The basement foundation walls will be treated to be watertight.

Any proposed construction dewatering rate for the site must be controlled to less than or equal to the total proposed flow to the combined sewer for the post-development site.

Sanitary

A single sanitary service connection will convey drainage from the site to the existing 300 mm Ø combined sewer located on Richmond Street West. This proposed sanitary

service will convey a peak flow of 0.62 L/s from the site. While this peak discharge is greater than the estimated sanitary discharge from the existing site, the storm discharge from the site will be over-controlled to result in a net neutral or net negative post redevelopment discharge to the Richmond Street West combined sewer.

Storm

A single storm service connection to the combined sewer on Richmond Street West will convey stormwater discharge from the proposed SWM system. As previously discussed in Section 3.4.2.1, the maximum allowable discharge rate of stormwater to the combined sewer on Richmond Street is 8.83 L/s. However, this rate will be further reduced to 5.53 L/s in order to ensure that the total discharge from the proposed site to the Richmond Street West combined sewer in the post development condition will result in a net neutral or net negative discharge compared to pre-development total discharge to the Richmond Street West combined sewer. A SWM detention tank with a vortex orifice control device will provide the required detention volume to accommodate the over-controlled discharge rate. Refer to Appendix D for detail on the SWM tank.

It is anticipated that the implementation of rainwater harvesting for reuse within toilet flushing, infiltration gallery, or irrigation systems will serve to meet the City's water balance target and limit the total average runoff volume to 50% of the annual average rainfall. A cistern size of $2m^3$ will be used to retain the harvested rainwater on-site for reuse.

The site is effectively 100% "clean" from a water quality perspective, and as a result the clean nature of runoff with respect to TSS will inherently serve to meet the City's 80% TSS removal water quality requirement.

Summary of Key Servicing and SWM Parameters

Water Service Connection Size(s):

• 150 mm Ø fire with 100 mm Ø domestic branch.

Sanitary Service Connection Size:

• 150 mm Ø sanitary service

Storm Service Connection Size:

• 150 mm Ø storm service.

We trust that this report satisfies the requirements of the City of Toronto with respect to the subject development. Should you have any questions, please do not hesitate to contact the undersigned.

R. V. ANDERSON ASSOCIATES LIMITED



Report Prepared By

Alex Wong, P.Eng. Project Engineer

APPENDIX A

Architectural Plans, Site Statistics, and Supporting Documents

















ARCHITECTURAL DRAWING LIST	
NUMBER DESCRIPTION	ISSUED
	06/21/2022 14/07/2023
PROJECT	
A001 DRAWING LIST, SYMBOLS LEGEND, & PERSPECTIVE VIEWS	• •
A010 CONTEXT PLAN	• •
A011 SURVEY	• •
A012 STATISTICS	• •
A013 SITE PLAN	• •
A100 FLOOR PLANS – BASEMENT	• •
A101 FLOOR PLANS - FIRST FLOOR	• •
A102 FLOOR PLANS - SECOND FLOOR	• •
A103 FLOOR PLANS - THIRD FLOOR	• •
A104 FLOOR PLANS - FOURTH FLOOR	• •
A105 FLOOR PLANS - FIFTH FLOOR	• •
A106 FLOOR PLANS - SIXTH FLOOR	• •
A107 FLOOR PLANS - SEVENTH FLOOR	• •
A108 FLOOR PLANS – EIGHT FLOOR	• •
A109 FLOOR PLANS - ROOF	• •
A200 SOUTH ELEVATION	• •
A201 EAST ELEVATION	• •
A202 NORTH ELEVATION	• •
A203 WEST ELEVATION	• •
A300 LONGITUDINAL SECTION	• •
A301 LATERAL SECTION	• •

ALEN	ALIGNMENT HEAD
××	grid head — existing
××	grid head – new
	SECTION CALLOUT
	DETAIL CALLOUT – ELEMENT
	DETAIL CALLOUT – SECTION/PLAN
X A000	ELEVATION CALLOUT
DESCRIPTION LEVEL	LEVEL - ELEVATION
DESCRIPTION	LEVEL – PLAN
×	TYPICAL COMPOSITION
	NOTES
PXXX	DOOR TAC
NUM TAME AREA	ROOM TAC
	REVISION TAG
	TITLE & SCAL

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HM PF (822-838 RICHMOND) LTD.

OWNER

474 WELLINGTON STREET	474 WELLINGTON STREET WEST, SUITE 200, TORONTO, ON M5V 1E3				
CONSULTANTS					
PLANNING:	SvN ARCHITECTS + PLANNERS				
LANDSCAPE:	LAND ART DESIGN				
TRANSPORTATION:	BA GROUP				
SERVICING:	RV ANDERSON				
ENERGY:	EQ BUILDING PERFORMANCE INC.				
CODE CONSULTANT:	VORTEX FIRE				
MEP ENGINEER:	WILD THOMAS GROUP & ELEVATION ENG.				
STRUCTURAL ENGINEER:	HONEYCOMB GROUP INC.				
SURVEYOR:	R. AVIS SURVEYING INC.				
WIND ENGINEER:	GRADIENT WIND ENGINEERING INC.				

GENERAL NOTES

IT IS THE CONTRACTOR'S AND/OR CLIENT'S RESPONSIBILITY TO RETAIN THE PROFESSIONAL SERVICES OF AN ENGINEER IN ACCORDANCE WITH LOCAL LAWS GOVERNING THE PRACTICE.

ANY COORDINATION BETWEEN THE VARIOUS SUBCONTRACTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. BEFORE UNDERTAKING THE WORK, THE CONTRACTOR SHALL VERIFY ALL THE DIMENSIONS AND DIMENSIONS INDICATED ON THE PLANS, AS WELL AS THE DIMENSIONS OF THE EXISTING BUILDING OR BUILDINGS IN THE EVENT OF RENOVATION OR RESTORATION. THE CONTRACTOR MUST NOTIFY THE ARCHITECT OF ANY ERRORS OR OMISSIONS IN THE PLANS.

NO DIMENSIONS SHALL BE MEASURED DIRECTLY TO SCALE ON THESE DRAWINGS.

THE CONSTRUCTION MUST BE EXECUTED ACCORDING TO LOCAL RULES OF ART AND IN COMPLIANCE WITH GOVERNMENT STANDARDS AND LOCAL BUILDING CODES.

ANY ERROR OR OMISSION REPORTED TO THE ARCHITECT MUST BE SUBMITTED TO THEM IN WRITING, WITHOUT EXCEPTION, BEFORE THE BEGINNING OF ANY WORK.

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SEAL

STATUS

SUBMITTED FOR OPA & ZBA DO NOT USE FOR CONSTRUCTION

NO. DESCRIPTION BY DATE

5	ISSUED FOR OPA / ZBA SUBMISSION	KJ	18-07-2023
4	ISSUED FOR COORDINATION	KJ	11-04-2023
3	ISSUED FOR COORDINATION	KJ	29-03-2023
2	ISSUED FOR OPA / ZBA SUBMISSION	KB	06-21-2022
1	ISSUED FOR COORDINATION	KJ	05-23-2022

PROJECT

2114-TOR 828-838 RICHMOND STREET WEST

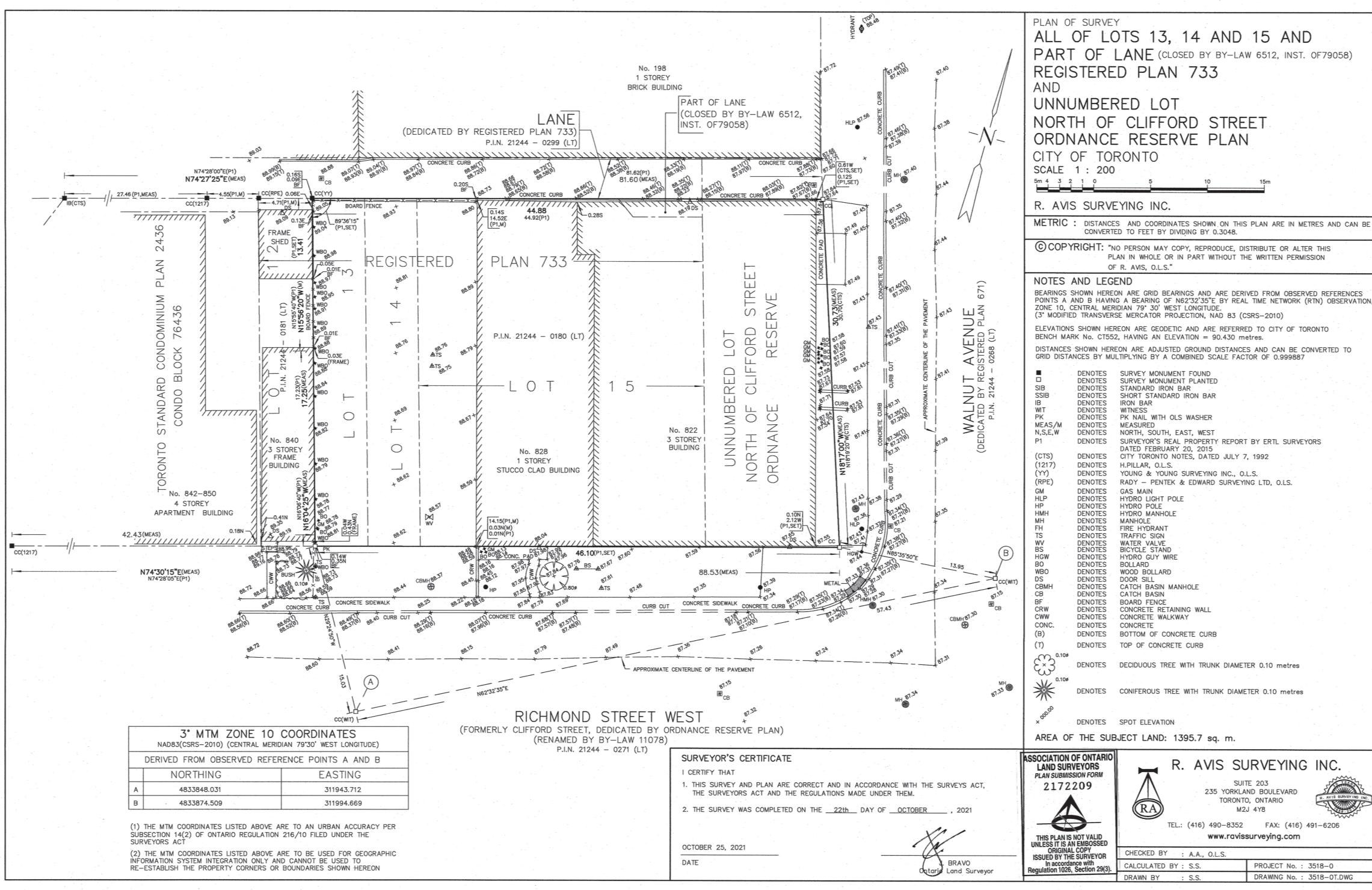
828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

PHASE SCHEMATIC DESIGN

DESCRIPTION

DRAWING LIST, SYMBOLS LEGEND, & PERSPECTIVE VIEWS

SCALE :	N/A	TIMESTAMP :	21/07/2023
PROJECT CODE :	2114-TOR	PAGE :	
FILE NAME :	2114-TOR_A001.dwg		
DESIGNED BY :	ADB		
DRAFTED BY :	KJ	Λ	001
VERIFIED BY :	ADB	A	UUT





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OWNER

HM PF (822-838 RICHMOND) LTD.

474 WELLINGTON STREET	WEST, SUITE 200, TORONTO, ON M5V 1E3
CONSULTANTS	
PLANNING:	SvN ARCHITECTS + PLANNERS
LANDSCAPE:	LAND ART DESIGN
TRANSPORTATION:	BA GROUP
SERVICING:	RV ANDERSON
ENERGY:	EQ BUILDING PERFORMANCE INC.
CODE CONSULTANT:	VORTEX FIRE
MEP ENGINEER:	WILD THOMAS GROUP & ELEVATION ENG.
STRUCTURAL ENGINEER:	HONEYCOMB GROUP INC.
SURVEYOR:	R. AVIS SURVEYING INC.
WIND ENGINEER:	GRADIENT WIND ENGINEERING INC.

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THE RESPONSIBILITY OF THE CONTRACTOR. BEFORE UNDERTAKING THE WORK, THE CONTRACTOR SHALL VERIFY ALL

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NO DIMENSIONS SHALL BE MEASURED DIRECTLY TO SCALE ON THESE DRAWINGS. THE CONSTRUCTION MUST BE EXECUTED ACCORDING TO LOCAL RULES

OF ART AND IN COMPLIANCE WITH GOVERNMENT STANDARDS AND LOCAL BUILDING CODES.

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SEAL

STATUS

SUBMITTED FOR OPA & ZBA **DO NOT USE FOR CONSTRUCTION**

NO.	DESCRIPTION		BY	DATE

05	ISSUED FOR OPA / ZBA SUBMISSION	KJ	18-07-2023
04	ISSUED FOR COORDINATION	KJ	11-04-2023
03	ISSUED FOR COORDINATION	KJ	29-03-2023
02	ISSUED FOR OPA / ZBA SUBMISSION	KJ	14-04-2023
01	ISSUED FOR OPA / ZBA SUBMISSION	KB	21-06-2022

PROJECT

2114-TOR

828-838 RICHMOND STREET WEST 828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

PHASE

SCHEMATIC DESIGN

DESCRIPTION

SURVEY

TIMESTAMP : 21/07/2023 SCALE : 1:200 PROJECT CODE : 2114-TOR PAGE : FILE NAME : 2114-TOR_A011.dwg DESIGNED BY : ADB A011 DRAFTED BY : KJ VERIFIED BY : ADB

PLAN IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION

R. AVIS SURVEYING INC.

SUITE 203 235 YORKLAND BOULEVARD TORONTO, ONTARIO 215/112 M2J 4Y8 TEL.: (416) 490-8352 FAX: (416) 491-6206 www.ravissurveying.com

PROJECT No. : 3518-0 DRAWING No. : 3518-0T.DWG

1.0 SUMMARY

SUMMARY OF ABOVE-GRADE AREAS	FT ²	M²	
SITE AREA	8,057.00	748.52	
GROSS FLOOR AREA (1, 2)	31,917.25	2,965.21	
RESIDENTIAL SUITE AREA	23,888.56	2,219.32	
FLOOR SPACE INDEX (3)	3.9	96	
RESIDENTIAL UNIT COUNT	26		
Studio	8	30.8%	
1 Bedroom	3	11.5%	
2 Bedrooms	12	46.2%	
3 Bedrooms	3	11.5%	
VEHICLE PARKING SPACES	16		
BICYCLE PARKING SPACES	27		
Short-term	3		
Long-term	24		
LOADING	N	/A	
PROPOSED BUILDING HEIGHTS	5 STOREYS 8 STOREYS	S @ 16.9 M S @ 25.8 M	

2.0 DETAILED AREAS

FLOOR LEVEL	CONSTR AR	UCTION EA	DEDUC (2		GROSS ARE			ENTIAL AREA	COM AR		INDC AMEN			DOOR IITIES		/ATE R SPACE
	FT ²	M²	FT ²	M ²	FT ²	M²	FT ²	M²	FT ²	M²	FT ²	M²	FT ²	M²	FT ²	M²
BASEMENT	6,088.50	565.64	5,733.18	532.63	355.32	33.01	0.00	0.00	355.32	33.01	0.00	0.00	0.00	0.00	0.00	0.00
LEVEL 1	5,679.58	527.65	1,161.53	107.91	4,518.04	419.74	1,513.41	140.60	2,401.43	223.10	603.21	56.04	1,099.43	102.14	230.67	21.43
LEVEL 2	6,088.28	565.62	624.74	58.04	5,463.55	507.58	3,749.39	348.33	1,714.15	159.25	0.00	0.00	0.00	0.00	0.00	0.00
LEVEL 3	5,362.47	498.19	571.03	53.05	4,791.45	445.14	4,351.96	404.31	439.49	40.83	0.00	0.00	0.00	0.00	966.92	89.83
LEVEL 4	5,362.47	498.19	570.59	53.01	4,791.88	445.18	4,352.39	404.35	439.49	40.83	0.00	0.00	0.00	0.00	0.00	0.00
LEVEL 5	4,704.26	437.04	580.28	53.91	4,123.98	383.13	3,778.56	351.04	345.41	32.09	0.00	0.00	0.00	0.00	658.11	61.14
LEVEL 6	3,689.01	342.72	646.16	60.03	3,042.85	282.69	2,047.62	190.23	367.48	34.14	627.75	58.32	921.82	85.64	0.00	0.00
LEVEL 7	3,061.26	284.40	646.16	60.03	2,415.10	224.37	2,047.62	190.23	367.48	34.14	0.00	0.00	0.00	0.00	0.00	0.00
LEVEL 8	3,061.26	284.40	646.16	60.03	2,415.10	224.37	2,047.62	190.23	367.48	34.14	0.00	0.00	0.00	0.00	0.00	0.00
ROOF	777.15	72.20	777.15	72.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	43,874.24	4,076.05	11,956.98	1,110.84	31,917.25	2,965.21	23,888.56	2,219.32	6,797.73	631.53	1,230,96	114.36	2,021.25	187.78	1,855.70	172.40

1) 800.50 (320) GROSS FLOOR AREA means the sum of the total area of each floor level of a building, above and below the ground, measured from the exterior of the main wall of each floor level.

2) 40.5.40.40. (5) In the Commercial Residential Zone category, the gross floor area of an apartment building is reduced by the area in the building used for:

a. parking, loading and bicycle parking below-ground; **b.** required **loading spaces** at the ground level and required **bicycle parking spaces** at or above-ground;

c. storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms in the basement; d. shower and change facilities required by this By-law for required bicycle parking spaces;

e. amenity space required by this By-law;

f. elevator shafts; g. garbage shafts;

h. mechanical penthouse; and

i. exit stairwells in the building.

3) 40.5.40.40. (6) In the Commercial Residential Zone category, the FLOOR SPACE INDEX for an apartment building is the result of the gross floor area minus the areas listed in regulation 40.5.40.40(5), divided by the area of the lot.

2.1 AMENITY AREAS

AMENITY SPACE	REQUIRED RATIO	CALCU	LATION	AREA REQUIRED		
		RATIO	# OF UNITS	FT ²	M²	
INDOOR	MIN. 2 SQM PER UNIT (1)	2	26	559.72	52.00	
OUTDOOR	MIN. 40 SQM (2)	-	-	430.56	40.00	
TOTAL	MIN. 4 SQM PER UNIT	4	21	947.22	88.00	

AREA PROVIDED						
FT ²	M²					
1,230.96	114.36					
2,021.25	187.78					
3,252.21	302.14					

40.10.40.50 (1) In the CR zone, a building with 20 or more dwelling units must provide amenity space at a minimum rate of 4.0 square metres for each dwelling unit, of which: a. at least 2.0 square metres for each dwelling unit is indoor amenity space; [By-law: 1353-2015] b. at least 40.0 square metres is outdoor amenity space in a location adjoining or directly accessible to the indoor amenity space; and

c. no more than 25% of the outdoor component may be a **green roof**.

2.2 GARBAGE AREAS

GARBAGE SPACE	REQUIRED RATIO	CALCU	LATION	AREA REQUIRED		
		RATIO	# OF UNITS	FT ²	M²	
MAIN GARBAGE ROOM	NO REQ. MIN. IF < 31 UNITS	-	26	-	-	
BULK GARBAGE ROOM	MIN. 10 SQM	-	-	107.64	10.00	
TOTAL				107.64	10.00	

AREA PROVIDED					
FT ²	M²				
198.59	18.45				
275.02	25.55				
473.61	44.00				

2.3 RESIDENTIAL UNITS

UNIT	UNIT	AREA		UNIT	OCCUPANCY		
	FT ²	M²	S	1B	2B	3B	LOAD
UNIT 1	1,641.3	152.48				~	6
UNIT 2	1,622.3	150.72					6
UNIT 3	649.4	60.33		\checkmark			2
UNIT 4	674.7	62.68					2
UNIT 5	674.7	62.68		~			2
UNIT 6	1,157.1	107.50					4
UNIT 7	1,147.2	106.58					4
UNIT 8	488.6	45.39					2
UNIT 9	488.6	45.39					2
UNIT 10	535.2	49.72					2
UNIT 11	535.2	49.72					2
UNIT 12	1,156.8	107.47			~		4
UNIT 13	1,147.4	106.60					4
UNIT 14	488.6	45.39					2
UNIT 15	488.6	45.39					2
UNIT 16	535.2	49.72					2
UNIT 17	535.2	49.72					2
UNIT 18	1,740.7	161.72					6
UNIT 19	1,018.9	94.66					2
UNIT 20	1,018.9	94.66					2
UNIT 21	1,023.8	95.11					2
UNIT 22	1,023.8	95.11					2
UNIT 23	1,023.8	95.11					2
UNIT 24	1,023.8	95.11					2
UNIT 25	1,023.8	95.11					2
UNIT 26	1,023.8	95.11					2
TOTAL	23,887.05	2,219.18	8	3	12	3	72
TOTAL	25,887.05	2,215.10		2	6		12



The Toronto Green Standard Version 4.0 Statistics Template is submitted with Site Plan Control Applications and stand alone Zoning Bylaw Amendment applications. Complete the table and copy it directly onto the Site Plan submitted as part of the application.

For Zoning Bylaw Amendment applications: complete General Project Description and Section 1. For Site Plan Control applications: complete General Project Description, Section 1 and Section 2. For further information, please visit <u>www.toronto.ca/areendevelopment</u>

General Project Description	Proposed	
Total Gross Floor Area	2,965.2	
Breakdown of project components (m²):	1. 1. The second se	
Residential	2,965.2	
Retail	0.0	
Commercial	0.0	
Industrial	0.0	
Institutional/Other	0.0	
Total number of residential units	26	

Section 1: For Stand Alone Zoning Bylaw Amendment Applications and Site Plan Control Applications

Automobile Infrastructure	Required	Proposed	Proposed %
Number of Parking Spaces	30	16	53.3%
Number of parking spaces with EVSE (residential)	16	16	100.0%
Number of parking spaces with EVSE (non-residential)	0	0	0.0%
Cycling Infrastructure	Required	Proposed	Proposed %
Number of long-term bicycle parking spaces (all-uses)	24	24	100.0%
Number of long-term bicycle parking located on:			
a) first storey of building	-	24	
b) second storey of building	-	0	
c) first level below-ground	-	0	
d) second level below-ground	-	0	
e) other levels below-ground	-	0	

Cycling Infrastructure	Required	Proposed	Proposed %
Number of short-term bicycle parking spaces	3	3	100.0%
Number of short-term bicycle parking spaces (non-residential)	0	0	0.0%
Tree Canopy	Required	Proposed	Proposed %
Total Soil Volume (40% of the site area ÷ 66 m² x 30 m³)	136.1	97.6	71.7%
Total Soil Volume (40% of the site area ÷ 66 m² x 30 m³) Soil volume provided within the site area (m³)	136.1 -	97.6 98	71.7%

3.0 VEHICLE PARKING (ZONING BY-LAW 569-2013)

VEHICLE PARKING	PARKING REQUIRED RATIO CALCULATION		ILATION	REQUIRED SPACES	PROVIDED SPACES
		RATIO	# OF UNITS		
	0.9 PER 1 BEDROOM UNIT	0.9	11	9	
RESIDENTIAL	1.0 PER 2 BEDROOM UNIT	1.0	12	12	16
	1.2 PER 3+ BEDROOM UNIT	1.2	3	4	1
VISITOR	0.2 PER DWELLING UNIT	0.2	26	5	0
TOTAL				30	16

While Zoning By-law 89-2002 (since amended by By-law 125-2022) is considered to be 'applicable law', the minimum parking requirements of Zoning By-law 569-2013 (due to By-law 160-2022) are considered to be applicable. The new parking standards included within By-law 89-2022 (which will amend Zoning By-law 569-2013) provide for a minimum requirement of 3 parking spaces and maximum requirement of 29 spaces.

ACCESSIBLE PARKING	REQUIRED RATIO	CALCULATION		REQUIRED SPACES	PROVIDED SPACES
		RATIO	# OF SPACES		
RESIDENTIAL	13-100 SPACES = 1 PER 25 SPACES (0.04 RATIO)	0.04	16	1	0
VISITOR	13-100 SPACES = 1 PER 25 SPACES (0.04 RATIO)	0.04	0	0	0
TOTAL				1	0

3.1 BICYCLE PARKING (ZONING BY-LAW 569-2013)

BICYCLE PARKING	REQUIRED RATIO	CALCULATION		REQUIRED SPACES	PROVIDED SPACES
		RATIO	# OF UNITS		
SHORT-TERM	0.1 SPACES PER UNIT	0.1	26	2	3
LONG-TERM	0.9 SPACES PER UNIT	0.9	26	24	24
TOTAL				26	27

3.2 LOADING

LOADING	REQUIRED RATIO	CALCULATION		REQUIRED SPACES	PROVIDED SPACES
		RATIO	# OF UNITS		
SHORT-TERM	NON REQUIRED FOR 0-30 DWELLING UNITS	0.0	26	0	0
TOTAL				0	0

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OWNER

HM PF (822-838 RICHMOND) LTD.

474 WELLINGTON STREET WEST, SUITE 200, TORONTO, ON M5V 1E3			
CONSULTANTS			
PLANNING:	SvN ARCHITECTS + PLANNERS		
LANDSCAPE:	LAND ART DESIGN		
TRANSPORTATION:	BA GROUP		
SERVICING:	RV ANDERSON		
ENERGY:	EQ BUILDING PERFORMANCE INC.		
CODE CONSULTANT:	VORTEX FIRE		
MEP ENGINEER:	WILD THOMAS GROUP & ELEVATION ENG.		
STRUCTURAL ENGINEER:	HONEYCOMB GROUP INC.		
SURVEYOR:	R. AVIS SURVEYING INC.		
WIND ENGINEER:	GRADIENT WIND ENGINEERING INC.		

GENERAL NOTES

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STATUS

SUBMITTED FOR OPA & ZBA DO NOT USE FOR CONSTRUCTION

NO.	DESCRIPTION	BY	DATE	
09	ISSUED FOR OPA / ZBA SUBMISSION	KJ	18-07-2023	
08	ISSUED FOR COORDINATION	KJ	11-04-2023	
07	ISSUED FOR COORDINATION	KJ	29-03-2023	
06	ISSUED FOR COORDINATION	KJ	03-17-2023	
05	ISSUED FOR COORDINATION	KJ	01-31-2023	
04	ISSUED FOR COORDINATION	KJ	01-12-2023	
03	ISSUED FOR COORDINATION	KB	12-08-2022	
02	ISSUED FOR OPA / ZBA SUBMISSION	KB	06-21-2022	
01	ISSUED FOR COORDINATION	KJ	05-23-2022	

2114-TOR

828-838 RICHMOND STREET WEST 828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

PHASE

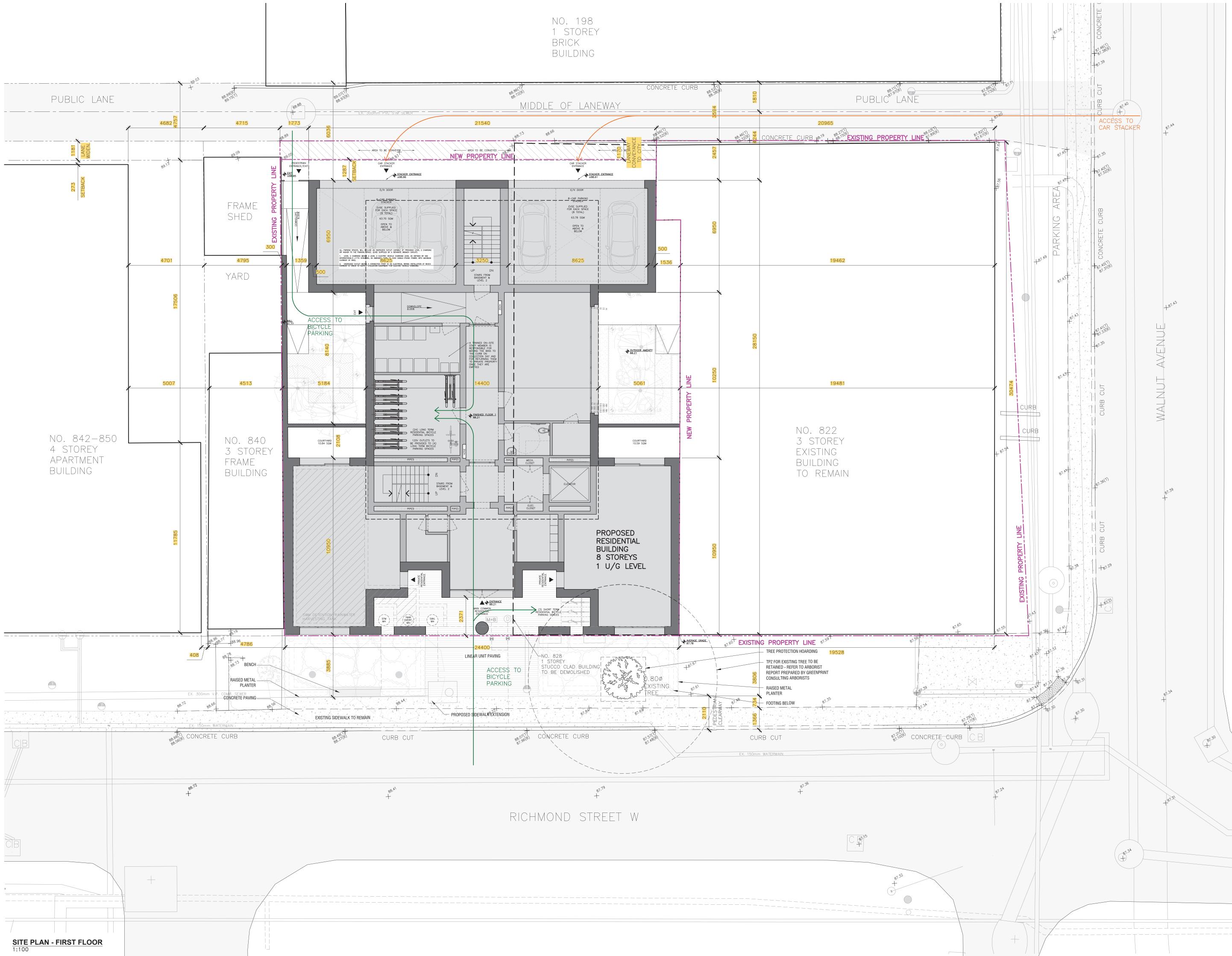
SCHEMATIC DESIGN

DESCRIPTION

PROJECT STATISTICS

SCALE :	N/A	TIMESTAMP :	18/07/2023
PROJECT CODE :	2114-TOR	PAGE :	
FILE NAME :	2114-TOR_A012-A01	3.dwg	
DESIGNED BY :	ADB		
DRAFTED BY :	KJ	•	012
VERIFIED BY :	ADB	A	

BICYCLE PARKING SPACE BREAKDOWN # OF SPACES 27 LEVEL 1 27





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474 WELLINGTON STREET WEST, SUITE 200, TORONTO, ON M5V 1E3			
CONSULTANTS			
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LANDSCAPE:	LAND ART DESIGN		
TRANSPORTATION:	BA GROUP		
SERVICING:	RV ANDERSON		
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KEY PLAN



HLP HYDRO LIGHT POLE HP HYDRO POLE HMH HYDRO MANHOLE MH MANHOLE MH MANHOLE FH FIRE HYDRANT WV WATER VALVE HGW HYDRO GUY WIRE CBMH CATCH BASIN MANHOLE CB CATCH BASIN

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NO.	DESCRIPTION	BY	DATE			
06	ISSUED FOR OPA / ZBA SUBMISSION	KJ	18-07-2023			
05	ISSUED FOR COORDINATION	KJ	11-04-2023			
04	ISSUED FOR COORDINATION	KJ	29-03-2023			
03	ISSUED FOR COORDINATION	KJ	17-03-2023			
02	ISSUED FOR OPA / ZBA SUBMISSION	KB	21-06-2022			
01	ISSUED FOR COORDINATION	KJ	23-05-2022			
PRO	JECT					
2114-TOR						
828-	828-838 RICHMOND STREET WEST					

828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

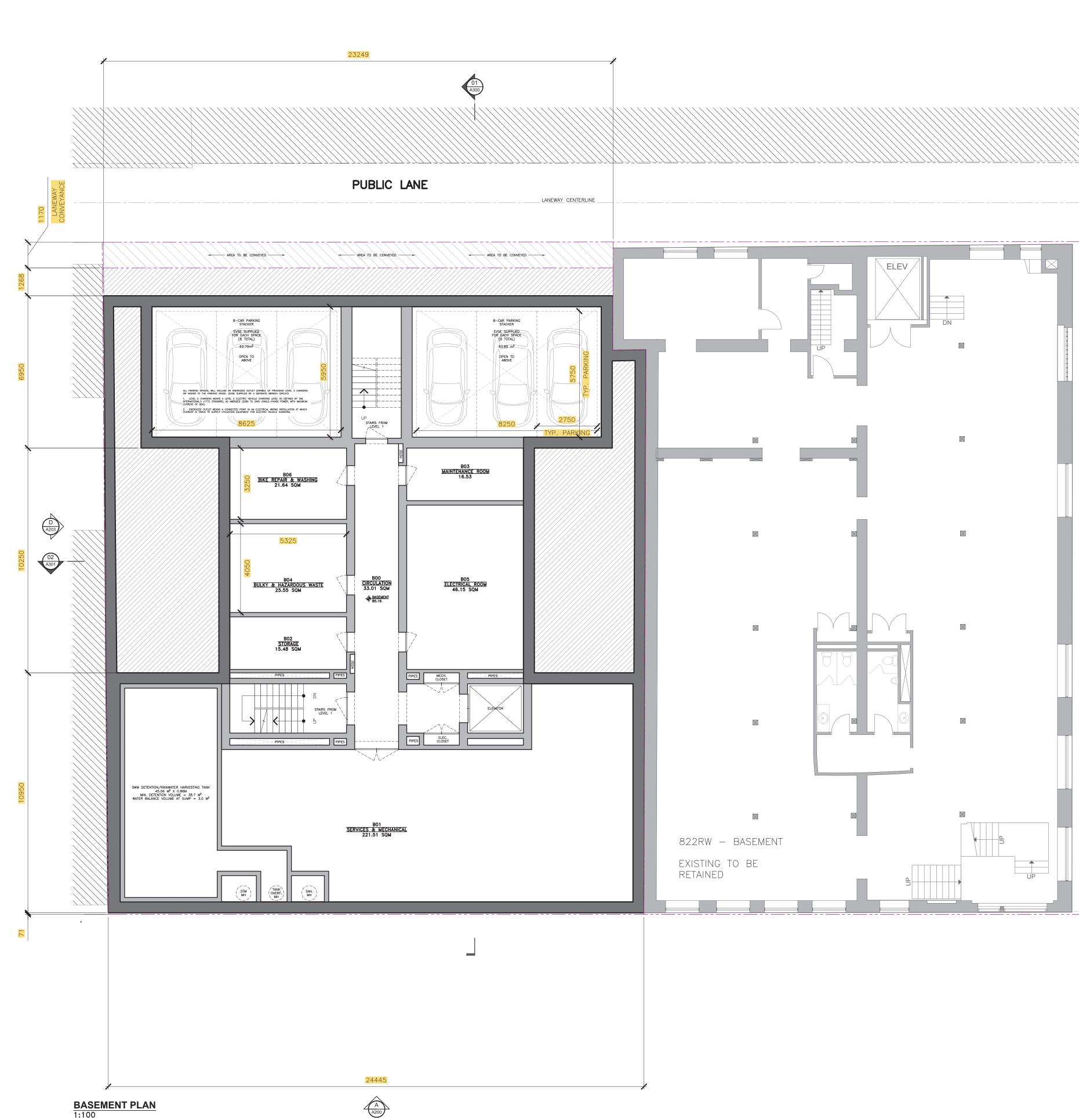
PHASE SCHEMATIC DESIGN

DESCRIPTION

CONCEPT SITE PLAN

1:100	TIMESTAMP :	18/07/2023
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474 WELLINGTON STREET WEST, SUITE 200, TORONTO, ON M5V 1E3			
CONSULTANTS			
PLANNING:	SvN ARCHITECTS + PLANNERS		
LANDSCAPE:	LAND ART DESIGN		
TRANSPORTATION:	BA GROUP		
SERVICING:	RV ANDERSON		
ENERGY:	EQ BUILDING PERFORMANCE INC.		
CODE CONSULTANT:	VORTEX FIRE		
MEP ENGINEER:	WILD THOMAS GROUP & ELEVATION ENG.		
STRUCTURAL ENGINEER:	HONEYCOMB GROUP INC.		
SURVEYOR:	R. AVIS SURVEYING INC.		
WIND ENGINEER:	GRADIENT WIND ENGINEERING INC.		

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SUBMITTED FOR OPA & ZBA DO NOT USE FOR CONSTRUCTION

NO.	DESCRIPTION	BY	DATE
12	ISSUED FOR OPA / ZBA SUBMISSION	KJ	18-07-2023
11	ISSUED FOR COORDINATION	KJ	11-04-2023
10	ISSUED FOR COORDINATION	KJ	29-03-2023
09	ISSUED FOR COORDINATION	KJ	31-01-2023
08	ISSUED FOR COORDINATION	KJ	11-01-2023
07	ISSUED FOR COORDINATION	KJ	09-01-2023
06	ISSUED FOR COORDINATION	KJ	12-14-2022
05	ISSUED FOR COORDINATION	KJ	12-08-2022
04	ISSUED FOR OPA / ZBA SUBMISSION	KB	06-21-2022
03	ISSUED FOR COORDINATION	KB	06-07-2022
02	ISSUED FOR COORDINATION	KB	05-23-2022
01	ISSUED FOR COORDINATION	KJ	05-05-2022

PROJECT

2114-TOR

828-838 RICHMOND STREET WEST 828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

PHASE

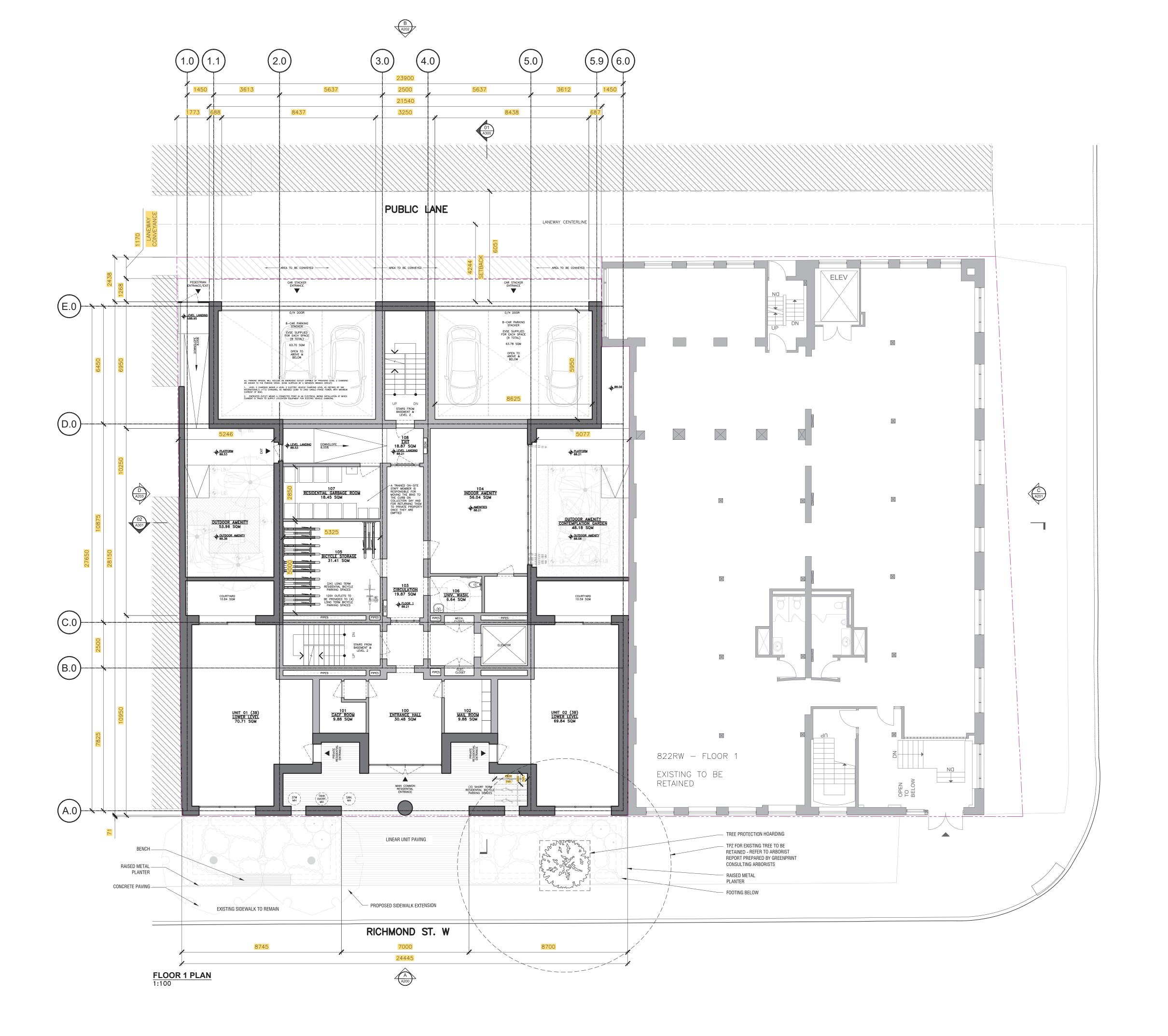
SCHEMATIC DESIGN

DESCRIPTION

FLOOR PLANS

BASEMENT

SCALE : 1:100 TIMESTAMP : 21/07/2023 PROJECT CODE : 2114-TOR PAGE : FILE NAME : 2114-TOR_A100.dwg DESIGNED BY : ADB A100 DRAFTED BY : KJ VERIFIED BY : ADB



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CONSULTANTS			
PLANNING:	SvN ARCHITECTS + PLANNERS		
LANDSCAPE:	LAND ART DESIGN		
TRANSPORTATION:	BA GROUP		
SERVICING:	RV ANDERSON		
ENERGY:	EQ BUILDING PERFORMANCE INC.		
CODE CONSULTANT:	VORTEX FIRE		
MEP ENGINEER:	WILD THOMAS GROUP & ELEVATION ENG.		
STRUCTURAL ENGINEER:	HONEYCOMB GROUP INC.		
SURVEYOR:	R. AVIS SURVEYING INC.		
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NO.	DESCRIPTION	BY	DATE
12	ISSUED FOR OPA / ZBA SUBMISSION	KJ	18-07-2023
11	ISSUED FOR COORDINATION	KJ	11-04-2023
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07	ISSUED FOR COORDINATION	KJ	09-01-2023
06	ISSUED FOR COORDINATION	KJ	12-14-2022
05	ISSUED FOR COORDINATION	KJ	12-08-2022
04	ISSUED FOR OPA / ZBA SUBMISSION	KB	06-21-2022
03	ISSUED FOR COORDINATION	KB	06-07-2022
02	ISSUED FOR COORDINATION	KB	05-23-2022
01	ISSUED FOR COORDINATION	KJ	05-05-2022

PROJECT

2114-TOR

828-838 RICHMOND STREET WEST 828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

PHASE

SCHEMATIC DESIGN

DESCRIPTION

FLOOR PLANS FIRST FLOOR

 SCALE:
 1:100
 TIMESTAMP:
 18/07/2023

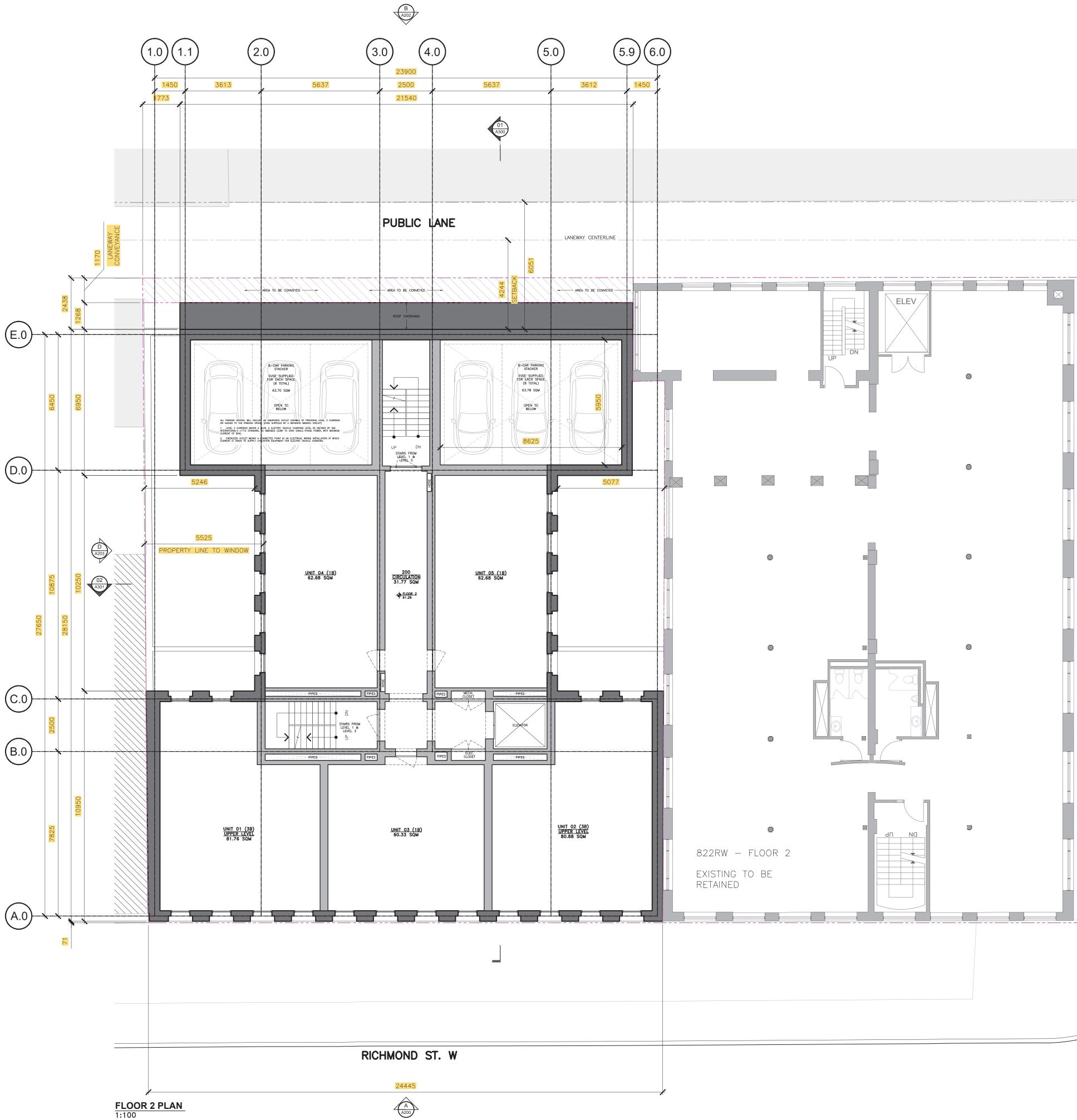
 PROJECT CODE:
 2114-TOR
 PAGE:

 FILE NAME:
 2114-TOR_A100.dwg

 DESIGNED BY:
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 DRAFTED BY:
 KJ

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CONSULTANTS		
PLANNING:	SvN ARCHITECTS + PLANNERS	
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SERVICING:	RV ANDERSON	
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STATUS

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		DATE
SUED FOR OPA / ZBA SUBMISSION	KJ	18-07-2023
SUED FOR COORDINATION	KJ	11-04-2023
SUED FOR COORDINATION	KJ	29-03-2023
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SUED FOR COORDINATION	KJ	11-01-2023
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SUED FOR COORDINATION	KJ	12-08-2022
SUED FOR OPA / ZBA SUBMISSION	KB	06-21-2022
SUED FOR COORDINATION	KB	06-07-2022
SUED FOR COORDINATION	KB	05-23-2022
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PROJECT

2114-TOR

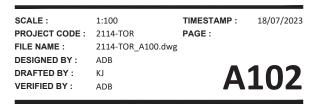
828-838 RICHMOND STREET WEST 828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

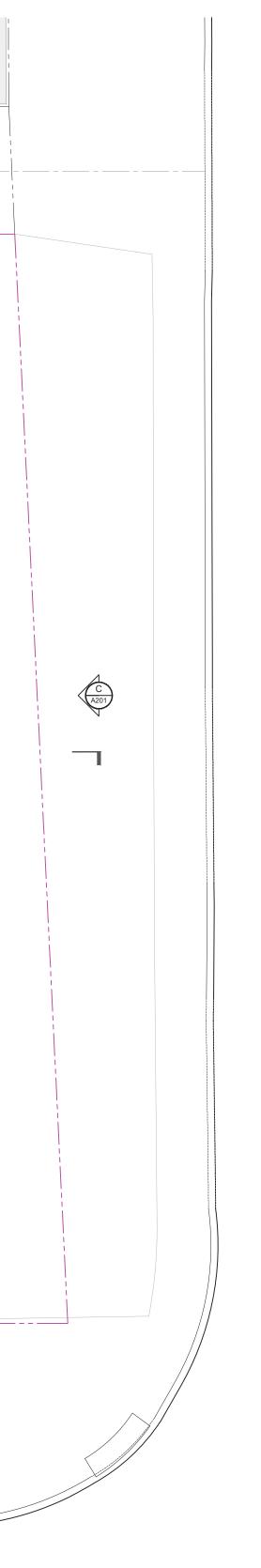
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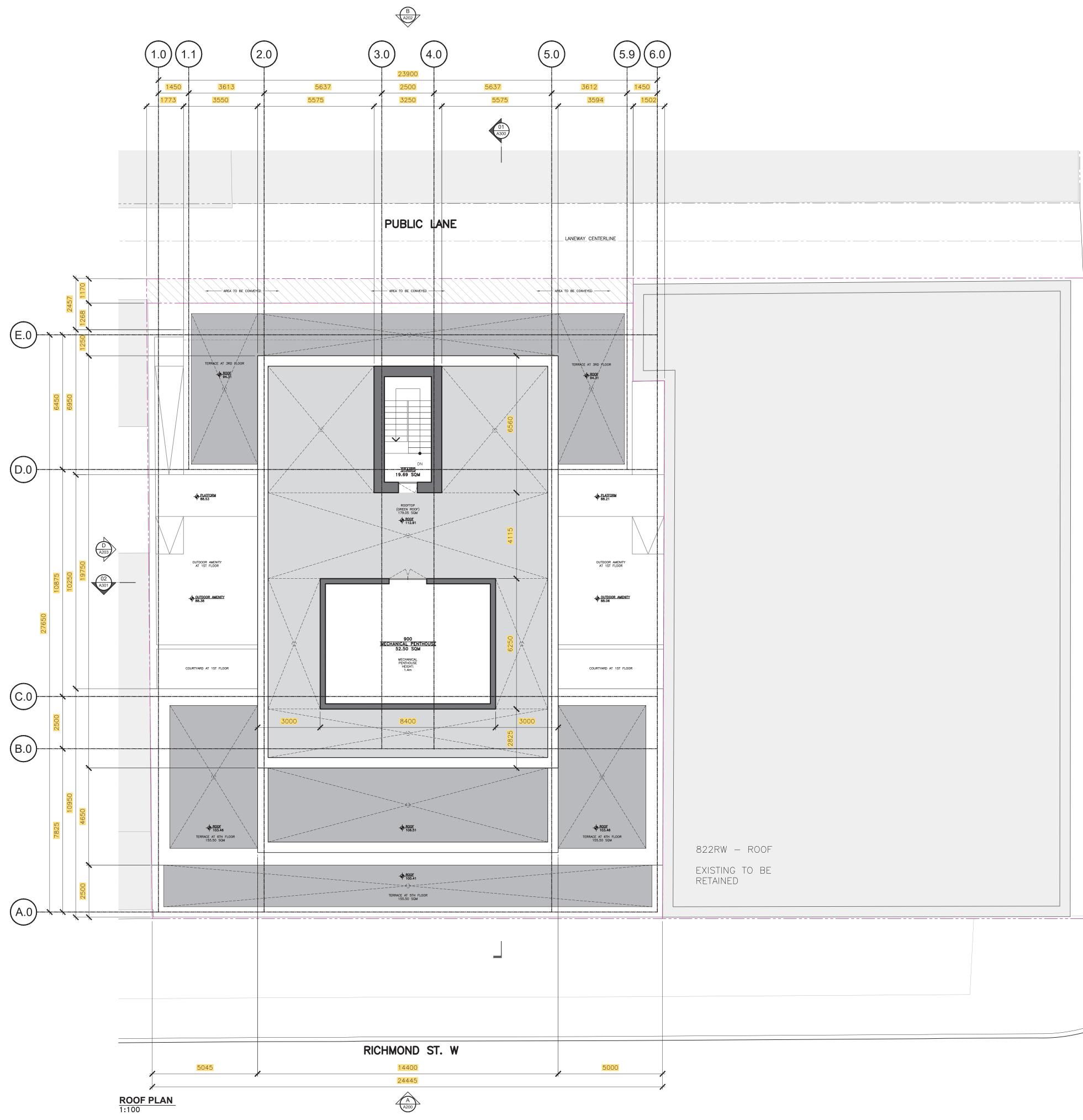
SCHEMATIC DESIGN

DESCRIPTION

FLOOR PLANS SECOND FLOOR







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OWNER

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CONSULTANTS			
PLANNING:	SvN ARCHITECTS + PLANNERS		
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10	ISSUED FOR COORDINATION	KJ	29-03-2023
09	ISSUED FOR COORDINATION	KJ	31-01-2023
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07	ISSUED FOR COORDINATION	KJ	09-01-2023
06	ISSUED FOR COORDINATION	KJ	12-14-2022
05	ISSUED FOR COORDINATION	KJ	12-08-2022
04	ISSUED FOR OPA / ZBA SUBMISSION	KB	06-21-2022
03	ISSUED FOR COORDINATION	KB	06-07-2022
02	ISSUED FOR COORDINATION	KB	05-23-2022
01	ISSUED FOR COORDINATION	KJ	05-05-2022

PROJECT

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828-838 RICHMOND STREET WEST 828-838 RICHMOND STREET W. TORONTO, ON M6J 1C9

PHASE

SCHEMATIC DESIGN

DESCRIPTION

FLOOR PLANS

ROOF

