152–164 Bathurst Street and
623–627 Richmond Street West
Toronto, ON

Preliminary Hydrogeological Impact Assessment

PREPARED FOR:
Toronto (Bathurst & Richmond) LP
257 Borden Street
Toronto, ON M5S 2N5

PREPARED BY:
PGL Environmental Consultants
250 Water Street, Suite 102
Whitby, ON L1N 0G5

PGL File: 5660-03.03

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Executive Summary

PGL Environmental Consultants (PGL) conducted a Preliminary Hydrogeological Impact Assessment at 152–164 Bathurst Street and 623–627 Richmond Street West, Toronto, Ontario (the Site). The investigation was completed for Toronto (Bathurst & Richmond) LP. PGL assessed groundwater conditions at the Site, and potential impacts on groundwater from dewatering during the excavation and operation of the Site. This report is preliminary as PGL has not finished collecting groundwater elevations for three months, as mandated by Toronto Water. This report will be updated once that work is complete.

The Site is comprised of nine parcels on the southwest corner of Bathurst Street and Richmond Street West, and it is improved with mixed-use, low-rise buildings (residential and commercial). The proposed development includes construction of a 17-storey, mixed-use condominium building with two levels of underground parking. The building at 164 Bathurst Street has been incorporated into the new building design; all other existing buildings will be removed.

Seven monitoring wells were installed at the Site: two shallow wells, four intermediate wells, and one deep well ranging in depth from 4.5m to 13m below ground surface (bgs).

Groundwater conditions were assessed by reviewing existing information and reports on geology and hydrogeology. The hydraulic conductivity is based on published literature associated with soil stratigraphy where the water table was observed. This data was then used to approximate flow volumes during construction dewatering and long-term dewatering for the development. PGL then evaluated potential impacts to groundwater due to construction dewatering.

The key results of the hydrogeological impact assessment for the Site are:

- Construction dewatering will be required during the excavation, with a maximum estimated flow of 966L/day;
- There are no anticipated impacts to aquifers, nearby water wells, or baseflow to surface water features due to the planned construction dewatering for the new residential building;
- Construction dewatering at the Site will not likely require registration in the Environmental Activity and Sector Registry;
- A Permit to Take Water is not likely required for the construction dewatering;
- Long-term dewatering of groundwater for the entire Site is anticipated to be a maximum of 300L/day;
- Groundwater at the Site met the City of Toronto Sanitary Sewer By-Law limits;
- Groundwater at the Site exceeded the City of Toronto Storm Sewer By-Laws for Total Suspended Solids and total manganese. Confirmatory sampling or groundwater treatment should be completed prior to dewatering operations; and
- If the construction dewatering plan changes or any of the assumptions stated in this report are otherwise violated, re-evaluation of the potential hydrogeological impact will be required.

Assessment of ground settling due to dewatering was outside the scope of this work program and area of expertise of the authors. We recommend this potential impact be evaluated by a geotechnical engineer.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.

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Table of Contents

LIST OF TABLES

In text

Appended

LIST OF FIGURES

LIST OF APPENDICES

List of Acronyms

asl	-	above sea level
BH___M	-	borehole with monitoring well installed
bgs	-	below ground surface
ESA	-	Environmental Site Assessment
m/s	-	metres per second
m asl	-	metres above sea level
m bgs	-	metres below ground surface
MECP	-	Ministry of the Environment, Conservation and Parks
MW	-	borehole with a monitoring well installed
PGL	-	PGL Environmental Consultants
TSS	-	Total Suspended Solids

1.0 INTRODUCTION

Toronto (Bathurst & Richmond) LP retained PGL Environmental Consultants (PGL) to conduct a Preliminary Hydrogeological Impact Assessment at 152–164 Bathurst Street and 623–627 Richmond Street West in Toronto, Ontario (the Site, Figure 1). The investigation was conducted to assess groundwater conditions at the Site in advance of proposed redevelopment activities.

This report is preliminary, as PGL has not finished collecting groundwater elevations for three months, as mandated by Toronto Water. This report will be updated once that work is complete.

The Site is comprised of nine parcels on the southwest corner of Bathurst Street and Richmond Street West. The Site is improved with mixed-use, low-rise buildings (residential and commercial). Most of the rear yards are paved for parking.

The proposed development includes construction of a 17-storey, mixed-use condominium building with two levels of underground parking. The building at 164 Bathurst Street will most likely be designated as a heritage building, and as such it has been incorporated into the new building design; all other existing buildings will be removed.

This work was completed concurrently with supplemental PGL's Phase 2 Environmental Site Assessment (ESA), and Terrapex Environmental's (Terrapex's) geotechnical investigation. The fieldwork included drilling and installing seven monitoring wells: two shallow wells, four intermediate wells, and one deep well ranging in depth from 4.5m to 13m below ground surface (bgs). PGL retained Terrapex to complete the geotechnical investigation, and their report will be submitted under separate cover.

This Hydrogeological Impact Assessment has been prepared in accordance with Ontario *Water Resources Act*, Ontario Regulation 387/04, and Toronto Municipal Code Chapter 681 –Sewers.

2.0 SCOPE OF WORK

To meet the objectives noted above, PGL:

1. Reviewed and evaluated existing Site information, including:
    a. Borehole logs and monitoring well installation details of the seven onsite monitoring wells installed in February 2021 (Appendix 1);
    b. Architect drawings by KIRKOR Architects and Planners, April 15, 2021 (Appendix 2);
    c. A Grading Plan by Husson Engineering + Management April 8, 2021 (Appendix 3); and
    d. Available Ministry of the Environment, Conservation and Parks (MECP) well records, and Ministry of Natural Resources and Forestry Heritage maps.
2. Measured static groundwater levels and completed single-well response tests at each of the five onsite monitoring wells. Groundwater recovery and recharge at the Site is very slow, and the single-well response tests did not yield useable data. The estimated hydraulic conductivity at the Site is from published reference materials.
3. Completed a total of three of six measurements of static groundwater levels as required by Toronto Water. Three events are pending.

4. Determined whether groundwater would be encountered during construction, and estimated flow rate for dewatering;
5. Collected a water sample on March 17, 2021 from one onsite well (BH204M / MW204) to assess water quality to the City of Toronto's sanitary and stormwater sewer by-law limits; and
6. Conducted a Hydrogeological Impact Assessment to identify possible project impacts on groundwater quantity and quality.

3.0 SITE DESCRIPTION

The Site encompasses nine rectangular properties on the southwest corner of Bathurst Street and Richmond Street West. It is bounded to the north by Richmond Street West followed by commercial properties, to the east by Bathurst Street followed by former residential properties undergoing redevelopment, to the south by a residential condominium, and to the west by residential properties and a public school. The Site buildings vary in construction and are used for residential or mixed commercial and residential purposes.

The Site is roughly 0.20 hectares with a mix of building types, occupants, and uses as summarized below.

Table A: Site Buildings and Current Uses

Address	Building Description and Current Use
152–154 Bathurst Street	Two-storey commercial building with a basement. Occupied by Royal LePage, realty brokerage.
156–158 Bathurst Street	Two-storey, mixed-use building, with a partial basement on the west side of the building. The basement and ground floor are currently vacant. Previously occupied by Cyclemotive – a store selling bicycles and accessories, and providing bicycle servicing. The second floor is a large residential unit.
160 Bathurst Street	Former two-storey residential building with a basement. The building was severely damaged by a fire that occurred in March 2019. The building has been demolished and was most recently used as an outdoor patio.
162 Bathurst Street	Former two-storey, mixed-use building. The ground floor was previously used as a barber shop with a residential unit on the second floor. The building was severely damaged by a fire that occurred in March 2019. The building has been demolished and was most recently used as an outdoor patio.
164 Bathurst Street	Mixed-use, three-storey building with a basement. The basement and ground floor are occupied by a restaurant. The second and third floor are residential units.
623–625 Richmond Street	Three-storey, semi-detached, multi-unit residential building with a basement.
627 Richmond Street	Three-storey, multi-unit residential building with a basement.

3.1 Topography and Physical Setting

The Site and area are generally flat. Lake Ontario is about 1.2km south of the Site.

No Ministry of Natural Resources Heritage Sites, Area of Natural and Scientific Research sites, Oak Ridges Moraine, Niagara Escarpment or Environmentally Sensitive areas were identified within 250m of the Site.

Based on topography and proximity of Lake Ontario, the inferred local and regional groundwater flow direction is to the southeast toward Lake Ontario.

3.2 Geology

Geological maps show the surficial soils near the Site are expected to be glaciolacustrine deposits: sand, gravelly sand, and gravel nearshore and beach deposits (OGS, 2000). Overburden at the Site is underlain by Georgian Bay Formation bedrock consisting of shale, limestone, dolostone, and siltstone (OGS, 2010). Bedrock is expected to be at a depth of roughly 11m based on review of Ministry of the Environment, Conservation, and Parks (MECP) well records.

PGL / Terrapex advanced 12 boreholes, ranging in depth from 0.9m bgs to 16m bgs across the Site in February 2021 (BH201 to BH212). Seven monitoring wells ranging in depth from 4.5m bgs to 13m bgs were installed and are identified interchangeable as MW20# or BH20#M (BH201MD, BH201MS, BH202M, BH203M, BH204M and BH205M, BH206M. The Well BH201M location has two wells “nested” one deep (D) and the second one shallow (S).

The borehole logs are provided in Appendix 1. Soil stratigraphy beneath the asphalt, brick pavers, or topsoil consisted of various fill layers consisting of either gravelly sand, clayey silt, and silty sand to a maximum depth of 3.5m bgs. The fill was underlain by the following soil types: silty clay (till), silty fine sand, silty clay till and weathered shale, and shale with limestone interbeds. The locations of all wells are provided in Figure 1. In general, Site geology comprised the following:

Table B: Site Geology

Stratigraphy	Approximate Depths (m bgs)
Asphalt, brick pavers, topsoil	0.0–0.2
Fill gravelly sand, clayey silt, silty sand	0.2–3.5
Silty clay (till), some sand	2.0–9.0
Silty fine sand	8.5–10.5
Silty clay (till) and weathered shale	10.0–12.5
Shale with limestone interbeds	12.0–16.0

4.0 HYDROGEOLOGICAL WORK PROGRAM

To estimate groundwater extraction rates during construction, several hydrogeological parameters must be measured or calculated. The following sections describe how the Site groundwater elevations, inferred groundwater flow direction, hydraulic gradient, and hydraulic conductivity were estimated.

4.1 Groundwater Elevations and Flow Direction

PGL measured depth to groundwater in each of the seven monitoring wells on three occasions, as shown in Table 1 (appended). Groundwater depths and elevations for the March 9, 2021 monitoring round are shown in Table C below. The depth to groundwater was recorded using a Solinst water level tape to establish static groundwater levels. The measured depth to groundwater was translated to elevation above sea level (asl) based on the ground surface elevations determined in the elevation survey.

The groundwater elevation fluctuated by 0.21m to 4.80m in each well during the three monitoring rounds from March 9 to March 25, 2021. The minimum measured groundwater elevation was

80.88m asl, and the maximum was 87.72m asl. Static groundwater has not been achieved, as groundwater elevations are continuing to increase in the wells, although this may be due to the seasonal spring high water levels.

Table C: Groundwater Levels and Elevations

Location	Ground Elevation (m asl)	9-Mar-2021	
		Depth to Groundwater (m bgs)	Groundwater Elevation (m asl)
Shallow Wells			
BH202M	90.18	dry @ 6.104	Dry
BH206M	87.43	3.336	86.66
Intermediate Wells			
BH201MS	90.23	7.908	82.32
BH203M	90.33	2.611	87.72
BH204M	90.50	6.751	83.75
BH205M	90.18	7.674	82.51
Deep Well			
BH201MD	90.23	8.226	82.00

Notes: asl = above sea level bgs = below ground surface

Figure 2 shows the groundwater elevations measured on March 9, 2021. Groundwater contours were not generated, as groundwater recharge is very slow, and levels have not recovered from the drilling and groundwater monitoring events conducted in early March.

Based on local topography and proximity to Lake Ontario, groundwater flow direction is most likely to the south toward Lake Ontario.

4.2 Aquifer Performance Tests

Single-well response tests (slug tests) were conducted at all wells on March 25, 2021 to estimate the hydraulic conductivity of the subsurface materials expected to be encountered during the excavation of basements or building footings. However, due to very low recharge rates, the monitoring wells had not yet recovered from drilling two weeks prior, and the results of the slug tests could not be reliably interpreted.

Instead, we have reviewed literature values for silt (5×10^{-7} to 1×10^{-6}m/s), clay (1×10^{-10} to 1×10^{-7}m/s), and shale (1×10^{-13} to 1×10^{-9}m/s), respectively.[1] As the recharge rates are so low, use of literature values for hydraulic conductivity were determined by PGL to be sufficient for the purposes of dewatering calculations.

The main soil type observed at the Site is a silty clay till unit. This till unit is likely not homogeneous, so the uncertainty in the estimated hydraulic conductivities is likely elevated. To account for this increased uncertainty, and the observed low recharge rate, we have used an estimated hydraulic conductivity of 1×10^{-8}m/s for the dewatering calculations.

[1] J. Patrick Powers, Arthur B. Corwin, Paul C. Schm, "Construction Dewatering and Groundwater Control, New Methods and Applications, 3rd Edition", John Wiley and Sons Inc, 2007.

5.0 DEWATERING CALCULATIONS

To evaluate the potential impacts on nearby groundwater receptors from construction dewatering for the hotel excavation, approximate groundwater flow rates need to be calculated. In addition, the radius of influence needs to be estimated. The radius of influence is the maximum distance from the area of groundwater extraction where groundwater pressure decreases can be measured, and represents the area where potential hydrogeological impacts may occur.

Several analytical models have been developed to generate these estimates. These models typically have similar assumptions to the hydraulic conductivity solutions discussed in Section 4.2, including steady-state flow and a homogeneous aquifer of infinite extent.

The elevations listed in Table D were used to determine the dewatering volumes. These are based on the drawings provided in Appendices 2 and 3.

Table D: Elevations for Dewatering Calculations

Lowest Basement Elevation	80.91m asl
Foundation Elevation	80.61m asl (lowest basement with 0.3m deep footings)
Ground Elevation	Existing elevation ranges from 89.90m to 90.47m asl Finished floor will range from 89.95m to 90.6 m asl

5.1 Dewatering Volumes: Construction Dewatering

To calculate approximate flow volumes of groundwater into the redevelopment excavation during construction, the excavation was assumed to be rectangular, and this rectangular excavation was modelled as an equivalent well, assuming groundwater will be flowing radially into the excavation. The equation representing this analytical model, from Powers et al. (2007)[2], is:

$$Q_w = \frac{\pi K(H^2 - h_w^2)}{\ln R_0/r_w}$$

Where:

Parameter	Input	Description
Q (L/day)	-	**Q** is the volumetric flow into the excavation (i.e., parameter being calculated)
K (m/s)	1.0 x 10^{-8}	**K** is the hydraulic conductivity. We have used a K value from published literature. The excavation will extend through the silty clay till layer (Table B), and therefore we have used 1.0 x 10-8 for the hydraulic conductivity (Section 4.2) of the till to approximate groundwater flow.

[2] J. Patrick Powers, Arthur B. Corwin, Paul C. Schm, "Construction Dewatering and Groundwater Control, New Methods and Applications, 3rd Edition", John Wiley and Sons Inc, 2007.

Parameter	Input	Description
H (m)	10.72	**H** is the static height of the water table (potentiometric surface) with respect to a datum. The highest measured groundwater elevation was 87.72m asl in BH203M. To be conservative and account for further seasonal and short-term fluctuations, we have assumed that the water table could fluctuate up to 1m above this level. The assumed groundwater elevation across the Site is therefore 88.72m asl. The elevation of the datum is conservatively estimated to be 78m asl (approximately the top of the weathered shale unit, which is interpreted to be the bottom of the aquifer) and corresponds to the design groundwater elevation (78.56m asl) required for construction. **H** is the difference between the water level elevation (88.72m asl) and the assumed datum (78.0m asl) which is 10.72m.
h (m)	0.56	**h** is the static height of the water table with respect to the level required in the excavation. The existing Site elevation in the southeast corner, 89.90m asl (Appendix 3), was used for the finished Site level. The building is to be completed with two levels of underground parking (P1 and P2). Based on email communication, the underground parking is split level, and the lowest excavated area is below Level P2 (-9.04m bgs) with allowance for footings (0.3m), elevator pit (0.5m), and buffer (0.5m). The depth of excavation is 79.56m asl. In order to maintain dry and stable working conditions during excavation, dewatering of 1m below the excavation floor is required. The water level required in the excavation is therefore 78.56m asl. The height of the required water level (78.56m asl) above the datum level (78.0m asl) is therefore 0.56m.
R_o	100	**R_o**, the radius of influence, is related to the maximum distance where drawdown from pumping can be measured, which corresponds to the lateral distance between **H** and **h**. **R_o** that was calculated using the empirical relationship developed by Sichart (Powers et al, 2007): **$R_o = 3000^* (H-h)^*K^{0.5}$**. This empirical equation yields a value of 10.0m. Considerable professional judgement is required to employ this relationship. For these flow calculations, the Sichart relationship yields a value close to the edge of the excavation, which would result in large hydraulic gradients and high flow rates. Experience and professional judgement dictate this is unrealistic. Although smaller **R_o** values result in higher estimated groundwater flow rates and the use of the Sichart method is precautionary, the radius of influence must be significantly larger than the equivalent radius of the excavation, **r**. Based on professional judgement, 10.0m is too small to be used for hydrogeological impact assessment. Based on PGL's experience, 100m is a reasonable radius of influence for the magnitude of drawdowns and hydraulic conductivities anticipated at the Site. As a conservative measure, the radius of influence, **R_o**, was assumed to be 100m.
r	27.60	**r** is the equivalent radius of the excavation when modelled as an equivalent well. We have assumed that the entire Site will be excavated to allow for utilities trenches and building footings. As indicated in the provided Site plans (Appendix 2), the Site width is 40.20m, and the Site length is 42.50m. We have added an extra 1m at each end to act as a buffer. The equivalent radius is calculated by **(a+b)/π**, where a = 42.20m, and b = 44.50m, which equals 16.92m.

Using these input values, the total volumetric flow to the excavation for construction is estimated at **241L/day** under steady-state conditions. To account for the initial draining of pores, precipitation, additional dewatering of service utility trenches, runoff, and uncertainty in the input parameter estimates, a safety factor of **4** was deemed reasonable, based on experience at similar sites. The maximum anticipated flow rate is therefore **966L/day**.

5.2 Dewatering Volume: Long-term Drainage into Perimeter Drains

To calculate the long-term drainage volumes at the basement perimeter drains, all parameter estimates from Section 5.1 remain the same, except:

Parameter	Input	Description
H (m)	8.11	**The datum changes to 80.61m asl**, corresponding to the maximum depth of the basement level P2 (9.04m) plus the footings (0.3m), and assumes horizontal passive flow to the foundation drain. The difference between the static groundwater level (88.72) and the datum is therefore 8.11m.
h (m)	0	No dewatering is required below the footings. The difference in elevation between the datum and the required water level is therefore zero.
R_o	50	For these flow calculations, the Sichart relationship yields a value of 7.98m. Based on professional judgement, 7.98m is too small for hydrogeological impact assessment. Based on PGL's experience, 50m is a reasonable radius of influence for the magnitude of drawdowns and hydraulic conductivities anticipated at the Site for long-term dewatering. As a conservative measure, the radius of influence, **R_o**, was assumed to be 50m.
r	27.60	For long-term drainage, only dewatering of the building footprint is required. The maximum dimensions measured on the provided drawings (Appendix 2) are 40.2m and 42.50m. We have added an extra meter at each end to act as a buffer. The equivalent radius is calculated as (a+b)/ π, where a = 42.20m and b = 44.50m. The equivalent radius is therefore 20.18m.

Using these new input values, the total flow of groundwater into the building's foundation drainage system is estimated to be a maximum of **300L/day** under steady-state conditions. No additional safety factor is required for long-term dewatering calculations.

6.0 HYDROGEOLOGICAL IMPACT ASSESSMENT

The impact assessment portion of PGL's scope characterized the potential impacts of the construction dewatering at the building foundation. This assessment discusses quantity and then quality of groundwater.

6.1 Groundwater Quantity

Potential hydrogeological impacts evaluated for the proposed construction are:

- Impacts to water levels in aquifers;
- Impacts to water levels in nearby water wells; and
- Impacts to baseflow in nearby surface water features.

Geological maps (Toronto and Region Conservation[3]) show that between Queen Street and Lake Ontario within the West Don River watershed, it is likely that only the Scarborough Aquifer underlies the Site, and is overlain by recent sediments. The Scarborough Aquifer lays directly on the shale bedrock. Based on the provided borehole logs, and the stratigraphy encountered during drilling, this aquifer was either not encountered or is dominated by very fine-grained sediments

[3] Toronto and Region Conservation (2009). *Don River Watershed Plan: Geology and Groundwater Resources – Report on Current Conditions. Figure 17: Don River watershed cross section A-A.*

near the Site. Regardless, impact to the aquifer is expected to be negligible as dewatering is anticipated to be less than 1,000L/day.

PGL conducted a water well search for wells within 500m of the Site, and identified 169 total wells. These are identified as:

- 2 wells abandoned;
- 2 monitoring wells;
- 4 monitoring wells classified as abandoned;
- 54 wells listed as monitoring/test hole;
- 29 not classified;
- 7 observation wells;
- 5 observation wells listed as not used;
- 46 wells listed as observation and monitoring wells;
- 19 test holes; and
- 1 test hole listed as not used.

The 29 unclassified wells are not likely to be used for water supply. The Site is in downtown Toronto, which is municipally serviced, and all unclassified wells were likely installed in or after 2010, when the existing municipal services were likely to be in place. It is therefore likely that these wells are monitoring wells/test holes.

Only seven wells were within the 100m radius of influence – four wells not classified, and three test hole/observation/monitoring wells. As the Site is within Toronto, these are not expected to be drinking water wells. No adverse impacts to these wells or any wells within 500m of the Site are expected.

The closest surface water body is Lake Ontario, over 1m south of the Site. There are no surface water bodies within the anticipated radius of influence; therefore, baseflow to them will not likely be impacted by Site dewatering.

6.1.1 Environmental Activity and Sector Registry and Permit to Take Water

In Ontario, groundwater takings for construction dewatering require registration in the Environmental Activity and Sector Registry if the extracted groundwater rates are greater than 50,000L/day and less than 400,000L/day. Based on the current construction plan, the dewatering volumes during construction at the Site will not require registration in the Environmental Activity and Sector Registry for online construction dewatering registration.

A Permit to Take Water is required by Ontario for long-term takings of greater than 50,000L/day and construction dewatering projects of greater than 400,000L/day. It is unlikely a Permit to Take Water will be required for this work.

If the proposed development is revised and the excavation will extend deeper than proposed, a Permit to Take Water may be required for construction. In addition, if any design changes violate the assumptions regarding the dewatering, a Permit to Take Water may be required.

6.2 Groundwater Quality

PGL collected a groundwater sample from the Site on March 17, 2021. The groundwater results were compared against the City of Toronto Sanitary and Storm Sewer By-Laws to evaluate if treatment may be required prior to discharge of groundwater to the sewer system. The laboratory Certificate of Analysis is presented in Appendix 4.

Groundwater exceeded the City of Toronto Sewer By-Laws Limits for Storm Sewer Discharge for Total Suspended Solids and total manganese. Groundwater concentrations met all other respective limits for Sanitary Sewer Discharge and Storm Sewer discharge.

We recommend confirmatory sampling for the applicable parameters prior to discharge to the storm or sanitary sewer system, so that the appropriate permits can be obtained prior to dewatering operations. Alternatively, a treatment system could be incorporated into the dewatering operations to ensure concentrations meet the applicable by-laws.

7.0 SUMMARY

PGL completed a Hydrogeological Impact Assessment at 152–164 Bathurst Street and 623–627 Richmond Street West in Toronto, Ontario. The purpose of the assessment was to determine potential impacts due to construction and dewatering at the Site.

The assessment determined the following features of the Site:

- Groundwater elevation ranged between 80.88m asl to 87.72m asl between March 9 and 25, 2021;
- The excavation will extend down to an elevation of 79.56m asl, within the silty clay till, and dewatering is required to an elevation of 78.56 asl; and
- The hydraulic conductivity is based on published literature associated with soil stratigraphy, where the water table was observed, and where the excavation will extend is $1.0x10^{-8}$m/s.

The key results of the Hydrogeological Impact Assessment for the Site are:

- Construction dewatering will be required during the excavation, with a maximum estimated flow of 966L/day;
- There are no anticipated impacts to aquifers, nearby water wells, or baseflow to surface water features due to the planned construction dewatering for the new residential building;
- Construction dewatering at the Site will not likely require registration in the Environmental Activity and Sector Registry;
- A Permit to Take Water is not likely required for the construction dewatering;
- Long-term dewatering of groundwater for the entire Site is anticipated to be a maximum of 300L/day;
- Groundwater at the Site met the City of Toronto Sanitary Sewer By-Law limits;
- Groundwater at the Site exceeded the City of Toronto Storm Sewer By-Laws for Total Suspended Solids and total manganese. Confirmatory sampling or groundwater treatment should be completed prior to dewatering operations; and
- If the construction dewatering plan changes or any of the assumptions stated in this report are otherwise violated, re-evaluation of the potential hydrogeological impact will be required.

Assessment of ground settling due to dewatering was outside the scope of this work program and area of expertise of the authors. We recommend this potential impact be evaluated by a geotechnical engineer.

8.0 STANDARD LIMITATIONS

This report is accurate at a high level for reasonably foreseeable conditions. The limitations of the work are not always obvious, and the best way to understand them is discussion with the authors in the context of your intended use. This work is a snapshot in time, so any use must consider that conclusions may change materially because of changes in site condition or regulatory context.

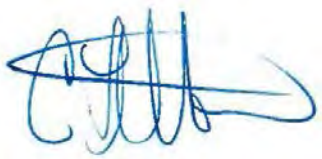
Only the addressee, our client, and their agents may rely on this report for the stated purpose. We warrant only that the work was done as described and is similar to the work that would be done by other qualified consultants in this area. Our contract includes limitations on liability related to professional errors and omissions.

Respectfully submitted,

PGL ENVIRONMENTAL CONSULTANTS

Per:

Salima Jaffer, B.Sc.
Environmental Consultant



Christina Trotter, M.Sc., P.Geo.
Senior Hydrogeologist

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Figures

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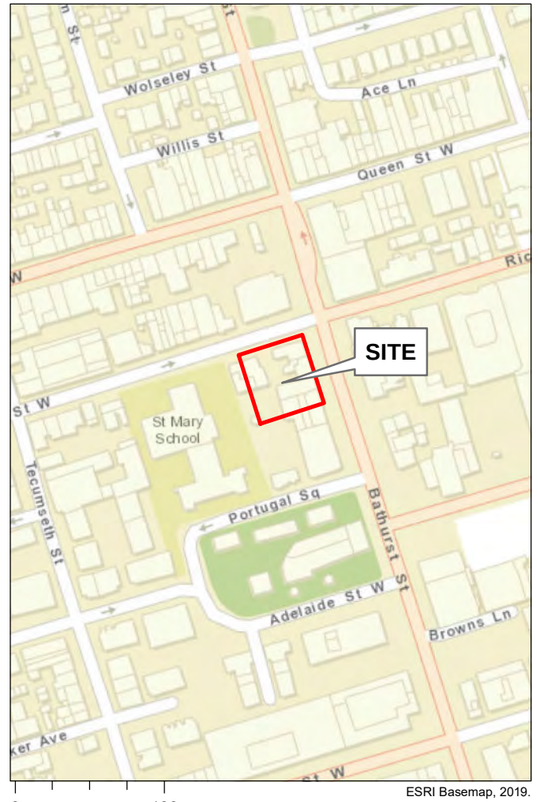

Site Boundary (Approximate)

Monitoring Well

Site boundary and site features are approximate and are presented for discussion purposes only.

0 20 m

2018 orthoimage and street map from ESRI
Parcel data from Ontario MNRF web GIS
NAD 1983 UTM Zone 17N

SITE LOCATION & INVESTIGATION LOCATIONS

152 - 164 Bathurst Street, & 623 - 627 Richmond Street West, Toronto, Ontario

TORONTO (BATHURST & RICHMOND) LP

PGL ENVIRONMENTAL CONSULTANTS

File No.:	Dwg No.:	FIGURE
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Site boundary and site features are approximate and are presented for discussion purposes only.

2018 orthoimage and street map from ESRI
Parcel data from Ontario MNRF web GIS
NAD 1983 UTM Zone 17N

Site Boundary (Approximate)

Inferred Groundwater Flow Direction *

##.## Groundwater Elevation (m asl)

Monitoring Well

* GROUNDWATER TABLE IS STILL RECOVERING. GROUNDWATER FLOW DIRECTION INFERRED TO BE SOUTH TOWARDS LAKE ONTARIO

GROUNDWATER ELEVATIONS AND FLOW DIRECTION - (MARCH 9, 2021)

152 - 164 Bathurst Street, & 623 - 627 Richmond Street West, Toronto, Ontario

TORONTO (BATHURST & RICHMOND) LP

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Date: APR 2021	Drawn by: RSS	

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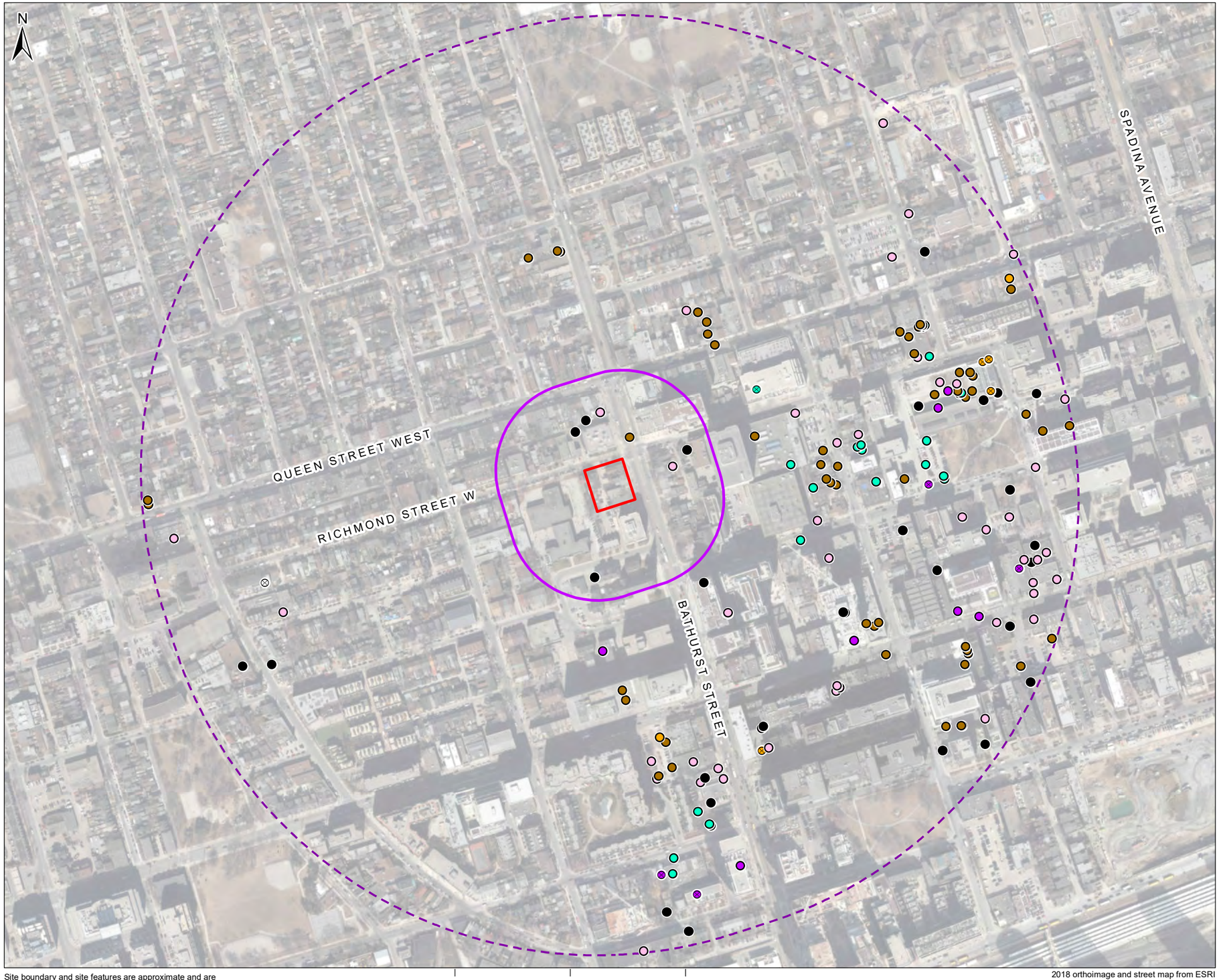

Site Boundary (Approximate)

WellSearchArea - 500m

Radius of Influence - 100m

Ontario Well Record DB Classification

- Abandoned
- Monitoring Well
- Monitoring Well - Abandoned
- Monitoring Well/Test Hole
- Not Classified
- Observation Well
- Observation Well - Not Used
- Observation/Monitoring Well
- Test Hole
- Test Hole - Not Used

Site boundary and site features are approximate and are presented for discussion purposes only.

0 260 m

2018 orthoimage and street map from ESRI
Parcel data from Ontario MNRF web GIS
NAD 1983 UTM Zone 17N

RADIUS OF INFLUENCE

152 - 164 Bathurst Street, & 623 - 627 Richmond Street West, Toronto, Ontario

TORONTO (BATHURST & RICHMOND) LP

PGL ENVIRONMENTAL CONSULTANTS

File No.: 5660-03.03	Dwg No.: HG_0030	FIGURE 3
Date: APR 2021	Drawn by: RSS	

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Tables

PGL ENVIRONMENTAL CONSULTANTS

PGL Environmental Consultants
Analytical Table Notes
Soil and Groundwater Samples

BH_M	Monitoring Well
MW	Monitoring Well
m asl	metres above sea level
m btr	metres below top of riser
m bgs	metres below ground surface
CNA	could not access

PGL ENVIRONMENTAL CONSULTANTS

Table 1
Groundwater Elevations
152-164 Bathurst Street 623-627 Ricmond Street West, Toronto, Ontario
Toronto (Bathurst Richmond) LP, PGL File 5660-03.03

Location	Riser Elevation (m asl)	Ground Elevation (m asl)	09-Mar-21			17-Mar-21			25-Mar-21		
			Depth to Groundwater (m btr)	Depth to Groundwater (m bgs)	Groundwater Elevation (m asl)	Depth to Groundwater (m btr)	Depth to Groundwater (m bgs)	Groundwater Elevation (m asl)	Depth to Groundwater (m btr)	Depth to Groundwater (m bgs)	Groundwater Elevation (m asl)
Shallow Wells											
BH202M	90.10	90.18	dry @6.024	dry @6.104	Dry	5.56	5.65	84.54	5.24	5.32	84.86
BH206M	87.43	87.43	3.241	3.336	84.19	3.34	3.48	84.09	3.12	3.22	84.31
Intermediate Wells											
BH201MS	90.14	90.23	7.821	7.908	82.32	7.68	7.77	82.46	7.48	7.57	82.66
BH203M	90.22	90.33	2.504	2.611	87.72	7.02	7.13	83.20	7.30	7.41	82.92
BH204M	90.38	90.50	6.634	6.751	83.75	5.26	5.38	85.12	2.98	3.10	87.40
BH205M	90.07	90.18	7.564	7.674	82.51	7.34	7.43	82.73	7.04	7.15	83.04
Deep Well											
BH201MD	90.14	90.23	8.136	8.226	82.00	9.26	9.33	80.88	8.75	8.84	81.39

Appendix 1

Borehole Logs

PGL
ENVIRONMENTAL CONSULTANTS

Borehole Logs by PGL Environmental

PGL
ENVIRONMENTAL CONSULTANTS

BOREHOLE RECORD

BOREHOLE NO: **BH207**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.14 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2		**TOPSOIL**						90.0
		Clayey SILT (FILL) with rock fragments, grey, moist						
0.4							Bentonite	89.8
0.6				**BH207-SS1**: Metals PAHs PHCs	<25			89.6
0.8								89.4
		End of borehole at 0.90 m						

INVESTIG. METHOD: Geoprobe 420M

INVESTIG. DATE: February 25, 2021

LOGGED BY: RSC HOLE DIAM (mm): 102

Sample Notes: Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

BOREHOLE RECORD

BOREHOLE NO: **BH208**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.5 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2		**Sandy SILT (FILL)** with gravel, trace clay, grey and brown, moist						90.4
0.4							Bentonite	90.2
0.6			**BH208**: Metals PAHs PHCs		<25			90.0
0.8								89.8
		End of borehole at 0.90 m						89.6

INVESTIG. METHOD: Geoprobe 420M

INVESTIG. DATE: February 25, 2021

LOGGED BY: RSC HOLE DIAM (mm): 102

Sample Notes: Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

PGL ENVIRONMENTAL CONSULTANTS

BOREHOLE RECORD

BOREHOLE NO: **BH209**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.488 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	● PID READING (ppmv) ● ■ VAPOUR READING (ppmv) ■	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2		**Silty SAND (FILL)** trace gravel, grey, moist						90.4
0.4				**BH209-SS1**: Metals PAHs PHCs	■<25		Bentonite	90.2 90.0
0.6		**Clayey SILT** trace construction debris, brown, moist						89.8
0.8				**BH209-SS2**	■<25			89.6

End of borehole at 0.90 m

INVESTIG. METHOD: Geoprobe 420M

INVESTIG. DATE: February 25, 2021

LOGGED BY: RSC HOLE DIAM (mm): 102

Sample Notes ⋈ Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

PGL ENVIRONMENTAL CONSULTANTS

BOREHOLE RECORD

BOREHOLE NO: **BH210**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.414 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	● PID READING (ppmv) ● ■ VAPOUR READING (ppmv) ■	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
		ASPHALT						90.4
0.2		**Silty SAND (FILL)** with gravel, grey, moist						90.2
0.4				**BH210-SS1**: Metals PAHs PHCs	■<25		Bentonite	90.0
0.6		**Clayey SILT (FILL)** trace construction debris, trace gravel, brown, moist						89.8
0.8				**BH210-SS2**	■<25			89.6

End of borehole at 0.90 m

INVESTIG. METHOD: Geoprobe 420M

INVESTIG. DATE: February 25, 2021

LOGGED BY: RSC HOLE DIAM (mm): 102

Sample Notes ⋈ Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

BOREHOLE RECORD

BOREHOLE NO: **BH211**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.365 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
		ASPHALT						
		Silty SAND (FILL) with gravel, brown, moist						
0.2		**Silty CLAY (FILL)** trace construction debris, brown, moist						90.2
0.4				**BH211-SS1**: Metals PAHs PHCs	<25		Bentonite	90.0
0.6								89.8
0.8								89.6

End of borehole at 0.90 m

INVESTIG. METHOD: Geoprobe 420M

INVESTIG. DATE: February 25, 2021

LOGGED BY: RSC HOLE DIAM (mm): 102

Sample Notes: Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

PGL ENVIRONMENTAL CONSULTANTS

BOREHOLE RECORD

BOREHOLE NO: **BH212**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.251 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	● PID READING (ppmv) ● ■ VAPOUR READING (ppmv) ■	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
		TOPSOIL						90.2
0.2		**Clayey SILT (FILL)** with rock fragments, grey, moist		**BH212-SS1**: Metals PAHs PHCs	■<25			90.0
0.4							Bentonite	89.8
0.6		**Silty CLAY (FILL)** trace construction debris, brown, moist		**BH212-SS2**	■<25			89.6
0.8								89.4

End of borehole at 0.90 m

INVESTIG. METHOD: Geoprobe 420M

INVESTIG. DATE: February 25, 2021

LOGGED BY: RSC HOLE DIAM (mm): 102

Sample Notes: Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

WELL RECORD

WELL NO: **MW201D**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.23 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2		Brick Pavers 50 mm					Roadbox, J-plug Silica Sand	90.0
0.4		**SAND AND GRAVEL (FILL)** some clay, some silt, brown, moist						89.8
0.6								89.6
0.8								89.4
1.0								89.2
1.2		**Clayey SILT (FILL)** trace construction debris, brown, moist						89.0
1.4								88.8
1.6								88.6
1.8								88.4
2.0		**Silty CLAY** some sand, trace gravel, brown, moist						88.2
2.2								88.0
2.4								87.8
2.6								87.6
2.8								87.4
3.0								87.2
3.2								87.0
3.4								86.8
3.6								86.6
3.8								86.4
4.0								86.2
4.2								86.0
4.4								85.8
4.6								85.6
4.8								85.4
5.0								85.2
5.2								85.0
5.4								84.8
5.6								84.6
5.8								84.4
6.0								84.2
6.2								84.0
6.4								83.8
6.6							Bentonite	83.6
6.8								83.4
7.0								83.2
7.2								83.0
7.4								82.8
7.6								82.6
7.8								82.4
8.0								82.2
8.2								82.0
8.4								81.8
8.6								81.6
8.8								81.4
9.0								81.2
9.2		**Silty SAND** trace clay, trace gravel, grey, moist						81.0
9.4								80.8
9.6								80.6
9.8								80.4
10.0								80.2
10.2								80.0
10.4		**Silty CLAY** grey, moist						79.8
10.6								79.6
10.8								79.4
11.0								79.2
11.2								79.0
11.4								78.8
11.6								78.6
11.8								78.4
12.0								78.2
12.2								78.0
12.4								77.8
12.6		Weathered Shale						77.6
12.8								77.4
13.0								77.2
13.2								77.0
13.4								76.8
13.6								76.6
13.8								76.4
14.0								76.2
14.2							Silica Sand 50mm 010 Slot PVC	76.0
14.4								75.8
14.6								75.6
14.8								75.4
15.0								75.2
15.2								75.0
15.4								74.8
15.6								74.6
15.8								74.4
16.0							Slough	

MW201D-SS3: Metals, PAHs, PHCs

MW201D-SS4: Metals, PAHs, PHCs

End of borehole at 16.00 m

Screened interval from 12.9 m to 15.9 m below surface.
GW 9.33 mbgs
(3/17/2021)

INVESTIG. METHOD: B37X Diamond Drill

INVESTIG. DATE: February 22, 2021

LOGGED BY: RSC HOLE DIAM (mm): 203

Sample Notes ☒ Split Spoon

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

WELL RECORD

WELL NO: **MW201S**

PGL ENVIRONMENTAL CONSULTANTS

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.23 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2		Brick Pavers 50 mm			Roadbox, J-plug Silica Sand	90.0
0.4		**SAND AND GRAVEL (FILL)** some clay, some silt, brown, moist				89.8
0.6		**Clayey SILT** trace construction debris, brown, moist				89.6
0.8						89.4
1.0						89.2
1.2						89.0
1.4						88.8
1.6						88.6
1.8						88.4
2.0						88.2
2.2		**Silty CLAY** some sand, trace gravel, brown, moist				88.0
2.4						87.8
2.6					Bentonite	87.6
2.8						87.4
3.0						87.2
3.2						87.0
3.4						86.8
3.6						86.6
3.8		grey below 3.7m				86.4
4.0						86.2
4.2						86.0
4.4						85.8
4.6						85.6
4.8						85.4
5.0						85.2
5.2						85.0
5.4						84.8
5.6						84.6
5.8						84.4
6.0						84.2
6.2					Silica Sand 50mm 010 Slot PVC	84.0
6.4						83.8
6.6						83.6
6.8						83.4
7.0						83.2
7.2						83.0
7.4						82.8
7.6			▼			82.6
7.8						82.4
8.0					Slough	

End of borehole at 8.00 m

Screened interval from 4.9 m to 7.9 m below surface.
GW 7.77 mbgs
(3/17/2021)

INVESTIG. METHOD: B37X Diamond Drill
INVESTIG. DATE: February 22, 2021
LOGGED BY: RSC HOLE DIAM (mm): 203

Sample Notes

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

WELL RECORD

WELL NO: **MW202**

PGL ENVIRONMENTAL CONSULTANTS

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.18 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2		**Clayey SILT (FILL)** some gravel, some sand, brown, moist		**MW202-SS1**: Metals PAHs PHCs	<25			Roadbox, J-plug Silica Sand	90.0
0.4									89.8
0.6									89.6
0.8				**MW202-SS2**: Metals PAHs PHCs	<25	5			89.4
1.0									89.2
1.2									89.0
1.4				**MW202-SS3**	<25				88.8
1.6		grey, moist to dry below 1.5m						Bentonite	88.6
1.8		0.15m sand seam at 1.8m							88.4
2.0				**MW202-SS4**: Metals PAHs PHCs	<25				88.2
2.2									88.0
2.4									87.8
2.6				**MW202-SS5**	<25				87.6
2.8									87.4
3.0									87.2
3.2				**MW202-SS6/Z001**: Metals PAHs	<25				87.0
3.4									86.8
3.6		**Silty CLAY** trace gravel, brown, moist							86.6
3.8									86.4
4.0		grey below 3.8m							86.2
4.2				**MW202-SS7**	<25				86.0
4.4								Silica Sand 50mm 010 Slot PVC	85.8
4.6									85.6
4.8									85.4
5.0									85.2
5.2									85.0
5.4									84.8
5.6				**MW202-SS8**	<25				84.6
5.8									84.4
6.0									84.2
6.2				**MW202-SS9**	<25				84.0
6.4									83.8
6.6									83.6
6.8								Slough	83.4
7.0									83.2
7.2				**MW202-SS10**	<25				83.0
7.4									82.8
7.6									82.6

End of borehole at 7.60 m

Screened interval from 3 m to 6.1 m below surface.
GW 5.65 mbgs
(3/17/2021)

INVESTIG. METHOD: B37X Diamond Drill
INVESTIG. DATE: February 23, 2021
LOGGED BY: RSC HOLE DIAM (mm): 203

Sample Notes ☒ Split Spoon

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

PGL MULTI-TEST VAPOR LOG 2015 5660-03.GPJ PGL CANADA 2015.GDT 4/22/21

WELL RECORD

WELL NO: **MW203**

PGL PROJECT NO: **5660-03.03**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

SURFACE ELEVATION: **90.33 m**

DEPTH (m)	SOIL DESCRIPTION	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	COMPLETION NOTES	ELEVATION (m)
0.2	**Clayey SILT (FILL)** trace gravel with rock fragments, trace roots, grey, dry to moist	**MW203-SS1**: Metals PAHs PHCs	<25	Roadbox, J-plug Silica Sand	90.2
0.4					90.0
0.6					89.8
0.8					89.6
1.0		**MW203-SS2**: Metals PAHs PHCs	<25		89.4
1.2					89.2
1.4					89.0
1.6					88.8
1.8	**SAND (FILL)** some gravel, brown, moist	**MW203-SS3**	<25		88.6
2.0					88.4
2.2					88.2
2.4	**Silty CLAY** grey and brown, moist	**MW203-SS4**: Metals PAHs PHCs	<25		88.0
2.6					87.8
2.8				Bentonite	87.6
3.0					87.4
3.2					87.2
3.4		**MW203-SS5**	<25		87.0
3.6					86.8
3.8					86.6
4.0	grey below 4m	**MW203-SS6/Z002**: VOCs	<25		86.4
4.2					86.2
4.4					86.0
4.6					85.8
4.8					85.6
5.0					85.4
5.2					85.2
5.4					85.0
5.6					84.8
5.8					84.6
6.0					84.4
6.2					84.2
6.4				Silica Sand 50mm 010 Slot PVC	84.0
6.6					83.8
6.8					83.6
7.0					83.4
7.2					83.2
7.4					83.0
7.6					82.8
7.8					82.6
8.0					82.4
8.2					82.2
8.4					82.0
8.6	**Silty SAND** trace clay, trace gravel, grey, wet				81.8
8.8					81.6
9.0				Slough	81.4
9.2					81.2
9.4					81.0
9.6					80.8
9.8					80.6
					80.4

INVESTIG. METHOD: B37X Diamond Drill

INVESTIG. DATE: February 24, 2021

LOGGED BY: RSC HOLE DIAM (mm): 203

Sample Notes ⊠ Split Spoon

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

PGL ENVIRONMENTAL CONSULTANTS

WELL RECORD

WELL NO: **MW203**

CLIENT: Originate Developments Inc.

PGL PROJECT NO: **5660-03.03**

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

SURFACE ELEVATION: **90.33 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	● PID READING (ppmv) ● ■ VAPOUR READING (ppmv) ■	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
10.2									80.2
10.4		**Silty CLAY** grey, moist							80.0
10.6									79.8
10.8									79.6
11.0									79.4
11.2									79.2
11.4									79.0
11.6									78.8
11.8									78.6
12.0									78.4
12.2		Weathered Shale							78.2
12.4								Slough	78.0
12.6									77.8
12.8									77.6
13.0									77.4
13.2									77.2
13.4									77.0
13.6									76.8
13.8									76.6
14.0									76.4
14.2									76.2
14.4									76.0
14.6									75.8

End of borehole at 14.60 m

Screened interval from 4.9 m to 7.9 m below surface.
GW 7.13 mbgs
(3/17/2021)

PGL MULTI-TEST VAPOR LOG 2015 5660-03.GPJ PGL CANADA 2015.GDT 4/22/21

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

WELL RECORD

WELL NO: **MW204**

PGL ENVIRONMENTAL CONSULTANTS

CLIENT: Originate Developments Inc.

PGL PROJECT NO: **5660-03.03**

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

SURFACE ELEVATION: **90.5 m**

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2	**ASPHALT**						Roadbox, J-plug Silica Sand	90.4
0.4	**Gravelly SAND (FILL)** with construction debris, brown, moist	MW204-SS1	Metals, PAHs, PHCs	<25				90.2
0.6								90.0
0.8								89.8
1.0	**Clayey SILT (FILL)** brown, moist							89.6
1.2								89.4
1.4		MW204-SS2	Metals, PAHs, PHCs	<25				89.2
1.6								89.0
1.8								88.8
2.0	**Silty CLAY** some sand, trace gravel, brown, moist	MW204-SS3		<25				88.6
2.2								88.4
2.4								88.2
2.6							Bentonite	88.0
2.8		MW204-SS4/Z004	Metals, PAHs, PHCs	<25				87.8
3.0								87.6
3.2								87.4
3.4								87.2
3.6								87.0
3.8	grey below 3.7m							86.8
4.0								86.6
4.2								86.4
4.4								86.2
4.6								86.0
4.8								85.8
5.0								85.6
5.2					▼			85.4
5.4								85.2
5.6								85.0
5.8								84.8
6.0								84.6
6.2								84.4
6.4							Silica Sand 50mm 010 Slot PVC	84.2
6.6								84.0
6.8								83.8
7.0								83.6
7.2								83.4
7.4								83.2
7.6								83.0
7.8								82.8
8.0								82.6
8.2								82.4
8.4								82.2
8.6	with weathered shale below 8.5m							82.0
8.8								81.8
9.0							Slough	81.6
9.2								81.4
9.4								81.2
9.6								81.0
9.8								80.8
								80.6

INVESTIG. METHOD: B37X Diamond Drill

INVESTIG. DATE: February 25 - February 26, 2021

LOGGED BY: RSC HOLE DIAM (mm): 203

Sample Notes: Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

PGL ENVIRONMENTAL CONSULTANTS

WELL RECORD

WELL NO: **MW204**

CLIENT: Originate Developments Inc.

PGL PROJECT NO: **5660-03.03**

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

SURFACE ELEVATION: **90.5 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	● PID READING (ppmv) ● ■ VAPOUR READING (ppmv) ■	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
10.2		**Silty CLAY** some sand, trace gravel, brown, moist *continued from previous page*							80.4
10.4									80.2
10.6									80.0
10.8									79.8
11.0									79.6
11.2									79.4
11.4									79.2
11.6									79.0
11.8									78.8
12.0									78.6
12.2									78.4
12.4								Slough	78.2
12.6		Weathered Shale							78.0
12.8									77.8
13.0									77.6
13.2									77.4
13.4									77.2
13.6									77.0
13.8									76.8
14.0									76.6
14.2									76.4
14.4									76.2
14.6									76.0

End of borehole at 14.60 m

Screened interval from 4.9 m to 7.9 m below surface.
GW 5.38 mbgs
(3/17/2021)

PGL MULTI-TEST VAPOR LOG 2015 5660-03.GPJ PGL CANADA 2015.GDT 4/22/21

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

WELL RECORD

WELL NO: **MW205**

PGL PROJECT NO: **5660-03.03**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

SURFACE ELEVATION: **90.18 m**

DEPTH (m)	SOIL DESCRIPTION	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2	**Clayey SILT (FILL)** trace sand, brown, moist	**MW205-SS1**: Metals PAHs PHCs	<25		Roadbox, J-plug Silica Sand	90.0
1.8	**Silty CLAY** some sand, trace gravel, brown, moist	**MW205-SS2**: Metals PAHs PHCs	<25			88.4
2.4		**MW205-SS3**	<25			87.8
3.0		**MW205-SS4**: Metals PAHs PHCs	<25		Bentonite	87.2
8.4	**Silty SAND** trace clay, trace gravel, grey, moist				Silica Sand 50mm 010 Slot PVC	81.8
9.8					Slough	80.4

INVESTIG. METHOD: B37X Diamond Drill

INVESTIG. DATE: February 24, 2021

LOGGED BY: RSC HOLE DIAM (mm): 203

Sample Notes: Split Spoon

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

WELL RECORD

WELL NO: **MW205**

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **90.18 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	● PID READING (ppmv) ● ■ VAPOUR READING (ppmv) ■	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
10.2									80.0
10.4		**Silty CLAY** with weathered shale, grey, moist							79.8
10.6									79.6
10.8									79.4
11.0									79.2
11.2									79.0
11.4								Slough	78.8
11.6									78.6
11.8									78.4
12.0									78.2
12.2									78.0
12.4									77.8
12.6		Weathered Shale							77.6
12.8									77.4

End of borehole at 12.80 m

Screened interval from 4.9 m to 7.9 m below surface.
GW 7.43 mbgs
(3/17/2021)

PGL MULTI-TEST VAPOR LOG 2015 5660-03.GPJ PGL CANADA 2015.GDT 4/22/21

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

WELL RECORD

WELL NO: **MW206**

PGL ENVIRONMENTAL CONSULTANTS

CLIENT: Originate Developments Inc.

PROJECT: 156-164 Bathurst St. & 623-627 Richmond St. West, Toronto, ON

PGL PROJECT NO: **5660-03.03**

SURFACE ELEVATION: **87.43 m**

DEPTH (m)	SOIL TYPE	SOIL DESCRIPTION	SAMPLE TYPE	LABORATORY ANALYSES	PID READING (ppmv) / VAPOUR READING (ppmv)	WATER LEVEL	WELL COMPLETION	COMPLETION NOTES	ELEVATION (m)
0.2		**CONCRETE**						Roadbox, J-plug	87.2
0.4		**GRAVEL (FILL)** grey, dry						Silica Sand	87.0
0.6		**Silty CLAY** trace rock fragments, trace sand, brown, moist		**MW206-SS1**: Grain Size, Metals, PAHs, pH, PHCs	<25				86.8
0.8									86.6
1.0								Bentonite	86.4
1.2				**MW206-SS2/ Z003**: Metals, PAHs, PHCs, VOCs	<25				86.2
1.4									86.0
1.6		grey below 1.5m							85.8
1.8		some gravel at 1.65m							85.6
2.0		no sand below 1.8m			<25				85.4
2.2				**MW206-SS3**					85.2
2.4									85.0
2.6									84.8
2.8				**MW206-SS4**: Metals, PAHs, PHCs	<25				84.6
3.0								Silica Sand 50mm 010 Slot PVC	84.4
3.2									84.2
3.4						▼			84.0
3.6				**MW206-SS5**	<25				83.8
3.8									83.6
4.0									83.4
4.2				**MW206-SS6**	<25				83.2
4.4									83.0
4.6									82.8
4.8				**MW206-SS7**	<25				82.6
5.0								Slough	82.4
5.2									82.2
5.4				**MW206-SS8**	<25				82.0

End of borehole at 5.50 m

Screened interval from 1.5 m to 4.6 m below surface.

Borehole located within the basement of Site address
GW 3.48 mbgs
(3/17/2021)

INVESTIG. METHOD: Geoprobe 420M

INVESTIG. DATE: February 24, 2021

LOGGED BY: RSC HOLE DIAM (mm): 102

Sample Notes: Macro Core Sampler

THIS LOG IS FOR ENVIRONMENTAL PURPOSES ONLY.

Borehole Logs by Terrapex Environmental

PGL
ENVIRONMENTAL CONSULTANTS

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling	**BH No.: BH201MD**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN / ELEV. (m) 90.23	
LOCATION: Toronto, Ontario	NORTHING: 4833784.86 / EASTING: 628704.11	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
	BRICK PAVERS 50 mm FILL, gravelly sand and clayey silt	0	90	17	20	1A		17		Borehole advanced with hollow stem augers. 50 mm diameter monitoring well installed.
	FILL firm to stiff, moist brown and black clayey silt trace brick fragments	0.5	89.5	8	21	1B				
		1			17	2		8		
		1.5	89							
		2	88.5	13	16	3		13		
		2.5	88	22	16	4		22		
		3	87.5							
		3.5	87	15	22	5		15		
	brown -----	4	86.5	18		6		18		
	grey	4.5	86							
	very stiff to stiff	5	85.5	14	15	7		14		
	-----	5.5	85							
	firm moist SILTY CLAY some sand to sandy trace gravel (TILL)	6	84.5							
		6.5	84	5	17	8		5		
		7	83.5	67						
		7.5	83							
		8	82.5	6	19	9		6		
		8.5	82							
		9	81.5							
	dense, moist, grey SILTY fine SAND trace clay, trace gravel	9.5	81	34	15 16	10A 10B		34		
			80.5							

TERRAPEX

LOGGED BY: JC | DRILLING DATE: February 22, 2021

REVIEWED BY: VN |

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH201MD**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.23	
LOCATION: Toronto, Ontario	NORTHING: 4833784.86	EASTING: 628704.11	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
	dense, moist, grey SILTY fine SAND trace clay, trace gravel	10	80							
	very dense SILTY CLAY (TILL) and weathered SHALE COMPLEX	10.5	79.5	47	10	11		47		
		11	79							
		11.5	78.5	40	14	12		40		
		12	78		12	13A		100+		
		12.5	77.5	100+		13B				
	grey weathered SHALE	13	77	100+	5	14		100+		TCR 85% RQD 61%
	grey SHALE with limestone interbeds slightly weathered moderately fractured	13.5	76.5			15				Unconfined compressive strength at 13.7 m depth is 53.7 MPa. TCR 100% RQD 93%
		14	76							
		14.5	75.5							
		15	75			16				
		15.5	74.5							
	END OF BOREHOLE									

TERRAPEX

LOGGED BY: JC | DRILLING DATE: February 22, 2021

REVIEWED BY: VN |

CLIENT: PGL Environmental Consultants	METHOD: Augering		**BH No.: BH201MS**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.23	
LOCATION: Toronto, Ontario	NORTHING: 4833784.86	EASTING: 628704.11	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		REFER TO BOREHOLE BH201MD FOR SOIL STRATIGRAPHY	0 – 7.5	90 – 82.5							Borehole advanced with hollow stem augers. 50 mm diameter monitoring well installed.
		END OF BOREHOLE									

TERRAPEX

LOGGED BY: EM | DRILLING DATE: February 23, 2021

REVIEWED BY: VN | Page 1 of 1

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH202M**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.18	
LOCATION: Toronto, Ontario	NORTHING: 4833816.34	EASTING: 628723.99	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		FILL stiff to very stiff, moist dark brown and grey clayey silt occasional pockets of crusher run limestone and gravelly sand	0 – 3.5	90 – 86.5	N-Value: 24, 9, 16, 17, 18		1A, 1B, 2, 3A, 3B, 4A, 4B, 5A, 5B		24, 9, 16, 17, 18		Borehole advanced with hollow stem augers. 50 mm diameter monitoring well installed.
		stiff to firm, moist, grey SILTY CLAY some sand to sandy trace gravel (TILL)	3.5 – 8	86.5 – 82	N-Value: 9, 8, 4, 6, 4, 4		6, 7, 8, 9, 10, 11		9, 8, 4, 6, 4, 4		
		END OF BOREHOLE									

TERRAPEX

LOGGED BY: EM	DRILLING DATE: February 23, 2021
REVIEWED BY: VN	Page 1 of 1

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH203M**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.33	
LOCATION: Toronto, Ontario	NORTHING: 4833809.60	EASTING: 628727.77	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		TOPSOIL 100 mm	0	90	15	17	1A				Borehole advanced with hollow stem augers.
		FILL stiff, moist, brown and grey clayey silt occasional shale fragments occasional pockets of crusher run limestone	0.5	89.5	9	7	1B		15		50 mm diameter monitoring well installed in straight augered borehole adjacent to sampled borehole.
			1	89			2		9		
			1.5	88.5	25	15	3A				
			2	88			3B		25		
			2.5	87.5	14	18	4		14		
		brown	3	87	8	17	5		8		
		-----	3.5	86.5							
		grey	4	86	7	16	6		7		
			4.5	85.5	3	18	7		3		
		stiff to firm, moist SILTY CLAY some sand to sandy trace gravel (TILL)	5	85							
			5.5	84.5							
			6	84	7	3	8		7		
			6.5	83.5							
			7	83							
			7.5	82.5	8	20	9		8		
			8	82							
			8.5	81.5							
		dense, wet, grey SILTY fine SAND trace clay, trace gravel	9	81	40	17	10		40		
			9.5	80.5							

TERRAPEX

LOGGED BY: JC | DRILLING DATE: February 24, 2021

REVIEWED BY: VN |

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH203M**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.33	
LOCATION: Toronto, Ontario	NORTHING: 4833809.60	EASTING: 628727.77	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

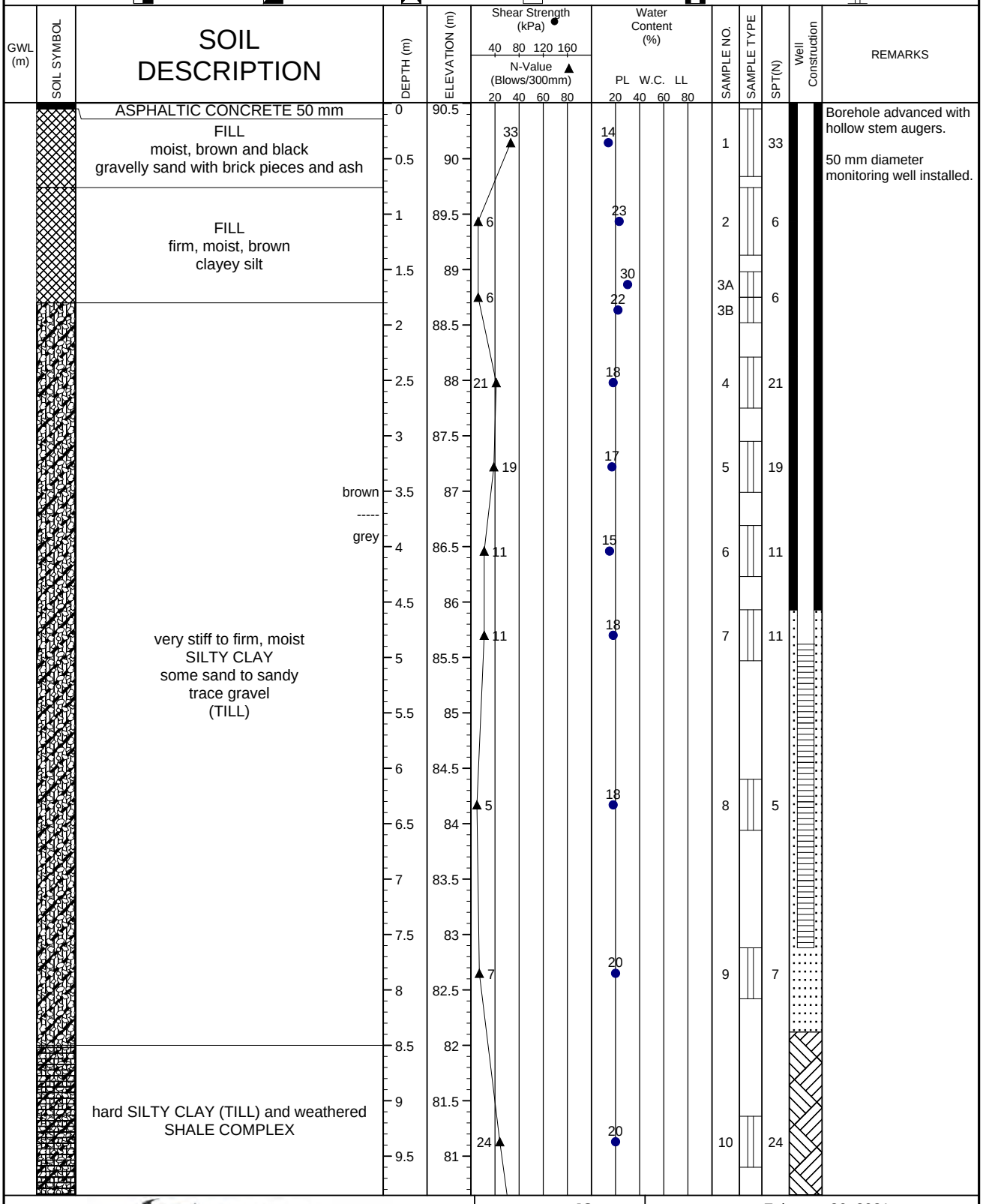
GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		dense, wet, grey SILTY fine SAND, trace clay, trace gravel	10								
			10.5	80							
		hard SILTY CLAY (TILL) and weathered SHALE COMPLEX	11	79.5	39	12	11		39		
			11.5	79							
			12	78.5	100+	9	12		100+		TCR 100% RQD 46%
		grey SHALE with limestone interbeds slightly weathered moderately fractured	12.5	78			13				TCR 100% RQD 94%
			13	77.5							
			13.5	77							Shale unconfined compressive strength at 13.5 m depth is 17.1 MPa.
			14	76.5			14				
		END OF BOREHOLE	14.5	76							

TERRAPEX

LOGGED BY: JC	DRILLING DATE: February 24, 2021
REVIEWED BY: VN	Page 2 of 2

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH204M**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.50	
LOCATION: Toronto, Ontario	NORTHING: 4833822.21	EASTING: 628701.54	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON



Borehole advanced with hollow stem augers.

50 mm diameter monitoring well installed.

TERRAPEX	LOGGED BY: JC	DRILLING DATE: February 26, 2021
	REVIEWED BY: VN	Page 1 of 2

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH204M**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.50	
LOCATION: Toronto, Ontario	NORTHING: 4833822.21	EASTING: 628701.54	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

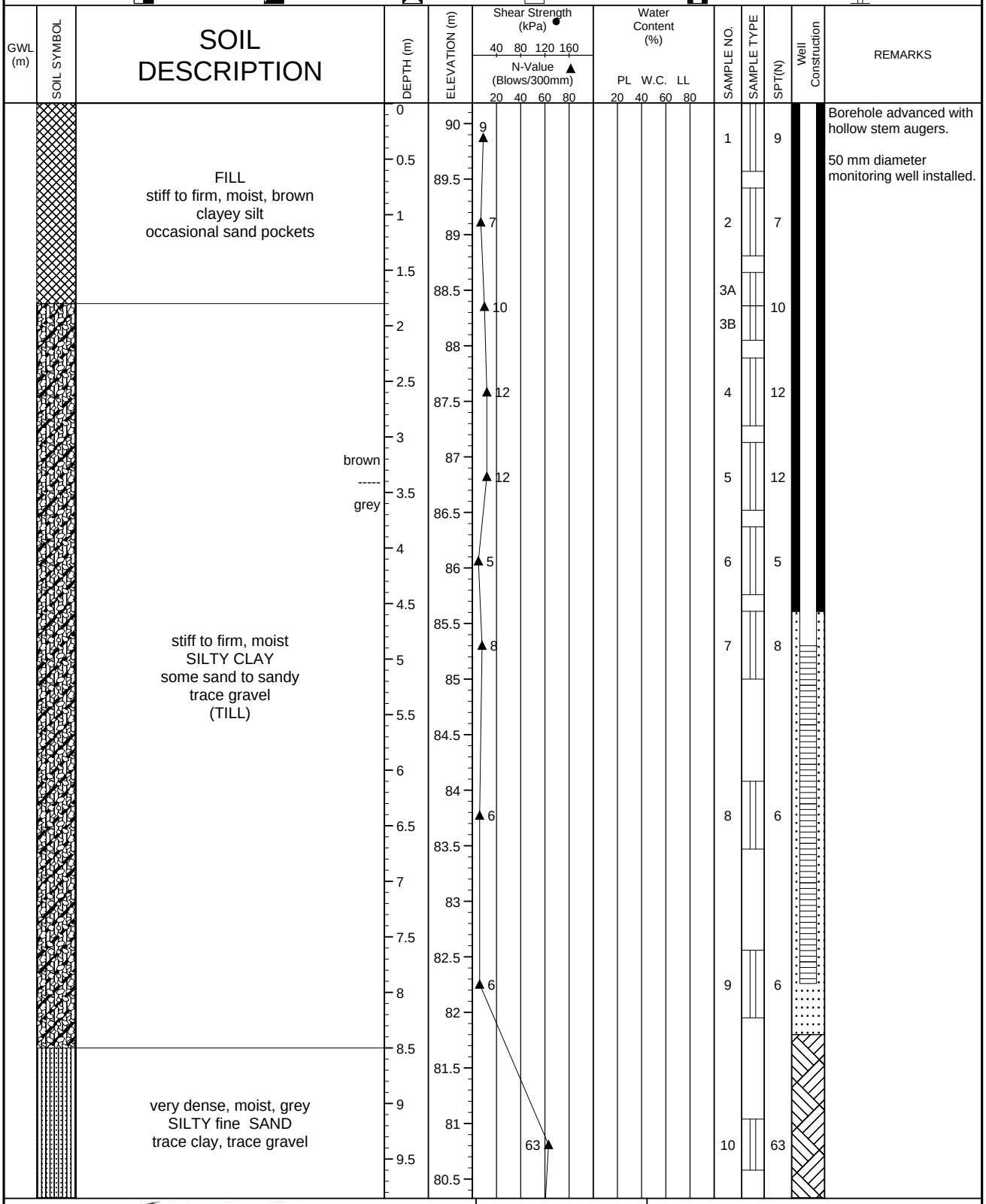
GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) / N-Value (Blows/300mm)	Water Content (%) PL W.C. LL	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		hard SILTY CLAY (TILL) and weathered SHALE COMPLEX	10	80.5	43	9	11		43		
			10.5	80							
			11	79.5							
			11.5	79							
			12	78.5	61	10	12		61		
			12.5	78	100+		13		100+		
		grey weathered SHALE	13	77.5							
			13.5	77							
			14	76.5							
			14.5	76	100+		14		100+		
		END OF BOREHOLE									

TERRAPEX

LOGGED BY: JC	DRILLING DATE: February 26, 2021
REVIEWED BY: VN	Page 2 of 2

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH205M**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.18	
LOCATION: Toronto, Ontario	NORTHING: 4833805.47	EASTING: 628711.82	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON



TERRAPEX	LOGGED BY: JC	DRILLING DATE: February 24, 2021
	REVIEWED BY: VN	Page 1 of 2

CLIENT: PGL Environmental Consultants	METHOD: Augering and Split Spoon Sampling		**BH No.: BH205M**
PROJECT: SW Corner of Richmond and Bathurst	PROJECT ENGINEER: VN	ELEV. (m) 90.18	
LOCATION: Toronto, Ontario	NORTHING: 4833805.47	EASTING: 628711.82	PROJECT NO.: 21-014

SAMPLE TYPE: AUGER | DRIVEN | CORING | DYNAMIC CONE | SHELBY | SPLIT SPOON

GWL (m)	SOIL SYMBOL	SOIL DESCRIPTION	DEPTH (m)	ELEVATION (m)	Shear Strength (kPa) 40 80 120 160 / N-Value (Blows/300mm) 20 40 60 80	Water Content (%) PL W.C. LL 20 40 60 80	SAMPLE NO.	SAMPLE TYPE	SPT(N)	Well Construction	REMARKS
		very dense, moist, grey SILTY fine SAND, trace clay, trace gravel	10	80							
		hard SILTY CLAY (TILL) and weathered SHALE COMPLEX	10.5	79.5	55		11		55		
			11	79							
			11.5	78.5	49		12		49		
			12	78							
		grey weathered SHALE	12.5	77.5	100+		13		100+		
		END OF BOREHOLE									

TERRAPEX

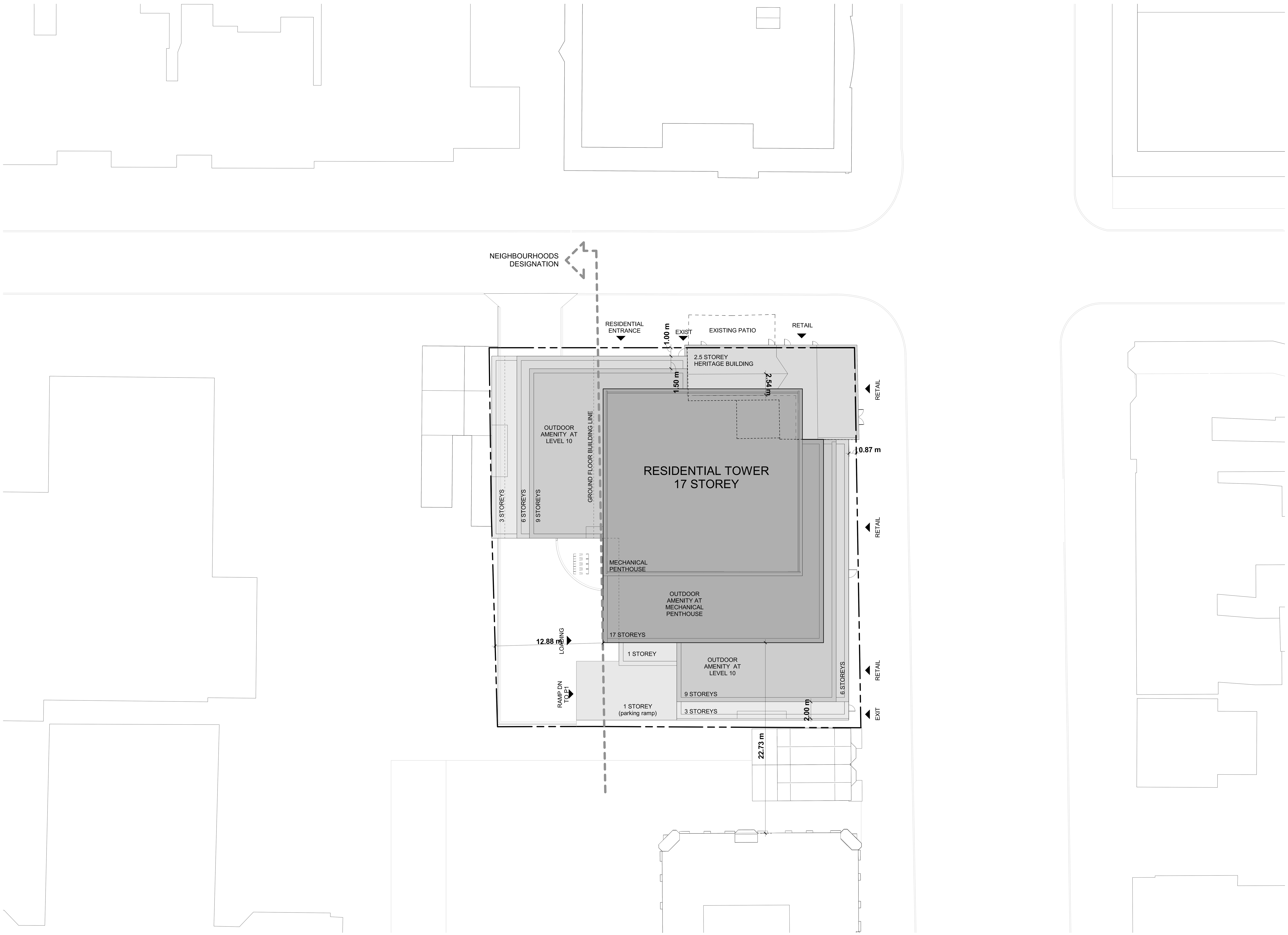
LOGGED BY: JC | DRILLING DATE: February 24, 2021

REVIEWED BY: VN

Appendix 2

Proposed Development Plans

PGL
ENVIRONMENTAL CONSULTANTS



Site Plan 1 / dA1.3

1 : 200

Authorities Having Jurisdiction

PROGRESS SET
April 15, 2021

Date:

KIRKOR ARCHITECTS AND PLANNERS
20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

Revisions:

No.:	Revision:	Date:

No.:	Issued For:	Date:

Drawing Title:

Site Plan

Client:

Originate

Project:

Bathurst and Richmond

152-164 Bathurst Street and 623-627 Richmond Street, Toronto

Scale: 1 : 200

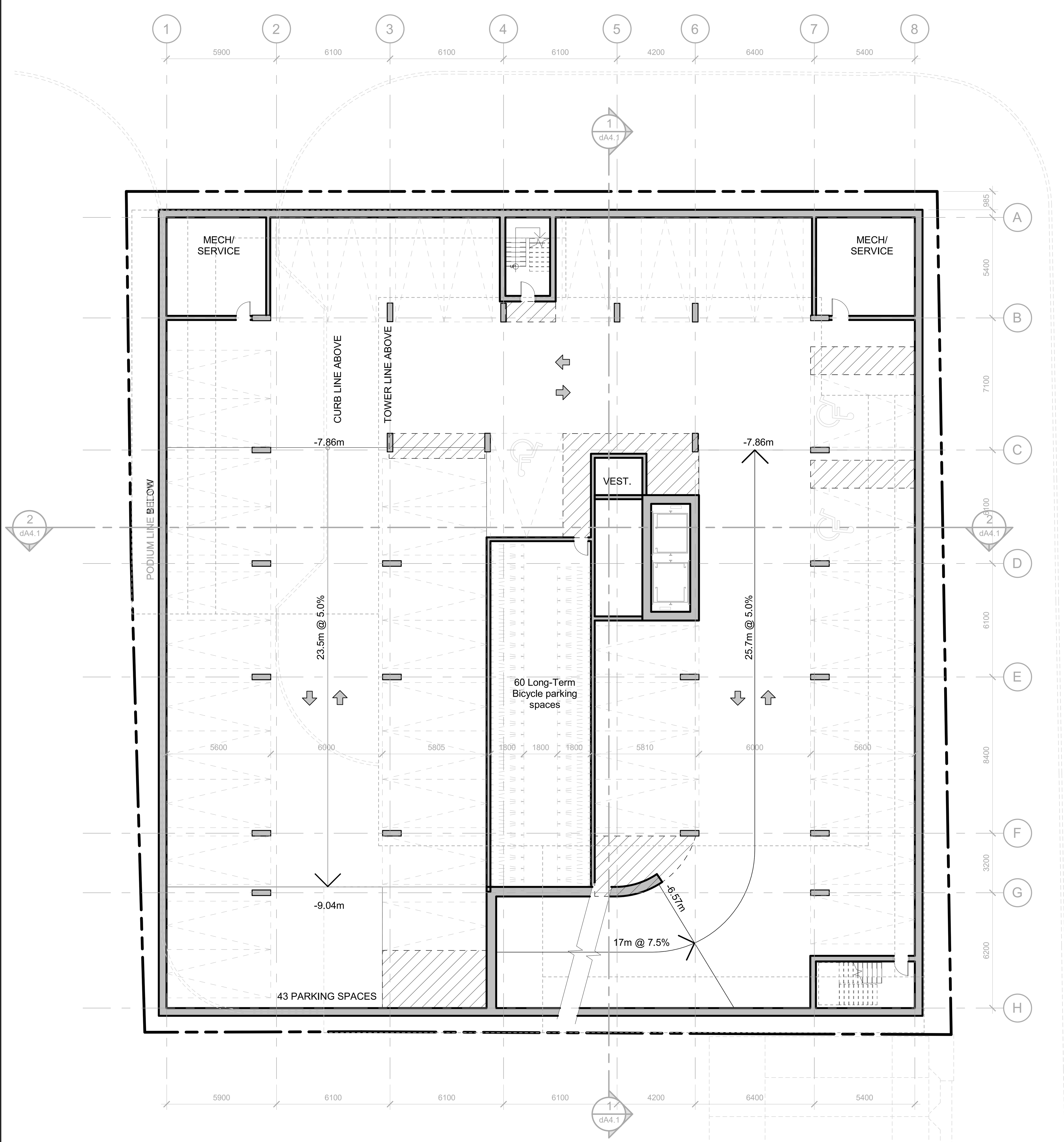
Drawn by: N.P

Checked by: A.L

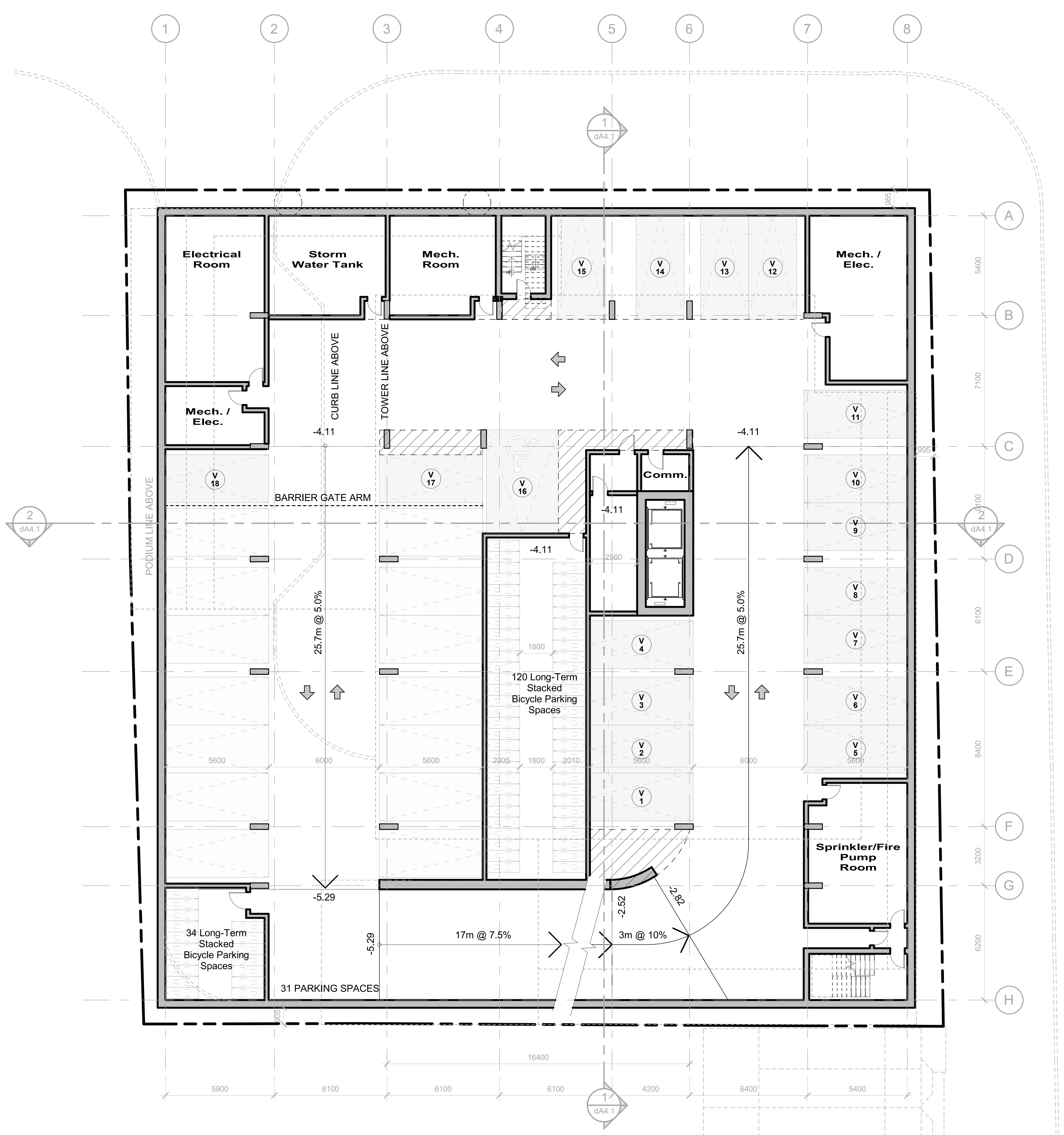
Project No.: 20-018

Date: April 15, 2021

Drawing No.: dA1.3



Floor plan P2 1 dA2.1
1 : 150



Floor plan P1 2 dA2.1
1 : 150

Authorities Having Jurisdiction

PROGRESS SET
April 15, 2021

Date:

KIRKOR ARCHITECTS AND PLANNERS
20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

Revisions:

No.:	Revision:	Date:

No.:	Issued For:	Date:

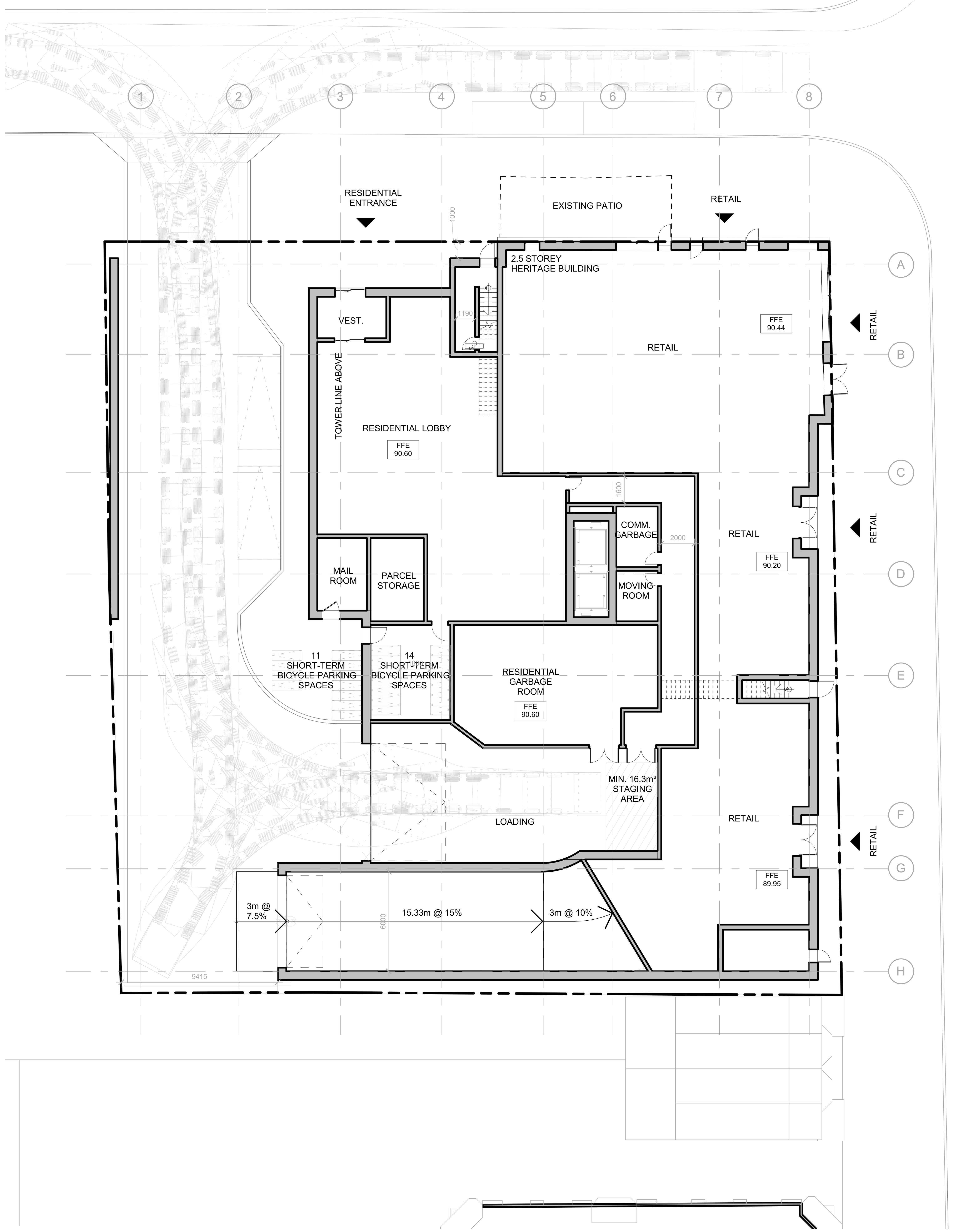
Drawing Title:
Floor Plan - Level P2 & P1

Client:
Originate

Project:
Bathurst and Richmond

152-164 Bathurst Street and 623-627 Richmond Street, Toronto

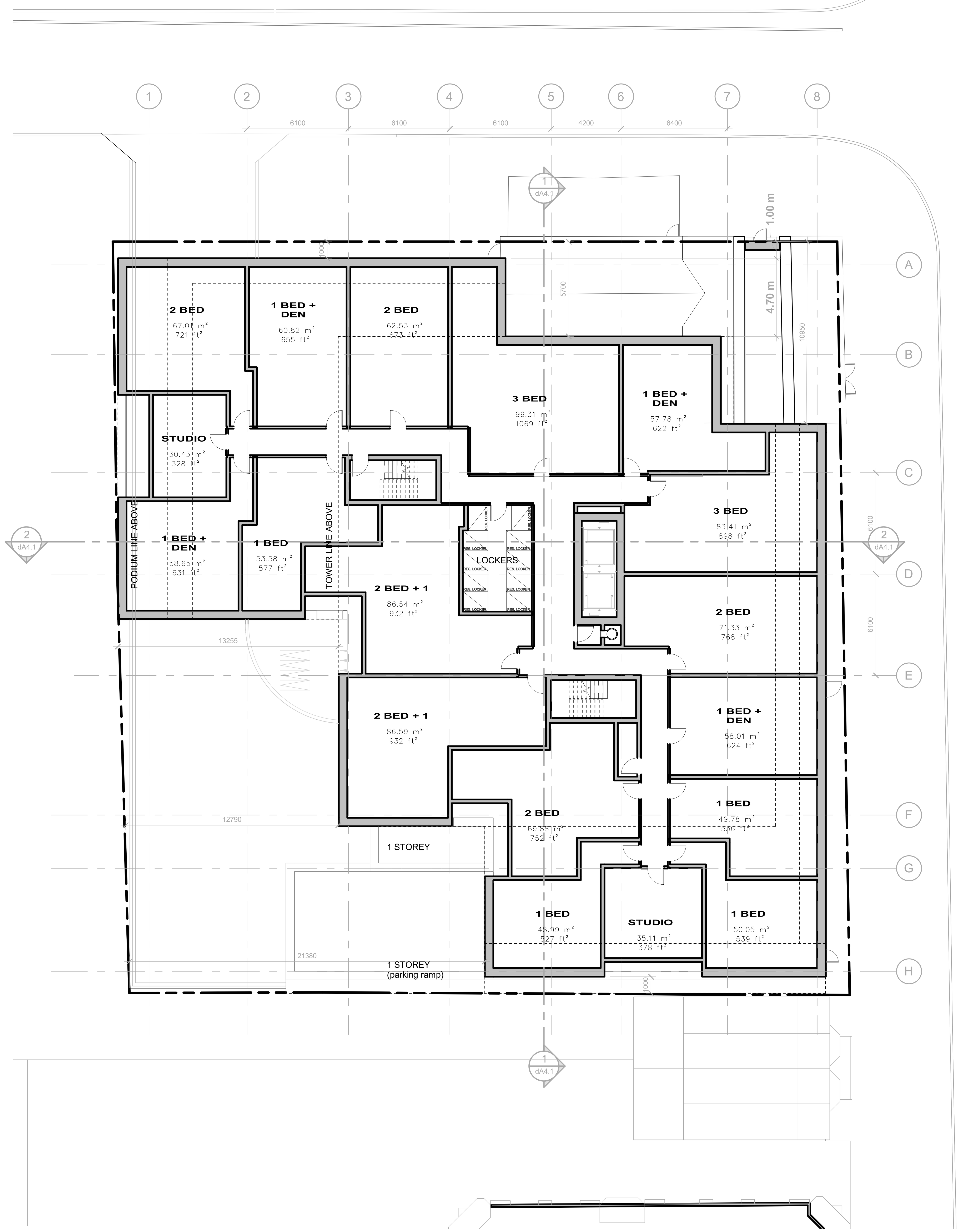
Scale: 1 : 150
Drawn by: N.P
Checked by: A.L
Project No.: 20-018
Date: April 15, 2021
Drawing No.: dA2.1



Floor Plan - Level 1

1 : 150

1 dA2.2



Floor Plan - Levels 2-3

1 : 150

2 dA2.2

Authorities Having Jurisdiction

PROGRESS SET
April 15, 2021

Date:

KIRKOR ARCHITECTS AND PLANNERS
20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

Revisions:

No.:	Revision:	Date:

No.:	Issued For:	Date:

Drawing Title:

Floor plan - Level 1 & 2-3

Client:

Originate

Project:

Bathurst and Richmond

152-164 Bathurst Street and 623-627 Richmond Street, Toronto

Scale: 1 : 150

Drawn by: N.P

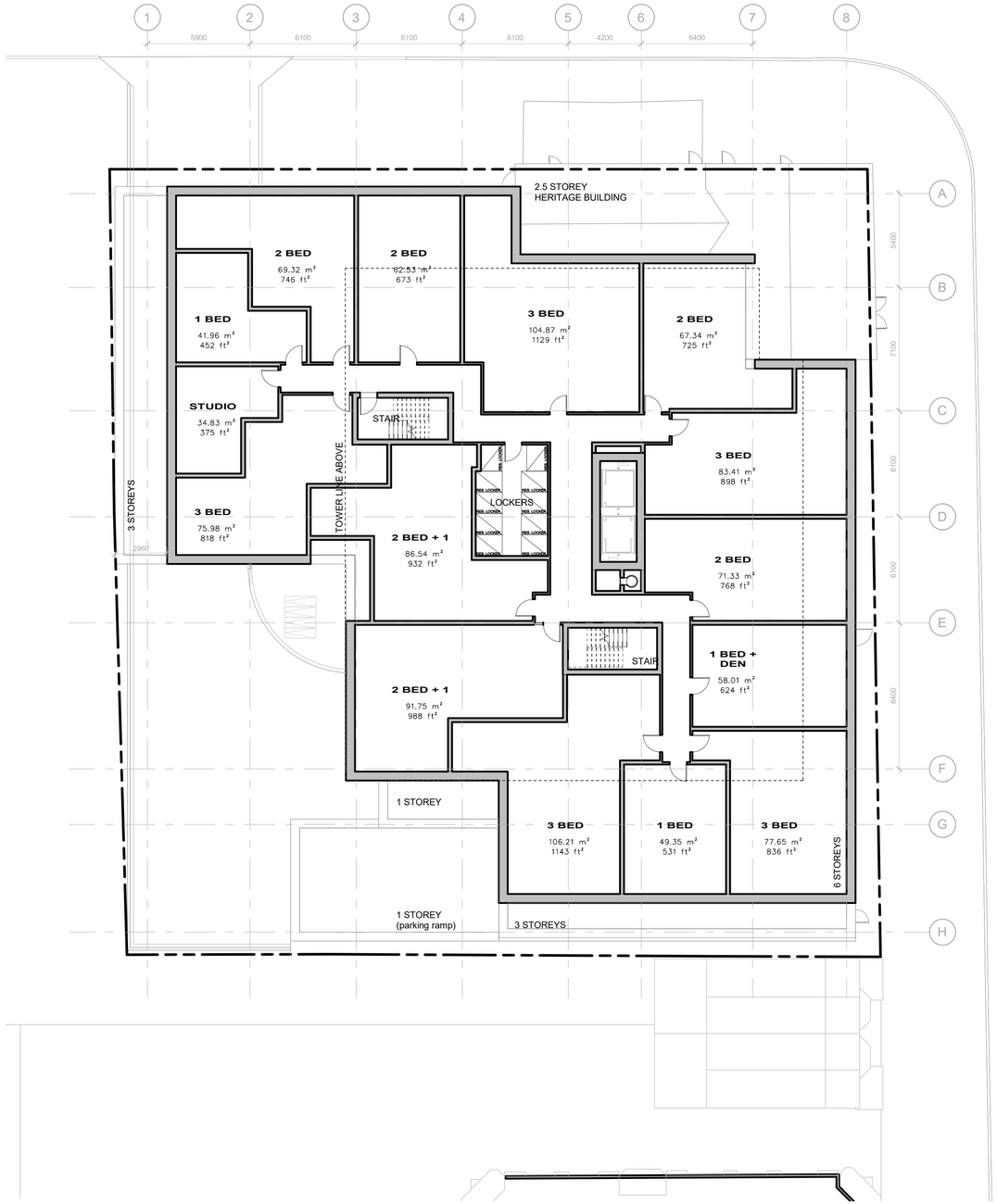
Checked by: A.L

Project No.: 20-018

Date: April 15, 2021

Drawing No.:

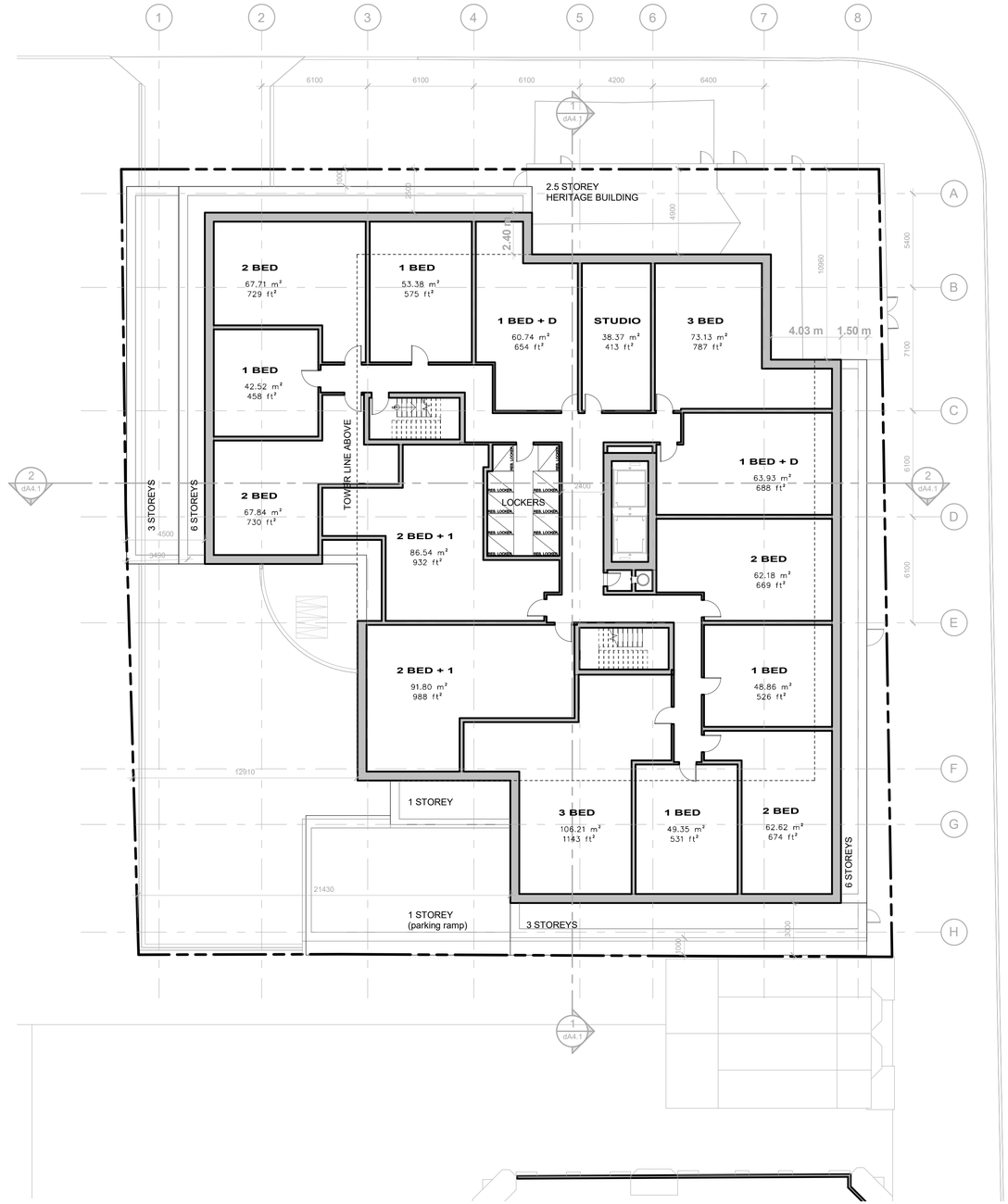
dA2.2



Floor Plan - Levels 4-6

1 : 150

1 dA2.3



Floor Plan - Levels 7-9

1 : 150

2 dA2.3

2020.02.26

Authorities Having Jurisdiction

PROGRESS SET
April 15, 2021

KIRKOR ARCHITECTS AND PLANNERS
20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

Revisions:

No.:	Revision:	Date:

No.:	Issued For:	Date:

Drawing Title:

Floor plan - Levels 4-6 & 7-9

Client:

Originate

Project:

Bathurst and Richmond

152-164 Bathurst Street and 623-627 Richmond Street, Toronto

Scale: 1 : 150

Drawn by: N.P

Checked by: A.L

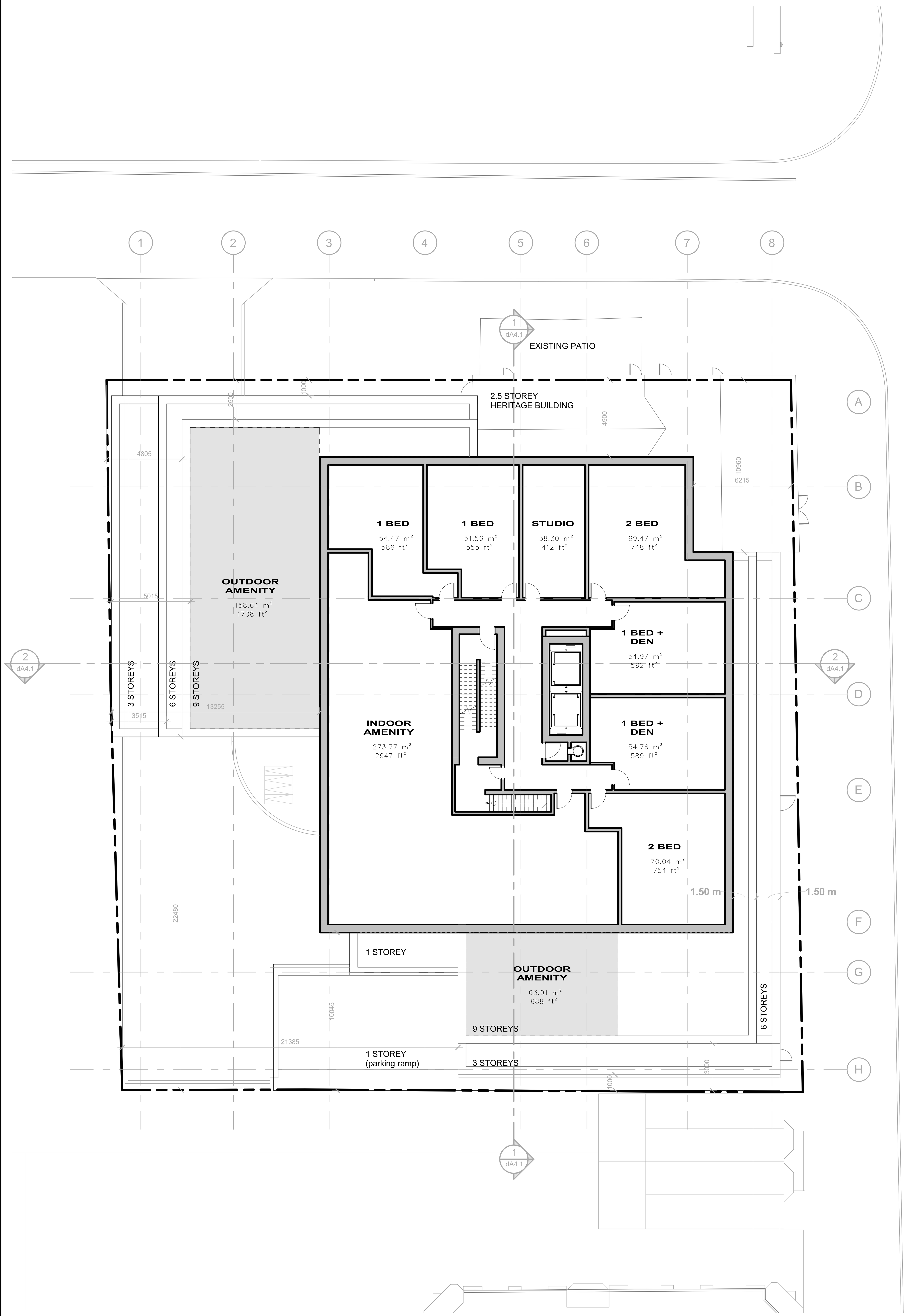
Project No.: 20-018

Date: April 15, 2021

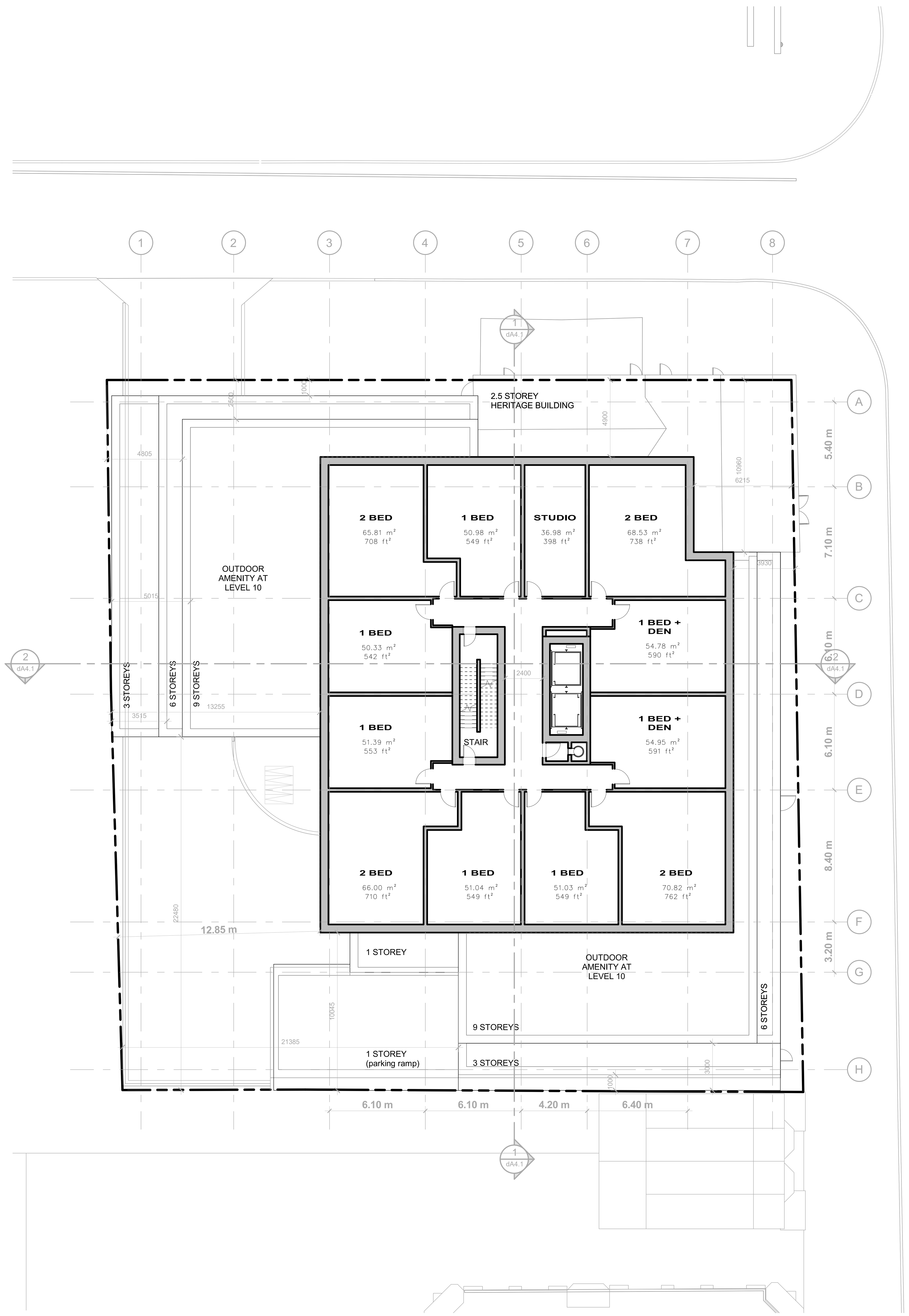
Drawing No.:

dA2.3

Plot Date: 2021-04-15 7:47:33 AM File Path: C:\Revit\2019\20018_Bathurst & Richmond_R19\2018_modelcentral.rvt



Floor Plan - Level 10 (1 / dA2.4)
1 : 150



Floor Plan - Levels 11-17 (2 / dA2.4)
1 : 150

Authorities Having Jurisdiction

PROGRESS SET
April 15, 2021

Date:

KIRKOR ARCHITECTS AND PLANNERS
20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

Revisions:

No.:	Revision:	Date:

No.:	Issued For:	Date:

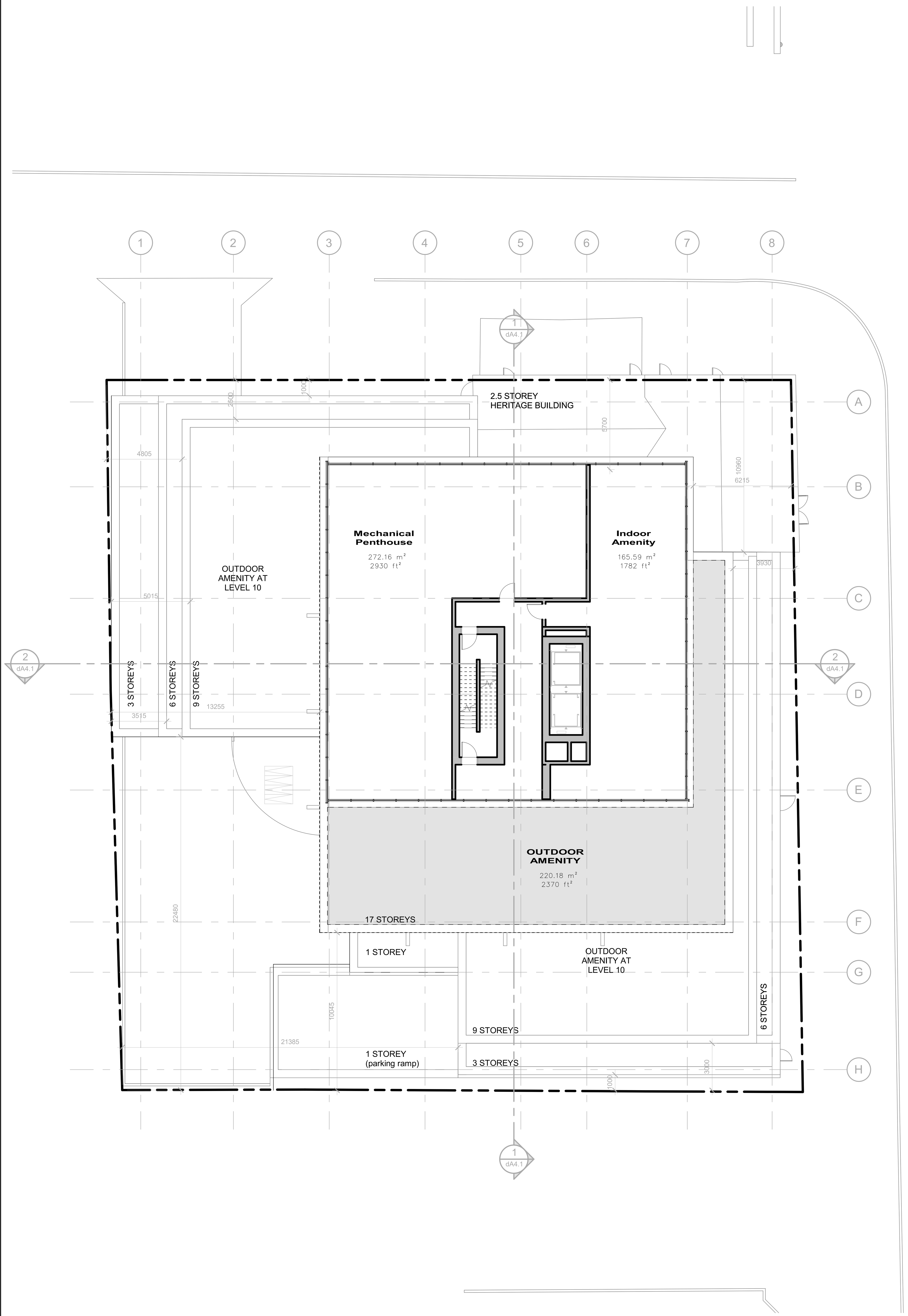
Drawing Title:
Floor plan - Levels 10 & 11-17

Client:
Originate

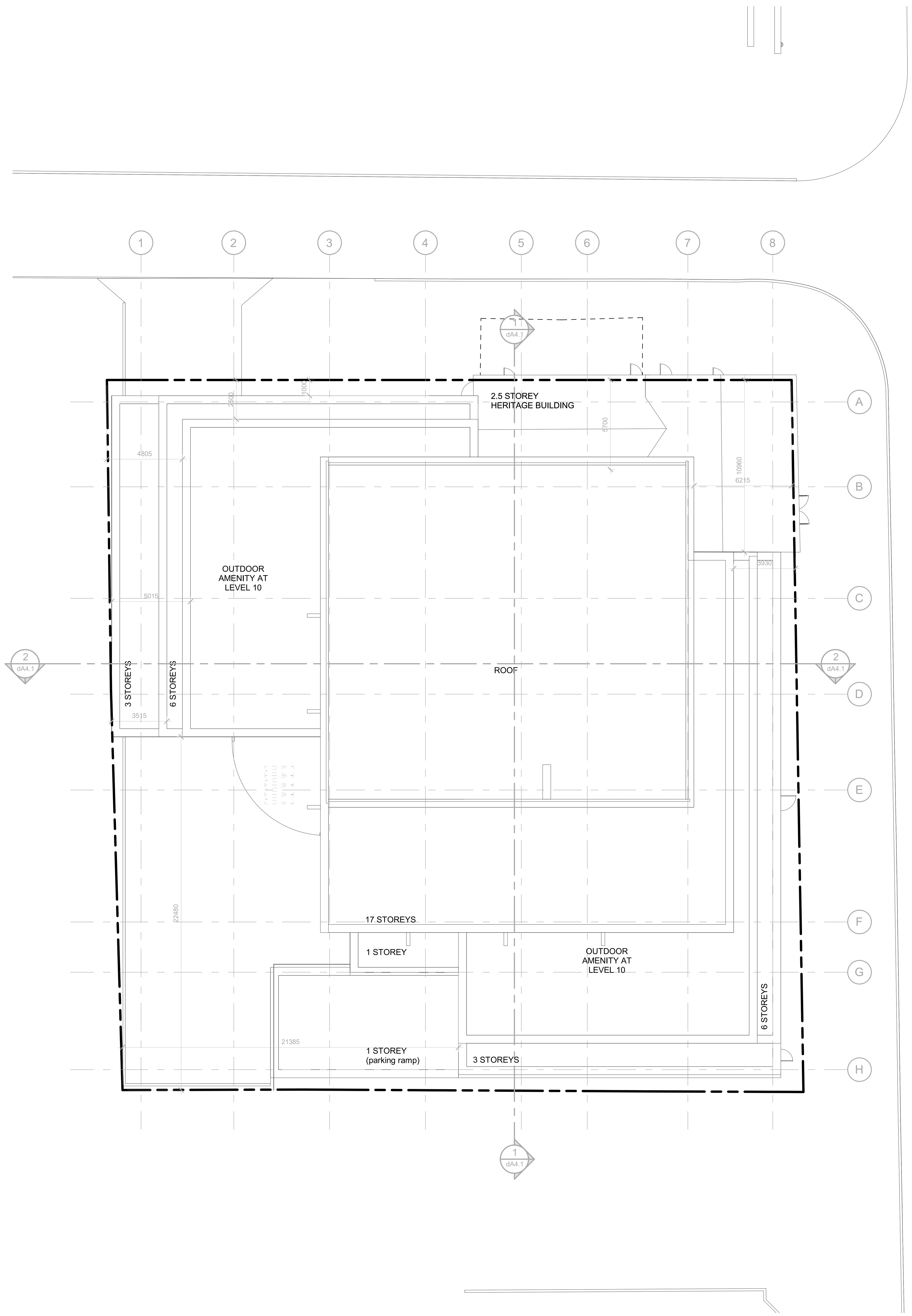
Project:
Bathurst and Richmond

152-164 Bathurst Street and 623-627 Richmond Street, Toronto

Scale: 1 : 150
Drawn by: N.P
Checked by: A.L
Project No.: 20-018
Date: April 15, 2021
Drawing No.: dA2.4



Floor Plan - Mechanical Penthouse 1 dA2.5
1 : 150



Roof Plan 2 dA2.5
1 : 150

Authorities Having Jurisdiction

PROGRESS SET
April 15, 2021

Do not scale the drawings.

This Drawing Is Not To Be Used For Construction Until Signed By The Architect.

Date:

KIRKOR ARCHITECTS AND PLANNERS
20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

Revisions:

No.:	Revision:	Date:

No.:	Issued For:	Date:

Drawing Title:

Floor plan - Mechanical Penthouse & Roof Plan

Client:

Originate

Project:

Bathurst and Richmond

152-164 Bathurst Street and 623-627 Richmond Street, Toronto

Scale: 1 : 150

Drawn by: N.P

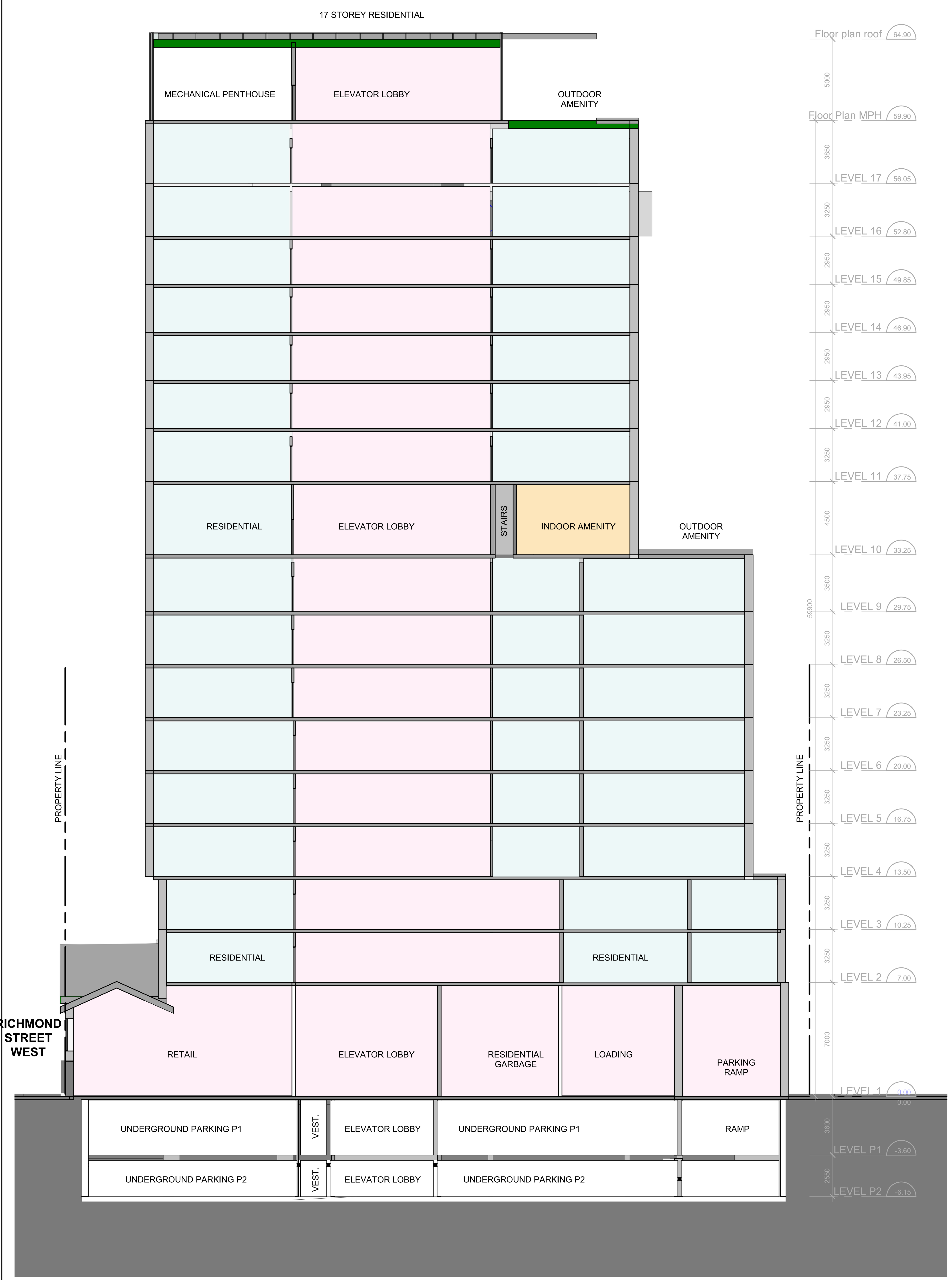
Checked by: A.L

Project No.: 20-018

Date: April 15, 2021

Drawing No.:

dA2.5



Building Section 1
1 dA4.1
1 : 150

Building Section 3
2 dA4.1
1 : 150

Authorities Having Jurisdiction

PROGRESS SET
April 15, 2021

Date:

KIRKOR ARCHITECTS AND PLANNERS
20 De Boers Dr. # 400 Toronto ON M3J 0H1
TEL 416 665 6060 kirkorarchitects.com

Revisions:

No.:	Revision:	Date:

No.:	Issued For:	Date:

Drawing Title:

Building Sections

Client:

Originate

Project:

Bathurst and Richmond

152-164 Bathurst Street and 623-627 Richmond Street, Toronto

Scale: 1 : 150

Drawn by: N.P

Checked by: A.L

Project No.: 20-018

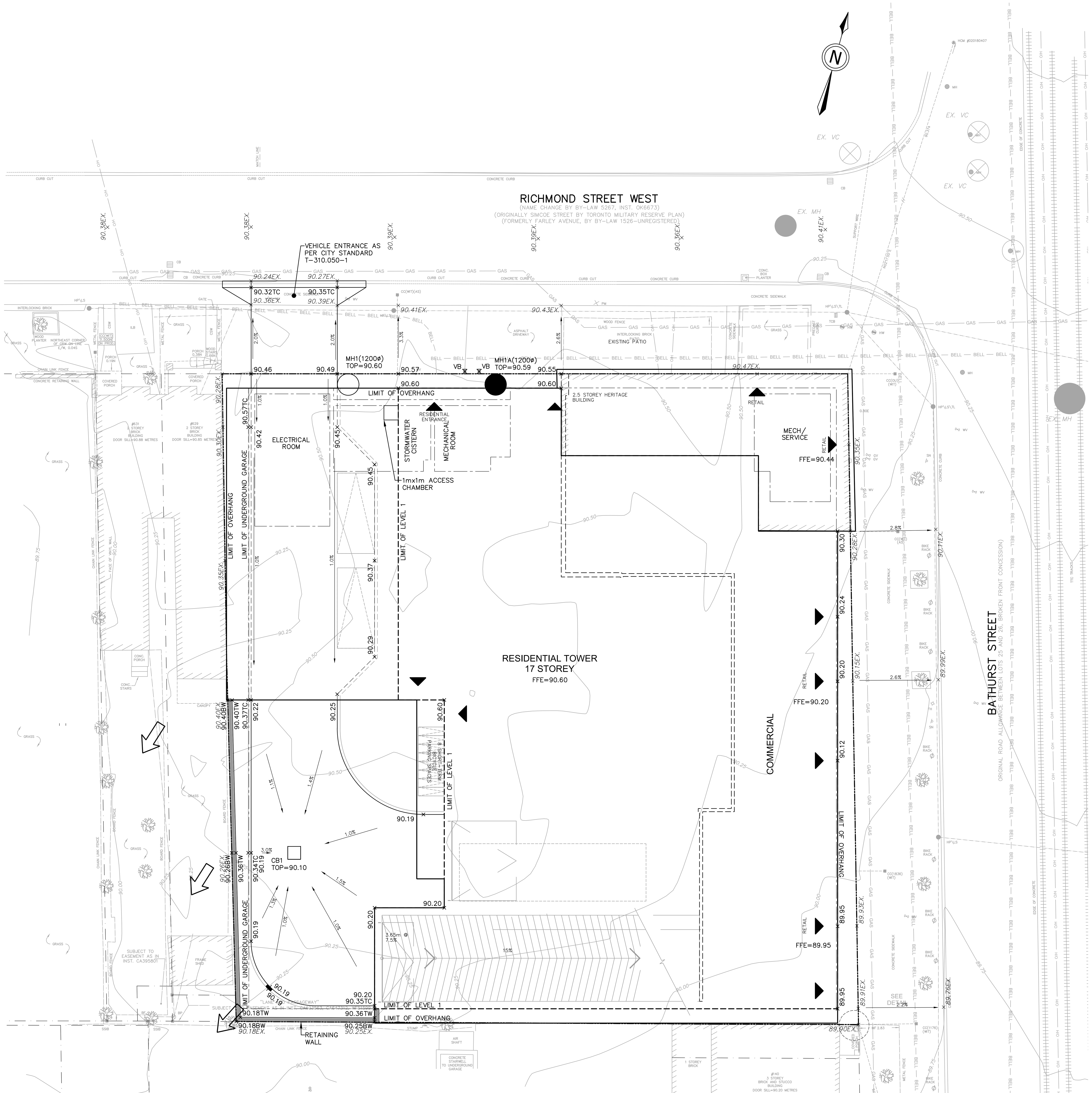
Date: April 15, 2021

Drawing No.: dA4.1

Appendix 3

Site Grading Plans (existing and proposed Site elevations)

PGL
ENVIRONMENTAL CONSULTANTS



GRADING

1. ALL AREA GRADING AND RESULTING DRAINAGE PATTERNS SHALL NOT ADVERSELY AFFECT ADJACENT LANDS.
2. THE STORM DRAINAGE SHALL BE SELF-CONTAINED WITHIN THE SUBJECT PROPERTY UNTIL IT CAN BE DISCHARGED, REUSED, INFILTRATED AND/OR EVAPOTRANSPIRED IN A MANNER ACCEPTABLE TO THE CITY.
3. MINIMUM GENERALLY ACCEPTED GRADIENT – 2.0 PERCENT.
4. MAXIMUM GENERALLY ACCEPTED GRADIENT – 5.0 PERCENT.
5. MAXIMUM ACCEPTABLE SLOPE 3 PARTS HORIZONTAL TO 1 PART VERTICAL.
6. NO ALTERATION TO EXISTING BOUNDARY ELEVATIONS OR ADJACENT LANDS SHALL BE UNDERTAKEN UNLESS WRITTEN AGREEMENT WITH THE ADJACENT PROPERTY OWNER IS OBTAINED AND SUBMITTED IN A FORMAT ACCEPTABLE TO THE CITY.
7. MINIMUM SWALE GRADIENT – 2.0 PERCENT.
8. MINIMUM SWALE DEPTH – 150mm.
9. ALL SWALES OR DITCHES HAVING VELOCITY IN EXCESS OF 1.5m/s SHALL BE DESIGNED TO INCORPORATE EROSION PROTECTION.
10. THE MINIMUM GRADIENT ON ANY DRIVEWAY SHALL BE 2.0 PERCENT.
11. THE MAXIMUM GRADIENT ON ANY DRIVEWAY SHALL BE 8.0 PERCENT.
12. ANY DISCREPANCIES BETWEEN THE SITE CONDITIONS AND THE DRAWINGS MUST BE REPORTED TO THE CONSULTING ENGINEER/CITY PRIOR TO COMMENCEMENT OF CONSTRUCTION AND APPROPRIATE ACTION TAKEN TO THE SATISFACTION OF THE CITY OF TORONTO.
13. ALL SURVEY POINTS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE LAYOUT SHALL BE REPORTED TO THE CONSULTING ENGINEER AND THE CONSULTING ENGINEER SHALL NOTIFY THE CITY OF THE NECESSARY CHANGES.
14. ALL AREAS DISTURBED DURING CONSTRUCTION WITHIN THE CITY'S RIGHT OF WAY SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION. GRASSED AREAS SHALL BE PROVIDED WITH 100mm OF TOPSOIL AND SHALL BE SODDED AS PER T.S. 5.00 AND T.S. 5.10.

ROAD RECONSTRUCTION:

1. RECONSTRUCTION OF DRIVEWAY ENTRANCES SHALL BE ACCORDING TO T-310.050-8.
2. LIMITS OF SIDEWALK / CURB RECONSTRUCTION ARE APPROXIMATE, ACTUAL LIMITS ARE TO BE CONFIRMED IN THE FIELD BY THE CONTRACT ADMINISTRATOR.
3. CHAINAGE IS ESTABLISHED FROM THE CENTRELINE OF CONSTRUCTION AND GUTTER GRADES ARE CALCULATED ALONG THE GUTTER LINE.
4. HEIGHT OF CURB FACES MAY VARY ALONG LENGTH OF GUTTER, AS SHOWN ON PROFILE, OR TO BE CONFIRMED IN THE FIELD.
5. ADJUST ALL STRUCTURES (MAINTENANCE HOLES, CATCH BASINS, ETC.) TO SUIT NEW DESIGN ELEVATIONS INCLUDING BREAKING DOWN AND REMOVAL OF PORTION OF TOP OF STRUCTURES TO ALLOW FOR MINIMUM 150 MM ADJUSTMENTS.
6. ALL CURB SHALL BE CONSTRUCTED WITH A LEDGE AT THE BACK OF THE CURB TO FACILITATE FUTURE SIDEWALK CONSTRUCTION.
7. FULL DEPTH SAW-CUTS ARE REQUIRED AT CONSTRUCTION LIMITS OF EXISTING CURB, SIDEWALK AND PAVEMENT UNLESS OTHERWISE SHOWN.
8. SAW CUT EXISTING PAVEMENT, SIDEWALK, CURB, GUTTER, DRIVEWAYS, WALKWAYS, ETC. AT CONSTRUCTION LIMITS TO PROVIDE A CLEAN JOINT FOR THE PROPOSED WORK.
9. CONSTRUCT PEDESTRIAN SIDEWALK RAMPS WITH TACTILE WALKING SURFACE INDICATORS ACCORDING TO T-310.030-7, T-310.030-8, T-310.030-9, T-310.030-10 AND T-310.030-11.
10. EXISTING ENTRANCE RAMPS TO BE RE-INSTATED. VEHICULAR SIDEWALK RAMP SHALL BE ACCORDING TO T-310.050-1.
11. ADJUSTMENT OF APPROACHES, WALKWAYS, AND STEPS MAY BE REQUIRED. LIMITS ARE TO BE DETERMINED IN THE FIELD BY THE CONTRACT ADMINISTRATOR.
12. EXISTING ASPHALT THICKNESS MAY VARY, TAPER TO MATCH EXISTING AT CONSTRUCTION LIMITS (MINIMUM 2.0m).
13. FILTER FABRIC TO BE PLACED UNDER GRATES ON ALL CATCHBASINS TO TRAP SEDIMENT. SILT TRAPS ARE TO BE CLEANED REGULARLY AND ARE NOT TO BE REMOVED UNTIL SUCH TIME AS THE CURBS ARE CONSTRUCTED AND THE BOULEVARDS ARE SODDED OR BACKYARDS GRADED AND FILTER FABRIC FOR SILT CONTROL TO BE TERRA FIX 270R OR APPROVED EQUIVALENT.

CONSTRUCTION NOTES:

1 ALL AREAS DISTURBED DURING CONSTRUCTION WITHIN THE CITY'S RIGHT-OF-WAY SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AND TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR. GRASS AREAS SHALL BE TREATED WITH 100 MM OF TOPSOIL AND SHALL BE SODDED ACCORDING TO TS 5.00 AND TS 5.10.

2 ALL EXISTING UTILITIES SHOWN ON DRAWINGS (PLAN AND PROFILE) ARE FOR REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL SATISFY THEMSELVES AS TO THE ACTUAL LOCATION AND DEPTH OF ANY UTILITY AND SHALL BE LIABLE FOR ALL OR ANY DAMAGE.

3 ANY DISCREPANCIES BETWEEN SITE CONDITIONS AND CONSTRUCTION DRAWINGS MUST BE REPORTED TO THE CITY PRIOR TO COMMENCEMENT OF CONSTRUCTION AND APPROPRIATE ACTION TAKEN TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

4 ALL SURVEY STAKE LAYOUT POINTS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE LAYOUT SHALL BE IMMEDIATELY REPORTED TO THE CITY.

5 ATTENTION IS DIRECTED TO THE POSSIBILITY OF EXISTING PRIVATE SPRINKLERS AND LIGHTING SYSTEMS WITHIN THE RIGHT-OF-WAY, WHICH ARE NOT SHOWN ON THE PLANS. LOCATING, WORKING AROUND AND PROTECTING THESE SYSTEMS SHALL BE COMPLETED AT NO EXTRA COST TO THE CITY.

6 ALL DIMENSIONS ARE EXPRESSED IN METRES (m) AND PIPE SIZES ARE EXPRESSED IN MILLIMETRES (mm) UNLESS OTHERWISE NOTED.

7 ALL MATERIAL FOR SEWER, FORCEMAIN, WATERMAIN, HYDRANTS AND APPURTENANCES, SHALL BE ACCORDING TO CITY OF TORONTO MATERIAL/MANUFACTURER SPECIFICATIONS AS REQUIRED BY CHAPTER 6, MATERIAL SPECIFICATIONS FROM DESIGN CRITERIA FOR SEWERS AND WATERMAINS MANUAL.

8 UTILITY SEPARATION SHALL BE ACCORDING TO APPENDIX 'D' OF THE CITY OF TORONTO DESIGN CRITERIA FOR SEWERS AND WATERMAINS MANUAL.

9 SERVICE CONNECTIONS AND UTILITY CUTS MADE IN ROAD PAVEMENTS SHALL BE BACKFILLED WITH UNSHRINKABLE FILL ACCORDING TO TS 4.60.

10 AT ALL LOCATIONS WHERE THE PROPOSED WATERMAIN CROSSES UNDER OR ABOVE THE EXISTING SEWERS, OR UTILITIES, GRANULAR A BEDDING MATERIAL IS TO EXTEND FROM THE LOWER PIPE TO THE TOP OF THE UPPER PIPE. GRANULAR A TO BE COMPACTED TO MINIMUM 98% OF MAXIMUM DRY DENSITY.

11 CONTRACTOR TO PROVIDE ADEQUATE SUPPORT DURING CONSTRUCTION BETWEEN THE NEW WATERMAIN AND EXISTING GAS MAINS. MAINTAIN 300mm MINIMUM VERTICAL CLEARANCES BETWEEN THE NEW WATERMAIN AND EXISTING GAS MAINS LESS THAN 300mm IN DIAMETER. MAINTAIN 600mm MINIMUM VERTICAL CLEARANCE BETWEEN THE NEW WATERMAIN AND EXISTING GAS MAINS EQUAL TO OR GREATER THAN 300mm IN DIAMETER.

12 ALL EXISTING WATERMAINS AND SEWER PIPES LARGER THAN 300mm DIAMETER SHALL BE SUPPORTED ACCORDING TO DRAWING T-1007.01-4.

CONTACT INFORMATION:

1. PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT-OF-WAY, THE CONTRACTOR SHALL APPLY FOR A ROAD OCCUPANCY PERMIT FROM THE CITY'S RIGHT-OF-WAY MANAGEMENT UNIT DISTRICT OFFICE.
2. ALL TTC TRAFFIC IS TO BE MAINTAINED DURING CONSTRUCTION OF THIS WATERMAIN, SEWER OR ROAD. IN ORDER TO CO-ORDINATE ALL DISRUPTIONS IN SERVICE, CONTRACTOR TO CONTACT MS EMILY ASSUNCAO 416-393-3302 AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
3. NOTIFY TORONTO WATER, WATER TREATMENT AND SUPPLY AT 416-397-0187 OR SEND AN E-MAIL MESSAGE TO TRUNKWATER@TORONTO.CA TWO WEEKS PRIOR TO EXCAVATION NEAR ANY TRANSMISSION WATERMAIN SO THAT A TORONTO WATER INSPECTOR MAY BE PRESENT.
4. DURING THE CONSTRUCTION OF WATERMAIN / SERVICES OR SEWER / LATERALS CLOSE TO AN EXISTING TRANSMISSION WATERMAIN, CONTRACTOR TO NOTIFY TORONTO WATER AT 416-397-0187 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

LEGISLATION, REGULATION AND CODES:

1. ALL WORK WITHIN THE CITY RIGHT-OF-WAY SHALL BE CONSTRUCTED ACCORDING TO THE LATEST CITY OF TORONTO STANDARD DRAWINGS AND SPECIFICATIONS. ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS MAY, SUBJECT TO THE APPROVAL OF THE CITY OF TORONTO, BE USED WHERE NO CITY STANDARD OR SPECIFICATION IS AVAILABLE.
2. ALL WORK SHALL BE COMPLETED ACCORDING TO THE CURRENT *OCCUPATIONAL HEALTH AND SAFETY ACT* AND *REGULATIONS FOR CONSTRUCTION PROJECTS*. THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEFINED IN THE ACT.
3. ALL TEMPORARY TRAFFIC CONTROL AND SIGNAGE DURING CONSTRUCTION SHALL BE ACCORDING TO THE CURRENT *ONTARIO TRAFFIC MANUAL BOOK 7: TEMPORARY CONDITIONS FIELD EDITION*.

ORIGINAL DATA SOURCE;

1. INFORMATION ABOUT EXISTING COMBINED SEWER AND WATERMAIN OBTAINED FROM THE CITY OF TORONTO FILES NO. 18-01304-004 RICHMOND STREET WEST DATED JANUARY 2018 AND NO. F-24 RICHMOND STREET WEST DATED JUNE 8, 1971.
2. DMOG OBTAINED FROM CITY OF TORONTO FILE ID 28568.
3. LEGAL BOUNDARY OBTAINED FROM KRCMAR SURVEYORS LIMITED TOPOGRAPHIC SURVEY. DATED JULY 20, 2020.

OTHER NOTES:

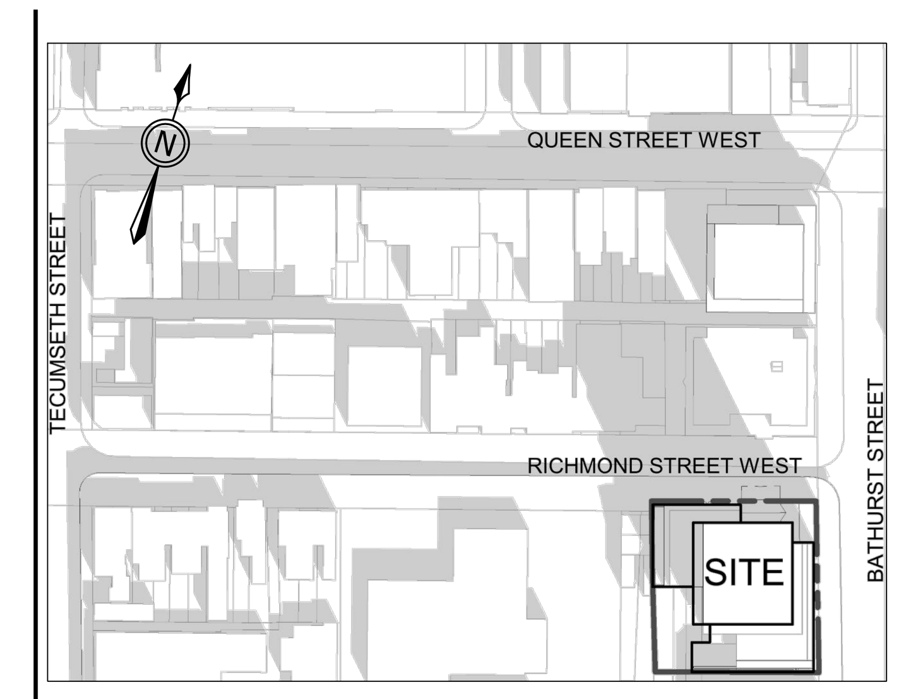
PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT-OF-WAY THE CONTRACTOR, DEVELOPER, OR CONSULTANT WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS FROM THE CITY'S RIGHT-OF-WAY MANAGEMENT UNIT CONTACT 416-392-7877.

TORONTO

ENGINEERING and CONSTRUCTION SERVICES DIVISION

ACCEPTED TO BE IN ACCORDANCE WITH THE CITY OF TORONTO STANDARDS.
THIS ACCEPTANCE IS NOT TO BE CONSTRUED AS VERIFICATION
OF ENGINEERING CONTENT.

Manager, Development Engineering DATE: ____________



LEGEND

90.00	PROPOSED ELEVATIONS
90.00EX	EXISTING ELEVATIONS
90.00TC	PROPOSED TOP OF CURB ELEVATIONS
2.0%	SLOPE
90.00	EXISTING CONTOURS
	PROPOSED STORM MANHOLE
	PROPOSED SANITARY MANHOLE
	EXISTING COMBINED MANHOLE
	PROPOSED STORM CATCHBASIN
	PROPOSED VALVE & BOX
	PROPERTY LINE
	LIMIT OF OVERHANG
	LIMIT OF LEVEL 1
	LIMIT OF UNDERGROUND GARAGE
	PROPOSED CURB UNDER BUILDING
	PROPOSED RESIDENTIAL AND COMMERCIAL DIVISION

ELEVATION

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO CITY OF TORONTO BENCH MARK No. CT556 HAVING AN ELEVATION OF 91.165 METRES.

REV.No.	REVISION NOTE	DATE

FOR COORDINATION
(21-04-08)

BATHURST AND RICHMOND

HUSSON
ENGINEERING + MANAGEMENT
P 905.709.5825
200 CACHET WOODS COURT, SUITE 204
MARKHAM, ON L6C 0Z8
HUSSON.CA

SW1
GRADING PLAN

DATE: APRIL 8, 2021 SCALE: 1:150 PROJECT: 211176
DESIGNED BY: WS CHECKED BY: GKR
DRAWN BY: WS CHECKED BY: GKR

Appendix 4

Laboratory Certificates of Analysis

PGL
ENVIRONMENTAL CONSULTANTS

Your Project #: 5660-03.03
Your C.O.C. #: 818096-01-01

Attention: Ryan Cook

Pottinger Gaherty Environmental Consultants Ltd
250 Water Street
Unit 102
Whitby, ON
CANADA L1N 0G5

Report Date: 2021/03/26
Report #: R6570215
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C172290
Received: 2021/03/18, 15:33

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Sewer Use By-Law Semivolatile Organics	1	2021/03/19	2021/03/22	CAM SOP 00301	EPA 8270 m
Biochemical Oxygen Demand (BOD)	1	2021/03/19	2021/03/24	CAM SOP-00427	SM 23 5210B m
Chromium (VI) in Water	1	N/A	2021/03/22	CAM SOP-00436	EPA 7199 m
Total Cyanide	1	2021/03/19	2021/03/19	CAM SOP-00457	OMOE E3015 5 m
Fluoride	1	2021/03/19	2021/03/19	CAM SOP-00449	SM 23 4500-F C m
Mercury in Water by CVAA	1	2021/03/23	2021/03/23	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS	1	N/A	2021/03/23	CAM SOP-00447	EPA 6020B m
E.coli, (CFU/100mL)	1	N/A	2021/03/18	CAM SOP-00552	MOE LSB E3371
Total Nonylphenol in Liquids by HPLC	1	2021/03/23	2021/03/24	CAM SOP-00313	In-house Method
Nonylphenol Ethoxylates in Liquids: HPLC	1	2021/03/23	2021/03/24	CAM SOP-00313	In-house Method
Animal and Vegetable Oil and Grease	1	N/A	2021/03/24	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2021/03/23	2021/03/24	CAM SOP-00326	EPA1664B m,SM5520B m
Polychlorinated Biphenyl in Water	1	2021/03/24	2021/03/25	CAM SOP-00309	EPA 8082A m
pH	1	2021/03/19	2021/03/19	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2021/03/22	CAM SOP-00444	OMOE E3179 m
Total Kjeldahl Nitrogen in Water	1	2021/03/19	2021/03/23	CAM SOP-00938	OMOE E3516 m
Total PAHs (1)	1	N/A	2021/03/23	CAM SOP - 00301	
Mineral/Synthetic O & G (TPH Heavy Oil) (2)	1	2021/03/23	2021/03/24	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids	1	2021/03/20	2021/03/22	CAM SOP-00428	SM 23 2540D m
Volatile Organic Compounds in Water	1	N/A	2021/03/22	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Your Project #: 5660-03.03
Your C.O.C. #: 818096-01-01

Attention: Ryan Cook

Pottinger Gaherty Environmental Consultants Ltd
250 Water Street
Unit 102
Whitby, ON
CANADA L1N 0G5

Report Date: 2021/03/26
Report #: R6570215
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C172290
Received: 2021/03/18, 15:33

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Total PAHs include only those PAHs specified in the sewer use by-by-law.
(2) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Deepthi Shaji, Project Manager
Email: Deepthi.Shaji@bureauveritas.com
Phone# (905)817-5700 Ext:7065843

==========

This report has been generated and distributed using a secure automated process.
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

TORONTO SANITARY&STORM SEWER (100-2016)

BV Labs ID				PCL839		
Sampling Date				2021/03/17 14:00		
COC Number				818096-01-01		
	UNITS	**San**	**Stm**	**MW204**	**RDL**	**QC Batch**
Calculated Parameters						
Total Animal/Vegetable Oil and Grease	mg/L	**150**	-	<0.50	0.50	7254170
Inorganics						
Total BOD	mg/L	**300**	15	<2	2	7255889
Fluoride (F-)	mg/L	**10**	-	0.56	0.10	7256372
Total Kjeldahl Nitrogen (TKN)	mg/L	**100**	-	2.8	0.10	7256922
pH	pH	**6.0:11.5**	6.0:9.5	7.88		7256391
Phenols-4AAP	mg/L	**1.0**	0.008	<0.0010	0.0010	7259063
Total Suspended Solids	mg/L	**350**	15	24	10	7258487
Total Cyanide (CN)	mg/L	**2**	0.02	<0.0050	0.0050	7257264
Petroleum Hydrocarbons						
Total Oil & Grease	mg/L	**-**	-	<0.50	0.50	7262504
Total Oil & Grease Mineral/Synthetic	mg/L	**15**	-	<0.50	0.50	7262511
Miscellaneous Parameters						
Nonylphenol Ethoxylate (Total)	mg/L	**0.2**	0.01	<0.005	0.005	7261321
Nonylphenol (Total)	mg/L	**0.02**	0.001	<0.001	0.001	7261318
Metals						
Chromium (VI)	ug/L	**2000**	40	<0.50	0.50	7254030
Mercury (Hg)	mg/L	**0.01**	0.0004	<0.00010	0.00010	7261315
Total Aluminum (Al)	ug/L	**50000**	-	180	4.9	7260231
Total Antimony (Sb)	ug/L	**5000**	-	1.1	0.50	7260231
Total Arsenic (As)	ug/L	**1000**	20	4.2	1.0	7260231
Total Cadmium (Cd)	ug/L	**700**	8	<0.090	0.090	7260231
Total Chromium (Cr)	ug/L	**4000**	80	<5.0	5.0	7260231
Total Cobalt (Co)	ug/L	**5000**	-	1.7	0.50	7260231
Total Copper (Cu)	ug/L	**2000**	40	1.9	0.90	7260231
Total Lead (Pb)	ug/L	**1000**	120	<0.50	0.50	7260231
Total Manganese (Mn)	ug/L	**5000**	50	430	2.0	7260231
Total Molybdenum (Mo)	ug/L	**5000**	-	20	0.50	7260231
Total Nickel (Ni)	ug/L	**2000**	80	3.5	1.0	7260231
Total Phosphorus (P)	ug/L	**10000**	400	<100	100	7260231
Total Selenium (Se)	ug/L	**1000**	20	<2.0	2.0	7260231
Total Silver (Ag)	ug/L	**5000**	120	<0.090	0.090	7260231
Total Tin (Sn)	ug/L	**5000**	-	1.7	1.0	7260231

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
San,Stm: Toronto Sanitary and Storm Sewer Use By Law Guidelines, respectively. Referenced to Chapter 681

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TORONTO SANITARY&STORM SEWER (100-2016)

BV Labs ID				PCL839		
Sampling Date				2021/03/17 14:00		
COC Number				818096-01-01		
	UNITS	**San**	**Stm**	**MW204**	**RDL**	**QC Batch**
Total Titanium (Ti)	ug/L	**5000**	-	7.2	5.0	7260231
Total Zinc (Zn)	ug/L	**2000**	40	12	5.0	7260231
Semivolatile Organics						
Di-N-butyl phthalate	ug/L	**80**	15	<2	2	7257468
Bis(2-ethylhexyl)phthalate	ug/L	**12**	8.8	<2	2	7257468
3,3'-Dichlorobenzidine	ug/L	**2**	0.8	<0.8	0.8	7257468
Pentachlorophenol	ug/L	**5**	2	<1	1	7257468
Phenanthrene	ug/L	-	-	<0.2	0.2	7257468
Anthracene	ug/L	-	-	<0.2	0.2	7257468
Fluoranthene	ug/L	-	-	<0.2	0.2	7257468
Pyrene	ug/L	-	-	<0.2	0.2	7257468
Benzo(a)anthracene	ug/L	-	-	<0.2	0.2	7257468
Chrysene	ug/L	-	-	<0.2	0.2	7257468
Benzo(b/j)fluoranthene	ug/L	-	-	<0.2	0.2	7257468
Benzo(k)fluoranthene	ug/L	-	-	<0.2	0.2	7257468
Benzo(a)pyrene	ug/L	-	-	<0.2	0.2	7257468
Indeno(1,2,3-cd)pyrene	ug/L	-	-	<0.2	0.2	7257468
Dibenzo(a,h)anthracene	ug/L	-	-	<0.2	0.2	7257468
Benzo(g,h,i)perylene	ug/L	-	-	<0.2	0.2	7257468
Dibenzo(a,i)pyrene	ug/L	-	-	<0.2	0.2	7257468
Benzo(e)pyrene	ug/L	-	-	<0.2	0.2	7257468
Perylene	ug/L	-	-	<0.2	0.2	7257468
Dibenzo(a,j) acridine	ug/L	-	-	<0.4	0.4	7257468
7H-Dibenzo(c,g) Carbazole	ug/L	-	-	<0.4	0.4	7257468
1,6-Dinitropyrene	ug/L	-	-	<0.4	0.4	7257468
1,3-Dinitropyrene	ug/L	-	-	<0.4	0.4	7257468
1,8-Dinitropyrene	ug/L	-	-	<0.4	0.4	7257468
Calculated Parameters						
Total PAHs (18 PAHs)	ug/L	**5**	2	<1	1	7255014
Volatile Organics						
Benzene	ug/L	**10**	2	<0.40	0.40	7256872
Chloroform	ug/L	**40**	2	<0.40	0.40	7256872
1,2-Dichlorobenzene	ug/L	**50**	5.6	<0.80	0.80	7256872
1,4-Dichlorobenzene	ug/L	**80**	6.8	<0.80	0.80	7256872

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TORONTO SANITARY&STORM SEWER (100-2016)

BV Labs ID				PCL839		
Sampling Date				2021/03/17 14:00		
COC Number				818096-01-01		
	UNITS	**San**	**Stm**	**MW204**	**RDL**	**QC Batch**
cis-1,2-Dichloroethylene	ug/L	**4000**	5.6	<1.0	1.0	7256872
trans-1,3-Dichloropropene	ug/L	**140**	5.6	<0.80	0.80	7256872
Ethylbenzene	ug/L	**160**	2	<0.40	0.40	7256872
Methylene Chloride(Dichloromethane)	ug/L	**2000**	5.2	<4.0	4.0	7256872
1,1,2,2-Tetrachloroethane	ug/L	**1400**	17	<0.80	0.80	7256872
Tetrachloroethylene	ug/L	**1000**	4.4	<0.40	0.40	7256872
Toluene	ug/L	**16**	2	<0.40	0.40	7256872
Trichloroethylene	ug/L	**400**	7.6	<0.40	0.40	7256872
p+m-Xylene	ug/L	**1400**	4.4	<0.40	0.40	7256872
o-Xylene	ug/L	**1400**	4.4	<0.40	0.40	7256872
Total Xylenes	ug/L	**1400**	4.4	<0.40	0.40	7256872
PCBs						
Total PCB	ug/L	**1**	0.4	<0.05	0.05	7265276
Microbiological						
Escherichia coli	CFU/100mL	**-**	200	<10	10	7255548
Surrogate Recovery (%)						
2,4,6-Tribromophenol	%	**-**	-	66		7257468
2-Fluorobiphenyl	%	**-**	-	70		7257468
D14-Terphenyl (FS)	%	**-**	-	76		7257468
D5-Nitrobenzene	%	**-**	-	87		7257468
D8-Acenaphthylene	%	**-**	-	86		7257468
Decachlorobiphenyl	%	**-**	-	81		7265276
4-Bromofluorobenzene	%	**-**	-	97		7256872
D4-1,2-Dichloroethane	%	**-**	-	111		7256872
D8-Toluene	%	**-**	-	94		7256872

RDL = Reportable Detection Limit
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BV Labs Job #: C172290
Report Date: 2021/03/26

Pottinger Gaherty Environmental Consultants Ltd
Client Project #: 5660-03.03
Sampler Initials: AES

TEST SUMMARY

BV Labs ID: PCL839
Sample ID: MW204
Matrix: Water

Collected: 2021/03/17
Shipped:
Received: 2021/03/18

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sewer Use By-Law Semivolatile Organics	GC/MS	7257468	2021/03/19	2021/03/22	Kathy Horvat
Biochemical Oxygen Demand (BOD)	DO	7255889	2021/03/19	2021/03/24	Nusrat Naz
Chromium (VI) in Water	IC	7254030	N/A	2021/03/22	Lang Le
Total Cyanide	SKAL/CN	7257264	2021/03/19	2021/03/19	Aditiben Patel
Fluoride	ISE	7256372	2021/03/19	2021/03/19	Surinder Rai
Mercury in Water by CVAA	CV/AA	7261315	2021/03/23	2021/03/23	Gagandeep Rai
Total Metals Analysis by ICPMS	ICP/MS	7260231	N/A	2021/03/23	Prempal Bhatti
E.coli, (CFU/100mL)	PL	7255548	N/A	2021/03/18	Tasbir Singh
Total Nonylphenol in Liquids by HPLC	LC/FLU	7261318	2021/03/23	2021/03/24	Tonghui (Jenny) Chen
Nonylphenol Ethoxylates in Liquids: HPLC	LC/FLU	7261321	2021/03/23	2021/03/24	Dennis Boodram
Animal and Vegetable Oil and Grease	BAL	7254170	N/A	2021/03/24	Automated Statchk
Total Oil and Grease	BAL	7262504	2021/03/23	2021/03/24	Jay Tailor
Polychlorinated Biphenyl in Water	GC/ECD	7265276	2021/03/24	2021/03/25	Svitlana Shaula
pH	AT	7256391	2021/03/19	2021/03/19	Surinder Rai
Phenols (4AAP)	TECH/PHEN	7259063	N/A	2021/03/22	Bramdeo Motiram
Total Kjeldahl Nitrogen in Water	SKAL	7256922	2021/03/19	2021/03/23	Rajni Tyagi
Total PAHs	CALC	7255014	N/A	2021/03/23	Automated Statchk
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	7262511	2021/03/23	2021/03/24	Jay Tailor
Total Suspended Solids	BAL	7258487	2021/03/20	2021/03/22	Shivani Desai
Volatile Organic Compounds in Water	GC/MS	7256872	N/A	2021/03/22	Blair Gannon

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.7°C

Sample PCL839 [MW204] : VOC Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7254030	LLE	Matrix Spike	Chromium (VI)	2021/03/22		100	%	80 - 120
7254030	LLE	Spiked Blank	Chromium (VI)	2021/03/22		102	%	80 - 120
7254030	LLE	Method Blank	Chromium (VI)	2021/03/22	<0.50		ug/L	
7254030	LLE	RPD	Chromium (VI)	2021/03/22	NC		%	20
7255889	NNA	QC Standard	Total BOD	2021/03/24		92	%	80 - 120
7255889	NNA	Method Blank	Total BOD	2021/03/24	<2		mg/L	
7255889	NNA	RPD	Total BOD	2021/03/24	1.6		%	30
7256372	SAU	Matrix Spike	Fluoride (F-)	2021/03/19		106	%	80 - 120
7256372	SAU	Spiked Blank	Fluoride (F-)	2021/03/19		101	%	80 - 120
7256372	SAU	Method Blank	Fluoride (F-)	2021/03/19	<0.10		mg/L	
7256372	SAU	RPD	Fluoride (F-)	2021/03/19	0.46		%	20
7256391	SAU	Spiked Blank	pH	2021/03/19		102	%	98 - 103
7256391	SAU	RPD	pH	2021/03/19	0.042		%	N/A
7256872	BG1	Matrix Spike	4-Bromofluorobenzene	2021/03/22		106	%	70 - 130
			D4-1,2-Dichloroethane	2021/03/22		109	%	70 - 130
			D8-Toluene	2021/03/22		102	%	70 - 130
			Benzene	2021/03/22		89	%	70 - 130
			Chloroform	2021/03/22		97	%	70 - 130
			1,2-Dichlorobenzene	2021/03/22		93	%	70 - 130
			1,4-Dichlorobenzene	2021/03/22		104	%	70 - 130
			cis-1,2-Dichloroethylene	2021/03/22		98	%	70 - 130
			trans-1,3-Dichloropropene	2021/03/22		99	%	70 - 130
			Ethylbenzene	2021/03/22		84	%	70 - 130
			Methylene Chloride(Dichloromethane)	2021/03/22		97	%	70 - 130
			1,1,2,2-Tetrachloroethane	2021/03/22		100	%	70 - 130
			Tetrachloroethylene	2021/03/22		92	%	70 - 130
			Toluene	2021/03/22		90	%	70 - 130
			Trichloroethylene	2021/03/22		101	%	70 - 130
			p+m-Xylene	2021/03/22		87	%	70 - 130
			o-Xylene	2021/03/22		84	%	70 - 130
7256872	BG1	Spiked Blank	4-Bromofluorobenzene	2021/03/22		105	%	70 - 130
			D4-1,2-Dichloroethane	2021/03/22		104	%	70 - 130
			D8-Toluene	2021/03/22		103	%	70 - 130
			Benzene	2021/03/22		89	%	70 - 130
			Chloroform	2021/03/22		96	%	70 - 130
			1,2-Dichlorobenzene	2021/03/22		93	%	70 - 130
			1,4-Dichlorobenzene	2021/03/22		103	%	70 - 130
			cis-1,2-Dichloroethylene	2021/03/22		97	%	70 - 130
			trans-1,3-Dichloropropene	2021/03/22		93	%	70 - 130
			Ethylbenzene	2021/03/22		86	%	70 - 130
			Methylene Chloride(Dichloromethane)	2021/03/22		94	%	70 - 130
			1,1,2,2-Tetrachloroethane	2021/03/22		95	%	70 - 130
			Tetrachloroethylene	2021/03/22		94	%	70 - 130
			Toluene	2021/03/22		91	%	70 - 130
			Trichloroethylene	2021/03/22		103	%	70 - 130
			p+m-Xylene	2021/03/22		90	%	70 - 130
			o-Xylene	2021/03/22		88	%	70 - 130
7256872	BG1	Method Blank	4-Bromofluorobenzene	2021/03/22		101	%	70 - 130
			D4-1,2-Dichloroethane	2021/03/22		111	%	70 - 130
			D8-Toluene	2021/03/22		94	%	70 - 130
			Benzene	2021/03/22	<0.20		ug/L	
			Chloroform	2021/03/22	<0.20		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,2-Dichlorobenzene	2021/03/22	<0.40		ug/L	
			1,4-Dichlorobenzene	2021/03/22	<0.40		ug/L	
			cis-1,2-Dichloroethylene	2021/03/22	<0.50		ug/L	
			trans-1,3-Dichloropropene	2021/03/22	<0.40		ug/L	
			Ethylbenzene	2021/03/22	<0.20		ug/L	
			Methylene Chloride(Dichloromethane)	2021/03/22	<2.0		ug/L	
			1,1,2,2-Tetrachloroethane	2021/03/22	<0.40		ug/L	
			Tetrachloroethylene	2021/03/22	<0.20		ug/L	
			Toluene	2021/03/22	<0.20		ug/L	
			Trichloroethylene	2021/03/22	<0.20		ug/L	
			p+m-Xylene	2021/03/22	<0.20		ug/L	
			o-Xylene	2021/03/22	<0.20		ug/L	
			Total Xylenes	2021/03/22	<0.20		ug/L	
7256872	BG1	RPD	Benzene	2021/03/22	NC		%	30
			Chloroform	2021/03/22	NC		%	30
			1,2-Dichlorobenzene	2021/03/22	NC		%	30
			1,4-Dichlorobenzene	2021/03/22	NC		%	30
			cis-1,2-Dichloroethylene	2021/03/22	NC		%	30
			trans-1,3-Dichloropropene	2021/03/22	NC		%	30
			Ethylbenzene	2021/03/22	NC		%	30
			Methylene Chloride(Dichloromethane)	2021/03/22	NC		%	30
			1,1,2,2-Tetrachloroethane	2021/03/22	NC		%	30
			Tetrachloroethylene	2021/03/22	NC		%	30
			Toluene	2021/03/22	NC		%	30
			Trichloroethylene	2021/03/22	NC		%	30
			p+m-Xylene	2021/03/22	NC		%	30
			o-Xylene	2021/03/22	NC		%	30
			Total Xylenes	2021/03/22	NC		%	30
7256922	RTY	Matrix Spike	Total Kjeldahl Nitrogen (TKN)	2021/03/23		95	%	80 - 120
7256922	RTY	QC Standard	Total Kjeldahl Nitrogen (TKN)	2021/03/23		101	%	80 - 120
7256922	RTY	Spiked Blank	Total Kjeldahl Nitrogen (TKN)	2021/03/23		101	%	80 - 120
7256922	RTY	Method Blank	Total Kjeldahl Nitrogen (TKN)	2021/03/23	<0.10		mg/L	
7256922	RTY	RPD	Total Kjeldahl Nitrogen (TKN)	2021/03/23	4.7		%	20
7257264	ABP	Matrix Spike	Total Cyanide (CN)	2021/03/19		88	%	80 - 120
7257264	ABP	Spiked Blank	Total Cyanide (CN)	2021/03/19		97	%	80 - 120
7257264	ABP	Method Blank	Total Cyanide (CN)	2021/03/19	<0.0050		mg/L	
7257264	ABP	RPD	Total Cyanide (CN)	2021/03/19	NC		%	20
7257468	KHO	Matrix Spike	2,4,6-Tribromophenol	2021/03/22		78	%	10 - 130
			2-Fluorobiphenyl	2021/03/22		84	%	30 - 130
			D14-Terphenyl (FS)	2021/03/22		86	%	30 - 130
			D5-Nitrobenzene	2021/03/22		94	%	30 - 130
			D8-Acenaphthylene	2021/03/22		92	%	30 - 130
			Di-N-butyl phthalate	2021/03/22		95	%	30 - 130
			Bis(2-ethylhexyl)phthalate	2021/03/22		91	%	30 - 130
			3,3'-Dichlorobenzidine	2021/03/22		51	%	30 - 130
			Pentachlorophenol	2021/03/22		59	%	30 - 130
			Phenanthrene	2021/03/22		94	%	30 - 130
			Anthracene	2021/03/22		90	%	30 - 130
			Fluoranthene	2021/03/22		102	%	30 - 130
			Pyrene	2021/03/22		103	%	30 - 130
			Benzo(a)anthracene	2021/03/22		92	%	30 - 130
			Chrysene	2021/03/22		106	%	30 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(b/j)fluoranthene	2021/03/22		99	%	30 - 130
			Benzo(k)fluoranthene	2021/03/22		94	%	30 - 130
			Benzo(a)pyrene	2021/03/22		88	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2021/03/22		96	%	30 - 130
			Dibenzo(a,h)anthracene	2021/03/22		94	%	30 - 130
			Benzo(g,h,i)perylene	2021/03/22		95	%	30 - 130
			Dibenzo(a,i)pyrene	2021/03/22		100	%	30 - 130
			Benzo(e)pyrene	2021/03/22		107	%	30 - 130
			Perylene	2021/03/22		88	%	30 - 130
			Dibenzo(a,j) acridine	2021/03/22		94	%	30 - 130
			7H-Dibenzo(c,g) Carbazole	2021/03/22		73	%	30 - 130
			1,6-Dinitropyrene	2021/03/22		109	%	30 - 130
			1,3-Dinitropyrene	2021/03/22		120	%	30 - 130
			1,8-Dinitropyrene	2021/03/22		81	%	30 - 130
7257468	KHO	Spiked Blank	2,4,6-Tribromophenol	2021/03/22		76	%	10 - 130
			2-Fluorobiphenyl	2021/03/22		80	%	30 - 130
			D14-Terphenyl (FS)	2021/03/22		88	%	30 - 130
			D5-Nitrobenzene	2021/03/22		99	%	30 - 130
			D8-Acenaphthylene	2021/03/22		91	%	30 - 130
			Di-N-butyl phthalate	2021/03/22		97	%	30 - 130
			Bis(2-ethylhexyl)phthalate	2021/03/22		90	%	30 - 130
			3,3'-Dichlorobenzidine	2021/03/22		101	%	30 - 130
			Pentachlorophenol	2021/03/22		44	%	30 - 130
			Phenanthrene	2021/03/22		94	%	30 - 130
			Anthracene	2021/03/22		91	%	30 - 130
			Fluoranthene	2021/03/22		103	%	30 - 130
			Pyrene	2021/03/22		103	%	30 - 130
			Benzo(a)anthracene	2021/03/22		92	%	30 - 130
			Chrysene	2021/03/22		105	%	30 - 130
			Benzo(b/j)fluoranthene	2021/03/22		99	%	30 - 130
			Benzo(k)fluoranthene	2021/03/22		104	%	30 - 130
			Benzo(a)pyrene	2021/03/22		85	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2021/03/22		97	%	30 - 130
			Dibenzo(a,h)anthracene	2021/03/22		94	%	30 - 130
			Benzo(g,h,i)perylene	2021/03/22		94	%	30 - 130
			Dibenzo(a,i)pyrene	2021/03/22		103	%	30 - 130
			Benzo(e)pyrene	2021/03/22		104	%	30 - 130
			Perylene	2021/03/22		92	%	30 - 130
			Dibenzo(a,j) acridine	2021/03/22		90	%	30 - 130
			7H-Dibenzo(c,g) Carbazole	2021/03/22		82	%	30 - 130
			1,6-Dinitropyrene	2021/03/22		115	%	30 - 130
			1,3-Dinitropyrene	2021/03/22		120	%	30 - 130
			1,8-Dinitropyrene	2021/03/22		82	%	30 - 130
7257468	KHO	Method Blank	2,4,6-Tribromophenol	2021/03/22		54	%	10 - 130
			2-Fluorobiphenyl	2021/03/22		85	%	30 - 130
			D14-Terphenyl (FS)	2021/03/22		89	%	30 - 130
			D5-Nitrobenzene	2021/03/22		95	%	30 - 130
			D8-Acenaphthylene	2021/03/22		90	%	30 - 130
			Di-N-butyl phthalate	2021/03/22	<2		ug/L	
			Bis(2-ethylhexyl)phthalate	2021/03/22	<2		ug/L	
			3,3'-Dichlorobenzidine	2021/03/22	<0.8		ug/L	
			Pentachlorophenol	2021/03/22	<1		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Phenanthrene	2021/03/22	<0.2		ug/L	
			Anthracene	2021/03/22	<0.2		ug/L	
			Fluoranthene	2021/03/22	<0.2		ug/L	
			Pyrene	2021/03/22	<0.2		ug/L	
			Benzo(a)anthracene	2021/03/22	<0.2		ug/L	
			Chrysene	2021/03/22	<0.2		ug/L	
			Benzo(b/j)fluoranthene	2021/03/22	<0.2		ug/L	
			Benzo(k)fluoranthene	2021/03/22	<0.2		ug/L	
			Benzo(a)pyrene	2021/03/22	<0.2		ug/L	
			Indeno(1,2,3-cd)pyrene	2021/03/22	<0.2		ug/L	
			Dibenzo(a,h)anthracene	2021/03/22	<0.2		ug/L	
			Benzo(g,h,i)perylene	2021/03/22	<0.2		ug/L	
			Dibenzo(a,i)pyrene	2021/03/22	<0.2		ug/L	
			Benzo(e)pyrene	2021/03/22	<0.2		ug/L	
			Perylene	2021/03/22	<0.2		ug/L	
			Dibenzo(a,j) acridine	2021/03/22	<0.4		ug/L	
			7H-Dibenzo(c,g) Carbazole	2021/03/22	<0.4		ug/L	
			1,6-Dinitropyrene	2021/03/22	<0.4		ug/L	
			1,3-Dinitropyrene	2021/03/22	<0.4		ug/L	
			1,8-Dinitropyrene	2021/03/22	<0.4		ug/L	
7257468	KHO	RPD	Di-N-butyl phthalate	2021/03/22	8.9		%	40
			Bis(2-ethylhexyl)phthalate	2021/03/22	NC		%	40
			3,3'-Dichlorobenzidine	2021/03/22	NC		%	40
			Pentachlorophenol	2021/03/22	NC		%	40
			Phenanthrene	2021/03/22	NC		%	40
			Anthracene	2021/03/22	NC		%	40
			Fluoranthene	2021/03/22	NC		%	40
			Pyrene	2021/03/22	NC		%	40
			Benzo(a)anthracene	2021/03/22	NC		%	40
			Chrysene	2021/03/22	NC		%	40
			Benzo(b/j)fluoranthene	2021/03/22	NC		%	40
			Benzo(k)fluoranthene	2021/03/22	NC		%	40
			Benzo(a)pyrene	2021/03/22	NC		%	40
			Indeno(1,2,3-cd)pyrene	2021/03/22	NC		%	40
			Dibenzo(a,h)anthracene	2021/03/22	NC		%	40
			Benzo(g,h,i)perylene	2021/03/22	NC		%	40
			Dibenzo(a,i)pyrene	2021/03/22	NC		%	40
			Benzo(e)pyrene	2021/03/22	NC		%	40
			Perylene	2021/03/22	NC		%	40
			Dibenzo(a,j) acridine	2021/03/22	NC		%	40
			7H-Dibenzo(c,g) Carbazole	2021/03/22	NC		%	40
			1,6-Dinitropyrene	2021/03/22	NC		%	40
			1,3-Dinitropyrene	2021/03/22	NC		%	40
			1,8-Dinitropyrene	2021/03/22	NC		%	40
7258487	SDE	QC Standard	Total Suspended Solids	2021/03/22		96	%	85 - 115
7258487	SDE	Method Blank	Total Suspended Solids	2021/03/22	<10		mg/L	
7258487	SDE	RPD	Total Suspended Solids	2021/03/22	5.1		%	25
7259063	BMO	Matrix Spike	Phenols-4AAP	2021/03/22		97	%	80 - 120
7259063	BMO	Spiked Blank	Phenols-4AAP	2021/03/22		103	%	80 - 120
7259063	BMO	Method Blank	Phenols-4AAP	2021/03/22	<0.0010		mg/L	
7259063	BMO	RPD	Phenols-4AAP	2021/03/22	NC		%	20
7260231	PBA	Matrix Spike	Total Aluminum (Al)	2021/03/23		115	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Antimony (Sb)	2021/03/23		100	%	80 - 120
			Total Arsenic (As)	2021/03/23		101	%	80 - 120
			Total Cadmium (Cd)	2021/03/23		101	%	80 - 120
			Total Chromium (Cr)	2021/03/23		95	%	80 - 120
			Total Cobalt (Co)	2021/03/23		100	%	80 - 120
			Total Copper (Cu)	2021/03/23		99	%	80 - 120
			Total Lead (Pb)	2021/03/23		103	%	80 - 120
			Total Manganese (Mn)	2021/03/23		97	%	80 - 120
			Total Molybdenum (Mo)	2021/03/23		102	%	80 - 120
			Total Nickel (Ni)	2021/03/23		98	%	80 - 120
			Total Phosphorus (P)	2021/03/23		104	%	80 - 120
			Total Selenium (Se)	2021/03/23		107	%	80 - 120
			Total Silver (Ag)	2021/03/23		99	%	80 - 120
			Total Tin (Sn)	2021/03/23		99	%	80 - 120
			Total Titanium (Ti)	2021/03/23		97	%	80 - 120
			Total Zinc (Zn)	2021/03/23		102	%	80 - 120
7260231	PBA	Spiked Blank	Total Aluminum (Al)	2021/03/23		105	%	80 - 120
			Total Antimony (Sb)	2021/03/23		101	%	80 - 120
			Total Arsenic (As)	2021/03/23		104	%	80 - 120
			Total Cadmium (Cd)	2021/03/23		102	%	80 - 120
			Total Chromium (Cr)	2021/03/23		98	%	80 - 120
			Total Cobalt (Co)	2021/03/23		103	%	80 - 120
			Total Copper (Cu)	2021/03/23		102	%	80 - 120
			Total Lead (Pb)	2021/03/23		104	%	80 - 120
			Total Manganese (Mn)	2021/03/23		100	%	80 - 120
			Total Molybdenum (Mo)	2021/03/23		104	%	80 - 120
			Total Nickel (Ni)	2021/03/23		102	%	80 - 120
			Total Phosphorus (P)	2021/03/23		108	%	80 - 120
			Total Selenium (Se)	2021/03/23		110	%	80 - 120
			Total Silver (Ag)	2021/03/23		101	%	80 - 120
			Total Tin (Sn)	2021/03/23		99	%	80 - 120
			Total Titanium (Ti)	2021/03/23		98	%	80 - 120
			Total Zinc (Zn)	2021/03/23		106	%	80 - 120
7260231	PBA	Method Blank	Total Aluminum (Al)	2021/03/24	<4.9		ug/L	
			Total Antimony (Sb)	2021/03/24	<0.50		ug/L	
			Total Arsenic (As)	2021/03/24	<1.0		ug/L	
			Total Cadmium (Cd)	2021/03/24	<0.090		ug/L	
			Total Chromium (Cr)	2021/03/24	<5.0		ug/L	
			Total Cobalt (Co)	2021/03/24	<0.50		ug/L	
			Total Copper (Cu)	2021/03/24	<0.90		ug/L	
			Total Lead (Pb)	2021/03/24	<0.50		ug/L	
			Total Manganese (Mn)	2021/03/24	<2.0		ug/L	
			Total Molybdenum (Mo)	2021/03/24	<0.50		ug/L	
			Total Nickel (Ni)	2021/03/24	<1.0		ug/L	
			Total Phosphorus (P)	2021/03/24	<100		ug/L	
			Total Selenium (Se)	2021/03/24	<2.0		ug/L	
			Total Silver (Ag)	2021/03/24	<0.090		ug/L	
			Total Tin (Sn)	2021/03/24	<1.0		ug/L	
			Total Titanium (Ti)	2021/03/24	<5.0		ug/L	
			Total Zinc (Zn)	2021/03/24	<5.0		ug/L	
7260231	PBA	RPD	Total Aluminum (Al)	2021/03/24	4.0		%	20
			Total Antimony (Sb)	2021/03/24	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Arsenic (As)	2021/03/24	NC		%	20
			Total Cadmium (Cd)	2021/03/24	3.4		%	20
			Total Chromium (Cr)	2021/03/24	NC		%	20
			Total Cobalt (Co)	2021/03/24	NC		%	20
			Total Copper (Cu)	2021/03/24	1.7		%	20
			Total Lead (Pb)	2021/03/24	NC		%	20
			Total Manganese (Mn)	2021/03/24	1.4		%	20
			Total Molybdenum (Mo)	2021/03/24	3.9		%	20
			Total Nickel (Ni)	2021/03/24	1.6		%	20
			Total Phosphorus (P)	2021/03/24	NC		%	20
			Total Selenium (Se)	2021/03/24	NC		%	20
			Total Silver (Ag)	2021/03/24	NC		%	20
			Total Tin (Sn)	2021/03/24	5.0		%	20
			Total Titanium (Ti)	2021/03/24	13		%	20
			Total Zinc (Zn)	2021/03/24	1.4		%	20
7261315	GR1	Matrix Spike	Mercury (Hg)	2021/03/23		95	%	75 - 125
7261315	GR1	Spiked Blank	Mercury (Hg)	2021/03/23		99	%	80 - 120
7261315	GR1	Method Blank	Mercury (Hg)	2021/03/23	<0.00010		mg/L	
7261315	GR1	RPD	Mercury (Hg)	2021/03/23	NC		%	20
7261318	TJC	Matrix Spike	Nonylphenol (Total)	2021/03/23		109	%	50 - 130
7261318	TJC	Spiked Blank	Nonylphenol (Total)	2021/03/23		103	%	50 - 130
7261318	TJC	Method Blank	Nonylphenol (Total)	2021/03/23	<0.001		mg/L	
7261318	TJC	RPD	Nonylphenol (Total)	2021/03/24	NC		%	40
7261321	DEO	Matrix Spike	Nonylphenol Ethoxylate (Total)	2021/03/23		88	%	50 - 130
7261321	DEO	Spiked Blank	Nonylphenol Ethoxylate (Total)	2021/03/23		83	%	50 - 130
7261321	DEO	Method Blank	Nonylphenol Ethoxylate (Total)	2021/03/23	<0.005		mg/L	
7261321	DEO	RPD	Nonylphenol Ethoxylate (Total)	2021/03/23	NC		%	40
7262504	JT5	Spiked Blank	Total Oil & Grease	2021/03/24		97	%	85 - 115
7262504	JT5	RPD	Total Oil & Grease	2021/03/24	0.52		%	25
7262504	JT5	Method Blank	Total Oil & Grease	2021/03/24	<0.50		mg/L	
7262511	JT5	Spiked Blank	Total Oil & Grease Mineral/Synthetic	2021/03/24		97	%	85 - 115
7262511	JT5	RPD	Total Oil & Grease Mineral/Synthetic	2021/03/24	3.1		%	25
7262511	JT5	Method Blank	Total Oil & Grease Mineral/Synthetic	2021/03/24	<0.50		mg/L	
7265276	SVS	Matrix Spike	Decachlorobiphenyl	2021/03/25		89	%	60 - 130
			Total PCB	2021/03/25		45 (1)	%	60 - 130
7265276	SVS	Spiked Blank	Decachlorobiphenyl	2021/03/25		62	%	60 - 130
			Total PCB	2021/03/25		79	%	60 - 130
7265276	SVS	Method Blank	Decachlorobiphenyl	2021/03/25		89	%	60 - 130
			Total PCB	2021/03/25	<0.05		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
7265276	SVS	RPD	Total PCB	2021/03/25	NC		%	40

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike exceeds acceptance limits,probable matrix interference.

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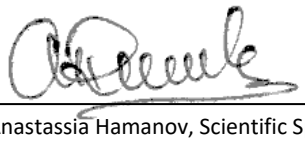
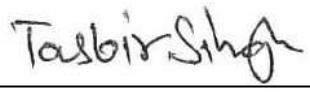
VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anastassia Hamanov, Scientific Specialist



Tasbir Singh, Lab Technician

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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MICRO

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CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name	#12541 Pottinger Gaherty Environmental Consultants	Company Name	PGL	Quotation #	C10356	BV Labs Job #:	Bottle Order #: 818096
Attention	Accounts Payable	Attention	~~Paula Schuster~~ Ryan Cook	P.O. #			
Address	250 Water Street Unit 102, Whitby ON L1N 0G5	Address	rcook@pggroup.com	Project	5660-03.03	COC #: C#818096-01-01	Project Manager: Deepthi Shaji
Tel	(905) 668-4908 Fax (905) 668-4909	Tel	(905) 668-4908 Ext. 115 Fax	Project Name			
Email	AP@pggroup.com; labdataon@pggroup.com	Email	~~pschuster@pggroup.com~~,LabDataON@pggroup.com	Site #			
				Sampled By	AES + RSC		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011): ☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___

Other Regulations: ☐ CCME ☐ Reg 558 ☐ MISA ☐ PWQO ☐ Other ☒ Sanitary Sewer Bylaw ☒ Storm Sewer Bylaw Municipality ___ ☐ Reg 406 Table ___

Special Instructions:

Include Criteria on Certificate of Analysis (Y/N)? Y

ANALYSIS REQUESTED (PLEASE BE SPECIFIC): Field Filtered (please circle): Metals / Hg / Cr VI; Toronto Sanitary&Storm Sewer (100-2016); O.Reg 153 VOCs by HS & F1-F4; O.Reg 153 PAHs; O.Reg 153 Dissolved ICPMS Metals; O.Reg 153 VOCs by HS; Toronto Storm and Sewer

#	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Toronto Sanitary&Storm Sewer (100-2016)	O.Reg 153 VOCs by HS & F1-F4	O.Reg 153 PAHs	O.Reg 153 Dissolved ICPMS Metals	O.Reg 153 VOCs by HS	Toronto Storm and Sewer	# of Bottles	Comments
1		MW 204	2021/03/17	2pm	GW	N						X	19	
2														
3														
4														
5														
6														
7														
8														
9														
10														

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___
Rush Confirmation Number: ___ (call lab for #)

18-Mar-21 15:33
Deepthi Shaji
C172290
ATM env-1305

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Ayesha Shah	21/03/18	9:30	Pooja Parjeet Kharel	21/03/18	15:33	0

Laboratory Use Only: Time Sensitive; Temperature (°C) on Recei 5/3/5; Custody Seal Present / Intact: Yes ✓

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Exceedance Summary Table – Toronto San/Stm Sewer

Result Exceedances

Sample ID	BV Labs ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

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