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FUNCTIONAL SERVICING / STORMWATER MANAGEMENT REPORT

Proposed Building Addition

St. Luke's Dixie Senior Residence
4150 Westminster Place
City of Mississauga
Region of Peel

October 2022
January 2024
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Prepared For: **St. Luke's Dixie Senior Residence Corporation**

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VALDOR WATER RESOURCES

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1.0 INTRODUCTION

Valdor Engineering Inc. has been retained by St. Luke's Dixie Senior Residence Corporation to provide consulting engineering services for the proposed building addition on their lands. The subject site is located to the northwest of the intersection of Rathburn Road East and Westminster Place in the City of Mississauga as indicated in **Figure 1**.

1.1 Existing Conditions

The subject site is approximately 1.637 hectares in size and is a part of the property known municipally as 4150 Westminster Place.

The property is currently occupied by a retirement building with parking lots and lawn areas. The site is bounded to the north-east by Westminster Place, to the south-east by Rathburn Road East, to the south-west by Shelby Park, and to the north-east by residential detached dwellings. There are no watercourses or other natural features within or adjacent to the site.

1.2 Proposed Development

The proposed building addition will be in the form of an 8-storey apartment building above a one-level underground parking garage. The area of the development is approximately 0.593 hectares.

A copy of the site plan and relevant architectural plans for the proposed building is included in **Appendix "A"** together with the calculations of the equivalent population in **Table A1**. The development statistics are summarized in **Table 1**.

Table 1. Development Statistics / Equivalent Population

Land Use	Residential Units	Equivalent Population
Apartment Units – Existing Building	190	513.0
Apartment Units – Proposed Building Addition	70	189.0
Total	**260**	**702.0**

1.3 Purpose of Report

This report has been prepared in support of the Zoning By-law application for the development. The intent of the report is to demonstrate the conformity of proposed water and wastewater servicing, storm drainage and stormwater management servicing with the criteria of the City of Mississauga, Region of Peel and the Toronto & Region Conservation Authority.

This report has been prepared based on a review of the topographic survey and background studies, discussions with municipal staff and a visit to the site.

2.0 WATER SUPPLY

The Region of Peel is responsible for the treatment and distribution of water within the City of Mississauga as well as the City of Mississauga and the Town of Caledon. The City of Mississauga is located within the Region's South Peel Drinking Water System which supplies a population of over 1.3 million people. This system draws water from Lake Ontario after which it is treated at either the Lakeview or Lornepark water treatment facilities. The distribution system carries water from the plants through a network of approximately 4,200 Km of watermains which is supported by various storage facilities including 12 reservoirs, 4 elevated tanks and 2 standpipes.

The subject site is located within the service boundary of water pressure Zone 5. A plan indicating the various pressure districts is included in **Appendix "B"**.

The following is a summary of the proposed water servicing for the site:

2.1 Domestic Demand

The domestic demand is to be calculated using the Region of Peel engineering design standards which include the following parameters:

Residential Average Day Demand:	280 L/person/day
Maximum Day Factor:	2.0
Peak Hour Factor	3.0
ICI Average Day Demand:	300 L/person/day
Maximum Day Factor:	1.4
Peak Hour Factor	3.0

Based on the above, domestic water demands are summarized in **Table 2**. A detailed calculation of the domestic water demand is provided in **Table B1** which is included in **Appendix "B"**. The water demand is also documented in the format of the Region's single use demand table which is included in **Appendix "G"**.

Table 2. Domestic Water Demand

	Equivalent Population (Persons)	Average Day Demand (L/min)	Maximum Day Demand (L/min)	Peak Hour Demand (L/min)	Maximum Day Plus Fire Flow (L/min)	Maximum Day Plus Fire Flow (L/s)
Existing Building	513.0	99.8	199.5	299.3	6,199.5	103.3
Proposed Building Addition	189.0	36.8	73.5	110.3	6,073.5	101.2
Total	**702.0**	**136.5**	**273.0**	**409.5**	**6,273.0**	**104.6**

2.2 Fire Flow

The fire flow required for the existing building and proposed building addition units was calculated using the criteria indicated in the *Water Supply for Public Fire Protection Manual*, 2020, by the Fire Underwriters Survey (FUS). The fire flow calculation considers the type of construction (the degree of fire rating), the type of occupancy (low vs. high hazard), whether or not the building will have a sprinkler system and how close the building is to neighbouring buildings (exposure factor).

The calculation was completed using the floor level having the most floor area. Based on these calculations, the minimum fire suppression flow required is 6,000 L/min. This fire flow plus the maximum day demand must be available at the nearest hydrant with a minimum pressure of 140 KPa.

Fire protection will be provided by the existing municipal fire hydrants located to the southwest of the subject site on Rathburn Road East, the proposed relocated on-site hydrant along the west side of the site and the proposed relocated on-site hydrant on the north east corner the subject site. The three fire hydrants will provide sufficient coverage given that it is located within 90m of the principal entrance of the building in accordance with the Ontario Building Code (OBC). In addition, the Siamese connection will be located within 45m of the municipal fire hydrant. Given the extent of the proposed development, the existing private hydrant will need to be relocated to the northeast corner of the subject site.

The locations of the existing municipal hydrant and the proposed relocated fire hydrants on site are indicated in **Figure 2.** A detailed calculation of the fire flow requirement is provided in **Table B2** which is included in **Appendix "B"**.

Pressure and flow testing was conducted by Hydratest on September 1, 2022, at the closest municipal fire hydrants on the adjacent streets to obtain existing flows as well as residual and static pressure in order to determine if the existing infrastructure can provide the required fire suppression. Based on the test results, the required fire flow of 6,000 L/min plus maximum day demand of 273.0 L/min is available at a residual pressure of approximately 582.6 kPa (84.5 psi) for the residual hydrant near the subject site which is greater than the minimum pressure of 140 kPa (20.3psi). Therefore, the existing municipal watermain can adequately service the subject development. The calculations for the available pressure at the required fire flow are provided in **Table B3** along with the results of the flow test all included in **Appendix "B"**.

2.3 Water Service Connection

The subject site is currently serviced by a 200mm diameter water service connection to the existing 600mm diameter concrete watermain on Rathburn Road. This 200mm diameter connection currently provides both domestic water supply and fire protection for the existing building. In accordance with the Region standard, a separate 150mm diameter domestic site watermain will be constructed and the existing site watermain will be used for fire protection. The proposed 150mm diameter domestic water service will branch off from the existing 200mm diameter water service connection at the property

line. A detector check valve will be installed on the 200mm diameter water service connection to the north of the property line.

The internal private watermain network will be routed within the parking garage to service each of the residential buildings. The internal watermain system will be designed by the mechanical engineer at the building permit stage.

The existing and proposed water service connection locations are indicated in **Figure 2**. The standard detail for the water service connection is included in **Appendix "B".**

2.4 Water Meter

The water meter is to be purchased from the Region of Peel and will be installed in the water meter room to be located on the P1 parking garage level of the proposed building addition with a remote readout device located on the exterior ground floor wall of the building. The existing building will continue to have its own water meter.

A backflow prevention device is to be installed after the meter in accordance with the Region's standards. The backflow prevention device will ensure that quality of the Region's potable water system is protected against the potential for the reversal of the normal flow of water which can occur as a result of back siphonage or back pressure when the municipal watermain pressure drops during such events as watermain break or fire fighting operation.

A copy of the standard detail for the water meter is included in **Appendix "B"**. The location of the water meter is illustrated in **Figure 2**.

3.0 WASTEWATER SERVICING

The Region of Peel operates and maintains approximately 3,384 Km of sanitary sewers in two separate gravity trunk sewer systems, being the east trunk and the west trunk. The divide between these two systems is approximated by the watershed boundary between the Etobicoke Creek and the Credit River. The west trunk discharges to the Clarkson Wastewater Treatment Facility (WWTF) located at the southwest corner of Mississauga and the east trunk discharges to the G. E. Booth (Lakeview) WWTF located at the southeast corner of Mississauga, both of which are located adjacent to Ontario.

The subject site is located in the catchment area of the east trunk system which extends northerly along the Etobicoke Creek valley from the G. E. Booth WWTF to Pearson International Airport. North of the airport the system splits into three branches known as the Etobicoke Creek West, Central and East sewer sheds. The subject is serviced by the east trunk sewer prior to the split in the City of Mississauga.

The following is a summary of the proposed wastewater servicing for the site:

3.1 Wastewater Loading

The wastewater loading has been calculated using the Region of Peel engineering design standards which include the following parameters.

Domestic Flow: Q = 302.8 L/person/day

Extraneous Flow: *I* = 0.20 L/s/Ha (Infiltration)

Peaking Factor: $K_H = 1 + \frac{14}{4 + \sqrt{P}}$

Where: K_H = Harmon Peaking Factor (Min 1.5, Max 4.0)

P = Population in thousands

Design Flow, Q = $Q_{ave} \times K_H + I$

The detailed calculation for the proposed wastewater loading is included in **Table C1** which is contained in **Appendix "C"** and summarized in **Table 3**. The wastewater load is also documented in the format of the Region's single use demand table which is included in **Appendix "G"**.

Table 3. Wastewater Loading Summary

Area (Ha)	Pop. (Persons)	Average Daily Flow (L/s)	Harmon Peaking Factor	Peak Daily Flow (L/s)	Infiltration Rate (L/s)	Total Flow (L/s)
0.594	189	0.61	4	2.45	0.12	2.57

3.2 Sanitary Service Connection

The existing wastewater system in the vicinity of the site includes a 300mm diameter sanitary sewer draining northeast on Rathburn Road East and a 250mm diameter sanitary sewer draining north on Westminster Place. The sanitary sewer on Westminster Place is currently servicing the existing building under the existing condition.

The proposed service be connected to the existing 300mm diameter sanitary sewer on Rathburn Road East by adding a control manhole at the southwest corner of the site. The site sanitary sewer will extend to the face of the parking garage. The internal private sanitary drain network will be routed within the parking garage to service the residential building. The internal drain system will be designed by the mechanical engineer at the building permit stage.

A detail of a typical sanitary service connection has been included in **Appendix "C".** The configuration of the existing sanitary sewers and location of the proposed service connection are illustrated in **Figure 3**.

3.3 Downstream Sanitary Sewer

The proposed sanitary flow will be received by the existing 300mm diameter sanitary sewer draining nothwast on Rathburn Road East. Based on the Region of Peel's record, the 300mm diameter sanitary sewer on Rathburn Road East ultimately flows to the 900mm diameter sanitary trunk sewer at the intersection of the Burnhamthorpe Trial and

Burnhamthorpe Road East. A figure that shows the downstream sanitary route and the location of the trunk connection is included in **Appendix "C"**.

4.0 STORM DRAINAGE & STORMWATER MANAGEMENT

The subject site is located within the Etobicoke Creek Watershed. Etobicoke Creek is the most westerly watershed within the TRCA jurisdiction, encompassing parts of Caledon, Brampton, Mississauga and Toronto. The Creek has a drainage area of approximately 211 km^2 in the form of a long and narrow watershed, with two principal tributaries. Little Etobicoke Creek is located along the western side of the watershed, with its headwaters just north of Highway 401. The second tributary, known as Spring Creek, joins the main creek approximately 13.5 km upstream from Lake Ontario and has its source within the Heart Lake complex of wetlands near the intersection of Mayfield Road and Heart Lake Road.

Based on a review of the TRCA's mapping, the subject site is not located within an area that is regulated by their office. A copy of the watershed plan is included in **Appendix "D"**.

In accordance with the requirements of the City of Mississauga drainage must be managed on site in order to minimize downstream impacts. The following is a summary of the storm drainage and stormwater management analysis:

4.1 Quantity Control

Stormwater quantity control is typically implemented to minimize the potential for downstream flooding, stream bank erosion and overflows of infrastructure. The impact of the proposed development has been analyzed as follows:

4.1.1 Pre-Development Flow

The subject site currently has catchbasins that convey the storm runoff by on-site storm sewers and discharge to the existing 450mm diameter storm sewer on Westminster Place. The servicing plan of the existing building is provided in **Appendix "E"**. Pre-development surfaces consist of the impervious areas such as the roof of the existing building, parking lots, and paved driveways, pervious areas consisting of the existing lawn areas. Based on these site surfaces, the composite runoff coefficient was calculated to be 0.74. The pre-development surface conditions are illustrated in **Figure 4**.

The rainfall intensity duration frequency data for the City of Mississauga is included in **Appendix "D"**. The rainfall intensity values, *I*, for the 2, 5, 10, 25, 50 and 100 year return periods are calculated in accordance with the City standard as follows.

$$I_2 = \frac{610}{(T_c + 4.6)^{0.78}} \qquad I_{25} = \frac{1160}{(T_c + 4.6)^{0.78}}$$

$$I_5 = \frac{820}{(T_c + 4.6)^{0.78}} \qquad I_{50} = \frac{1300}{(T_c + 4.7)^{0.78}}$$

$$I_{10} = \frac{1010}{(T_c + 4.6)^{0.78}} \qquad I_{100} = \frac{1450}{(T_c + 4.9)^{0.78}}$$

The peak flows are calculated using the following formula:

$Q = R \times A \times I \times 2.778$ where: Q = peak flow (L/s)
A = area in hectares (Ha)
I = rainfall intensity (mm/hr)
R = composite runoff coefficient
t = time of concentration (15 minutes)

The calculation of the pre-development 2 year thoruth 100 year peak flows are provided on **Table E1** and **E2** contained in **Appendix "E"** and summarized in first row of **Table 4.**

Table 4: Storm Drainage Peak Flows

Condition	Area (ha)	Runoff Coefficient	2 Year Peak Flows (L/s)	5 Year Peak Flows (L/s)	10 Year Peak Flows (L/s)	25 Year Peak Flows (L/s)	50 Year Peak Flows (L/s)	100 Year Peak Flows (L/s)
Pre-Development	0.594	0.74	73.6	98.9	121.9	153.9	187.5	216.1
Post-Development	0.594	0.71	70.2	94.4	116.3	146.9	178.9	206.2

4.1.2 Post-Development Flow

Based on a review of the architect's site plan, the post-development surface conditions for this site are illustrated in **Figure 5.** The impervious areas consist of the paved driveways, walkways and the roof areas. The pervious areas consist of the green roof, grassed and other landscaped areas. Based on these surfaces, the proposed development is slightly lower than the existing site condition with a composite runoff coefficient of 0.71.

Based on the area of the proposed surfaces, the post-development hydrological condition was calculated in accordance with the equations presented in **Section 4.1.1**, assuming no mitigation measures will be implemented. Based on a review of the site servicing plan of the existing building, the existing on-site stormwater management system does not have any storm water quantity control measures such as orifice tube or plates. As the existing on-site storm sewers and catchbasins will be rerouted and relocated based on the extent of the proposed building addition, the stormwater management concept will be maintained under the post-development condition.

The 2 year to 100 year peak flows are summarized in the section row of **Table 4**. A comparison of the rates in the first and second row of **Table 4** indicates that the peak flows under the post-development condition are lower than the pre-development condition flows. As the runoff coefficient and the stormwater management concept under the post-development are improved comparing to the pre-development condition, the stormwater quantity requirement is achieved, and no mitigation measures are required.

The locations of the existing and proposed storm sewers and catchbasins are illustrated in **Figure 6**. The site servicing plan for the existing building is included in **Appendix "E"**.

4.2 Quality Control

Based on the Stormwater Management Planning & Design Manual prepared by the Ministry of the Environment (March 2003), various levels of treatment are defined with the goal to maintain or enhance existing aquatic habitat based on the total suspended solids (TSS) removal efficiency.

Based on the municipal criteria for the area, storm water quality control for the subject site is to be designed to achieve "Enhanced" protection level (Level 1 treatment) which provides 80% TSS removal. A condominium setting parking lots can generate motor vehicle related contaminants such as spills of oil, fuel and lubricants and sediment accumulation.

Based on a review of the site servicing plan of the existing building, the existing stormwater system does not have a quality treatment unit. In addition, given the surface condition and runoff coefficient of the post-development condition is maintained to be similar to the pre-development condition, and the proposed green roof will enhance the TSS removal, the stormwater quality control is not required.

4.3 Low Impact Development (LID) Measures

Low Impact Development (LID) measures such as infiltration trenches, bio-retention swales, green roof systems and permeable pavers are implemented as source and conveyance stormwater management controls to promote infiltration and pollutant removal on a local site by site basis. These measures rely on eliminating the direct connection between impervious surfaces such as roofs, roads, parking areas, and the storm drainage system, as well as the promotion of infiltration on each development or re-development site.

The benefits from LID stormwater management practices are generally focused on the more frequent storm events (5mm rainfall events) of lower volumes as opposed to the less frequent storm events (e.g. 100 year storm) with higher volumes. It is also recognized that the forms of LID which promote infiltration or filtration through a granular medium also provide thermal mitigation for storm runoff. LID measures can be implemented varying degrees based upon the available area given the proposed land use and development form and the soil infiltration capacity.

The objective of the water balance criteria is to capture and manage annual rainfall on-site to preserve the pre-development hydrology. The water balance consists of runoff, infiltration and evapotranspiration.

Given the runoff coefficient under the post-development condition is similar to the pre-development condition. The pre-development hydrology of the subject site will be preserved. Therefore, water balance measures are not required. In addition, the proposed building addition will have green roof as a LID measure.

4.4 Storm Drainage System

The configurations of the existing and proposed storm sewer system are indicated in **Figure 6**. The main features of the storm drainage system include surface drainage, roof drainage and foundation drainage as follows:

4.4.1 Minor System

Surface runoff will be captured by several catchbasins located in the paved areas throughout the site. The on-site storm sewers will convey the runoff to the existing 450mm diameter storm service connection that drains to the existing 900mm diameter storm sewer that drains south-easterly on Westminster Place. The location of the existing storm service connection is indicated in **Figure 6**.

4.4.2 Major System

The major system for the site is comprised of an overland flow route to convey flows which are in excess of the 100 year storm. In this case, the overland flow route will direct runoff to the road allowance of Westminster Place.

4.4.3 Roof Drainage

The building will have roof drains which outlet to the on-site stormwater system at grade prior to discharge to municipal storm sewer system. Roof top stormwater detention is not proposed.

4.5 SWM Inspection & Maintenance

The proposed stormwater management system requires regular inspection and maintenance to ensure the infrastructure function as designed. The suggested inspection and maintenance procedures are as follows:

Catchbasins

Keep catchbasin and area drain grates clear of debris. Inspect silt depth in sumps regularly. Clean sump when reaches 50% full.

Maintenance should be performed immediately if an abnormality is observed such as slow catchbasin draining rate. As per practice standard, the condominium corporation will be responsible for the maintenance of the quantity control system.

5.0 VEHICLE & PEDESTRIAN ACCESS

The layout of the site has been developed with consideration for efficient and safe access and circulation of both vehicular and pedestrian traffic.

5.1 Public Roads

The subject site has frontage on Westminster Place which is operated and maintained by the City of Mississauga. These roads have urban cross sections with curb and gutter. No road widenings are proposed.

5.2 Driveways & Parking Areas

Vehicular access for the proposed development will be provided by two driveways off Clarence Street. The western driveway will provide emergency secondary access to the development. The eastern driveway will provide primary access for development.

The existing driveways are to be removed and the boulevard is to be restored to the satisfaction of the City of Mississauga.

5.3 Sidewalks & Walkways

Pedestrian access will be provided by walkways to safely guide residents through the development for access to the adjacent municipal sidewalk on Westminster Place Street. The City's municipal sidewalk will provide access to the nearby bus stops.

6.0 GRADING

Based on a review of the topographic survey, most of the redevelopment area is generally sloping from south at an elevation of 140.50m at the existing retaining wall to the north at an elevation of 139.30 at the existing driveway entrance. the proposed grading is designed to minimize the impact to the existing grades on the site while ensure that the existing and proposed buildings are not subject to flooding. A reduced copy of the topographic plan is provided in **Appendix "F"**.

6.1 Grading Criteria

As is typical with condominium apartment buildings, the grading design for the site must accommodate the existing elevations along the neighbouring properties and adjacent road allowances and the ground floor level must be established to provide an accessible route from the exterior to the lobby.

6.2 Preliminary Grading Design

The subject site is to be graded in accordance with the municipal grading criteria which dictates that driveway grades are to range from 0.5% to 5.0% except for the ramp area, walkway grades are to range from 0.5% to 5.0% and that sodded yard areas are to range from 2.0% to 5.0%. For large grade differentials, a maximum slope 3H : 1V can be used for sodded embankments. In areas where space is limited, retaining walls can be utilized to accommodate grade differentials. Based on the grading assessment, no significant difficulties are anticipated in achieving the municipal design standards.

6.3 Permitting

A review of the Regulation Mapping indicates that the subject site is not located within an area that is regulated by the TRCA. A grading permit is therefore not required from their office under Ontario Regulation 166/06 prior to proceeding with earthworks.

7.0 EROSION & SEDIMENT CONTROL DURING CONSTRUCTION

Construction activity, especially operations involving the handling of earthen material, dramatically increases the availability of particulate matter for erosion and transport by surface drainage. In order to mitigate the adverse environmental impacts caused by the release of silt-laden stormwater runoff, measures for erosion and sediment control (ESC) are required for construction sites.

The impact of construction on the environment is recognized by the Greater Golden Horseshoe Area Conservation Authorities. In December 2006 they released their document titled “Erosion & Sediment Control Guidelines for Urban Construction”. This document provides guidance for the preparation of effective erosion and sediment control plans.

Control measures must be selected that are appropriate for the erosion potential of the site and it is important that they be implemented and modified on a staged basis to reflect the site activities. Furthermore, their effectiveness decreases with sediment loading and therefore inspection and maintenance is required. The selection, implementation, inspection and maintenance of the control features are summarized as follows:

7.1 Control Measures

On relatively small urban re-development sites, measures for erosion and sediment control typically include the use of silt fencing, a mud mat and sediment traps. The following is a description of the sediment controls to be implemented on the subject site:

- **Silt Fences** are to be installed adjacent to all property limits subject to drainage from the development area prior to commencing earthworks.
- **Mud Mat** is to be installed at the construction entrance prior to commencing earthworks to minimize the tracking of mud onto municipal roads.
- **Sediment Traps** are to be installed at all catchbasin and area drain locations once the storm sewer system has been constructed to prevent silt laden runoff from entering the municipal storm sewer system.

7.2 Construction Sequencing

The following is the scheduling of construction activities with respect to sediment controls:

Stage 1: Foundations & Underground Parking Structure

1. Install hoarding around the perimeter of site and install silt fence onto the inside face of the hoarding.
2. Construct the mud mat for construction access with a lockable gate.
3. Install sediment traps on street catchbasins in the vicinity of the site.
4. Demolish existing buildings, clear site and dispose all debris off site.
5. Install the excavation support shoring system around perimeter of site.
6. Excavate to the base of the parking garage floor level and dispose of earth material off site.
7. Grade the base of the excavation towards one or more sumps to gather any stormwater runoff that may accumulate. Discharge is to be filtered using geotextile wrapped clear stone around the pump intake assembly.
8. Construct the building foundations and the parking garage structure to the ground floor level.
9. Sweep the street regularly to ensure that the road pavement is clear of any mud tracking.

Stage 2: Construction of Superstructure

1. Construct the superstructure, façade, rough-ins and finishes.
2. Sweep the street regularly to ensure that the road pavement is clear of any mud tracking.
3. Inspect and maintain the silt fence, catchbasin protection and mud mat regularly.

Stage 3: Servicing & Boulevard Works

1. Install the service connections and site servicing.
2. Cap the upstream end of sewers during construction to ensure that silt and debris does not enter the municipal systems.
3. Upon installation of area drains, protect with sediment traps.
4. Sweep the street regularly to ensure that the road pavement is clear of any mud tracking.
5. Complete boulevard grading and stabilize all ground surfaces with landscape and hardscape materials.
6. Once all surfaces are stabilized, remove the sediment controls.
7. Clean the stormwater detention tank, manholes and catchbasins and dispose all silt and debris off site.

7.3 ESC Inspection & Maintenance

In order to ensure that the erosion and sediment control measures operate effectively, they are to be regularly monitored and they will require periodic cleaning (e.g., removal of accumulated silt), maintenance and/or re-construction.

Inspections of all of the erosion and sediment controls on the construction site should be undertaken with the following frequency:

- On a weekly basis
- After every rainfall event
- After significant snow melt events
- Prior to forecasted rainfall events

If the “Control Measures” are found to be damaged, they should be repaired and/or replaced within 48 hours.

Site inspection staff and construction managers should refer to the Erosion and Sediment Control Inspection Guide (2008) prepared by the Greater Golden Horseshoe Area Conservation Authorities. This Inspection Guide provides information related to the inspection reporting, problem response and proper installation techniques.

8.0 SUMMARY

Based on the discussions contained herein, the proposed development can be adequately serviced with full municipal services (watermain, sanitary and storm) in accordance with the standards of the City of Mississauga, Region of Peel and Toronto & Region Conservation Authority (TRCA) as follows:

Water

- The subject site is serviced by one existing 200mm diameter connection to the existing 600mm diameter watermain on Rathburn Road East. This 200mm diameter connection currently provides both domestic water supply and fire protection for the existing building. In accordance with the Region standard, a separate 150mm diameter domestic site watermain will be constructed and the existing site watermain will be used for fire protection. The proposed 150mm diameter domestic water service will branch off from the existing 200mm diameter water service connection at the property line. A detector check valve will be installed on the 200mm diameter water service connection to the north of the property line.
- Water consumption will be measured by a bulk water meter to be located within the water meter room to be located on the P1 parking garage level. The existing building will continue to have its own water meter.
- Fire protection will be provided by the existing municipal fire hydrants on Rathburn Road East and the proposed municipal fire hydrants on the northeast corner and southwest corner of the site. The principal entrances to the buildings are located such that they are within 90m of the fire hydrants in accordance with the Ontario Building Code.
- The total water requirement including fire flow and the maximum day demand is 104.6 L/s.

Wastewater

- Sanitary service will be provided by a 250mm sanitary service connection discharging to the existing 300mm diameter sanitary sewer on Rathburn Road East.
- The peak wastewater flow from the subject development was calculated to be 2.57 L/s.

Storm Drainage & Stormwater Management

- Most of the redevelopment area on the subject site is generally sloping northernly to the road allowance of Westminster Place. The storm sewer system for the site will consist of the following:
    - Based on a review of the site servicing plan of the existing building, the existing on-site stormwater management system does not have any storm water quantity control measures such as orifice tube or plates. As the existing on-site storm sewers and catchbasins will be rerouted and relocated based on the extent of the proposed building addition, the stormwater management concept will be maintained under the post-development condition.
    - The 2 year to 100 year peak flows under the post-development condition are similar to and lower than the pre-development condition flows. As the runoff coefficient and the stormwater management concept under the post-development are improved comparing to the pre-development condition, the stormwater Quantity requirement is achieved, and no mitigation measures are required.

- the existing stormwater system does not have a quality treatment unit. In addition, given the surface condition and runoff coefficient of the post-development condition is maintained to be similar to the pre-development condition, and the proposed green roof will enhance the TSS removal, the stormwater quality control is not required.
- Given the runoff coefficient under the post-development condition is similar to the pre-development condition. The pre-development hydrology of the subject site will be preserved. Therefore, water balance measures are not required.
- The site storm sewer will discharge to the existing 900mm diameter Westminster Place storm sewer via the existing 450mm diameter storm service connection.
- The proposed on-site stormwater management facilities are to be inspected and maintained in accordance with the recommendations contained in this report.
- It should be noted that the details of the stormwater management system will be finalized during the detailed design stage of the Site Plan / Subdivision.

Vehicular & Pedestrian Access

- Vehicular access for the proposed development will be provided by the existing driveway off Westminster Place.
- Pedestrian access will be provided by walkways to safely guide residents through the development for access to the adjacent municipal sidewalk on Westminster Place. The City's municipal sidewalks will provide access to the nearby bus stops.

Erosion & Sediment Control

- Erosion and sediment controls are to be implemented during construction to prevent silt laden runoff from leaving the site in accordance with the "Erosion & Sediment Control Guidelines for Urban Construction" (December 2006).

9.0 REFERENCES & BIBLIOGRAPHY

- City of Mississauga, **Development Requirement Manual**, November 2020.
- Region of Peel, **Design, Specifications & Procedures Manual, Watermain Design Criteria**, June 2010.
- Region of Peel, **Design, Specifications & Procedures Manual, Sanitary Sewer Design Criteria**, March 2017.
- Ministry of Environment, **Stormwater Management Planning & Design Manual**, March 2003.
- Greater Golden Horseshoe Area Conservation Authorities, **Erosion & Sediment Control Guidelines for Urban Construction**, December 2006.
- Fire Underwriters Survey, **Water Supply for Public Fire Protection**, 2020.
- Ministry of Municipal Affairs & Housing, **Ontario Building Code** (OBC), 2012.
- TRCA & CVC, **Low Impact Development Stormwater Management Planning & Design Guide**, Version 1.0, 2010.

Respectfully submitted,

VALDOR ENGINEERING INC.

David Giugovaz, P.Eng., LEED AP
Senior Project Manager

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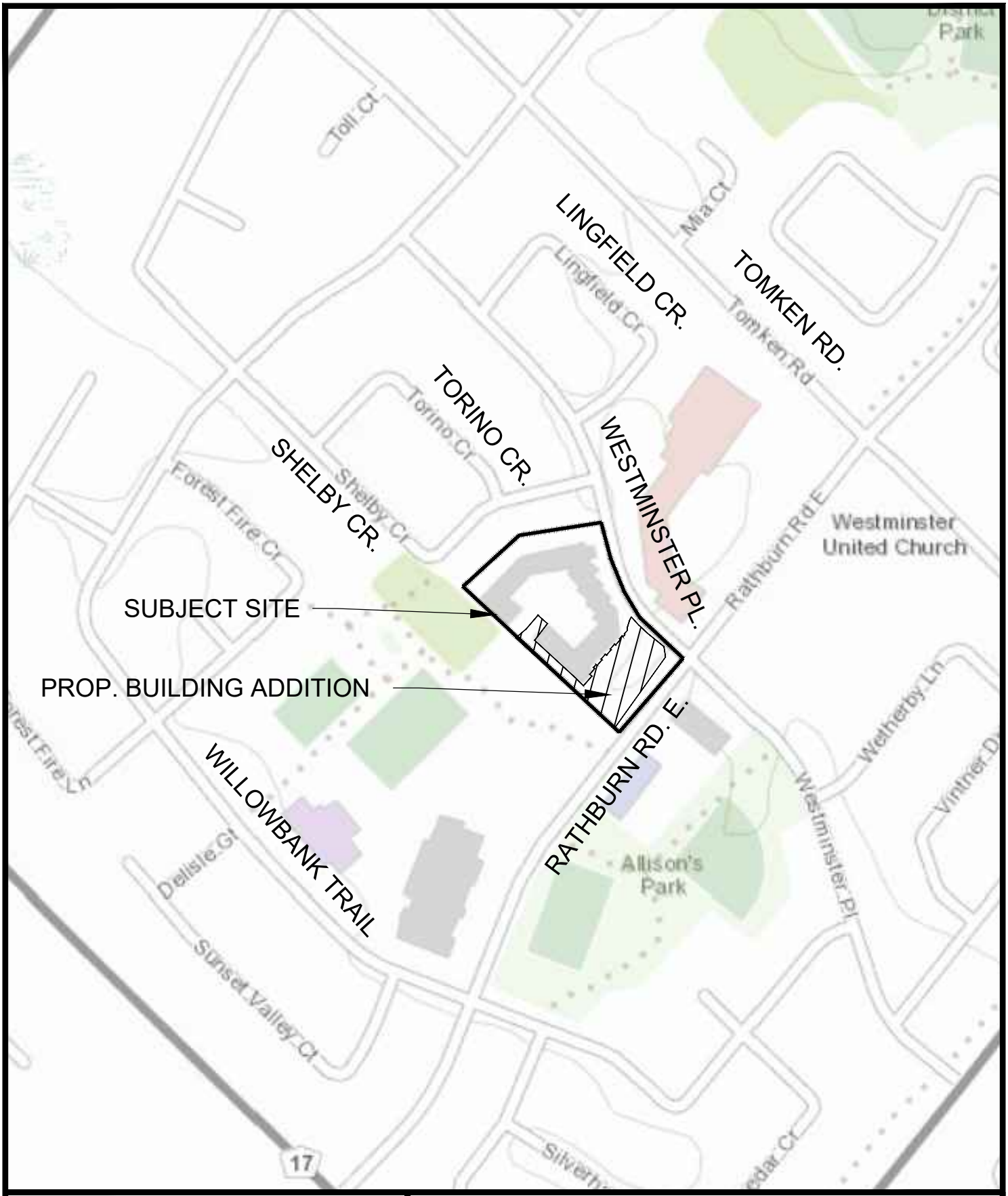
dgiugovaz@valdor-engineering.com



WESTMINSTER
ST LUKES'S SENIORS AFFORDABLE HOUSING
4150 WESTMINSTER PLACE, MISSISSAUGA ON

LOCATION PLAN

VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
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E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

SCALE	N.T.S.	CKD. BY	D.G	DWG.	FIGURE 1
DATE	APRIL 2024	DRAWN BY	T.S.	PROJECT	20139

LEGEND:

- PROPOSED WATERMAIN
- PROPOSED HYDRANT
- EXISTING WATERMAIN
- EXISTING HYDRANT

SHELBY CRESCENT

WESTMINSTER PLACE

RATHBURN ROAD EAST

1694

EX. HYD&V

200mm V&B

EX. HYD&V

200mm V&B

ABANDONED 200mmø WM

EX.200mmø WM

200mm V&C

300X200 REDUCER

EX.300mmø WM

300X250 REDUCER 250 V&B

ABANDONED 250mmø PVC

600mm V&C

EX. 300mmø WM

EX WMH

PROP. HYD&V

EX. HYD TO BE RELOCATED

EX. SIAMESE CONNECTION

PROP. SIAMESE CONECTION (AT GROUND LEVEL)

PROP. 150mmø FIRE LINE

EX.600mmø CONC. WM

EX.150mmø WM

PROP. BUILDING ADDITION

EX. BUILDING

EX. 75mm WATER METER (TO BE RELOCATED)

EX 150mmø WM TO BE RELOCATED

EX. WATERMAIN TO BE RELOCATED

PROP.150mmø V&B

PROP.150mmø DOMESTIC WATER SERVICE

EX. 200mmø WM

EX. 200mmø WATER SERVICE CONNECTION (TO BE REMOVED)

PROP. 150mmø DOMESTIC WM

EX.150mmø WM

EX.200mmø WM

PROP. HYD&V

EX. HYD&V TO BE RELOCATED

PROP. 200mmø FIRE LINE

INSTALL DETECTION CHECK VALVE IN CHAMBER

INSTALL 200mmø V&B

EX. HYD&V

CONNECT WITH TAPPING SLEEVE AND VALVE

PROP. HOARDING/ TREE PROTECTION FENCE

PROJECT	WESTMINSTER ST LUKE'S SENIORS AFFORDABLE HOUSING 4150 WESTMINSTER PLACE, CITY OF MISSISSAUGA
	WATER SERVICING

VALDOR ENGINEERING INC.
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www.valdor-engineering.com

PREPARED BY: H.E	CKD. BY: D.G
SCALE: N.T.S.	DATE: APRIL 2024
PROJECT: 20139	DWG.: FIGURE 2

LEGEND:

- PROPOSED SANITARY
- MANHOLE
- EXISTING SANITARY

SHELBY CRESCENT

WESTMINSTER PLACE

RATHBURN ROAD EAST

1694

EX. 92m 250mmø SAN @ 0.5%

EX. SAN. MH

EX. 11m 200mmø SAN @1%

EX. SAN MH
TOP 139.97
N 135.303
E 135.330
W 135.33

EX. 11m
200mmø
SAN @1%

EX. SAN MH
TOP 139.59

EX. 200mmø SAN SEWER

EX. 82.5m 300mmø SAN @ 0.47%

EX. SAN MH
TOP 139.87
SW 136.00
SE 135.99
NE 135.98

EX. 92.0m 300mmø SAN @ 0.52%

EX. BUILDING

PROP. BUILDING ADDITION

PROP. SAN MH.1A
(1200mmø)
TOP 141.75
SE INV 136.83
NW INV 136.86

PROP. ROAD RESTORATION

PROP. 16.8m 250mmø
SAN @ 2.0%

EX. SAN MH
TOP 141.77
SW 136.49
NE 136.48

PROP. 15.5m 250mmø
SAN @ 2.0%

PROP. SAN MH.2A
(1200mmø)
TOP 141.75
SE INV 136.83
NW INV 136.86

TREE PROTECTION FENCE / LIMIT OF NON-DISTURBANCE

PROJECT: WESTMINSTER
ST LUKE'S SENIORS AFFORDABLE HOUSING
4150 WESTMINSTER PLACE, CITY OF MISSISSAUGA

SANITARY SERVICING

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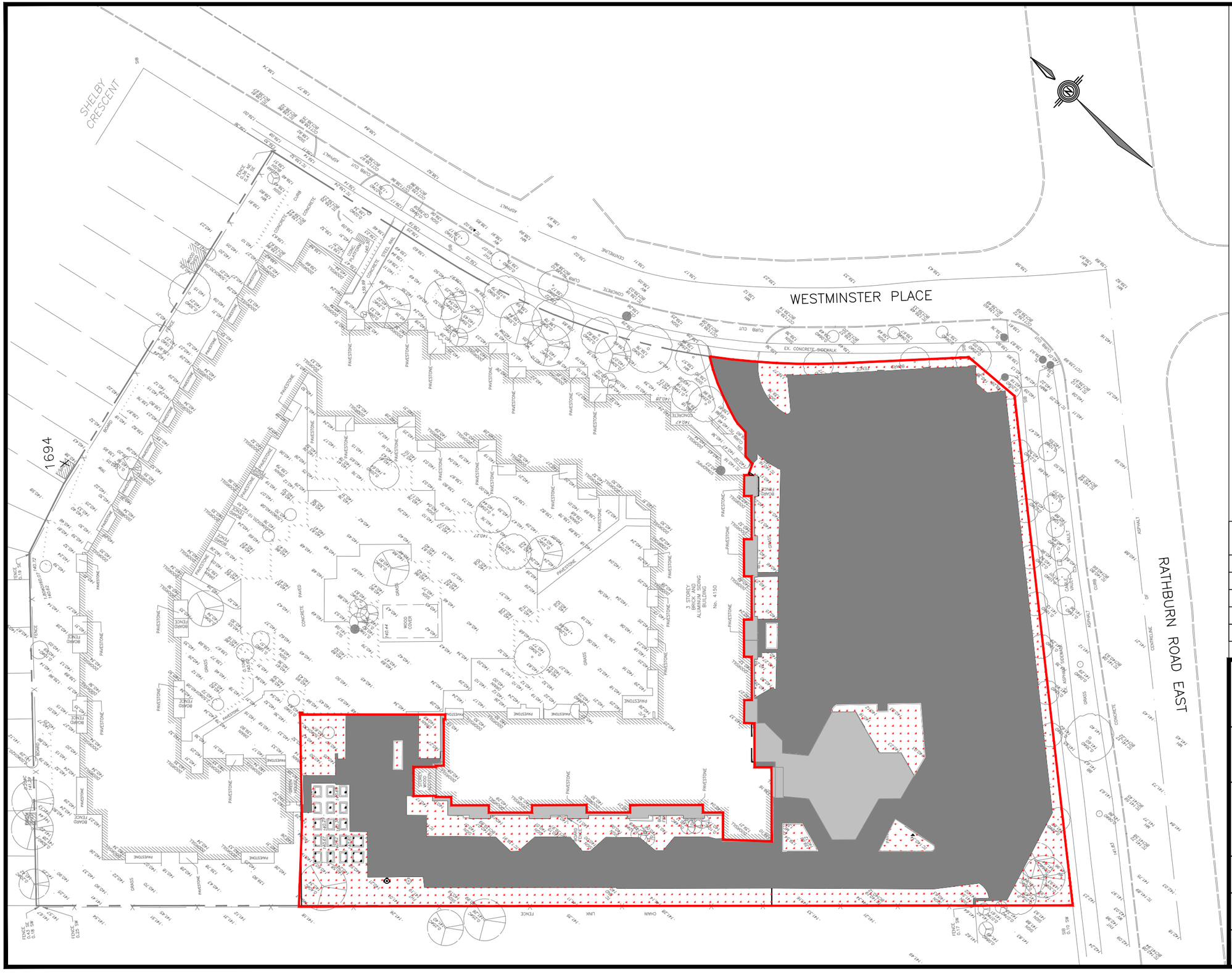
PREPARED BY	CKD. BY
H.E	D.G
SCALE: N.T.S.	DATE: APRIL 2024
PROJECT: 20139	DWG.: FIGURE 3



LEGEND:

- ROOF
- PERVIOUS
- IMPERVIOUS
- DEVELOPMENT AREA

POST–DEVELOPMENT AREA SUMMARY
SUBJECT SITE

LAND USE	AREA (Ha.)	RC	COMPOSITE RC
LANDSCAPE	0.142	0.25	0.74
ROOF	0.043	0.90	
IMPERVIOUS	0.409	0.90	
TOTAL	0.594		

PROJECT
WESTMINSTER ST LUKE'S SENIORS AFFORDABLE HOUSING
4150 WESTMINSTER PLACE, CITY OF MISSISSAUGA

PRE–DEVELOPMENT STORM DRAINAGE CONDITIONS

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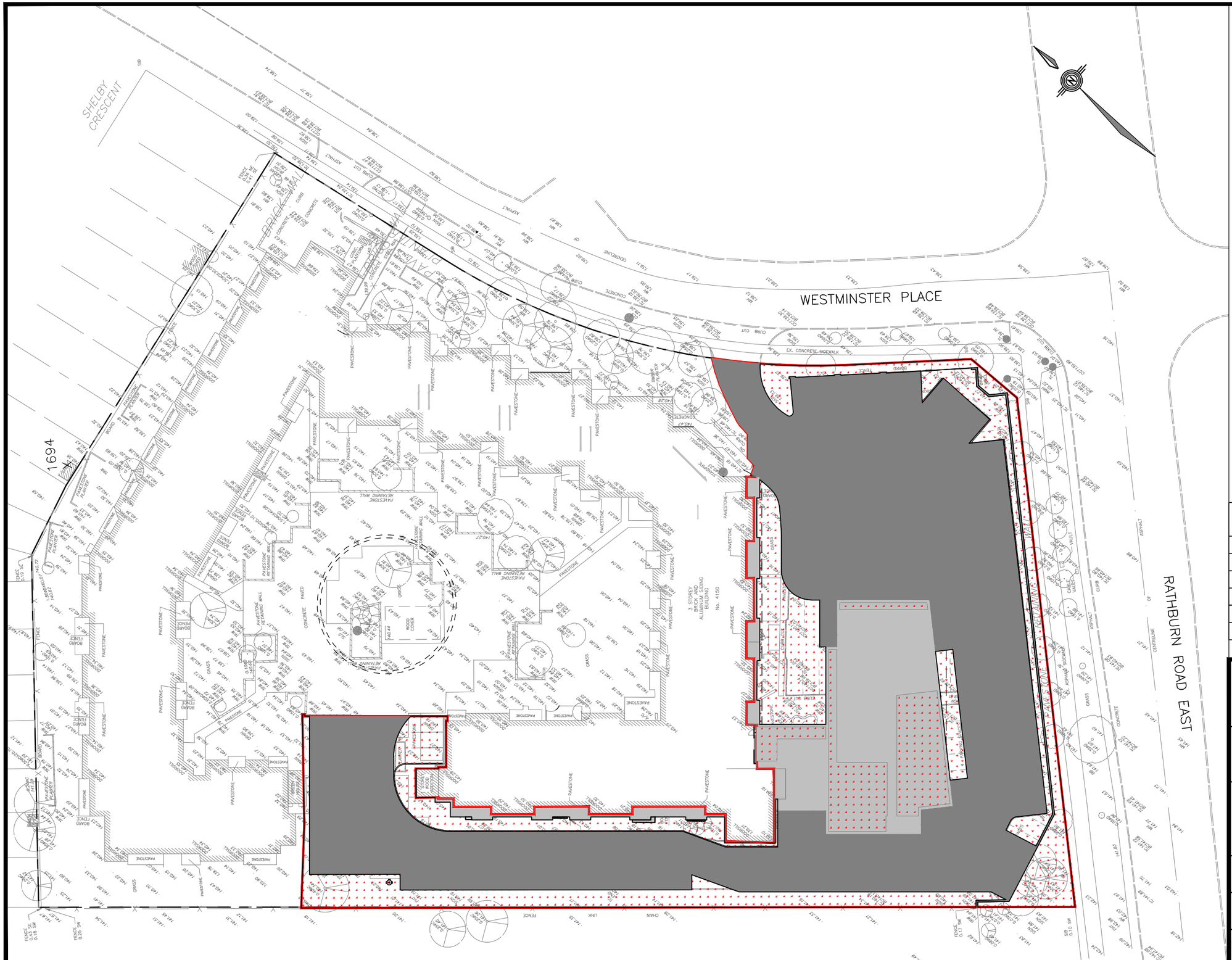
PREPARED BY	CKD. BY
H.E	D.G
SCALE: N.T.S.	DATE: APRIL 2024
PROJECT: 20139	DWG.: FIGURE 4



LEGEND:

- ROOF
- PERVIOUS
- GREEN ROOF
- IMPERVIOUS
- DEVELOPMENT AREA

POST–DEVELOPMENT AREA SUMMARY

LAND USE	AREA (Ha.)	RC	COMPOSITE RC
LANDSCAPE	0.147	0.25	0.71
ROOF	0.066	0.90	
GREEN ROOF	0.034	0.40	
IMPERVIOUS	0.347	0.90	
TOTAL	0.594		

PROJECT

WESTMINSTER ST LUKE'S SENIORS AFFORDABLE HOUSING

4150 WESTMINSTER PLACE, CITY OF MISSISSAUGA

POST–DEVELOPMENT STORM DRAINAGE CONDITIONS

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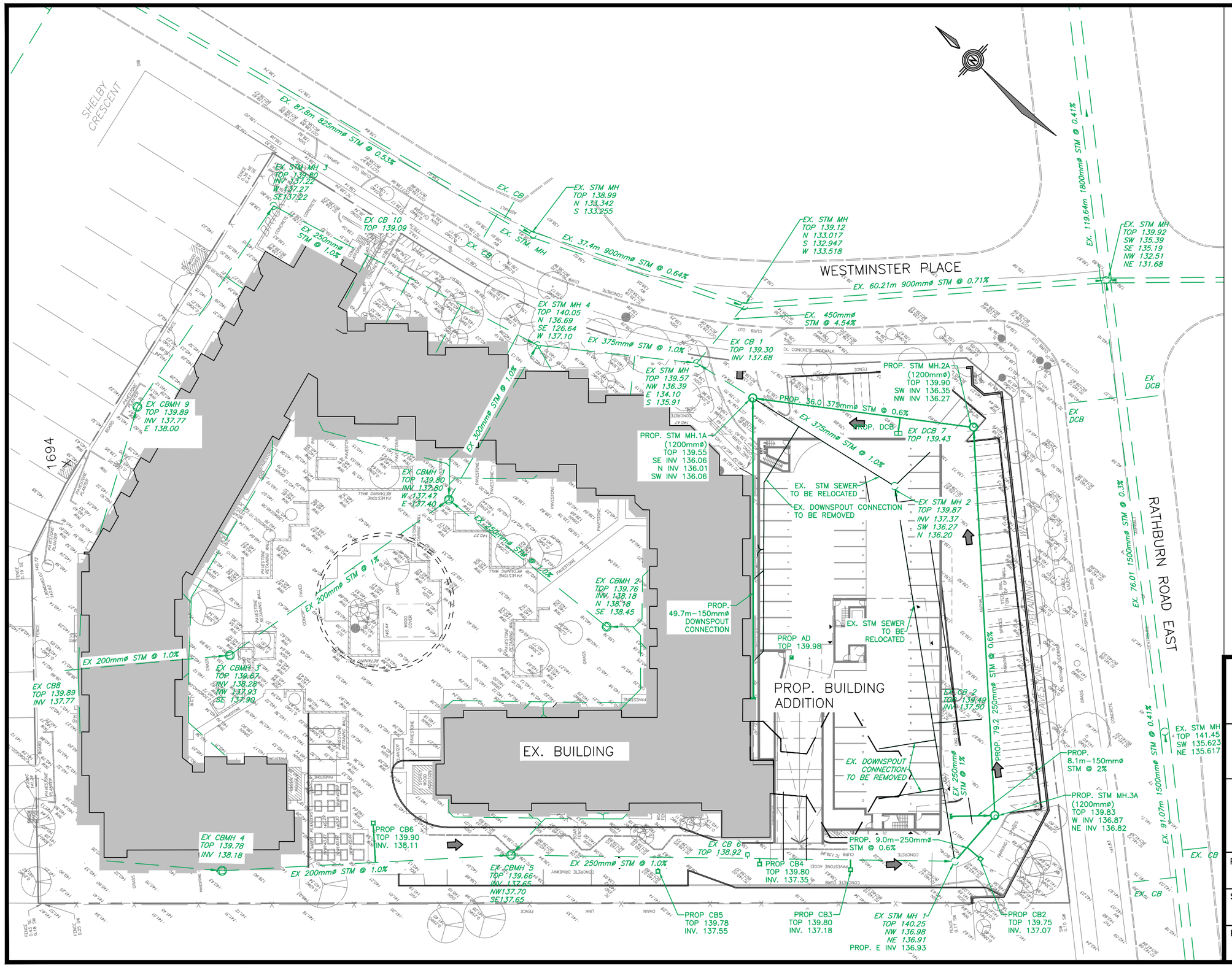
PREPARED BY	CKD. BY
H.E	D.G
SCALE	**DATE**
N.T.S.	APRIL 2024
PROJECT	**DWG.**
20139	FIGURE 5



LEGEND:

- PROPOSED STORM
- EXISTING STORM
- PROPOSED MANHOLE
- EXISTING MANHOLE

PROJECT	WESTMINSTER ST LUKE'S SENIORS AFFORDABLE HOUSING 4150 WESTMINSTER PLACE, CITY OF MISSISSAUGA
	STORM SERVICING

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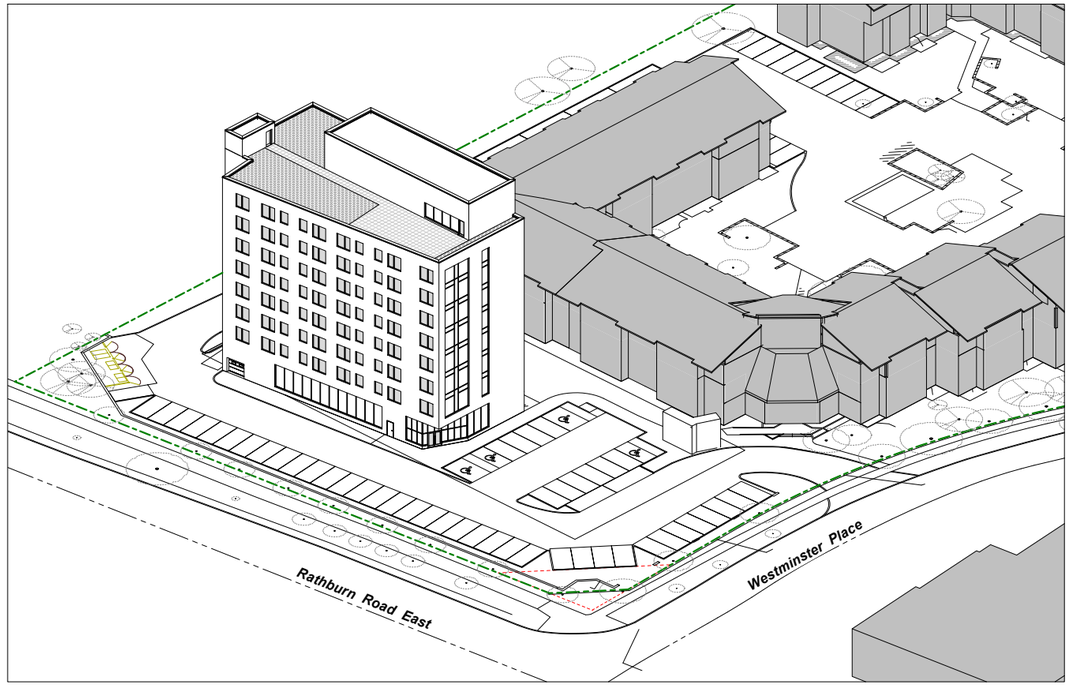
PREPARED BY: H.E	CKD. BY: D.G
SCALE: N.T.S.	DATE: APRIL 2024
PROJECT: 20139	DWG.: FIGURE 6

APPENDIX "A"

Architectural Site Plan & Equivalent Population

VALDOR

WESTMINSTER ST. LUKE'S SENIORS AFFORDABLE HOUSING



PROPOSED BUILDING - VIEW FROM SOUTH - EAST

CONTEXT PLAN

DETAILS OF DEVELOPMENT			
	BY-LAW	**EXISTING**	**PROPOSED ADDITION**
ZONE CODE	RA1-1		
ZONE DESCRIPTION	APARTMENT, LONG TERM CARE, RETIREMENT BUILDING	RENTAL APARTMENT	RENTAL APARTMENT
ZONE CATEGORY	RESIDENTIAL	RESIDENTIAL	RESIDENTIAL
LAND USE:	RESIDENTIAL HIGH DENSITY	RESIDENTIAL	RESIDENTIAL
BY-LAW	0225-2007		
Z-AREA	27		
NEIGHBOURHOOD	RATHWOOD		
LOT AREA:	----------	16370.21m2	16370.21m2
GFA		16070.58m2	24,098.44m2
FSI:	0.4 - 0.9	0.98	1.27
MAXIMUM HEIGHT	13m - 4 STOREYS	11m - 3 STOREYS	33.4m - 8 STOREYS
MIN FRONT YARD	9.5m		39m
MIN SIDE YARD	9.5m		18m
MIN REAR YARD	12.5m		10m

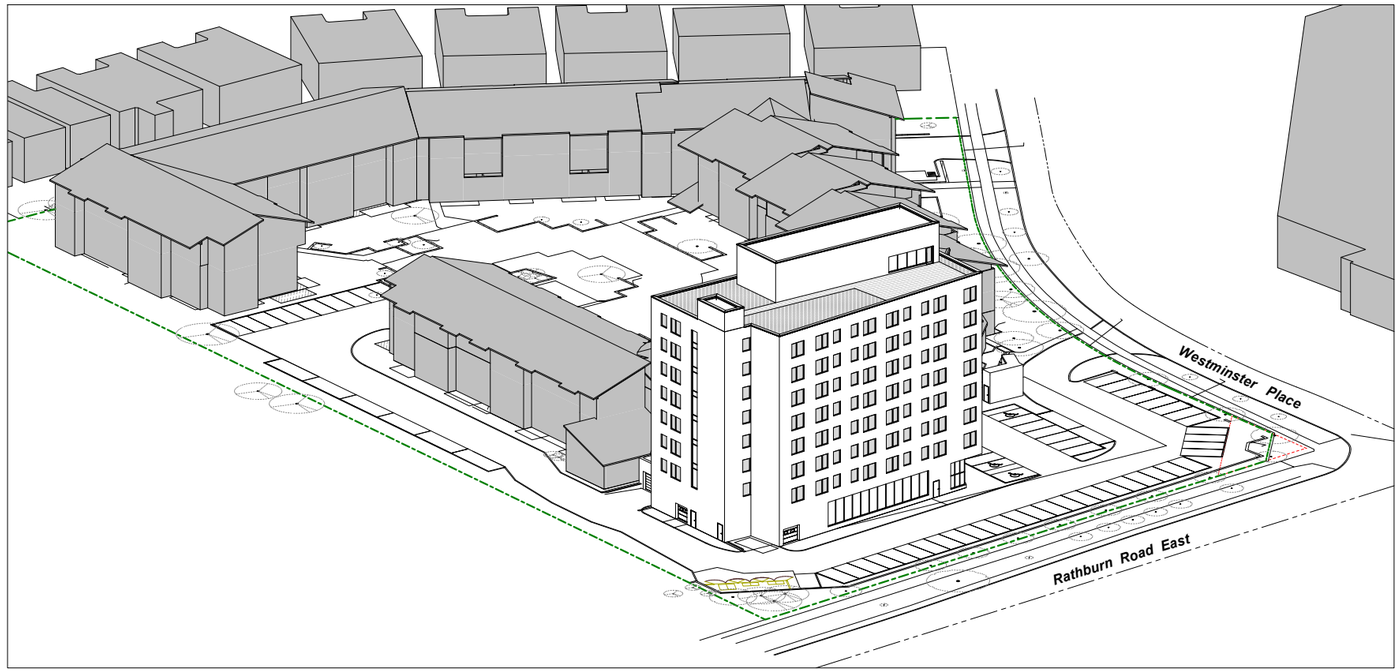
EXISTING LOT COVERAGE 27.41% (4487.23m2 exist. bldg. footprint / Lot Area)
PROPOSED LOT COVERAGE 32.68 % (4487.23m2 exist. bldg. footprint + 861.97 m2 new bldg. footprint / Lot Area)
EXISTING SITE FRONTAGE 92.12m (along RathBurn) ; 131.18m (along Westminster)

EXISTING SOFT LANDSCAPE AREA 5503.12 sm
PROPOSED SOFT LANDSCAPE AREA 5067.97 sm

GFA CALCULATION		
FLOOR	**GFA**	**AMENITY FLOOR AREA** (INCLUDED IN GFA)
U/G PARKING	1,951.46 m²	0 m²
GROUND FLOOR	849.61 m²	347.15 m²
2 ND FLOOR	719.68 m²	29.45 m²
3 TH FLOOR	719.68 m²	29.45 m²
4 TH FLOOR	719.68 m²	29.45 m²
5 TH FLOOR	719.68 m²	29.45 m²
6 TH FLOOR	719.68 m²	29.45 m²
7 TH FLOOR	719.68 m²	29.45 m²
8 TH FLOOR	719.68 m²	29.45 m²
MECH PENTHOUSE	229.98 m²	(exterior) 105.50 m²
TOTAL PROPOSED	**8,068.79 m²**	**658.80 m²**
TOTAL PROPOSED (EXCLUDES U/G PARKING)	**6,117.33 m²**	
TOTAL EXISTING	**16,070.58 m²**	
GRAND TOTAL (EXCLUDES U/G PARKING)	**22,187.91 m²**	

RESIDENTIAL UNIT TYPE BREAKDOWN			
FLOOR	**1 BED**	**1 BED BF**	**FLOOR TOTAL**
GROUND FLOOR	0	0	0
2ND FLOOR	8	2	10
3TH FLOOR	8	2	10
4TH FLOOR	8	2	10
5TH FLOOR	8	2	10
6TH FLOOR	8	2	10
7TH FLOOR	8	2	10
8TH FLOOR	8	2	10
MECH PENTHOUSE	0	0	0
TOTAL PROPOSED	56	14	**70**
TOTAL EXISTING			**190**
TOTAL			**260**

PARKING		
PARKING COUNT	**NO.**	**NO. OR BF SPACES INCLUDED**
PROPOSED ON GRADE	74	4
PROPOSED UNDERGROUND	49	2
TOTAL	**123**	**6**
PARKING RATIO		
NO. OF EXISTING RESIDENTIAL UNITS	190	
NO. OF PROPOSED NEW RESIDENTIAL UNITS	70	
TOTAL	**260**	
PARKING RATIO	**0.47**	



PROPOSED BUILDING - VIEW FROM SOUTH - WEST

ARCHITECTURAL DRAWING LIST	
A000	Project Information & Statistics
A001	3D Views
A002	Existing Site Survey
A003	Site Plan
A201	UG Parking and Ground Floor Plan
A202	2nd-8th Floor Plan and Roof Plan
A401	Building Elevations
A402	Building Elevations
SS01	Shadow Study

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kmai.com

The General Contractor shall check and verify all dimensions and report all errors and ommissions. Do not scale drawings. These documents shall only be used for the purpose indicated below, when as noted and initialed by the Architect.

Certificate of Practice No.: 1796
Architect's BCIN:

SPA | Permit | Tender | Contract | Construction

No.	Description	Chk'd	Date
1	Submit for Pre-application Review	KMA	March 23, 2021
2	Issued For Client Use	KMA	March 23, 2022
3	ISSUE FOR REZONING CO-ORDINATION	KMA	APR 4, 2022
4	GFA CALCULATION UPDATE	KMA	JULY 25, 2022
5	SITE STATISTICS UPDATE	KMA	SEPT 7, 2022
6	SITE PLAN REVISIONS	KMA	JAN 13, 2023
7	CORNER ENTRANCE UPDATE	KMA	JAN 27, 2023
8	ISSUED FOR REZONING APPLICATION	KMA	MARCH 3, 2023

Project

St Luke's Seniors Affordable Housing

4150 Westminster Place
Mississauga ON

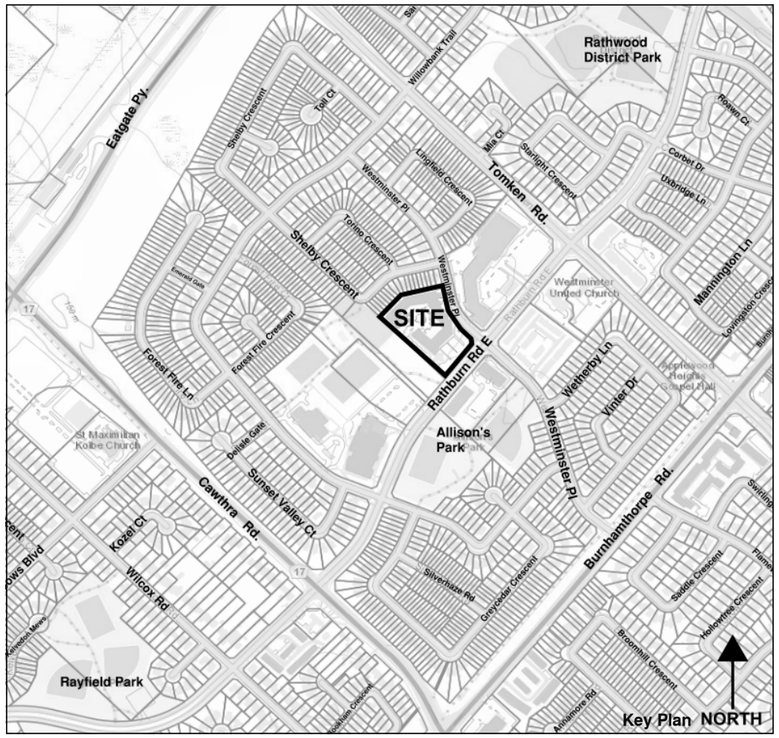
Scale	As indicated
Date Plotted	12/1/2023 5:37:54 PM
Drawn	Author
Checked	Checker

Project No. 18-078

Drawing No.

Project Information & Statistics

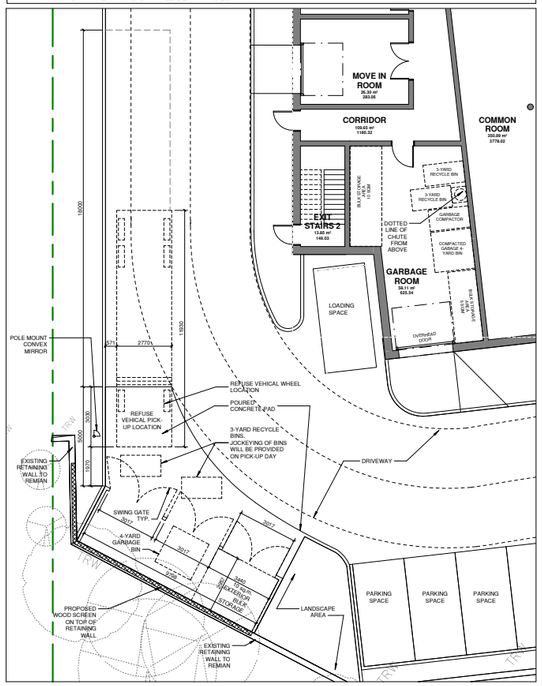
A000



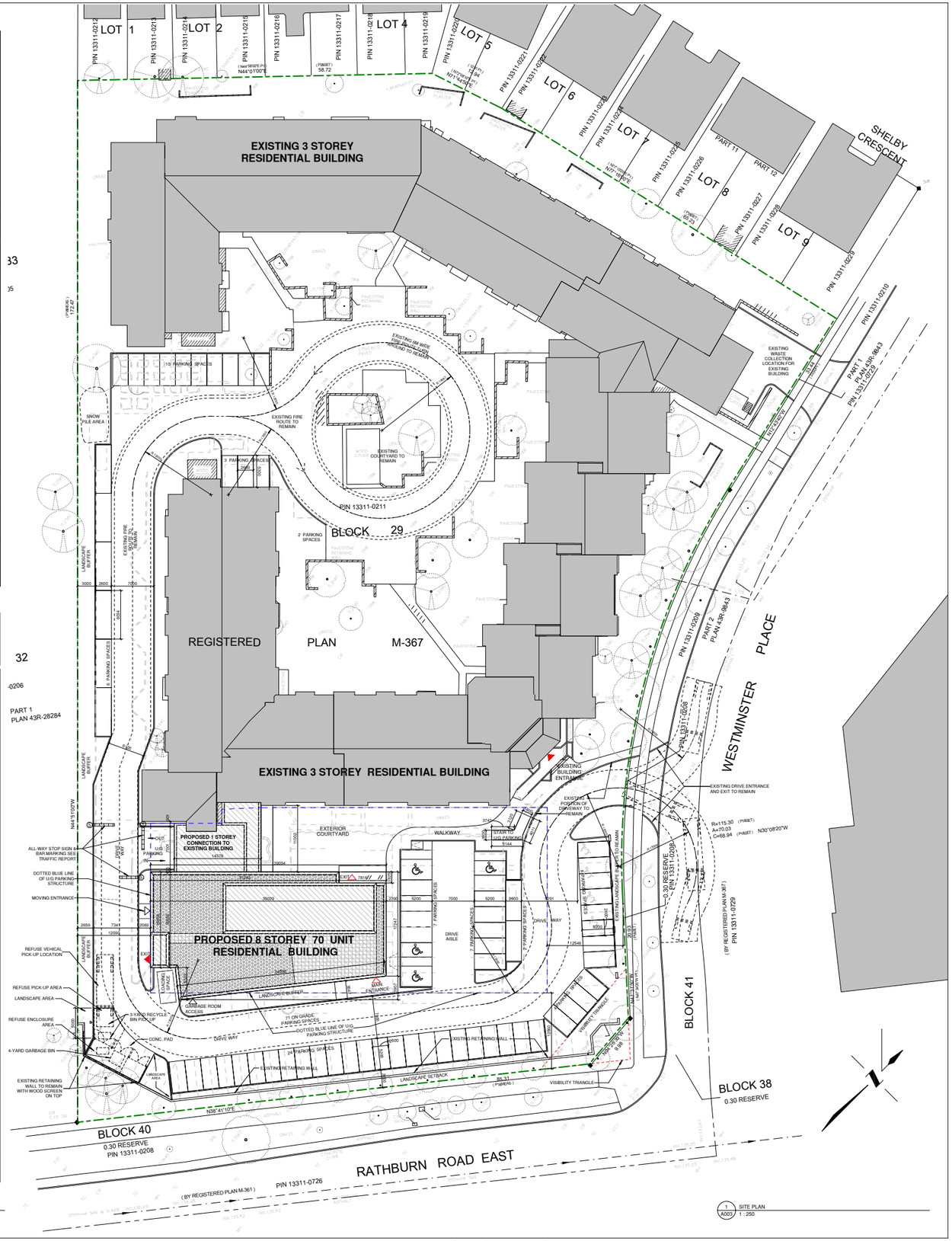
WASTE MANAGEMENT BIN REQUIREMENT CALCULATION

RECYCLABLE BIN @ ONE 3 YRD BIN PER 45 DWELLING UNITS
70 UNITS = 1.56 BINS TWO 3 YARD BINS WILL BE PROVIDED

COMPACTED GARBAGE BIN @ ONE 4 YRD BIN PER 72 DWELLING UNITS
70 UNITS = 0.97 BIN ONE 4 YARD BIN WILL BE PROVIDED



3 / A003 GROUND FLOOR GARBAGE ROOM PLAN
1 : 100



1 / A003 SITE PLAN
1 : 250

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Certificate of Practice No.:	1796
Architect's BCIN:	

SPA | Permit | Tender | Contract | Construction

No.	Description	Chk'd	Date
1	Submit for Pre-application Review	KMA	March 23, 2021
2	Issued For Client Use	KMA	March 23, 2022
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4	SITE STATISTICS UPDATE	KMA	SEPT 7, 2022
5	SITE PLAN REVISIONS	KMA	JAN 13, 2023
6	CORNER ENTRANCE UPDATE	KMA	JAN 27, 2023
7	ISSUED FOR REZONING APPLICATION	KMA	MARCH 3, 2023
8	KEY PLAN ADDED	KMA	MAY 22,2023
10	WASTE MANAGEMENT DESIGN REVISION	KMA	DEC 22, 2023

Project

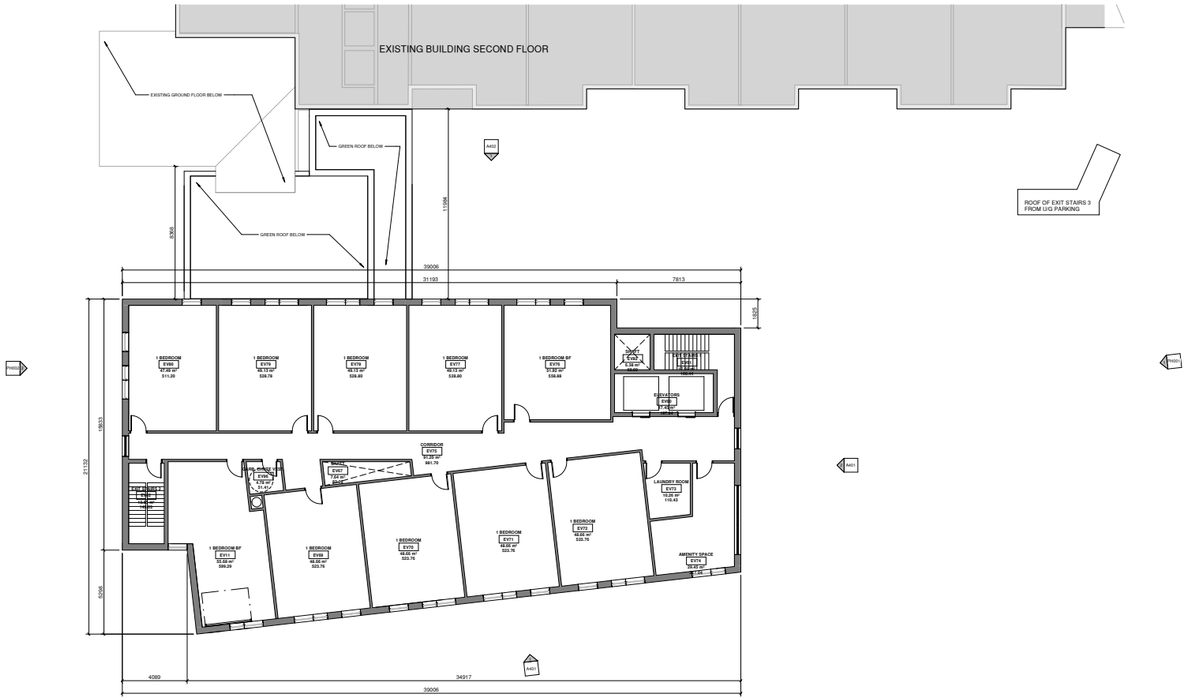
St Luke's Seniors Affordable Housing

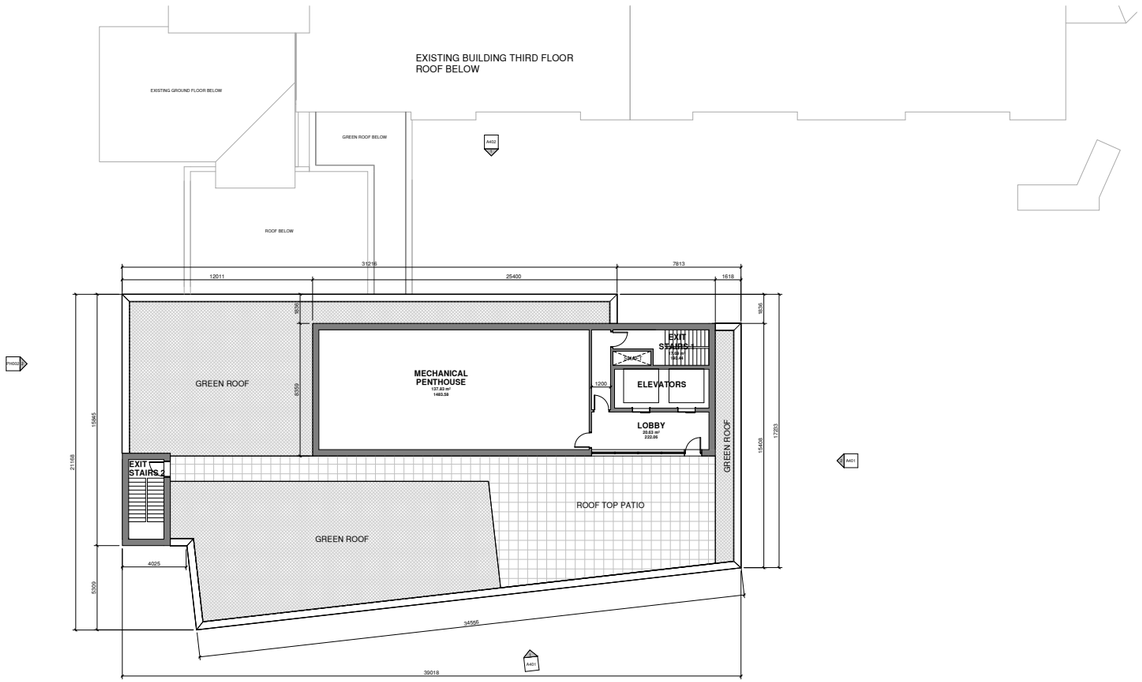
4150 Westminster Place
Mississauga ON

Scale	As indicated
Date Plotted	12/22/2023 4:13:03 PM
Drawn	Author
Checked	Checker
Project No.	18-078
Drawing No.	

Site Plan

A003





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No.	Description	Chk'd	Date
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7	CORNER ENTRANCE UPDATE	KMA	JAN 27, 2023
8	ISSUED FOR REZONING APPLICATION	KMA	MARCH 3, 2023

Project

St Luke's Seniors Affordable Housing

4150 Westminster Place
Mississauga ON

Scale	1 : 125
Date Plotted	12/1/2023 5:37:57 PM
Drawn	Author
Checked	Checker

Project No. 18-078

Drawing No.

2nd-8th Floor Plan and Roof Plan

A202

A0 (841x1189)

C:\Users\peterm\Documents\18-078 Westminster R2022_petermg@kmai.com.rvt

VALDOR ENGINEERING INC.
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TABLE: A1

EQUIVALENT POPULATION

Project Name: **Westminster ST Luke's Seniors Affordable Housing**
File: 20139
Date: April 2024

1. GENERAL CALCULATION

Criteria		Resident Units	Equivalent Population
Existing Apartment	2.7 persons / unit	190	513.0
Proposed Apartment	2.7 persons / unit	70	189.0
Total:			**702.0**

APPENDIX "B"

Water Distribution System Calculations & Details

VALDOR

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www.valdor-engineering.com

Table B1

WATER DEMAND CALCULATION

In accordance to Region of Peel's Design Criteria for Sewers and Watermains

Project Name: **Westminster ST.Luke's Seniors Affordable Housing**

File: 20139

Date: April 2024

Demand Critera:

	Base Demand		Peaking Factors	
Apartments	**280**	L/capita/day	Max Day	**2.00**
			Peak Hour	**3.00**

	Equivalent Population	Commercial Area (Ha)	Average Day (L/day)	Average Day (L/min)	Max Day (L/min)	Peak Hour (L/min)
Existing Residential	513.0	0.0	143,640	99.8	199.5	299.3
Proposed Residential	189.0	0.0	52,920	36.8	73.5	110.3
Total	**702.0**	**0.0**	**196,560**	**136.5**	**273.0**	**409.5**

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www.valdor-engineering.com

Table B2

REQUIRED FIRE FLOW CALCULATION

In accordance to Water Supply for Public Fire Protection, Fire Underwriters Survey 2020

Project Name: **Westminster ST. Luke's Seniors Affordable Housing**
File: 20139
Date: April 2024

Notes: **Retirement Building**
(Existing Building and 8 Storeys
Apartment Building Addition)

Type of Construction - Fire Resistive
$C =$ 0.6

For buildings with Runoff Coefficient less than 1.0, the area shall be the total area of the largest floor plus 25% of each of the two immediately adjoining floors (assuming vertical openings and exterior vertical communications are properly protected):

Floor	Area (sq.m)	%	
Largest Floor Area	5,219.7	100%	(2nd Floor)
Adjacent Upper Adjoining Floor Area	5,257.3	25%	(3rd Floor)
Adjacent Lower Adjoining Floor Area	5,219.7	25%	(1st Floor)
$A =$	7,839	sq.m	

$$F = 220\ C\ \sqrt{A}$$
$F =$ 11,687 L/min
$F =$ 12,000 (to nearest 1,000 Lmin)

Occupancy Factor

		Charge
Type:	Non-Combustible	-25%
	$f_1 =$	-25%

$$F' = F \times (1+f_1)$$
$F' =$ 9,000 L/min

Sprinkler Credit

		Charge
NFPA 13 Sprinkler Standard:	YES	-30%
Standard Water Supply:	YES	-10%
Fully Supervised System:	YES	-10%
Total Charge to Fire Flow:	$f_2 =$	-50%

Exposure Factor

		Charge
North Side - Distance to Building (m):	10.1 to 20m	15%
East Side - Distance to Building (m):	>30m	0%
South Side - Distance to Building (m):	>30m	0%
West Side - Distance to Building (m):	>30m	0%
	$f_3 =$	15% (maximum of 75%)

$$F'' = F' + F' \times f_2 + F' \times f_3$$
$F'' =$ 5,850 L/min

REQUIRED FIRE FLOW
$F'' =$ **6,000** **L/min** (to nearest 1,000 L/min)

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www.valdor-engineering.com

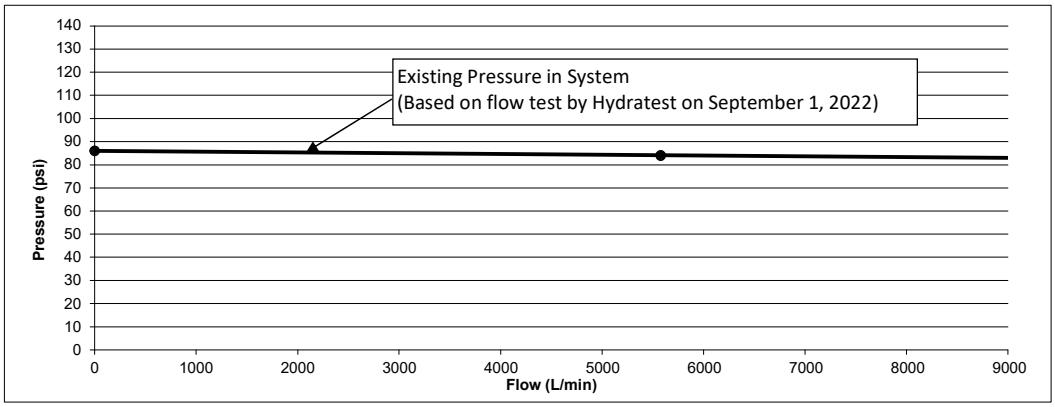
TABLE B3

Water Supply Calculation

Project Name: **Westminster ST.Luke's Seniors Affordable Housing**
File: 20139
Date: April 2024

Hydrant Flow Test Results
Residual Location: 2439 Eglinton Ave. E

Number of Outlets & Orifice Size	Flow (US GPM)	Flow (L/min)	Residual Pressure (psi)
0	0	0	86
2 1/2	1473	5576	84
2 x 2 1/2	2444	9252	83



$$Q_r = Q_t \times \left(\frac{P_s - Pr}{P_s - Pt}\right)^{0.54}$$

Re-aranged to: $\mathrm{P_r} = \mathrm{P_s} - (Ps - Pt)\sqrt[0.54]{Q_r/Q_t}$

Where,
Q_r= Projected Flow Rate at the Desired Pressure
Q_t= Flow Rate from Flow Test
P_s= Static Pressure
P_r= Desired Residual Pressure
P_t= Residual Presure inTest

Q_t=	9252	L/min
P_t=	83	psi
P_s=	86	psi

Maximum Day Domestic Demand =	273.0	L/min	(from Domestic Demand Calculation)
Domestic Peak Hour Flow to Satisfy (Q_{r2})=	409.5	L/min	(from Domestic Demand Calculation)
Fire Flow Requirement =	6,000	L/min	(from Fire Flow Calculation)
Fire Flow + Max Day (Q_{r1})=	6,273	L/min	
Minimum Req. Pressure for Fire-Flow =	140	kPa	
=	20.3	psi	
System Provided Pressure at min. firelow + max. day (P_{r1})=	84.5	psi	
System Provided Pressure at Peak Hour Flow (P_{r2})=	86.0	psi	

HYDRATEST

7-325 Nantucket Blvd, Scarborough ON M1P 4V5

JOB NO. _____ DATE SEPTEMBER 1, 2022

LOCATION 4150 WESTMINSTER PLACE, MISSISSAUGA

TEST DATA

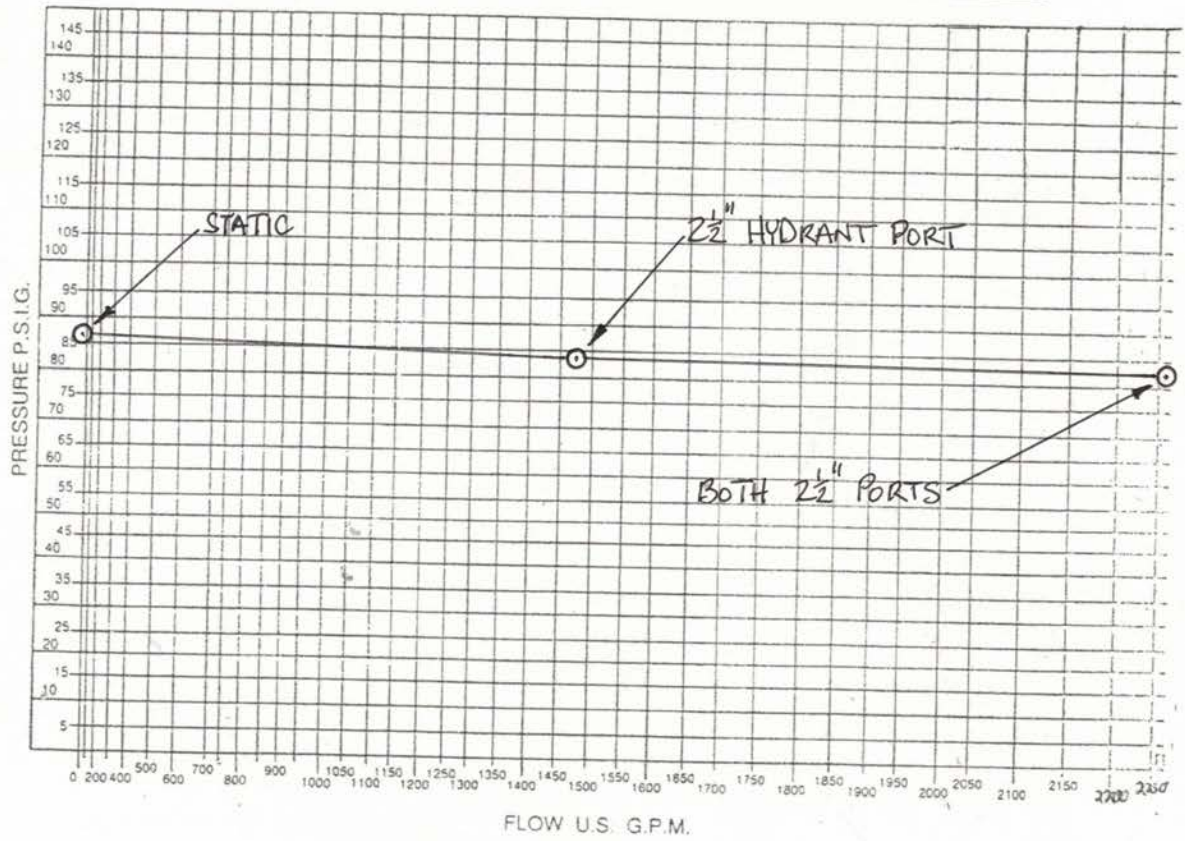
TIME OF TEST 10:30 A.M.

LOCATION OF TEST (FLOW) HYD. @ NE CORNER RATHBURN RD. (E)/WESTMINSTER

(RESIDUAL) HYDRANT (W) OF FLOW HYDRANT ON RATHBURN PLACE

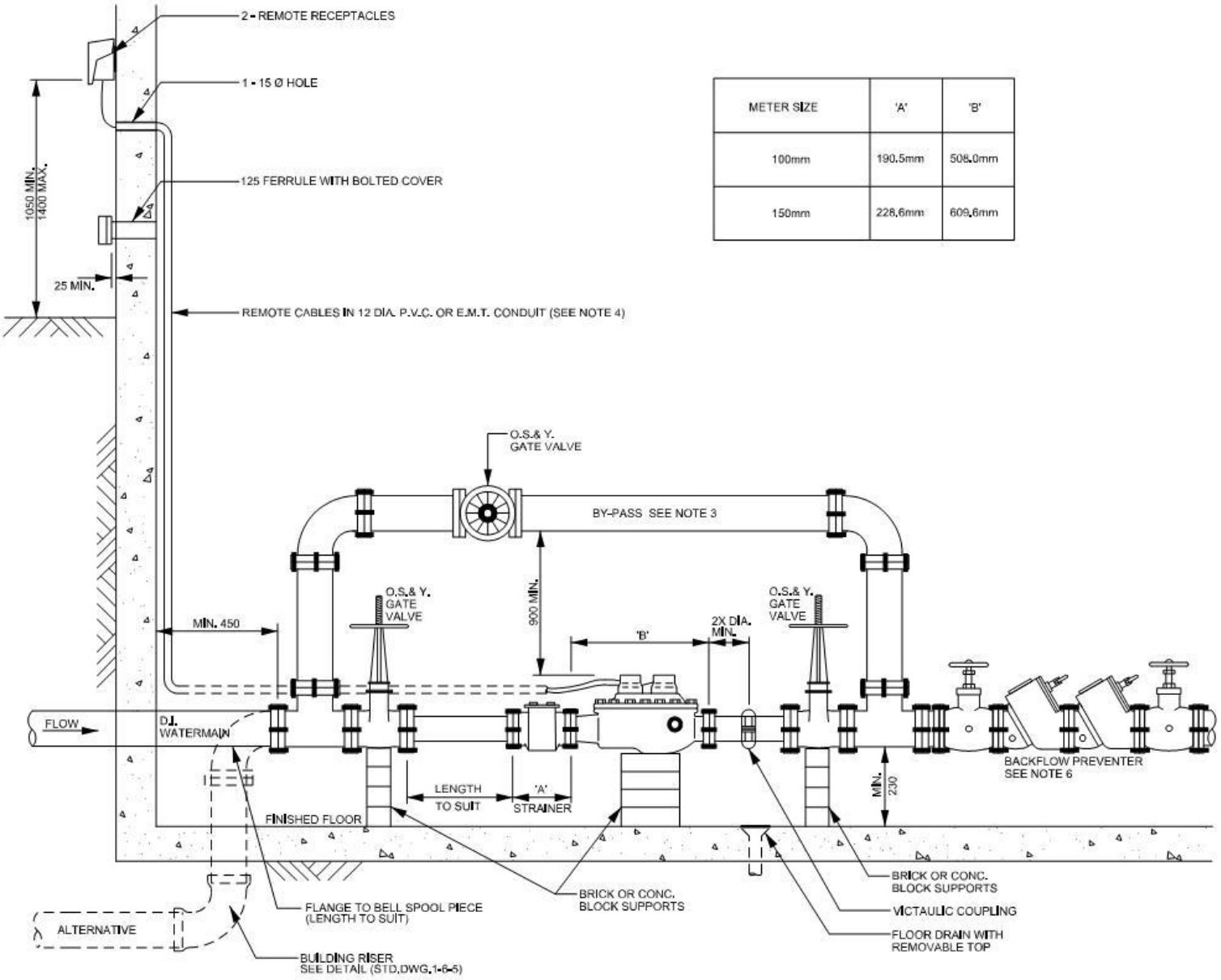
MAIN SIZE 24" - 600mm STATIC PRESSURE 86 P.S.I.

	NUMBER OF OUTLETS & ORIFICE SIZE	PITOT PRESSURE	FLOW (U.S.G.P.M.)	RESIDUAL PRESSURE
#1	2½" HYDRANT PORT	77	1473	84
#2	2x2½" HYDRANT PORTS	53	2444	83



COMMENTS HYDRANT RATED CLASS AA - LIGHT BLUE

Authorized Signature _____ Hydratest Ltd. Signature _____



METER SIZE	'A'	'B'
100mm	190.5mm	508.0mm
150mm	228.6mm	609.6mm

NOTE

1. PROVISION IS TO BE MADE FOR THE DISPOSAL OF WATER USED FOR IN PLACE TESTING OF TRU-FLO COMPOUND METER EITHER THROUGH FLOOR DRAIN OR THE 125mm FERRULE.
2. IF HOT WATER TANK IS WITHIN 3.0m OF METER, THEN A CHECK VALVE IS REQUIRED BETWEEN THE METER AND HOT WATER TANKS.
3. BY-PASS MAY BE ONE PIPE SIZE SMALLER THAN METER SIZE AND MAY BE INSTALLED HORIZONTALLY.
4. WHERE METER ROOM IS NOT ADJACENT TO AN OUTSIDE WALL OR IS BELOW EXTERIOR FINISHED GRADE, THE APPLICANT/ CONTRACTOR SHALL PROVIDE A CONTINUOUS 12mm E.M.T. CONDUIT COMPLETE WITH NYLON FISH LINE FROM METER ROOM TO 1000mm ABOVE EXTERIOR FINISHED GRADE.
5. METER SHALL BE ACCESSIBLE AT ALL TIMES.
6. WHERE REQUIRED, BACKFLOW PREVENTOR SHALL BE INSTALLED AFTER BOTH THE METER AND BY-PASS

Region of Peel
Working for you

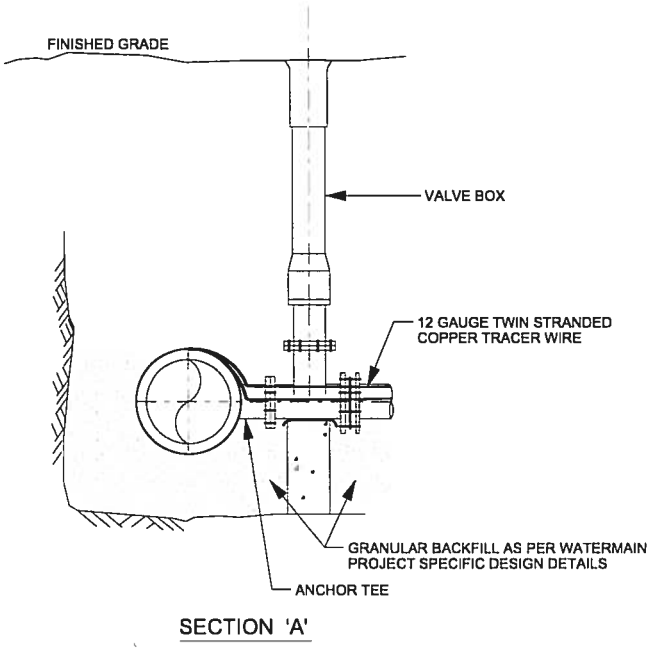
PUBLIC WORKS
STANDARD DRAWING

REV. DATE: NOVEMBER 2011

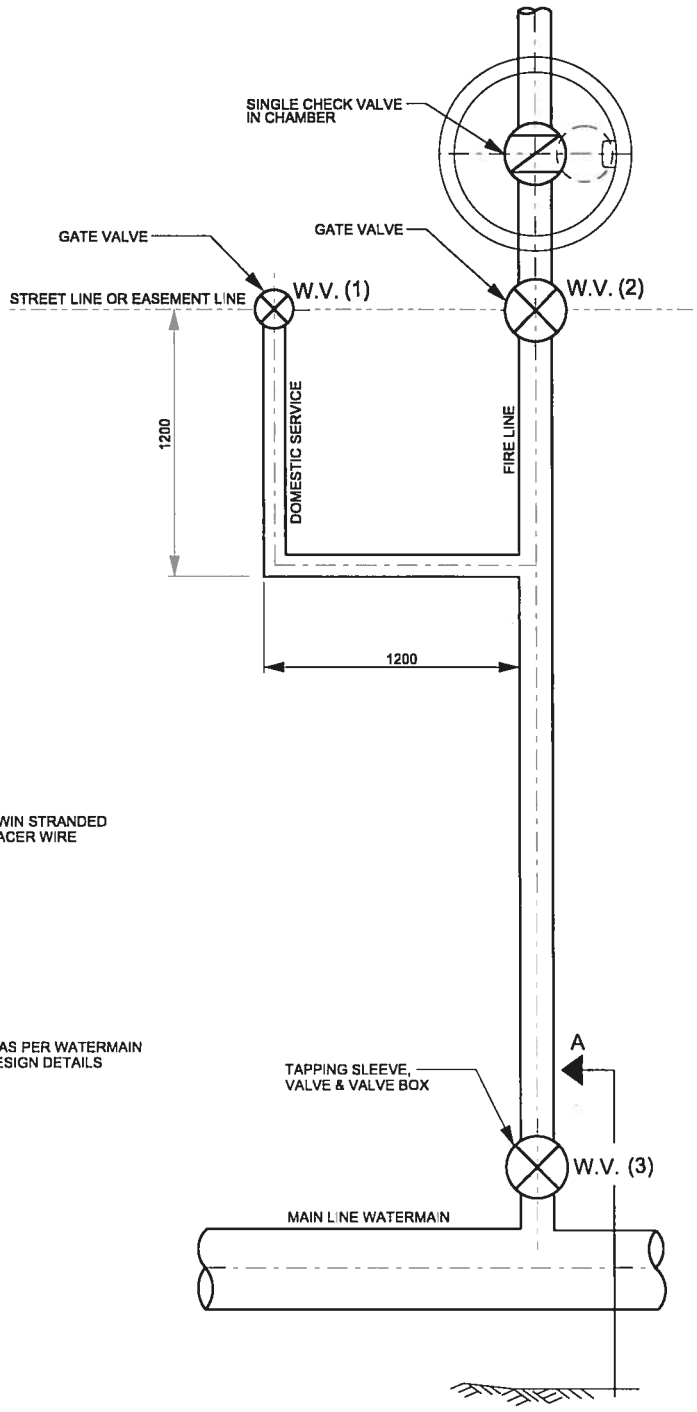
APPROVED BY	DRAWN BY
A.L.	AINLEY GROUP

100mm AND 150mm TRU-FLO COMPOUND METER IN BUILDING

STD. DWG. NUMBER	SCALE
1-4-3	N.T.S.



SECTION 'A'



NOTE

1. STANDARD FOR SERVICE MORE THAN 5000mm IN LENGTH.
2. SERVICES LESS THAN 12000mm IN LENGTH MAIN VALVE (3) TO BE TIES TO THE TEE USING S.S. TIE RODS.
3. WHERE NO METALLIC PIPE IS USED, A 12 GAUGE TRACER WIRE TO BE INSTALLED WITH THE PIPE AND BE BROUGHT TO THE SURFACE AT ALL VALVE BOX BOXES.
4. BACKFILL TRENCH WITH GRANULAR 'B' COMPACTED TO 100% STD. PROCTOR DENSITY.
5. REFER TO O. REG. 350/06 - PART - PLUMBING SECTION 7.6.2.4 FOR TYPE OF BLACKFLOW PREVENTER REQUIRED.
6. ALL PIPING, FITTINGS, VALVES, APPURTENANCES AND MECHANICAL RESTRAINTS TO BE c/w DENSO PASTE, DENSO MASTIC AND DENSO TAPE OR APPROVED EQUAL, APPLIED TO MANUFACTURER'S RECOMMENDATIONS.

Region of Peel
Working for you

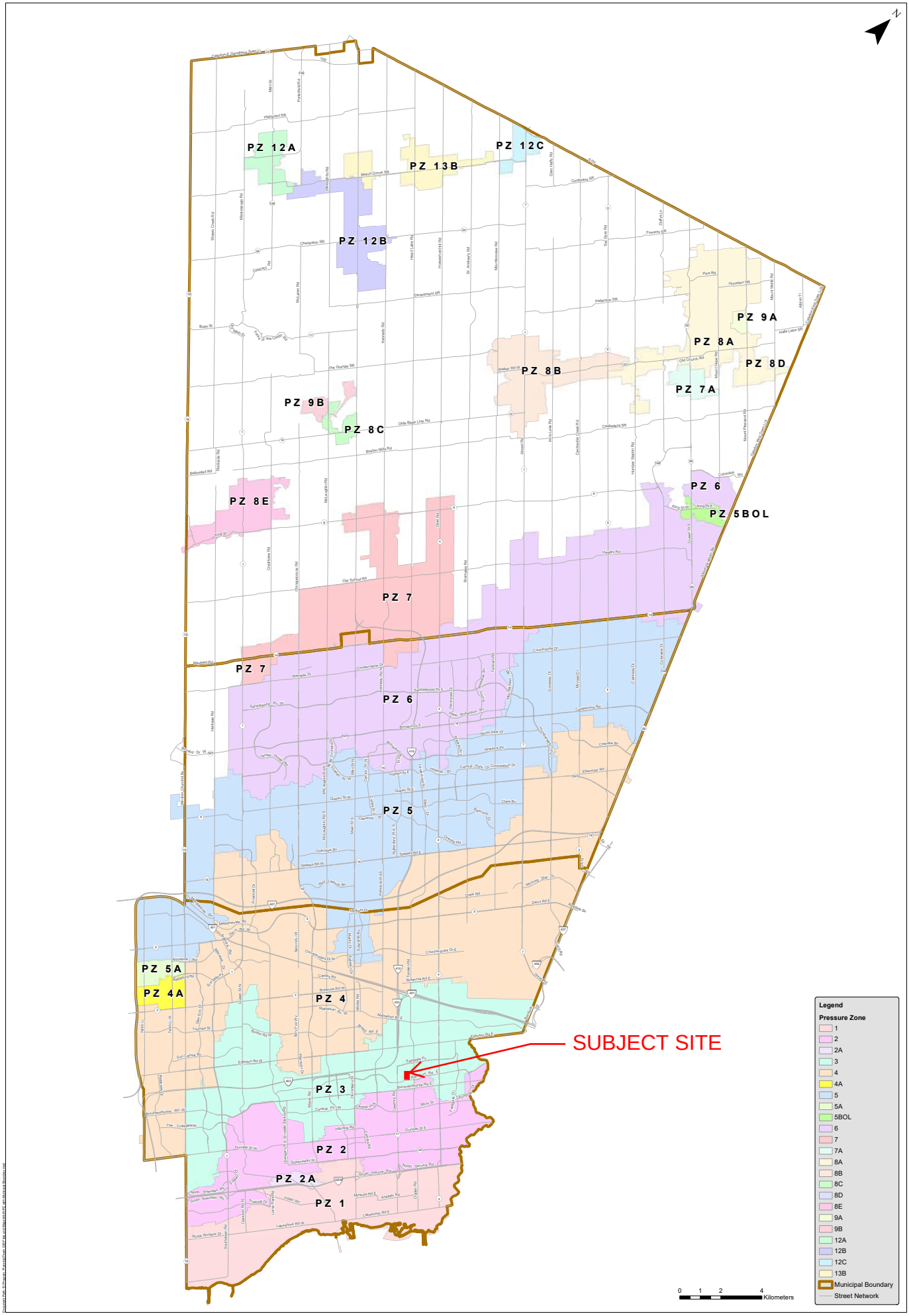
PUBLIC WORKS
STANDARD DRAWING

REV. DATE: APRIL 2014

APPROVED BY	DRAWN BY
D.L.	AINLEY GROUP

FIRE LINE AND DOMESTIC CONNECTION

STD. DWG. NUMBER	SCALE
1-6-4	N.T.S.



Region of Peel
working with you

Water Pressure Zones

May, 2021
Water & Wastewater Planning, Public Works
Map ID: 46-W-PZ with Municipal Boundary
Data Source: Region of Peel
Scale: 1:74,386 | NAD83 UTM zone 17N

APPENDIX "C"

Sanitary System Calculations & Details

VALDOR

VALDOR ENGINEERING INC.
571 Chrislea Road, Unit 4, 2nd Floor, Woodbridge, ON L4L 8A2
Tel: 905-264-0054 Fax: 905-264-0069 info@valdor-engineering.com
www.valdor-engineering.com

TABLE C1

Project Name: **Westminster ST Luke's Seniors Affordable Housing**
File: 20139
Date: April 2024

Wastewater Loading Calculation

Site Area	0.594	ha.
Equivalent Population	**189**	persons
Infiltration Rate	**0.20**	L/s/ha.
Infiltration, I	0.12	L/s
Harmon Peaking Factor, M	4.157	
	4.000	Max = 4.0
		Min = 1.5
Average Daily Flow Rate	280	L/persons/day
Average Daily Flow, Q	0.61	L/s

$$Q_{PROP} = Q_{BASE} \times M + I$$

Proposed Sanitary Flow = 2.57 L/s

	Area (Ha.)	Equivalent Population (persons)	Average Daily Flow (L/s)	Harmon Peaking Factor	Peak Daily Flow (L/s)	Infiltration Rate (L/s)	Total Flow (L/s)
	0.594	189.0	0.61	4.00	2.45	0.12	2.57

*The above equivalent flow, equivalent population, and equations are based on Region of Peel Design Criteria

Downstream Sanitary Sewer

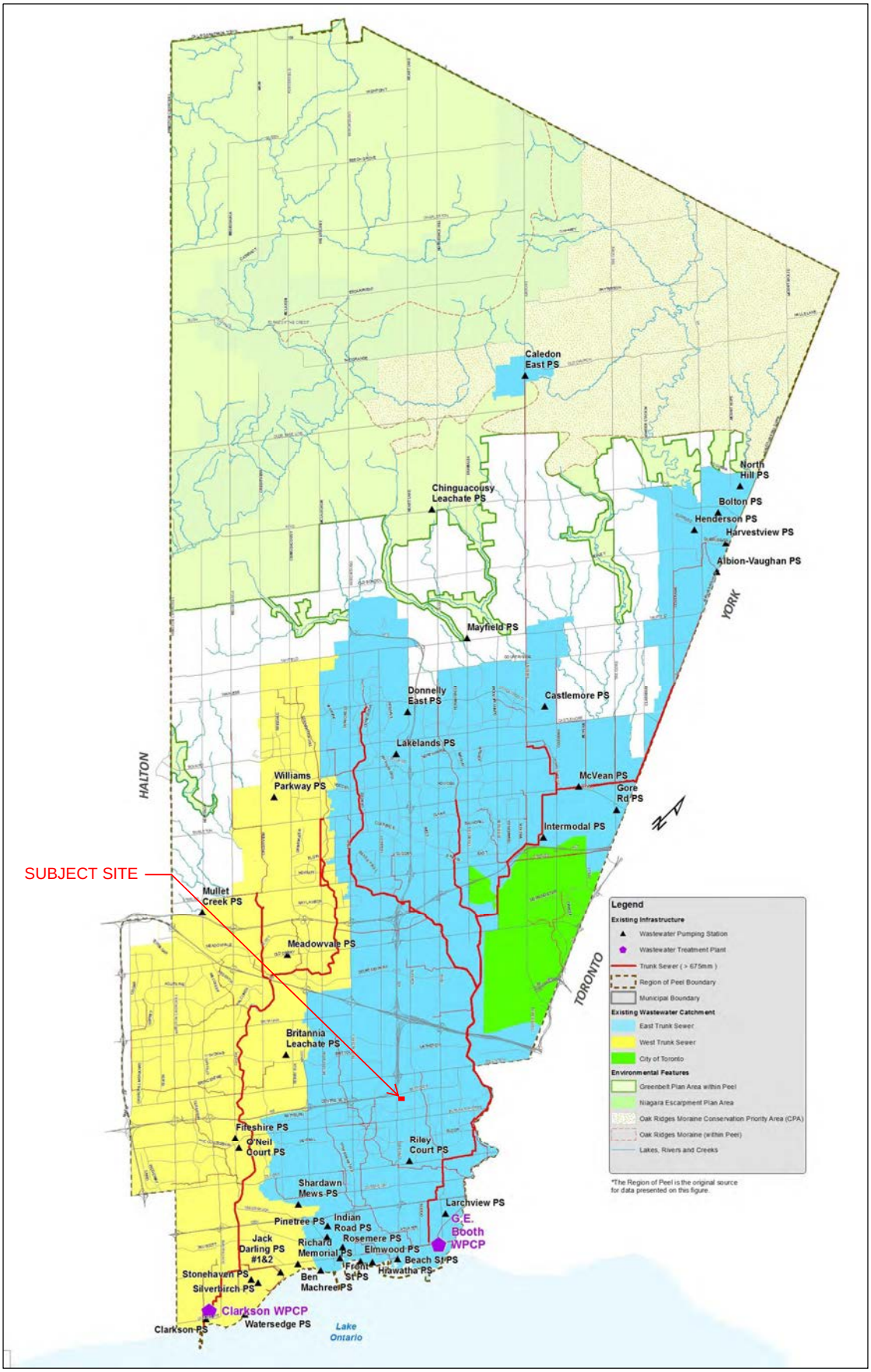
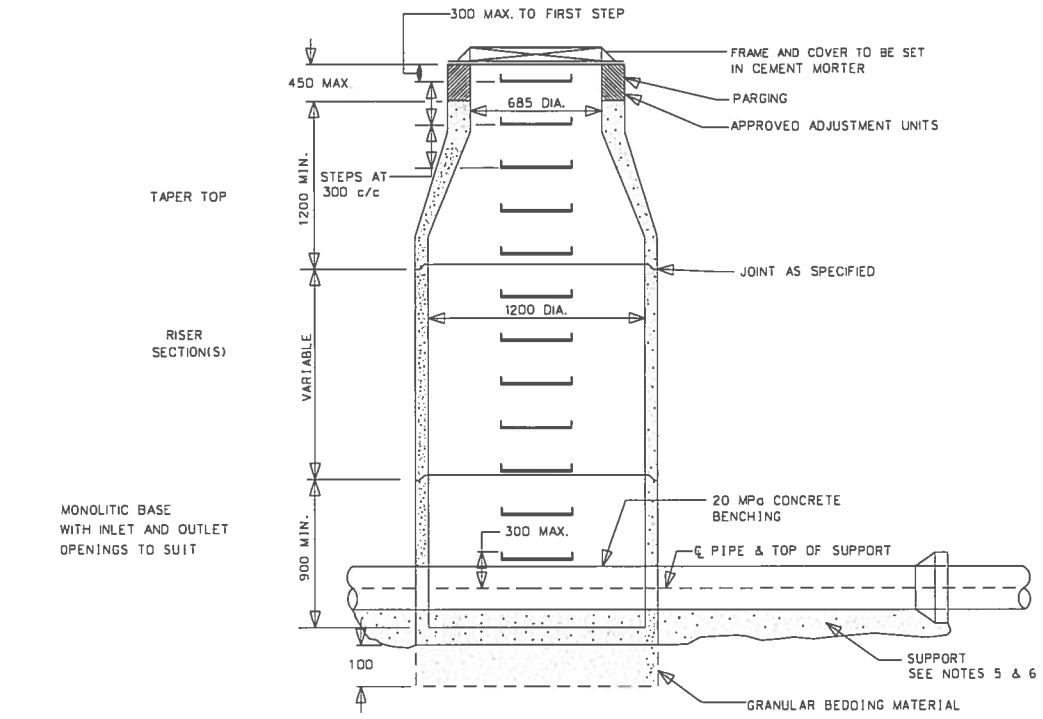
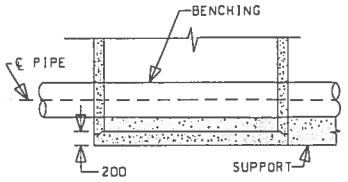


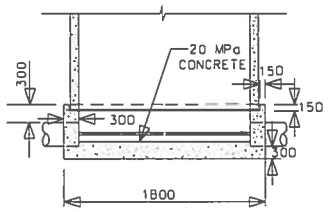
Figure 4.2 Existing Lake-Based Wastewater Collection System



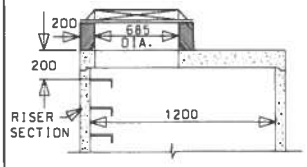
ALTERNATIVES



TYPE A
PRECAST SLAB BASE



TYPE B
CAST IN PLACE BASE



TYPE C
PRECAST FLAT TOP

FLEXIBLE JOINT 300 mm MAX. FROM MAINTENANCE HOLE WALL. IN LIEU OF CONCRETE CRADLE.

TYPE D

APPROVED FLEXIBLE WATERTIGHT PIPE CONNECTOR IN MAINTENANCE HOLE OPENING IN LIEU OF CONCRETE CRADLE.

TYPE E

PIPE SUPPORT AT MAINTENANCE HOLE

NOTE

1. PRECAST MAINTENANCE HOLE SECTIONS TO CONFORM TO ASTM C-478, OPSS 1351.
2. SPECIAL BASE DESIGN REQUIRED FOR DEPTHS GREATER THAN 9.0 m.
3. FILL LIFTING HOLES AND PIPE CONNECTIONS WITH 1:3 NON SHRINK MORTAR MIX.
4. APPROVED ADJUSTMENT UNITS INSTALLED AS MANUFACTURERS INSTRUCTIONS.
5. USE ALTERNATIVE BASE, TOP, PIPE SUPPORT OR CONNECTOR, STEPS, FRAME AND COVER AND/OR BENCHING WHERE SPECIFIED.
6. FOR PVC PIPE USE TYPE D OR E PIPE SUPPORT ONLY.
7. FOR RIGID PIPE SUPPORT FROM MAINTENANCE HOLE TO FIRST JOINT WITH MIN. 20 MPa. CONCRETE CRADLE.
8. FOR 1500mm AND LARGER SEWERS PRECAST MAINTENANCE HOLE TEES ARE ACCEPTABLE (SEE STD. DWG. 2-1-3).
9. SAFETY GRATE WHERE REQUIRED. (SEE STD DWG. 2-2-1).
10. BENCHING TO BE CONSTRUCTED TO THE OBVERT OF THE PIPE. (SEE STD DWG. 2-1-4).

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PUBLIC WORKS
STANDARD DRAWING

REV. DATE: MAY 2014

APPROVED BY	DRAWN BY
	L.W.

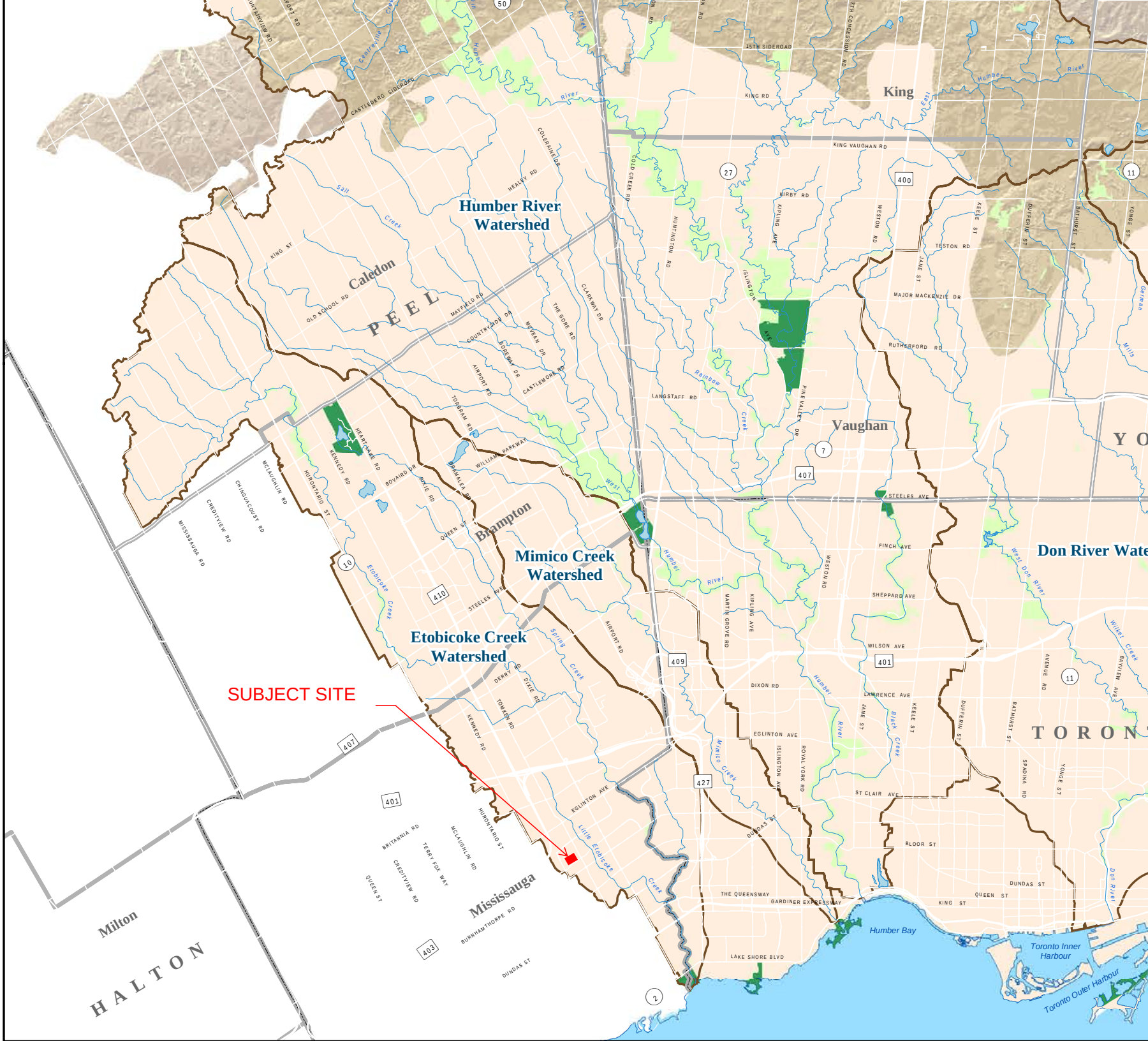
PRECAST MAINTENANCE HOLE
1200mm DIAMETER

STD. DWG. NUMBER	SCALE
2-1-1	N.T.S.

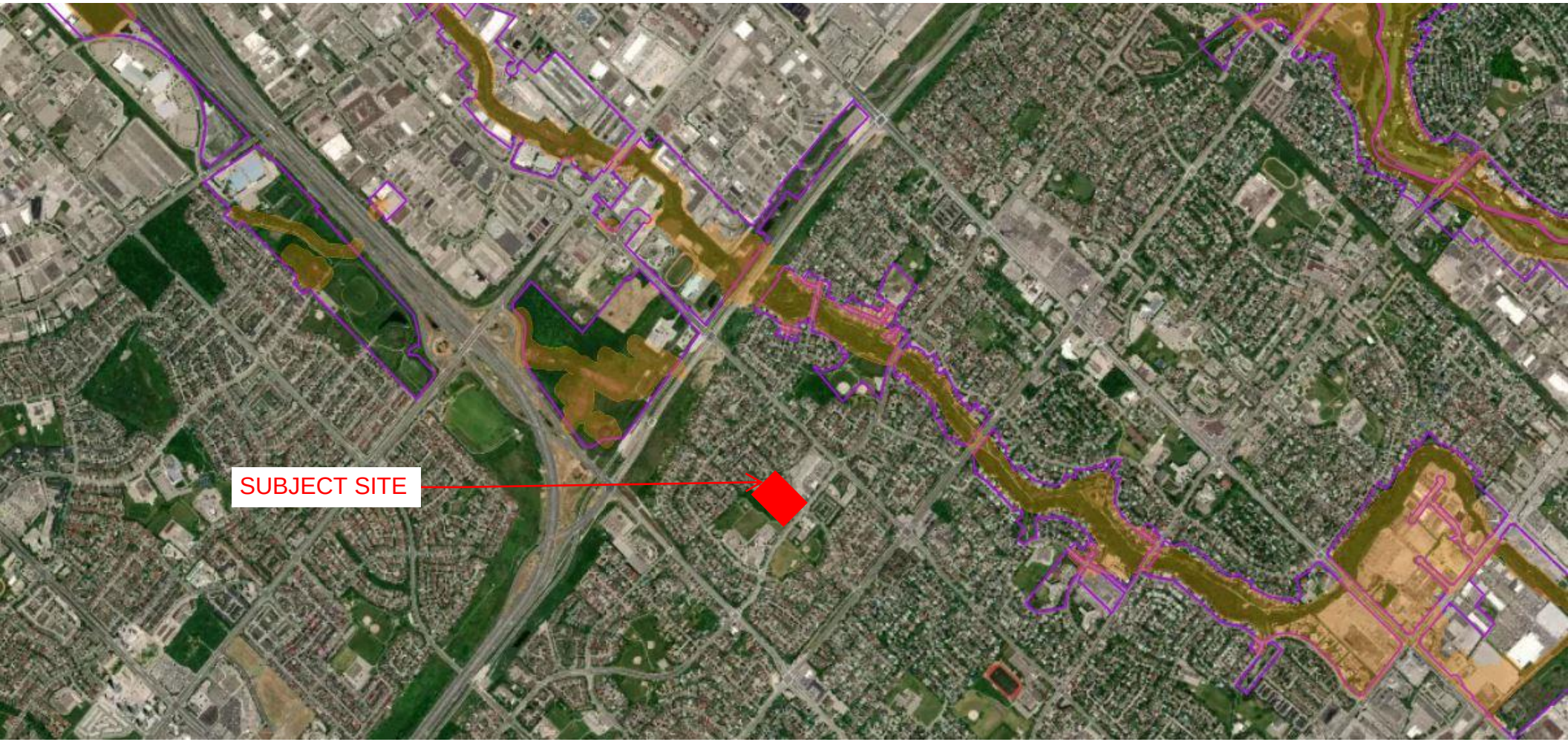
APPENDIX "D"

Watershed Mapping & IDF Rainfall Data

VALDOR

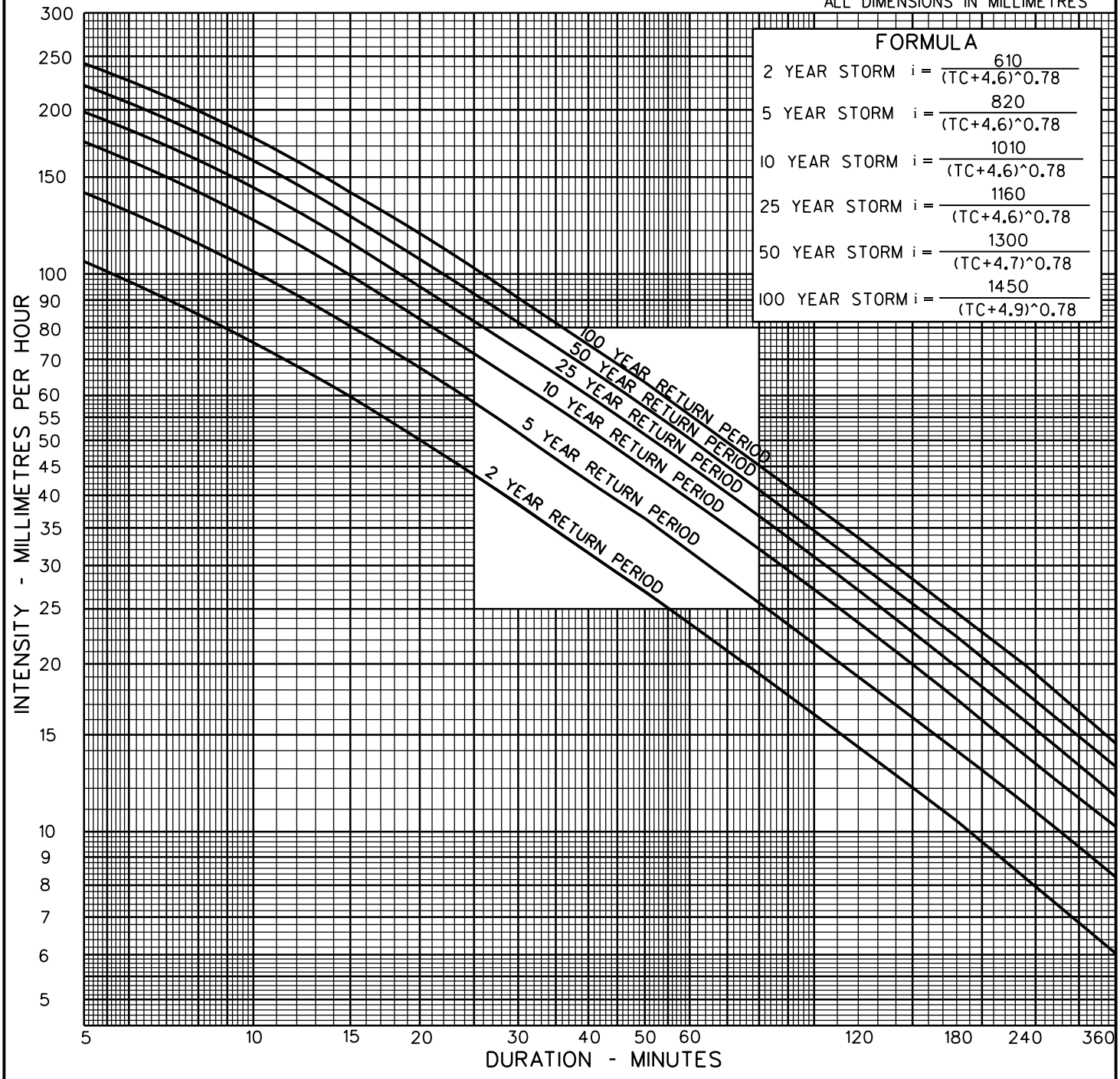

Humber River Watershed
Mimico Creek Watershed
Etobicoke Creek Watershed
SUBJECT SITE
PEEL
HALTON
TORONTO
Caledon
Brampton
Mississauga
Milton
Vaughan
King
Humber Bay
Toronto Inner Harbour
Toronto Outer Harbour
Don River Watershed

TRCA REGULATION MAPPING



METRIC

ALL DIMENSIONS IN MILLIMETRES



NOTES

1. ALL CALCULATIONS TO BE DONE ASSUMING FULL DEVELOPMENT AS SHOWN ON CITY OF MISSISSAUGA ZONING MAPS.
2. TO BE USED WITH RATIONAL FORMULA:
   $Q = \frac{CIA}{360}$
   Q=QUANTITY OF RUNOFF (M^3/S)
   C=RUNOFF COEFFICIENT
   A=AREA (ha)
   I=RAINFALL INTENSITY (mm/hr)

MISSISSAUGA

STANDARD INTENSITY-DURATION-FREQUENCY RAINFALL CURVES

EFF. DATE	2002-01-01	SCALE	N.T.S
REV.	2016-07-22	STANDARD No.	2111.010

APPENDIX "E"

Stormwater Quantity Control Calculations

VALDOR

VALDOR ENGINEERING INC. **TABLE: E1**
File: 20139
April 2024

PROJECT: Westminster ST Luke's Seniors Affordable Housing

PRE-DEVELOPMENT PEAK FLOW CALCULATION

Surface Type	Area (ha.)	Runoff Coefficient
Pervious Area	0.142	0.25
Roof	0.043	0.90
Impervious Area	0.409	0.90
TOTAL	**0.594**	**0.74**

2 Year Pre-Development Flow

I = 610/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 59.9 mm/hr
R = 0.74
N = 2.778

Q = R x A x I x N 2year Q = 73.59 L/s

5 Year Pre-Development Flow

I = 820/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 80.5 mm/hr
R = 0.74
N = 2.778

Q = R x A x I x N 5year Q = 98.92 L/s

10 Year Pre-Development Flow

I = 1010/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 99.2 mm/hr
R = 0.74
N = 2.778

Q = R x A x I x N 10year Q = 121.85 L/s

25 Year Pre-Development Flow

I = 1160/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 113.9 mm/hr
25 yr R = 0.82 25 yr adjustment factor = R X 1.1
N = 2.778

Q = R x A x I x N 25year Q = 153.94 L/s

50 Year Pre-Development Flow

I = 1300/ (Tc+4.7)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 127.1 mm/hr
50 yr R = 0.89 50 yr adjustment factor = R X 1.2
N = 2.778

Q = R x A x I x N 50year Q = 187.45 L/s

100 Year Pre-Development Flow

I = 1450/ (Tc+4.9)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 140.7 mm/hr
100 yr R = 0.93 100 yr adjustment factor = R X 1.25
N = 2.778

Q = R x A x I x N 100 year Q = 216.08 L/s

VALDOR ENGINEERING INC. **TABLE: E2**
File: 20139
April 2024

PROJECT: Westminster ST Luke's Seniors Affordable Housing

POST-DEVELOPMENT PEAK FLOW CALCULATION

Surface Type	Area (ha.)	Runoff Coefficient
Pervious Area	0.147	0.25
Green Roof	0.034	0.40
Roof	0.066	0.90
Impervious Area	0.347	0.90
TOTAL	**0.594**	**0.71**

2 Year Post-Development Flow

I = 610/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 59.9 mm/hr
R = 0.71
N = 2.778

Q = R x A x I x N 2year Q = 70.22 L/s

5 Year Post-Development Flow

I = 820/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 80.5 mm/hr
R = 0.71
N = 2.778

Q = R x A x I x N 5year Q = 94.40 L/s

10 Year Post-Development Flow

I = 1010/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 99.2 mm/hr
R = 0.71
N = 2.778

Q = R x A x I x N 10year Q = 116.27 L/s

25 Year Post-Development Flow

I = 1160/ (Tc+4.6)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 113.9 mm/hr
25 yr R = 0.78 25 yr adjustment factor = R X 1.1
N = 2.778

Q = R x A x I x N 25year Q = 146.89 L/s

50 Year Post-Development Flow

I = 1300/ (Tc+4.7)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 127.1 mm/hr
50 yr R = 0.85 50 yr adjustment factor = R X 1.2
N = 2.778

Q = R x A x I x N 50year Q = 178.87 L/s

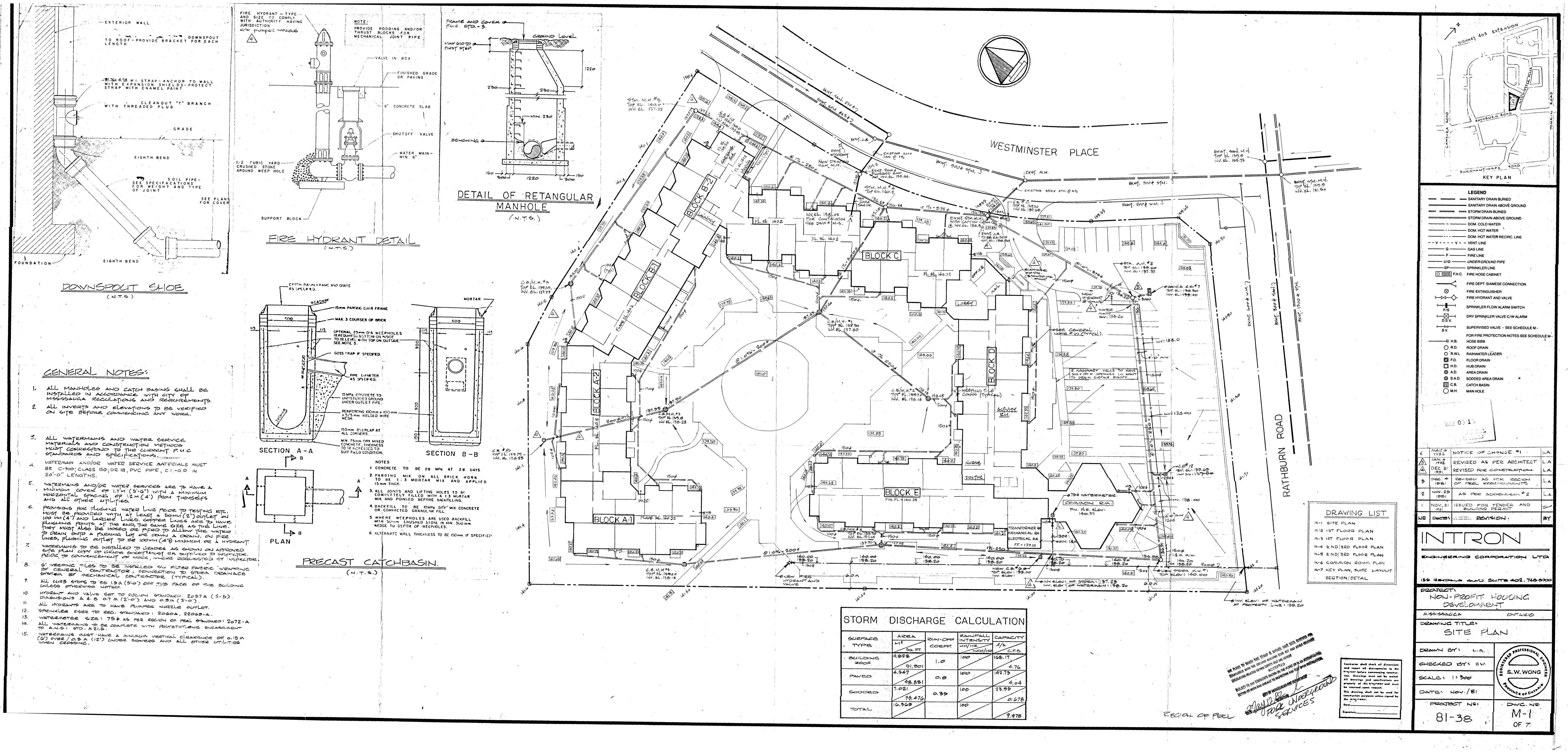
100 Year Post-Development Flow

I = 1450/ (Tc+4.9)^0.78

I = Rainfall Rate (mm/hr)

T = 15 minutes
I = 140.7 mm/hr
100 yr R = 0.89 100 yr adjustment factor = R X 1.25
N = 2.778

Q = R x A x I x N 100 year Q = 206.2 L/s



DISCLAIMER

These records are based upon available and unverified information and may prove inaccurate.
The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.

APPENDIX "F"

Topographic Survey

VALDOR

SURVEYOR'S REAL PROPERTY REPORT

PLAN OF SURVEY WITH TOPOGRAPHY OF

BLOCK 29
REGISTERED PLAN M–367
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL

SCALE 1 : 300

5 0 5 10 15 20 metres

TARASICK McMILLAN KUBICKI LIMITED
ONTARIO LAND SURVEYORS

REPORT SUMMARY

PROPERTY DESCRIPTION: 4150 WESTMINSTER PLACE, BEING BLOCK 29, REGISTERED PLAN M–367, CITY OF MISSISSAUGA, REGIONAL MUNICIPALITY OF PEEL, PIN 13311–0211.

THERE ARE NO EASEMENTS REGISTERED ON TITLE.

COMMENTS: NOTE LOCATION OF FENCES.

METRIC

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

ELEVATION NOTE

ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM–1928, AND WERE DERIVED FROM CITY OF MISSISSAUGA BENCHMARK No. 554, HAVING A PUBLISHED ELEVATION OF 141.549 metres.

BEARING NOTE

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHWESTERLY LIMIT OF BLOCK 29 AS SHOWN ON REGISTERED PLAN M–367, HAVING A BEARING OF N44°51'00"W.

BEARING NOTE

BEARINGS HEREON ARE GRID BEARINGS AND ARE DERIVED FROM
HORIZONTAL CONTROL MONUMENTS NO.
* N * E *
* N * E *
AND ARE REFERRED TO THE CENTRAL MERIDIAN 81°00' WEST LO
ZONE 17, UTM PROJECTION, NAD83 DATUM.

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT PLANTED
SIB	DENOTES	STANDARD IRON BAR
TC	DENOTES	TOP OF CURB
BC	DENOTES	BOTTOM OF CURB
CCT	DENOTES	CURB CUT
MH	DENOTES	MANHOLE
CB	DENOTES	CATCH BASIN
WUP	DENOTES	WOOD UTILITY POLE
WV	DENOTES	WATER VALVE
FHT	DENOTES	FIRE HYDRANT TOP
SLS	DENOTES	STEEL LIGHT STANDARD
CLS	DENOTES	CONCRETE LIGHT STANDARD
TRW	DENOTES	TOP OF RETAINING WALL
TL	DENOTES	TRAFFIC LIGHT
BB	DENOTES	BELL BOX
A/C	DENOTES	AIR CONDITIONER
WMH	DENOTES	WATER MANHOLE
INV.	DENOTES	INVERT
BOL	DENOTES	BOLLARD
P1	DENOTES	REGISTERED PLAN M–367
P2	DENOTES	WILLIAM J. PLAXTON LTD., O.L.S., MAY 28, 1982
P3	DENOTES	PLAN 43R–9203
P4	DENOTES	PLAN 43R–8844

0.20ØD DENOTES DECIDUOUS TREE WITH TRUNK DIAMETER

0.20ØC DENOTES CONIFEROUS TREE WITH TRUNK DIAMETER

TREE CANOPIES ARE DRAWN TO SCALE.

ALL FOUND SURVEY MONUMENTS WERE SET BY REGISTERED PLAN M–367 UNLESS NOTED OTHERWISE.

PREPARED FOR:

THIS REPORT WAS PREPARED FOR ST. LUKE'S DIXIE SENIOR RESIDENCE CORPORATION AND THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON MARCH 18, 2020.

APRIL 24, 2020
DATE

BORYS KUBICKI
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29(3)

TARASICK McMILLAN KUBICKI LIMITED
ONTARIO LAND SURVEYORS
4181 SLADEVIEW CRESCENT, UNIT 42, MISSISSAUGA, ONTARIO L5L 5R2
TEL: (905) 569–8849 FAX: (905) 569–3160
E–MAIL: office@tmksurveyors.com

DRAWN BY: R.E. | FILE No. 8449–SRPR–T

D (24"x36")

APPENDIX "G"

Region of Peel Demand Table

VALDOR ENGINEERING INC.

File: 20139 4150 Westminster Place
Date: April 2024 City of Mississauga

Region of Peel Demand Table

WATER CONNECTION

Connection Point [3]			600mm Dia Conc Watermain on Rathburn Road East	
Pressure zone of connection point:				Pressure Zone 3
Total equivalent population to be serviced [1]			702	Persons
Total lands to be serviced			1.637	Hectares
Hydrant flow test				
Hydrant flow test location:				4150 Westminister Place
	Pressure (PSI)	**Pressure** (kPa)	**Flow** (L/s)	**Time**
Minimum water pressure	83	572.3	154.2	N/A
Maximum water pressure	86	592.9	0	N/A

No.	**Water Demands**			
	Demand Type		**Demand**	**Units**
1	Average day flow	(136.5 L/min)	2.275	L/s
2	Maximum day flow	(273.0 L/min)	4.550	L/s
3	Peak hour flow	(409.5 L/min)	6.825	L/s
4	Fire flow [2]	(6,000 L/min)	100.000	L/s
Analysis				
5	Maximum day plus fire flow	(6,273.0 L/min)	104.550	L/s

WASTEWATER CONNECTION

Connection Point [4]		300mm Dia San Sewer on Rathburn Road East	
Total equivalent population to be serviced [1]		702	Persons
Total lands to be serviced		1.637	Hectares
6	Wastewater sewer effluent	2.57	L/s

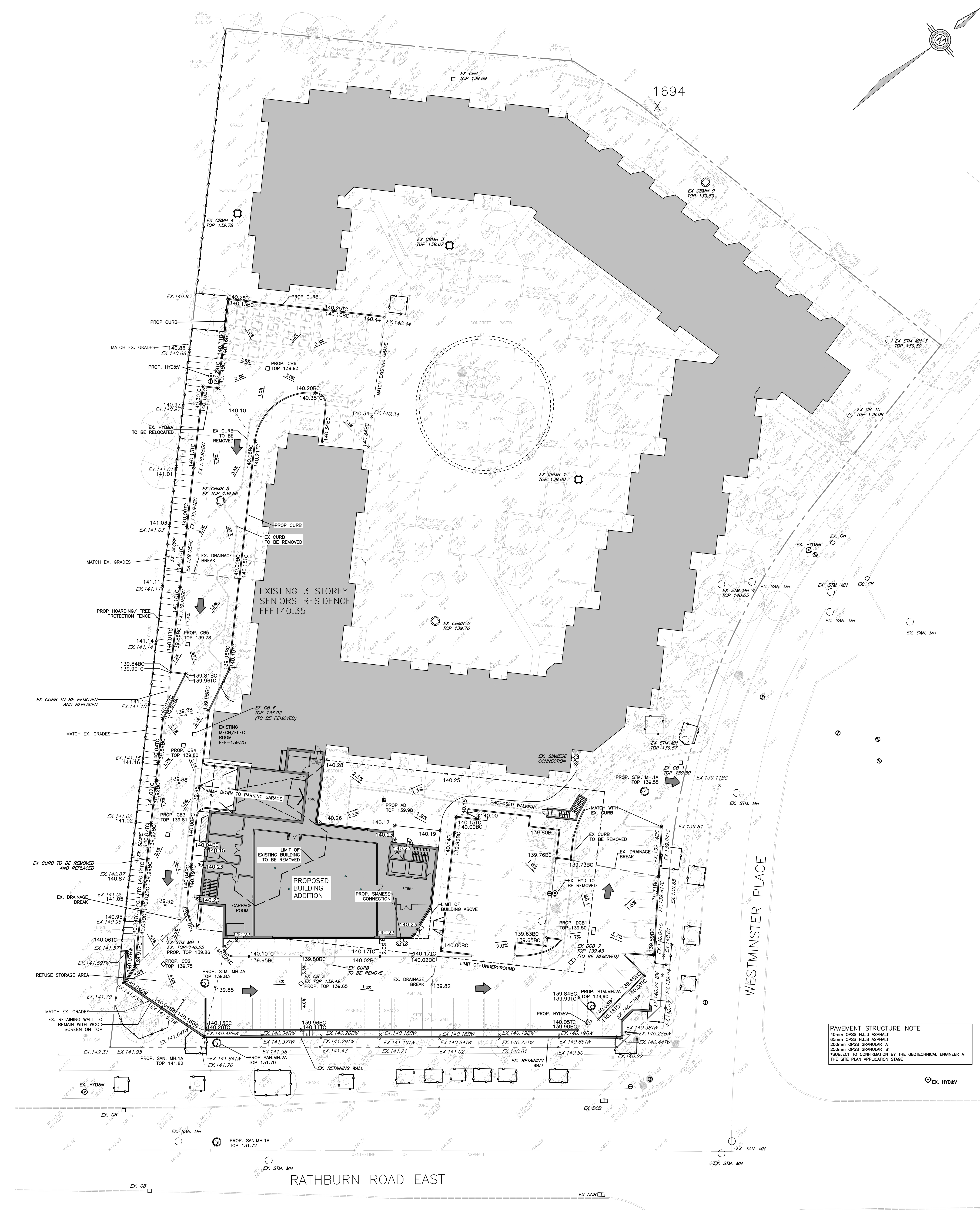
1) Please refer to design criteria for population equivalencies.
2) Please reference the Fire Underwriters Survey Document
3) Please specify the connection point ID
4) Please specify the connection point (wastewater line or manhole ID)
Also, the "total equivalent population to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of the Site Servicing Plan)

Please include the graphs associated with the hydrant flow test information table.
Please provide Professional Engineer's signature and stamp on the demand table.
All required calculations must be submitted with the demand table submission.

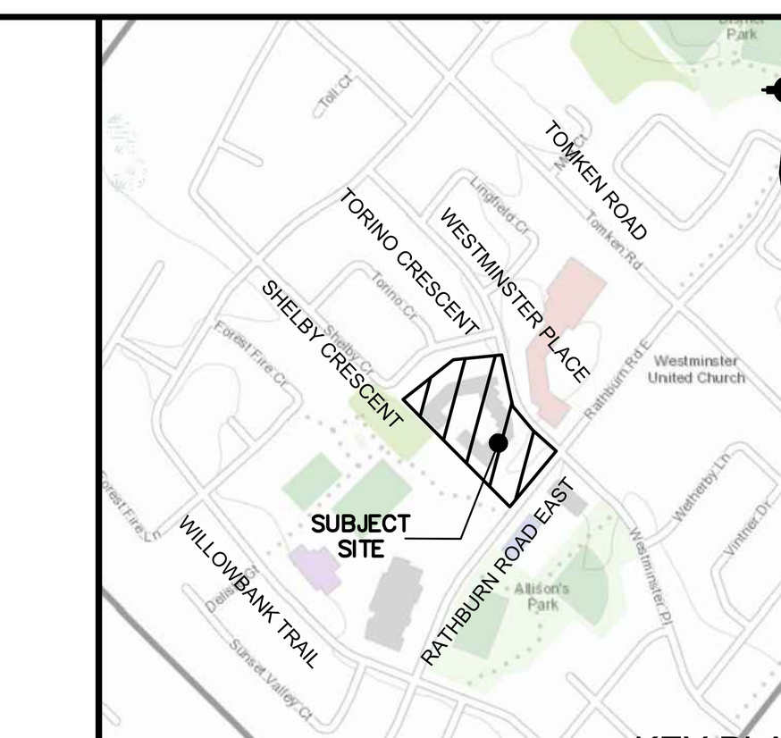
APPENDIX "H"

Functional Grading and Servicing Plan

VALDOR



PAVEMENT STRUCTURE NOTE
40mm OPSS H.L.3 ASPHALT
65mm OPSS H.L.8 ASPHALT
200mm OPSS GRANULAR 'A'
250mm OPSS GRANULAR 'B'
*SUBJECT TO CONFIRMATION BY THE GEOTECHNICAL ENGINEER AT THE SITE PLAN APPLICATION STAGE



KEY PLAN
N.T.S

LEGEND:

+ 301.08	EXISTING ELEVATION
— 188.5 —	EXISTING CONTOUR
2%	DRAINAGE FLOW DIRECTION AND SLOPE
× 126.50	PROPOSED ELEVATION
TW	TOP OF WALL
BW	BOTTOM OF WALL
TC	TOP OF CURB
BC	BOTTOM OF CURB
	HYDRANT
	VALVE AND BOX
	STORM MANHOLE
	CATCHBASIN MANHOLE
	AREA DRAIN
	CATCHBASIN
	SANITARY MANHOLE
— B —	BELL LINE
— GAS —	GAS LINE
—H—	HYDRO LINE
	CABLE LINE
	EXISTING SERVICING TO BE REMOVED
	PROP. RETAINING WALL
	EX. RETAINING WALL
	EXISTING CURB TO BE REMOVED
	HOARDING/TREE PROTECTION FENCING

NOTE:
THIS PLAN HAS BEEN PREPARED TO DEMONSTRATE FEASIBILITY OF THE PROPOSED DEVELOPMENT WITH RESPECT TO GRADING IN CONJUNCTION WITH THE ZONING BY-LAW AMENDMENT APPLICATION. DETAILED GRADING DESIGN WILL BE PREPARED AT THE SITE PLAN APPLICATION STAGE.

METRIC:
DISTANCE SHOW ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

ELEVATION NOTE:
ELEVATIONS ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM–1928, AND WERE DERIVED FROM CITY OF MISSISAUGA BENCHMARK No. 554, HAVING A PUBLISHED ELEVATION OF 141.549 METRES.

BEARING NOTE:
BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHWESTERLY LIMIT OF BLOCK 29 AS SHOWN ON REGISTERED PLAN M–367, HAVING A BEARING OF N44°51'00W.

NO.	DATE	REVISIONS	BY
03	APR.08/24	AS PER CITY COMMENTS	D.G.
02	JAN.16/24	ISSUED FOR ZBA	D.G.
01	MAR.01/23	AS PER UPDATED SITE PLAN	D.G.

LICENSED PROFESSIONAL ENGINEER
D. A. GIUGOVAZ
APR. 08, 2024
PROVINCE OF ONTARIO

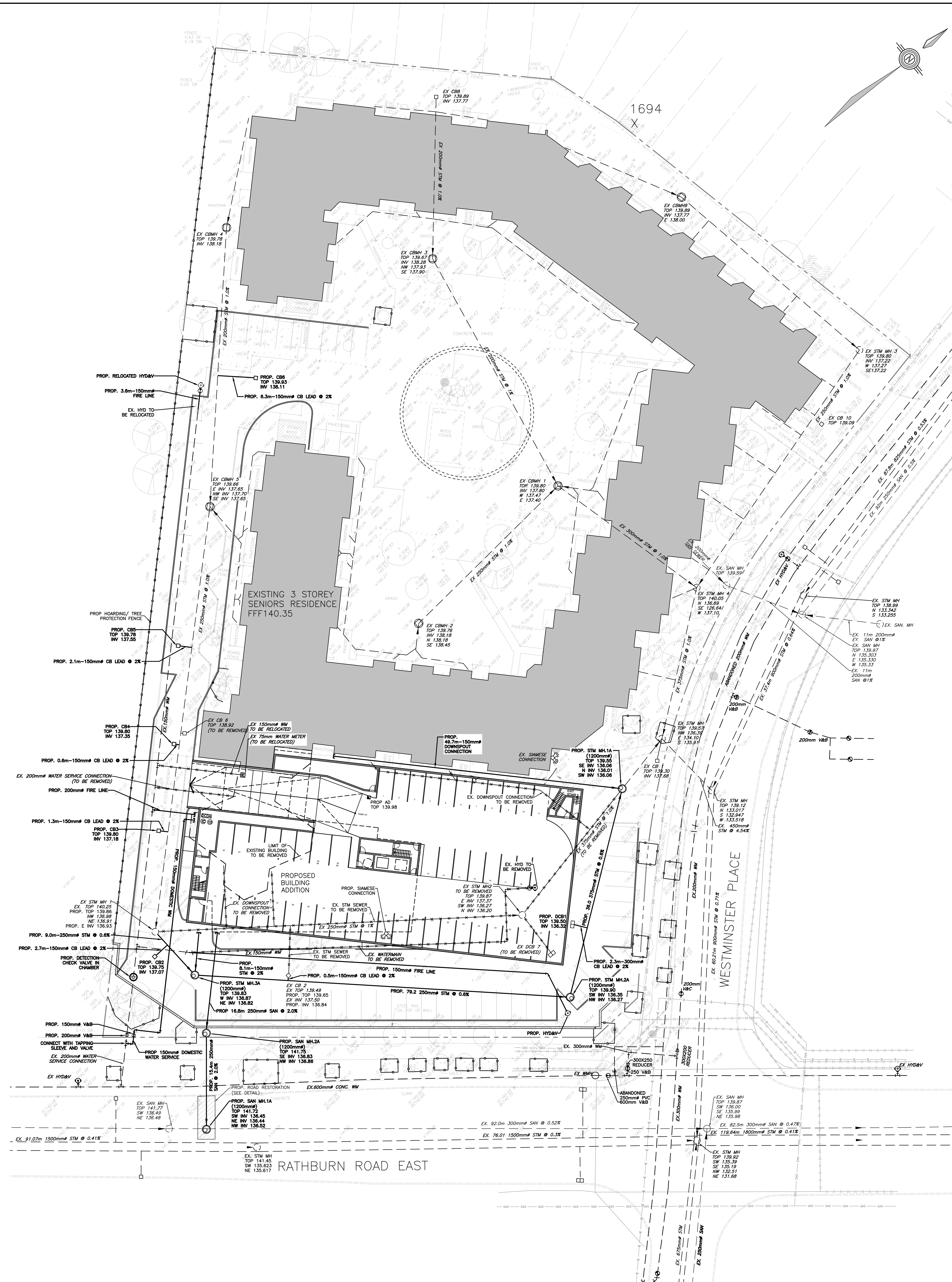
VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
571 CHRISLEA ROAD, UNIT 4, 2ND FLOOR, WOODBRIDGE, ONTARIO, L4L 8A2
TEL (905)264-0054, FAX (905)264-0069
E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

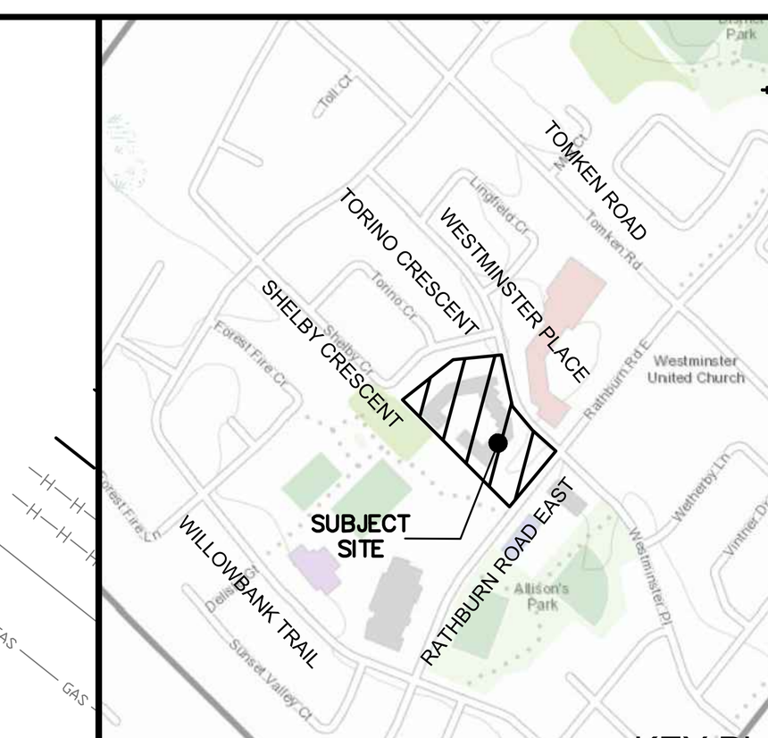
PROPOSED BUILDING ADDITION
WESTMINSTER COURT SENIORS RESIDENCE
4150 WESTMINSTER PLACE
CITY OF MISSISSAUGA

FUNCTIONAL GRADING PLAN (FOR ZONING STAGE ONLY)

SCALE	DATE OF DWG.	PROJECT NO.
1:250	OCT. 24/2022	20139

DRAWN BY	DRAWING NO.
P.M.	FGP-1
CHKD BY D.G.	





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FUNCTIONAL SERVICING PLAN
(FOR ZONING STAGE ONLY)

SCALE	DATE OF DWG.	PROJECT NO.
1:250	OCT. 24/2022	20139

DRAWN BY	DRAWING NO.
P.M.	FSP-1
CHKD BY	
D.G.	