EDWARD J. CUHACI AND ASSOCIATES ARCHITECTS INC.

OCDSB EARL OF MARCH SCHOOL ADDITION
4 THE PARKWAY, OTTAWA, ON

SERVICING AND STORMWATER MANAGEMENT REPORT

DECEMBER 12, 2024

OCDSB EARL OF MARCH SCHOOL ADDITION
4 THE PARKWAY, OTTAWA, ON
SERVICING AND STORMWATER MANAGEMENT REPORT

EDWARD J. CUHACI AND ASSOCIATES ARCHITECTS INC.

SITE PLAN APPLICATION

PROJECT NO.: CA0020000.3018
DATE: JULY 2024
REVISED: DECEMBER 2024

WSP CANADA INC.
2611 QUEESVIEW DRIVE, SUITE 300
OTTAWA, ON, CANADA, K2B 8K2

TEL.: +1 613-829-2800

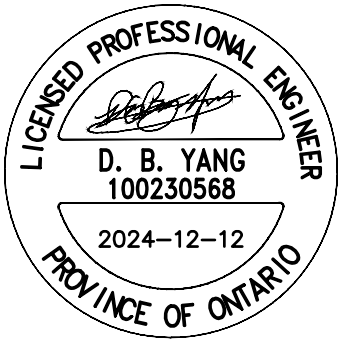
WSP.COM

SIGNATURES

PREPARED BY:

Zarak Ali, E.I.T.
Civil Designer

REVIEWED BY:



Ding Bang (Winston) Yang, P.Eng
Senior Engineer

This report was prepared by WSP Canada Inc. for the account of EDWARD J. CUHACI AND ASSOCIATES ARCHITECTS INC, in accordance with the professional services agreement. The disclosure of any information contained in this report is the sole responsibility of the intended recipient. The material in it reflects WSP Canada Inc.'s best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. WSP Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This limitations statement is considered part of this report.

The original of the technology-based document sent herewith has been authenticated and will be retained by WSP for a minimum of ten years. Since the file transmitted is now out of WSP's control and its integrity can no longer be ensured, no guarantee may be given with regards to any modifications made to this document.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

A

- PRE-CONSULTATION MEETING NOTES
- ARCHITECTURAL SITE PLAN
- TOPOGRAPHICAL SURVEY PLAN
- MCCORMICK RANKIN/DME, PLAN AND PROFILE DRAWINGS

B

- FIRE UNDERWRITERS SURVEY – FIRE FLOW CALCULATION FOR ADDITION
- WATER DEMAND CALCULATION
- BOUNDARY CONDITION REQUEST
- HYDRANT FLOW TESTS

C

- STORM SEWER DESIGN SHEET
- DWG C08/C09 – STORM DRAINAGE AREA PLANS

- DWG C10 – ROOF DRAINAGE PLAN
- STORMWATER MANAGEMENT CALCULATIONS
- EFO4 DETAILS
- SANITARY SEWER DESIGN SHEET
- DWG C04A/C04B – GRADING PLANS
- DWG C05A/C05B – SERVICING PLANS

D

- DWG C07A/C07B - EROSION AND SEDIMENTATION CONTROL PLAN

E

- SUBMISSION CHECK LIST

1 GENERAL

1.1 EXECUTIVE SUMMARY

WSP was retained by Edward J. Cuhaci and Associates Architects to provide servicing, grading and stormwater management design services for the servicing of a proposed addition to the north side of the existing Earl of March school located on a 9.74-hectare site. The site is located at 4 The Parkway, in the east end of Kanata. The site is situated on the north side of Campeau Drive, immediately east of the City owned John G. Mlacak Community Centre and The Ottawa Public Library (2500 Campeau Drive). The site shares an access from Campeau Drive with the City facilities but also has 2 additional site accesses, one from The Parkway to the north and a secondary Campeau Drive access.

The storm servicing for the addition will be available from the north side of the site, as there exists a 600mm diameter concrete storm sewer in The Parkway roadway. The sanitary and water servicing will be available from the existing 150mm diameter watermain stub and existing 200mm diameter sanitary sewer in The Parkway roadway, both of which will need to be extended approximately 75m to the north-east corner of the site in the right of way to provide servicing to the addition. This report outlines findings and calculations pertaining to the servicing and stormwater management design of the proposed addition with a gross building footprint of 0.164 ha.

The proposed addition is a two-storey building located on the north side of the existing Earl of March Secondary School (north side of the property). To the north of the proposed addition, there will be some parking provided and a new heavy-duty access connecting to the existing pathways around the portables. Several of the existing portables (currently located to the north of the existing school) will be relocated to the north and west of the addition. The fire route access will interconnect between the pathways around the portables and the large existing parking lot to the east of the existing school and new addition.

Currently, the area proposed for the new addition is within the larger Earl of March School site. The total study area (that is to be redeveloped) is considered to be 0.766 ha in size. The site is located at Part of Lot 3 Concession 3, Geographic Township of March, in the City of Ottawa per the Topographic Sketch dated January 17, 2024 and completed by Farley, Smith & Denis Surveying LTD. 2024. Based on the topographic survey, the site is relatively flat but with a slight slope west to east. The Parkway also slopes from west to east. Currently, various on-site catchbasins collect stormwater from the site and convey this flow to the 1050mm diameter sewer crossing Campeau Drive to the south. The storm network eventually dischargers to a City of Ottawa stormwater pond located west of March Road and north of Highway 417. This pond services the school site and surrounding area. The downstream receiving stream for stormwater is Watt's Creek, which discharges to the Ottawa River.

Design of a drainage and stormwater management system in this development must be prepared in accordance with the following documents:

- Sewer Design Guidelines, City of Ottawa, October 2012;
- Stormwater Management Planning and Design Manual, Ministry of the Environment, March 2003; and
- Stormwater Management Facility Design Guidelines, City of Ottawa, April 2012

This report was prepared utilizing servicing design criteria obtained from the City of Ottawa and outlines the design for water, sanitary wastewater, and stormwater facilities, including stormwater management.

The format of this report matches that of the servicing study checklist found in Section 4 of the City of Ottawa's Servicing Study Guidelines for Development Applications, November 2009.

The following municipal services are available at the north-east property line as recorded from GeoOttawa.
The Parkway:

- 600mm storm sewer
- 152mm watermain stub approximately 50m west from Teron Road
- 200mm sanitary sewer approximately 50m west from Teron Road

It is proposed that:

- On-site stormwater management systems, employing surface storage and roof storage will be provided to attenuate flow rates leaving the site area to be redeveloped. Existing drainage patterns, previously established controlled flow rates and storm sewers will be maintained.

1.2 DATE AND REVISION NUMBER

This version of the report is the second issue, dated December 12th, 2024.

1.3 LOCATION MAP AND PLAN

The proposed institutional development is located at 4 The Parkway, Ottawa, Ontario at the location shown in Figure 1-1 below.

Figure 1-1 Site Location

1.4 ADHERENCE TO ZONING AND RELATED REQUIREMENTS

The proposed property use will be in conformance with zoning and related requirements prior to approval and construction and is understood to be in conformance with current zoning.

1.5 PRE-CONSULTATION MEETINGS

A pre-consultation meeting was held with the City of Ottawa on April 30, 2024. Notes from this meeting are provided in Appendix A.

1.6 HIGHER LEVEL STUDIES

The review for servicing has been undertaken in conformance with, and utilizing information from, the following documents:

- Ottawa Sewer Design Guidelines, Second Edition, Document SDG002, October 2012, City of Ottawa including:
    - Technical Bulletin ISDTB-2012-4 (20 June 2012)
    - Technical Bulletin ISDTB-2014-01 (05 February 2014)
    - Technical Bulletin PIEDTB-2016-01 (September 6, 2018)
    - Technical Bulletin ISDTB-2018-01 (21 March 2018)
    - Technical Bulletin ISDTB-2018-04 (27 June 2018)
- Ottawa Design Guidelines – Water Distribution, July 2010 (WDG001), including:
    - Technical Bulletin ISDTB-2014-02 (May 27, 2014)
    - Technical Bulletin ISTB-2018-02 (21 March 2018)
- Stormwater Management Planning and Design Manual, Ontario Ministry of the Environment and Climate Change, March 2003 (SMPDM).
- Servicing and Stormwater Management Report for Earl of March High School Addition, prepared by WSP (previously Genivar Inc.), Ref. No. 131-18668-00, December 2013.
- Design Guidelines for Drinking-Water Systems, Ontario Ministry of the Environment and Climate Change, 2008 (GDWS).
- Fire Underwriters Survey, Water Supply for Public Fire Protection (FUS), 2020.

1.7 STATEMENT OF OBJECTIVES AND SERVICING CRITERIA

The objective of the site servicing is to meet the requirements for the proposed modification of the site while adhering to the stipulations of the applicable higher-level studies and City of Ottawa servicing design guidelines. The site plan includes a new school addition, a new parking area, fire access lane connection and relocated portables.

1.8 AVAILABLE EXISTING AND PROPOSED INFRASTRUCTURE

There is an existing 600mm diameter storm sewer on the north side of the site along The Parkway. The storm services for the new addition are proposed to connect into this existing municipal storm sewer. There is a 150mm watermain stub and 200mm sanitary sewer that ends approximately 50m west of The Parkway and Teron Road intersection. It is proposed to extend the

watermain and sanitary sewers approximately 75m west along The Parkway to connect onto the site services at the north-east corner of the site. The onsite watermain is proposed to connect to the extended watermain along The Parkway.

The current site accesses from Campeau Drive and The Parkway will be maintained to continue to service the existing school and the new addition.

1.9 ENVIRONMENTALLY SIGNIFICANT AREAS, WATERCOURSES AND MUNICIPAL DRAINS

There are no watercourses, municipal drains or environmentally significant areas on the site. The proposed changes to the site will not require any additional approvals or amendments to approvals pertaining to environmentally significant areas, watercourses or municipal drains.

1.10 CONCEPT LEVEL MASTER GRADING PLAN

As the design is being submitted for site plan approval, the grading plan has been developed to the final design level. The existing and proposed grading are shown on Drawings C04A and C04B (Grading Plan). Existing grading information is based on a topographic survey of the site completed in June 2024. No changes in grading are proposed beyond the redevelopment area boundaries. The proposed grading plan confirms the feasibility of the proposed stormwater management system, drainage, soil removal and fills. The geotechnical investigation was completed in 2024 by Exp Services Inc. The grading along the study area boundary is proposed to meet the existing grade.

1.11 IMPACTS ON PRIVATE SERVICES

There are no existing domestic private services (septic system and well) located on the site. There are no neighbouring properties using private services.

1.12 DEVELOPMENT PHASING

There are no development phasing considerations for the site.

1.13 GEOTECHNICAL STUDY

A draft geotechnical investigation report was previously prepared by Exp Services Inc. on February 27, 2024. No additional geotechnical information was required for the design of the modified site services, including paving. This geotechnical report will be included with the contract documents to be issued for construction, and the recommendations of the reports will be referenced in the construction specifications. The geotechnical study does, however, recommend a grade raise restriction of 0.5m.

1.14 DRAWING REQUIREMENT

The engineering plans submitted for site plan approval will be in compliance with City requirements.

2 WATER DISTRIBUTION

2.1 CONSISTENCY WITH MASTER SERVICING STUDY AND AVAILABILITY OF PUBLIC INFRASTRUCTURE

The existing hydrant lead at the north-west end of the existing on site watermain network is proposed to be rerouted around the new addition since it lays in the new addition's footprint. Additionally, the watermain stub on The Parkway is proposed to be extended to the north-east corner of the site to connect into the on-site network to provide redundancy. The addition's building service is proposed to connect to the on-site existing watermain. The new addition will be protected with an automatic fire protection system sprinkler system. The fire department connection is located near the main entrance of the existing school on the east side of the building.

No further changes are required to the existing City water distribution system to allow servicing for this property. The water entry room for the addition is located at the south-west corner of the building.

2.2 SYSTEM CONSTRAINTS AND BOUNDARY CONDITIONS

A boundary service request was submitted to the City of Ottawa and boundary conditions have been received and summarized below. A fire flow of 17,000 l/min (283 l/s) was estimated for the existing school with the proposed addition.

Table 2-1: Boundary Conditions at Connection 1

Boundary Condition Connection 1 – The Parkway (@ 92.9m)		
SCENARIO	Hydraulic Pressure (kPa / PSI)	Head (m)
Basic Day (MAX HGL)	376.5 / 54.6	131.3
Peak Hour (MIN HGL)	334.4 / 48.5	127.0
Max Day + Fire Flow	340.6 / 49.4	127.7

Table 2-2: Boundary Conditions at Connection 2

Boundary Condition Connection 2 – Campeau Dr. (@ 94.0m)		
SCENARIO	Hydraulic Pressure (kPa / PSI)	Head (m)
Basic Day (MAX HGL)	364.7 / 52.9	131.3
Peak Hour (MIN HGL)	323.4 / 46.9	127.0
Max Day + Fire Flow	328.9 / 47.7	127.6

2.3 CONFIRMATION OF ADEQUATE DOMESTIC SUPPLY AND PRESSURE

Water demands are based on Table 4.2 of the Ottawa Design Guidelines – Water Distribution. As previously noted, the development is considered as institutional development. A water demand calculation sheet is included in Appendix B, and the total water demands are summarized as follows:

	Proposed and Existing
Average Day	4.96 l/s
Maximum Day	7.44 l/s
Peak Hour	13.39 l/s

The 2010 City of Ottawa Water Distribution Guidelines stated that the preferred practice for design of a new distribution system is to have normal operating pressures range between 345 kPa (50 psi) and 552 kPa (80 psi) under maximum daily flow conditions. Other pressure criteria identified in the guidelines are as follows:

Minimum Pressure	Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi)
Fire Flow	During the period of maximum day demand, the system pressure shall not be less than 140 kPa (20 psi) during a fire flow event.
Maximum Pressure	Maximum pressure at any point in the distribution system in unoccupied areas shall not exceed 689 kPa (100 psi) as per the Water Distribution Guidelines. In accordance with the Ontario Building/Plumbing Code, the maximum pressure should not exceed 552 kPa (80 psi). Pressure reduction controls may be required for buildings where it is not possible/feasible to maintain the system pressure below 552 kPa.

Water pressure at municipal connections check:

Min. HGL @ Connection 1 – Pavement elevation = 127.0m – 93.33m = 33.67m = 330.11 kPa

Min. HGL @ Connection 2 – Pavement elevation = 127.0m – 94.46m = 32.54m = 319.03 kPa

Water pressure at building connection (at average day) check:

Max. HGL @ Connection 1 – Finished floor elevation = 131.3m – 94.11 = 37.19m = 364.62 kPa

Max. HGL @ Connection 2 – Finished floor elevation = 131.3m – 94.11 = 37.19m = 364.62 kPa

Water pressure at building connection (at max. hour demand) check:

Min. HGL @ Connection 1 – Finished floor elevation = 127.0m-94.11m = 32.89m = 322.46 kPa

Min. HGL @ Connection 2 – Finished floor elevation = 127.0m-94.11m = 32.89m = 322.46 kPa

Water pressure at building connection (at max. day + fire demand):

(Max Day + Fire) HGL @ Connection 1 - Finished floor elevation = 127.7m-94.11m = 33.59m = 329.32 kPa

(Max Day + Fire) HGL @ Connection 1 - Finished floor elevation = 127.6m-94.11m = 33.49m = 328.34 kPa

The minimum water pressure inside the building at the connection is determined with the minimum HGL condition, resulting in a pressure of 322.46 kPa which exceed the minimum requirement of 276 kPa per the guidelines.

Based on the on-site hydrant flow test, the residual pressures of both hydrants are 50 psi (the third hydrant can be assumed to have a similar residual pressure). Thus, the hydrants meet the requirements for minimum system pressure. The measured hydrant flow at 20 psi was 1624 gpm or 102.5 l/s which is greater than its maximum rating of 95 L/s. The second hydrant and third hydrant would therefore also be rated greater than 95 l/s.

2.4 CONFIRMATION OF ADEQUATE FIRE FLOW PROTECTION

The fire flow rate has been calculated using the Fire Underwriters Survey (FUS) method. The method takes into account the type of building construction, the building occupancy, the use of sprinklers and the exposures to adjacent structures.

Based on architect correspondence, it was determined that the original school did not have sprinkler protection, however, the previous addition to the south and the new addition to the north have full sprinkler coverage. Therefore, for the entire school, assuming non-combustible construction and a fully supervised sprinkler system (with partial coverage by area), a fire flow demand of 17,000 l/min (283 l/s) has been calculated. A copy of the FUS calculations is included in Appendix B.

The demand of 17,000 l/min for the school and the addition can be delivered through three existing on-site private fire hydrants. As per above, the three existing hydrants can provide up to 95 l/s with a combined total of 285 l/s which is greater than the FUS demand. There is also an existing municipal fire hydrant within the Campeau Drive ROW south of the school site which can provide additional fire protection. Therefore, the existing watermain system has adequate capacity to service the existing building and the new addition.

Furthermore, creating a looping between Campeau Drive and the Parkway via the existing on-site watermain will increase the safety factor for fire protection and provide redundancy for both domestic and fire supply as per City of Ottawa water distribution guidelines where average daily demand exceeds 50m³/day.

2.5 CHECK OF HIGH PRESSURE

High pressure is not a concern. The maximum water pressure inside the building at the connection is determined with the maximum HGL condition, resulting in a pressure of 364.62 kPa which is less than the 552 kPa threshold in the guideline in which pressure control is required. Based on this result, pressure control is not required for this building.

2.6 PHASING CONSTRAINTS

No development phasing constraint has been detailed for the site.

2.7 RELIABILITY REQUIREMENTS

A shut off valve is provided for the private watermain at the property line in the north-east corner of the. An additional shut off valve has been provided on the domestic service connecting to the addition.

2.8 NEED FOR PRESSURE ZONE BOUNDARY MODIFICATION

There is no need for a pressure zone boundary modification.

2.9 CAPABILITY OF MAJOR INFRASTRUCTURE TO SUPPLY SUFFICIENT WATER

The capability of the major infrastructure to supply sufficient water is confirmed.

2.10 DESCRIPTION OF PROPOSED WATER DISTRIBUTION NETWORK

The existing on-site network is proposed to be connected to the municipal watermain on The Parkway to provide redundancy. The existing hydrant lead at the north end of the network is proposed to be rerouted around the new addition. A new fire protection service connecting to the existing on-site watermain is proposed to connect to the new addition.

2.11 OFF-SITE REQUIREMENTS

The existing watermain stub in The Parkway right-of-way is proposed to be extended approximately 75m to the north-east corner of the subject site in order to connect to the proposed private watermain network and provide redundancy.

No other off-site improvements to watermains, feedermains, pumping stations, or other water infrastructure are required to maintain existing conditions and service the adjacent developments.

2.12 CALCULATION OF WATER DEMANDS

Water demands were calculated as described in Sections 2.3 and 2.4 above.

3 WASTEWATER DISPOSAL

3.1 DESIGN CRITERIA

In accordance with the City of Ottawa's Sewer Design Guidelines, the following design criteria have been utilized in order to predict wastewater flows generated by the subject site and complete the sewer design;

- Minimum Velocity 0.6 m/s
- Maximum Velocity 3.0 m/s
- Manning Roughness Coefficient 0.013
- Total est. hectares institutional use 0.765
- Average sanitary flow for institutional use 70 L/student/day (assume 10h day)
- Commercial/Institutional Peaking Factor 1.5
- Infiltration Allowance (Total) 0.33 L/Ha/s
- Minimum Sewer Slopes – 200 mm diameter 0.32%

The area of 0.766 ha represents the redevelopment area for the addition. This is the sanitary collection area that is being considered to contribute to the proposed 200mm sanitary service connection to the municipal sanitary sewer.

3.2 CONSISTENCY WITH MASTER SERVICING STUDY

The outlet for the sanitary service from the proposed addition is the extended 200 mm diameter municipal sewer at the north-east corner of the site on The Parkway. The Ottawa Sewer Design Guidelines provide estimates of sewage flows based on institutional development.

The criteria to determine anticipated actual peak flow based on site used as described in Ottawa Sewer Design Guidelines Appendix 4-A are as follows;

For the school addition:

- Institutional 70 L/student/day = 0.0019 L/student/s (assume 10h day)
- Peak flow = (0.0019 L/student/s x 100 students x 1.5 peaking factor) + 0.33 l/Ha/s x 0.766 ha = 0.54 L/s

3.3 REVIEW OF SOIL CONDITIONS

There are no specific local subsurface conditions that suggest the need for a higher extraneous flow allowance. Soil conditions have been reviewed by Exp Services Inc. Bedding and backfill will be provided as recommended, conventional sewer materials will be utilized, and dewatering will be undertaken as necessary in accordance with the geotechnical recommendations and conditions encountered. The geotechnical report indicates that groundwater table was observed to be between 93.0m and 91.7m (1.6m to 2.2m depths). Therefore, groundwater dewatering may be required for excavations as per the recommendations in the geotechnical report.

3.4 DESCRIPTION OF EXISTING SANITARY SEWER

The outlet sanitary sewer for the addition will be the 200mm sanitary sewer in The Parkway right-of-way. This sewer is proposed to be extended to the north-east corner of the site to service the addition. The flows in this sewer will be ultimately conveyed to the wastewater treatment facility.

3.5 VERIFICATION OF AVAILABLE CAPACITY IN DOWNSTREAM SEWER

The existing sanitary sewer within The Parkway right-of-way is a 200 mm diameter sewer at a slope of 0.86%. This size and slope of sewer provides a capacity of 31.7 L/s.

Since the flow from the study area is only 0.54 l/s, the additional flow should have negligible impact on the capacity of the existing sewer system.

3.6 CALCULATIONS FOR NEW SANITARY SEWER

The new sanitary service from the site is a 200 mm diameter sewer at a minimum slope of 0.65%. This size and slope of sewer provides a capacity of 26.4 L/s.

For the 0.766 ha study area, the sanitary peak flow is calculated at 0.29 l/s with an infiltration flow of 0.25 l/s (based on a peak extraneous flow of 0.33 l/s/ha) for a total flow of 0.54 l/s. Both the proposed sanitary on-site and municipal sewers have adequate capacity to convey this flow.

3.7 DESCRIPTION OF PROPOSED SEWER NETWORK

The proposed sanitary sewer network on site will consist of a 200mm sanitary network and three 1200mm maintenance holes. The proposed sanitary sewer within The Parkway right-of-way will consist of one manhole and a 200mm sanitary sewer that will extend the existing municipal sanitary network to the north-east corner of the site

3.8 ENVIRONMENTAL CONSTRAINTS

There are no previously identified environmental constraints that impact the sanitary servicing design in order to preserve the physical condition of watercourses, vegetation, or soil cover, or to manage water quantity or quality.

3.9 PUMPING REQUIREMENTS

The proposed development will have no impact on existing pumping stations and will not require new pumping facilities.

3.10 FORCEMAINS

There are no sanitary forcemains proposed on this site.

3.11 EMERGENCY OVERFLOWS FROM SANITARY PUMPING STATIONS

No sanitary pumping stations are proposed on this site.

3.12 SPECIAL CONSIDERATIONS

There is no known need for special considerations for sanitary sewer design related to existing site conditions.

4 SITE STORM SERVICING

4.1 EXISTING CONDITION

The subject site is located at 4 The parkway on pre-developed institutional land with an existing high school. An existing on-site storm sewer network captures most of the generated runoff which is then directed south towards the 1050 mm trunk sewer crossing Campeau Drive. This sewer directs stormwater to a City of Ottawa stormwater management facility west of March Road and north of highway 417 before eventually discharging to Watts Creek and the Ottawa River. There is also a 600 mm storm sewer running along The Parkway which conveys stormwater to a separate stormwater management system but also eventually discharges to Watts Creek and eventually, the Ottawa River. The storm sewer along The Parkway is proposed to service the stormwater runoff for the new addition.

The pre-development release rate from the 0.766 ha study area was to be 110.90 l/s for the 5-year event and 190.10 l/s for the 100-year event.

4.2 ANALYSIS OF AVAILABLE CAPACITY IN PUBLIC INFRASTRUCTURE

As the allowable release rate from the site will be unchanged and was determined in conjunction with the design of the public infrastructure, there are no concerns related to the adequacy and available capacity of the downstream network. Capacity in the minor system is not a concern.

4.3 DRAINAGE DRAWING

Drawings C05A and C05B show the detailed site sewer network. Drawings C04A and C04B provide the proposed grading, drainage and existing grading information. Drawing C08 provides the existing drainage sub-area plan. In this drawing, areas EX-3 and EX-4 delineate the drainage area design as per the Servicing and Stormwater Management Report for Earl of March High School Addition (prepared 2013). The area of study and redevelopment (area EX-A1) has been delineated based on the boundary of area EX-3 and the existing grading such that uncontrolled direct runoff is minimized and all the flow within area EX-A1 can be captured by a new proposed storm network.

Drawing C09 and C10 provides a post-construction drainage sub-area plan, including both site and roof information, respectively. Drainage patterns and storm sewer networks outside of this study area are to remain per their existing condition. Site sub-area information is also provided on the storm sewer design sheet attached in Appendix C. Overall grading and servicing plans have also been attached to Appendix C for reference.

4.4 WATER QUANTITY CONTROL OBJECTIVE

The water quantity objective for the study area is to limit the generated post-development 100-year runoff to the pre-development 5-year conditions. Based on the guidelines provided during the pre-consultation meeting, a pre-development runoff was calculated using the lesser of a runoff coefficient of 0.5 or the pre-existing runoff coefficient. The pre-existing runoff coefficient for the study area was calculated to be 0.59, thus 0.5 was used for the runoff coefficient. The pre-development 5-year release rate for the 0.766 ha study area was found to be 110.9 /s.

Excess flows above this limit for the study area up to those generated by the 100-year storm event are temporarily stored on site. All flows exceeding the defined minor system capacity and on-site storage capability will enter the major system, with overflow to the City right of way, on the north access of the site, to The Parkway.

Stormwater storage calculations are shown in Section 4.10 of this report. Detention stormwater storage is proposed on the school roof and on ground surface (refer to Appendix C).

4.5 WATER QUALITY CONTROL OBJECTIVE

The on-site quality control objective is to provide enhanced protection (minimum 80% TSS removal) prior to releasing flows from the site's paved areas. For this site, an EFO4 unit has been sized to meet the quality control requirements. See Appendix C for EFO4 details.

4.6 DESIGN CRITERIA

The stormwater system was designed following the principles of dual drainage, making accommodation for both major and minor flow.

Some of the key criteria include the following:

• Design Storm (minor system)	1:5-year return (Ottawa)
• Rational Method Sewer Sizing	
• Initial Time of Concentration	10 minutes
• Runoff Coefficients	
Landscaped Areas	C = 0.20
Asphalt/Concrete	C = 0.90
Traditional Roof	C = 0.90
• Pipe Velocities	0.80 m/s to 6.0 m/s
• Minimum Pipe Size	250 mm diameter (200 mm CB Leads and service pipes)

4.7 PROPOSED MINOR SYSTEM

The existing storm sewer network for the school will be maintained and continue to discharge to the municipal network on Campeau Drive. A new minor system is proposed for the addition and the subject study area which will convey flow to the north of the site to the 600 mm storm sewer in The Parkway. The new sewer system consists of a series of manholes, catchbasins, and storm sewers leading to the proposed outlet manhole (STMH 100) along the municipal 600 mm sewer in The Parkway. Most of the subject site area will be drained to this new storm sewer system.

It is also customary for larger buildings to be provided with piped storm services for roof and foundation drainage. The roof drains and the foundation drain for the proposed addition are connected to the proposed storm sewer such that flows from these areas into the municipal sewer are conveyed in an uncontrolled capacity, ensuring an unobstructed flow for the roof.

Using the above noted criteria, the proposed on-site storm sewers were sized accordingly. A detailed storm sewer design sheet and the associated post development storm sewer drainage area plan are included in Appendix C.

4.8 STORMWATER MANAGEMENT

The study area is proposed to be limited to a total post-development release rate of 103.9 l/s (allowable release rate was determined to be 110.90 l/s), which is achieved through an inlet control device (located within CBMH 102) and controlled roof drains.

Flows generated that are in excess of the site's allowable release rate will be stored on site in surface storage areas or by the use of roof top storage and gradually released into the minor system so as not to exceed the site's allocation.

The maximum surface retention depth of the developed areas will be limited to maximum 350mm during a 1:100 year event. The maximum ponding elevation has been designed to be 93.79m as determined by the overland flow elevation, which is well below the building ground floor level of 94.11m.

No surface ponding will occur during a 5-year event.

Overland flow routes will be provided in the grading to permit emergency overland flow from the site. The overflow routes will eliminate any increase in ponding depth for events exceeding 100 years.

At certain locations within the study area, the opportunity to store runoff is limited due to grading constraints. These locations are located at the perimeter of the site where it is necessary to tie into existing grades, and it is not always feasible to capture or store stormwater runoff. The runoff from these areas will be uncontrolled and be released as direct runoff.

The site grading and ponding has been designed to control water generated during the 1:100-year event, with no overflow leaving the site at this control level. Please refer to the SWM Calculations in Appendix C.

4.9 INLET CONTROLS

As noted in Section 4.8, there is one inlet control device (ICD) located in CBMH 102. While the majority of the site is controlled by this ICD, a portion of the site consisting of catchment area A-3 will drain directly to the existing on-site storm network uncontrolled. The rooftop of the school addition (catchment area A-1) will be controlled to a release rate of 11.5 l/s (refer to Table 4-4).

Therefore, the release from the study area that is not controlled by an ICD can be determined as:

$Q_{(uncontrolled)}$	= 2.78 x C x I_{100yr} x A where:
C	= 0.99 (100-year weighted average post-development runoff coefficient)
I_{100yr}	= Intensity of 100-year storm event (mm/hr)
	= 1735.688/((Tc+6.014)^(0.82)); where T_c = 10 minutes
	= 178.56
A	= Area (hectares)
	= 0.025
$Q_{(uncontrolled, 100yr)}$	= 2.78 x 1.0 x 178.56 x 0.025
	= 12.40 l/s (rounded to nearest tenth decimal)

The ICD located in CBMH 102 controls the release rate from the remainder of the study area (catchment areas A-2a, A-2b, A-2c, and A-2d) to 80 l/s. Flow restrictions will cause the on-site catchbasin and catchbasin manholes to surcharge, generating surface ponding in the parking and landscaped areas. Ponding locations and elevations are summarized on the grading and drainage area plans. The proposed ICD dimensions are determined as:

Table 4-1: ICD Information

Structure	Head (m)	Flow Rate (l/s)	Orifice Type
CBMH 102	1.85	80	Orifice plate 168mm

Therefore, the total release rate from the study area is calculated to be 96.5 l/s and is within the limits of the maximum allowable release rate of 110.8 l/s from the site.

$$Q_{(release)} = Q_{(uncontrolled)} + Q_{(controlled)} + Q_{(roof)}$$

$$= 12.4 \text{ l/s} + 80 \text{ l/s} + 11.5 \text{ l/s}$$

$$= \mathbf{103.9\ L/s}$$

The controlled and uncontrolled areas can be summarized in the following table.

Table 4-2: Stormwater Management Release Rates and Storage Summary

	Catchment Area	Release Rate (l/s)	Required Ponding Volume (m^3)	Provided Ponding Volume (m^3)
Uncontrolled	A-3	12.4	N/A	N/A
Controlled	A-2a, A-2b, A-2c, A-2d	80	43.08	49.56
Roof	A-1	11.5	54.66	61.20
Total		103.9 l/s		
Maximum allowable flow rate		110.9 l/s		

4.10 ON-SITE DETENTION

Any excess storm water up to the 100-year event is to be stored on-site to prevent surcharging of the downstream municipal storm sewer system. Detention will be provided in parking and landscape areas and building rooftops, where feasible. As previously noted, the volume of storage is dependent on the characteristics of each individual drainage area. It should be noted that greater than 0.30 m of vertical separation has been provided from all maximum ponding elevations to lowest building openings.

For the catchment areas where stormwater ponding is controlled by the ICD located in CBMH 102, a total of 43.08m^3 of storage is required and 49.56m^3 of storage is provided.

For the rooftop, a total of 54.66m^3 of storage is required and 61.20m^3 of storage is provided with a maximum ponding depth of 150mm.

The following Table summarizes the on-site storage requirements during the 1:100-year events.

Table 4-3: On-Site Storage Requirements

Catchment Area	Outlet Location	Proposed Ponding Area (m^2)	Proposed Ponding Depth (m)	Proposed Ponding Volume (m^3)
A-2a	CB 01	46.30	0.09	1.39
A-2b	CBMH 100	98.30	0.14	4.59
A-2c	CBMH 101	139.30	0.14	6.50
A-2d	CBMH 102	383.61	0.29	37.08
TOTAL		667.51		49.56

Table 4-4: Roof Storage – School Addition

Roof Drain Area	Ponding Area (m^2)	Ponding Depth (m)	Theoretical Rooftop Storage Volume* (m^3)	Storage Volume Provided (m^3)	Maximum Flow Rate (l/s)
R1	190	0.15	9.5	7.6	1.3
R2	200	0.15	10.0	8.0	1.3
R3	240	0.15	12.0	9.6	1.3
R4	180	0.15	9.0	7.2	1.3
R5	200	0.15	10.0	8.0	1.3
R6	280	0.15	14.0	11.2	1.3
R7	200	0.15	10.0	8.0	1.3
R8	20	0.15	1.0	0.8	1.3
R9	20	0.15	1.0	0.8	1.3
TOTAL	2306.9			**61.2**	**11.5**

*Theoretical storage volume is reduced by 20% to account for rooftop equipment

In all instances, the required storage is met via surface ponding and roof ponding which retain the stormwater and discharge at the restricted flow rate to the sewer system. Refer to the grading plan for storage information.

4.11 WATERCOURSES

There will be no modification to watercourses as a result of this proposed site plan.

4.12 PRE AND POST DEVELOPMENT PEAK FLOW RATES

The study area has an allowable release rate of 110.9 l/s (5-year pre-development flow rate). The post-development 100-year peak flow rate has been designed to be 103.9 l/s which has been achieved through roof controls and on-site surface ponding.

4.13 DIVERSION OF DRAINAGE CATCHMENT AREAS

There will be no diversion of existing drainage catchment areas arising from the proposed work described in this report.

4.14 DOWNSTREAM CAPACITY WHERE QUANTITY CONTROL IS NOT PROPOSED

This checklist item is not applicable to this development as quantity control is provided.

4.15 IMPACTS TO RECEIVING WATERCOURSES

No significant negative impact is anticipated to downstream receiving watercourses due to proposed quantity and quality control measures

4.16 MUNICIPAL DRAINS AND RELATED APPROVALS

There are no municipal drains on the site or associated with the drainage from the site.

4.17 MEANS OF CONVEYANCE AND STORAGE CAPACITY

The means of flow conveyance and storage capacity are described in Sections 4.7, 4.8, 4.9 and 4.10 above.

4.18 HYDRAULIC ANALYSIS

Hydraulic calculations for the site storm sewers are provided in the storm sewer design sheet.

4.19 IDENTIFICATION OF FLOODPLAINS

There are no designated floodplains on the site of this development.

4.20 FILL CONSTRAINTS

There are no known fill constraints applicable to this site related to any floodplain. The site is generally being graded to be within 0.5m relative to existing conditions.

5 SEDIMENT AND EROSION CONTROL

5.1 GENERAL

During construction, existing storm sewer system can be exposed to sediment loadings. A number of construction techniques designed to reduce unnecessary construction sediment loadings will be used including;

- Silt sacks will remain on open surface structures such as manholes and catchbasins until these structures are commissioned and put into use;
- Installation of silt fence, where applicable, around the perimeter of the proposed work area;
- The installation of straw bales within existing drainage features surround the site;
- Bulkhead barriers will be installed in the outlet pipes;

During construction of the services, any trench dewatering using pumps will be fitted with a “filter sock.” Thus, any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filter sock as needed including sediment removal and disposal.

All catchbasins, and to a lesser degree, manholes, convey surface water to sewers. Consequently, until the surrounding surface has been completed, these structures will be covered to prevent sediment from entering the minor storm sewer system. These measures will stay in place and be maintained during construction and build-out until it is appropriate to remove them.

During construction of any development both imported and native soils are placed in stockpiles. Mitigative measures and proper management to prevent these materials entering the sewer system are needed.

During construction of the deeper watermains and sewers, imported granular bedding materials are temporarily stockpiled on site. These materials are however quickly used up and generally placed before any catchbasins are installed.

Refer to the Erosion and Sedimentation Control Plan C07A/C07B provided in Appendix D.

6 APPROVAL AND PERMIT REQUIREMENTS

6.1 GENERAL

The proposed development is subject to site plan approval and building permit approval.

No approvals related to municipal drains are required.

No permits or approvals are anticipated to be required from the Ontario Ministry of Transportation, National Capital Commission, Parks Canada, Public Works and Government Services Canada, or any other provincial or federal regulatory agency.

7 CONCLUSION CHECKLIST

7.1 CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the proposed development can meet all provided servicing constraints and associated requirements. It is recommended that this report be submitted to the City of Ottawa in support of the application for site plan approval.

7.2 COMMENTS RECEIVED FROM REVIEW AGENCIES

Phase 3 Pre-Consultation Review Feedback was received October 3rd, 2024. Comments were addressed in the 2nd version of the report submitted December 12th, 2024. This is the 2nd version of the report.

APPENDIX

A

- PRE-CONSULTATION MEETING NOTES
- ARCHITECTURAL SITE PLAN
- TOPOGRAPHICAL SURVEY PLAN
- MCCORMICK RANKIN/DME, PLAN AND PROFILE DRAWINGS

File No.: PC2024-0153

May 1, 2024
Engineering Comments Provided on May 21, 2024

Xu Feng
Edward J. Cuhaci and Associates Architects Inc.
Via email: xuf@cuhaci.com

Subject: **Pre-Consultation: Meeting Feedback**
Proposed Site Plan Application – 4 The Parkway

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on April 30, 2024.

Pre-Consultation Preliminary Assessment

1 ☐	**2** ☐	**3** ☒	**4** ☐	**5** ☐

One (1) indicates that considerable major revisions are required while five (5) suggests that the proposal appears to meet the City's key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 2 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to planningcirculations@ottawa.ca.

2. In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

3. Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

Supporting Information and Material Requirements

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies

1. You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

Planning

Comments:

1. Relevant Official Plan Policies

    a. 5.4 – Suburban Transect – generally characterized by Low- to Mid-density development. Provides an emphasis on regulating the maximum built form envelope, based on the context, that frames the public right of way.

    b. 3.4 – Designated Neighbourhood - low-rise development which is predominantly ground oriented.

2. Zoning – the property is currently zoned I1A. The I1A Zone permits the School use and the proposed addition appears to meet zoning minimums.

3. A Site Plan detailing all relevant Zoning provisions (zoning table showing required and proposed), requested amendments and proposal details will be required to support the Site Plan Amendment Application. The City of Ottawa Terms of Reference for a Site Plan can be found at Site Plan (ottawa.ca). Please ensure your plan includes all the required components. These details will be reviewed to determine whether the submission can proceed to formal application.

4. We would like for see some vegetation added to screen the new parking area from The Parkway Road.

Urban Design

Submission Requirements:

5. Urban Design Brief is required. Please see attached customized Terms of Reference to guide the preparation.

a. The Urban Design Brief should be structured by generally following the headings highlighted under Section 3 – Contents of these Terms of Reference.

6. Additional drawings and studies are required as shown on the ASPIL. Please follow the terms of references (Planning application submission information and materials | City of Ottawa) the prepare these drawings and studies. These include:
    1. Design Brief
    2. Site Plan
    3. Landscape Plan (Conceptual to show spacing for tree soil volume)
    4. Elevations

Comments on Preliminary Design:

7. Please prepare a short design brief to provide a description of the existing features of the site and proposed addition.
8. Staff is pleased to see the materiality of the addition. The masonry is appreciated.
9. Staff appreciates the improved pedestrian connections provided. Please ensure that walkway widths are provided on the site plan.
10. Please consider removing the 15 proposed parking spaces. If parking is required, please look for opportunities to screen parking with new tree planting.
11. Please discuss the “hierarchy” of building entrances along the front façade. If the existing entrance to the high school is to remain as the main entrance for visitors, please ensure that this is clear through signage placement as well as architecture of the proposed addition.
12. Please consider location for potential additional portables when considering building entrance locations on the side and rear of the addition.

Engineering

13. The Stormwater Management Criteria, for the subject site, is to be based on the following:
    SWM for the addition - Depending on the scope of hardscaping around the addition, if the rooftop is flat, only rooftop SWM will be required.

    1. **Water Quality Control**: provide enhanced levels of protection of 80% for total suspended solids removal if required.

    2. **Water Quantity Control**: In the absence of area specific SWM criteria please control post-development runoff from the subject site, up to and including the **100-year storm event**, to **a 5-year pre-development level**.

        1. The pre-development runoff coefficient will need to be determined as per existing conditions but in no case more than 0.5. **[If 0.5**

applies it needs to be clearly demonstrated in the report that the pre-development runoff coefficient is greater than 0.5].

2. The time of concentration (Tc) used to determine the pre-development condition should be calculated. Tc should not be less than 10 min. since IDF curves become unrealistic at less than 10 min; **Tc of 10 minutes shall be used for all post-development calculations.**

3. Any storm events greater than the established 5-year allowable release rate, up to and including the 100-year storm event, shall be detained on-site. For events greater than 100 years, spillage must be directed to a public ROW and not to neighboring private property.

3. Please provide a Pre-Development Drainage Area Plan to define the pre-development drainage areas/patterns. Existing drainage patterns shall be maintained and discussed as part of the proposed SWM solution.

4. Ponding Notes:
    1. 100-year spill elevation must be 300mm lower than any building opening or ramp.
    2. Demonstrate that the stress test spill elevation (100-year +20% event) does not spill onto any permanent structures.
    3. The maximum permissible ponding depth for the 100-year storm event is 350mm. No spilling to adjacent sites.
    4. Please note that as per Technical Bulletin PIEDTB-2016-01 section 8.3.11.1 (p.12 of 14) there shall be no surface ponding on private parking areas during the 2-year storm rainfall event. 100-year spill elevation must be 300mm lower than any building opening or ramp

5. Document how any foundation drainage system will be integrated into the servicing design and show the positive outlet on the plan. Foundation drainage is to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention. It is recommended that the foundation drainage system be drained by a sump pump connection to the storm sewer to minimize risk of basement flooding as it will provide the best protection from the uncontrolled sewer system compared to relying on the backwater valve.

6. Please note that the minimum orifice dia. for a plug style ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s in order to reduce the likelihood of plugging.

7. If rooftop control and storage is proposed as part of the SWM solutions, sufficient details (Cl. 8.3.8.4) shall be discussed and documented in the

report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the SWM system and not to the foundation drain system. Provide a Roof Drain Plan as part of the submission.

8. Dry ponds are only to be functional for events that are greater than the 2-year storm event, a freeboard of 0.3m between the 100-year HWL elevation and the emergency overflow elevation and to be designed with a maximum depth of 1.5m with 3:1 side slopes. An emergency overland flow route to an appropriate outlet (Rideau River) from the SWM facility needs to be designed.
9. **Underground Storage**: Please note that the Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.
    1. When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. **We therefore require that an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume.** Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate. In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modelers in the Water Resources Group. Regarding all proposed UG storage, ground water levels (and in particular HGW levels) will need to be reviewed to ensure that the proposed system does not become surcharged and thereby ineffective.
    2. Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleansing), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc. UG storage to provide actual 5- and 100-year event storage requirements.

14. Storm Sewer
    1. A 600mm dia. concrete storm sewer is available within The Parkway.

2. A storm sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) Monitoring Devices.

15. Water:

    1. A watermain extension will be required to connect to the existing 152 mm dia. PVC watermain (2006) within The Parkway for looping of the fire hydrants.
    2. Domestic water from the existing building can be extended into the addition with sufficient proof of demand capacity.
    3. Water Supply Redundancy: Residential buildings with a basic day demand greater than 50m3/day (0.57 L/s) or with 50+ units are required to be connected to a minimum of two water services, with each their own meter, separated by an isolation valve to avoid a vulnerable service area.
    4. Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the expected loads required by the proposed development, including calculations. Please provide the following information:
        1. Plan showing the proposed location of service(s).
        2. Type of development and the amount of fire flow required (L/min). Note: The OBC method can be used if the fire demand for the private property is less than 9,000 L/min. If the OBC fire demand reaches 9000 L/min, then the FUS method is to be used.
        3. Average daily demand: __L/s.
        4. Maximum daily demand: __L/s.
        5. Maximum hourly daily demand: __L/s.
        6. Note: Use Table 3-3 of the MOE Design Guidelines for Drinking-Water System to determine Maximum Day and Maximum Hour peaking factors for 0 to 500 persons and use Table 4.2 of the Ottawa Design Guidelines, Water Distribution for 501 to 3,000 persons.
    5. Please review Technical Bulletin ISTB-2018-02, maximum fire flow hydrant capacity is provided in Section 3 Table 1 of Appendix I. A hydrant coverage figure shall be provided and demonstrate there is adequate fire protection for the proposal.
    6. A Water Data Card will have to be submitted to size the water meter (if applicable).

7. Any proposed emergency route is to be to the satisfaction of Fire Services.

16. Vibration and settlement monitoring on Backbone Watermain

    1. A 914mm diameter backbone watermain is located on Teron Road. Please note if any blasting is proposed to occur within proximity to the backbone watermain, the applicant may be required to develop a Vibration and Settlement Monitoring Program to ensure the integrity of the nearby backbone watermain is maintained.

17. Sanitary Sewer

    1. A sanitary sewer extension will be required within the Parkway to connect to the existing 200 mm dia. PVC Sanitary sewer (2005) near the intersection of The Parkway and Callaghan Private.

    2. **We do not see any issues with sanitary capacity, but we would like to see the sanitary flow demand for the addition to confirm it.**

    3. Include correspondence from the Architect within the Appendix of the report confirming the number of residential units per building and a unit type breakdown for each of the buildings to support the calculated building populations.

    4. Please apply the wastewater design flow parameters in Technical Bulletin PIEDTB-2018-01.

    5. Sanitary sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) Monitoring Devices.

    6. A backwater valve is required on the sanitary service for protection.

    7. An Environmental Compliance Approval (ECA) for sanitary sewer extension within the Parkway will be required.

18. General Servicing

    1. Provide existing servicing information and the recommended location for the proposed connections. Services should ideally be grouped in a common trench to minimize the number of road cuts.

    2. Where servicing involves three or more service trenches, either a full road width or full lane width 40 mm asphalt overlay will be required, as per amended Road Activity By-Law 2003-445 and City Standard Detail Drawing R10. The extent of the overlay must be shown on the grading plan or a road reinstatement plan.

3. CCTV sewer inspection of city infrastructure is required to record pre and post construction conditions and ensure there is no damage to City Assets.

4. Existing buildings sewer laterals require a CCTV inspection and report to ensure existing services to be re-used are in good working order and meet current minimum size requirements.

5. Connections to trunk sewers, easement sewers and backbone watermains are typically not permitted.

6. Sewer connections to be made above the springline of the sewer main as per:

    1. Std Dwg S11.1 for flexible main sewers – connections made using approved tee or wye fittings.

    2. Std Dwg S11 (For rigid main sewers) – lateral must be less that 50% the diameter of the sewermain.

    3. Std Dwg S11 (For rigid main sewers) – lateral must be less that 50% the diameter of the sewermain.

    4. No submerged outlet connections.

19. Grading and Erosion

    1. Post-development site grading shall match existing property line grades in order to minimize disruption to the adjacent properties. A topographical plan of survey shall be provided as part of the submission and a note provided on the plans.

    2. Erosion and sediment control plan must be provided.

    3. Any portion of the subject property which is intended to be used for permanent or temporary snow storage shall be as shown on the approved site plan and grading plan. Snow storage shall not interfere with approved grading and drainage patters or servicing. Snow storage areas shall be setback from the property lines, foundations, fencing or landscaping a minimum of 1.5m. Snow storage areas shall not occupy driveways, aisles, required parking spaces or any portion of a road allowance. If snow is to be removed from the site, please indicate this on the plan(s).

    4. Street catch basins are not to be located at any proposed entrances.

    5. Depressed driveways are discouraged and are not allowed in sag locations. For other locations, the builder must ensure that the maximum

depth of flow on the street during the 100-year and stress test events will not spill onto the depressed driveway.

6. If Window wells are proposed, they are to be indirectly connected to the footing drains. A detail of window well with indirect connection is required, as is a note at window well location speaking to indirect connection.

20. Environmental

    1. A Phase I ESA is required to be completed in accordance with Ontario Regulation 153/04 in support of this development proposal to determine the potential for site contamination. Depending on the Phase I recommendations a Phase II ESA may be required.
    2. The Phase I ESA shall provide all the required Environmental Source Information as required by O. Reg. 153/04. ERIS records are available to public at a reasonable cost and need to be included in the ESA report to comply with O. Reg. 153/04 and the Official Plan. The City will not be in a position to approve the Phase I ESA without the inclusion of the ERIS reports.
    3. Official Plan: Section 10. Protection of Health and Safety (ottawa.ca)
    4. A remediation plan may be required as per the outcome of the Phase one study. If required, a complete Phase Two study with the remediation activities will need to be submitted for our review.

21. Environmental Compliance Approval

    1. The consultant shall apply for Environmental Compliance Approval (ECA) for extending the sanitary sewer in The Parkway @ their cost. The City will review and submit the application.
    2. A Form 1 will need to be completed by the consultant for watermain extension.
    3. Environmental Compliance Approval | Ontario.ca

22. Geotechnical

    1. A Geotechnical Study/Investigation shall be prepared in support of this development proposal.
    2. Reducing the groundwater level in this area can lead to potential damages to surrounding structures due to excessive differential settlements of the ground. The impact of groundwater lowering on adjacent properties needs to be discussed and investigated to ensure there will be no short term and long-term damages associated with lowering the groundwater in this area.

3. Geotechnical Study shall be consistent with the Geotechnical Investigation and Reporting Guidelines for Development Applications. Geotechnical Investigation and Reporting (ottawa.ca)

4. If Sensitive marine clay soils are present in this area that are susceptible to soil shrinkage that can lead to foundation and building damages. All six (6) conditions listed in the Tree Planting in Sensitive Marine Clay Soils-2017 Guidelines are required to be satisfied. Note that if the plasticity index of the soil is determined to be less than 40% a minimum separation between a street tree and the proposed building foundations of 4.5m will need to be achieved. A memorandum addressing the Tree in Clay Soil Guidelines prepared by a geotechnical engineer is required to be provided to the City. Tree Planting in Sensitive Marine Clay Soils - 2017 Guidelines (ottawa.ca)

23. Slope Stability Assessment Reports

1. A report addressing the stability of slopes, prepared by a qualified geotechnical engineer licensed in the Province of Ontario, should be provided wherever a site has slopes (existing or proposed) steeper than 5 horizontal to 1 vertical (i.e., 11 degree inclination from horizontal) and/or more than 2 meter in height.

2. A report is also required for sites having retaining walls greater than 1 meter high, that addresses the global stability of the proposed retaining walls.

3. Slope Stability Guidelines for Development Applications (ottawa.ca)

24. Exterior Site Lighting

1. Any proposed light fixtures (both pole-mounted and wall mounted) must be part of the approved Site Plan. All external light fixtures must meet the criteria for Full Cut-off Classification as recognized by the Illuminating Engineering Society of North America (IESNA or IES), and must result in minimal light spillage onto adjacent properties (as a guideline, 0.5 fc is normally the maximum allowable spillage). In order to satisfy these criteria, the please provide the City with a **Certification (Statement) Letter** from an acceptable professional engineer stating that the design is compliant.

25. General

1. It is the sole responsibility of the consultant to investigate the location of existing underground utilities in the proposed servicing area and submit a request for locates to avoid conflict(s). The location of existing utilities and services shall be documented on an **Existing Conditions Plan**.

2. Any easements on the subject site shall be identified and respected by any development proposal and shall adhere to the conditions identified in the easement agreement. A **legal survey plan** shall be provided, and all easements shall be shown on the engineering plans.
3. All underground and above ground building footprints and permanent walls need to be shown on the plans to confirm that any permanent structure does not extend either above or below into the existing property lines and sight triangles.
4. **Construction approach** – Please contact the Right-of-Ways Permit Office TMconstruction@ottawa.ca early in the Site Plan process to determine the ability to construct site and copy File Lead on this request.

Please refer to the City of Ottawa Guide to Preparing Studies and Plans [Engineering]: Planning application submission information and materials**. The guides on the City website specify all required information to be presented within the required documents.**

Feel free to contact Terenzo Giovannitti, Infrastructure Project Manager, for follow-up questions.

Noise

Comments:

1. Noise Impact Studies required for the following:
    a. Road, as the site is within proximity to The Parkway.
    b. Stationary, due to the proximity to neighboring exposed mechanical equipment and/or if there will be any exposed mechanical equipment due to the proximity to neighboring noise sensitive land uses.

Feel free to contact Josiane Gervais, TPM, for follow-up questions.

Transportation

Comments:

2. Follow Transportation Impact Assessment Guidelines:
    a. Note that the TIA guidelines have been updated to align with the new pre-application consultation process. The changes are available on the City's website: https://ottawa.ca/en/transportation-impact-assessment-guidelines#section-41824473-e537-4647-b516-dd528523f9fe
    b. A Transportation Impact Assessment is required. Please submit the Scoping report to josiane.gervais@ottawa.ca at your earliest convenience

or, at the latest, as part of the Phase 2 pre-con package. Should a Phase 2 pre-con be waived, the applicant is still responsible to submit the Scoping Report and must allow for a 14 day circulation period.

c. The Strategy Report must be submitted for review at the latest with the Phase 3 pre-con package. The applicant is still encouraged to submit the Strategy Repot to the TMP before submission of the Phase 3 pre-con package and allow for a 14 day circulation period.

d. If an RMA is required to support the proposed development, the functional plan and/or RMA plans must be submitted with the formal submission to deem complete. Request base mapping asap if RMA is required. Contact Engineering Services (https://ottawa.ca/en/city-hall/planning-and-development/engineering-services)

3. ROW Protection:

   a. Ensure that the development proposal complies with the Right-of-Way protection requirements of the Official Plan's Schedule C16.

   b. See Schedule C16 of the Official Plan.

   c. Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management.

   d. ROW must be unincumbered and conveyed at no cost to the City. Note that conveyance of the ROW/corner triangle will be required prior to registration of the SP agreement. Additional information on the conveyance process can be provided upon request.

4. TMP includes:

   a. Campeau widening (Network Concept)

   b. BRT along March Road (Affordable Network)

5. Nearby planned construction and infrastructure projects include:

   a. Campeau, New Road, Planned 1-2 years https://ottawa.ca/en/planning-development-and-construction/construction-and-infrastructure-projects#section-c02586f1-9271-4b10-82dc-adfa5593dcce

6. As the proposed site is institutional and for general public use, AODA legislation applies.

a. Ensure all crosswalks located internally on the site provide a TWSI at the depressed curb, per requirements of the Integrated Accessibility Standards Regulation under the AODA.

b. Clearly define accessible parking stalls and ensure they meet AODA standards (include an access aisle next to the parking stall and a pedestrian curb ramp at the end of the access aisle, as required).

c. Please consider using the City's Accessibility Design Standards, which provide a summary of AODA requirements. https://ottawa.ca/en/city-hall/creating-equal-inclusive-and-diverse-city/accessibility-services/accessibility-design-standards-features#accessibility-design-standards

7. On site plan:

a. Provide new sidewalk along The Parkway frontage.

b. Sidewalk is to be continuous across access as per City Specification 7.1.

c. Clearly show the bus route on site.

d. Ensure site accesses meet the City's Private Approach Bylaw.

e. Show all details of the roads abutting the site; include such items as pavement markings, accesses and/or sidewalks.

f. Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.

g. Turning movement diagrams required for internal movements (loading areas, garbage).

h. Show all curb radii measurements; ensure that all curb radii are reduced as much as possible and fall within TAC guidelines (Figure 8.5.1).

i. Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc.)

Feel free to contact Josiane Gervais, Transportation Project Manager, for follow-up questions.

Environment

Comments:

8. The school property at 4 Parkway (The) is within 30 m of a natural feature as per OP Schedule C11A.

9. Environmental Impact Study – Since the school building is further than the adjacency distance of 30 m and the proposal is for an addition which is attached to the school building and over 75 m from the natural feature, we can waive the requirement for an environmental impact study.

10. Bird-Safe Design Guidelines – Please review and incorporate bird safe design elements. Some of the risk factors include glass and related design traps such as corner glass and fly-through conditions, ventilation grates and open pipes, landscaping, light pollution. More guidance and solutions are available in the guidelines which can be found here: https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdf

11. Urban Heat Island - Please add features that reduce the urban heat island effect (see OP 10.3.3) produced by the parking lot and a building footprint. For example, this impact can be reduced by adding large canopy trees, green roofs or vegetation walls, or constructing the parking lot or building differently.

Feel free to contact Matthew Hayley, Environmental Planner, for follow-up questions.

Forestry

Comments:

12. It appears that the addition and parking area are located in an area with no trees, which is much appreciated. Please confirm that there are no trees in any of the areas of proposed work. If there are no trees existing, the required TCR may be waived.

13. The existing trees within the Parkway ROW must be retained and protected for the entire duration of construction, in accordance with the City's Tree Protection Specifications.

14. A permit is required prior to removal of any protected trees on site. The tree permit will be released upon site plan approval. Please contact the planner associated with the file or the Planning Forester, Nancy Young (Nancy.young@ottawa.ca) for information on obtaining the tree permit.

15. To ensure that no harm is caused to breeding birds, tree removal and vegetation clearing should be avoided during the migratory bird season (April 15 – August 15) as specified by The City of Ottawa's Environmental Impact Study Guidelines.

Landscape Plan Comments:

16. A Landscape Plan is required with this application and must address all requirements within the Landscape Plan Terms of Reference https://documents.ottawa.ca/sites/documents/files/landscape_tor_en.pdf ,

including the projection of canopy cover toward the target of 40%, and confirmation of adequate soil volumes to support any proposed trees.

17. Trees should be planted in areas to maximize benefits to students and staff at the school, to provide shade to the portables, pathway and parking areas. It is recommended to plant 1 tree for every 5 new parking spaces to limit the heat island effect.

18. The Landscape Plan must show the setback distances between proposed and existing trees to buildings and underground structures to ensure that both the above and below-ground space proposed is sufficient for tree planting in the Right of Way and other landscaped areas.

19. The Official Plan section 4.8.2, sub 3 provides the following direction related to tree planting related to site plans:

    a. Preserve and provide space for mature, healthy trees on private and public property, including the provision of adequate volumes of high-quality soil as recommended by a Landscape Architect;

    b. On urban properties subject to site plan control or community planning permits, development shall create tree planting areas within the site and in the adjacent boulevard, as applicable, that meet the soil volume requirements in any applicable City standards or best management practices or in accordance with the recommendation of a Landscape Architect;

Landscape Plan tree planting requirements:

20. The City recommends the following Best Management Practices to improve the climate change resiliency of new developments:

    a. For parking lots, provide 1 new tree for every 5 parking spaces to help cool the landscape of the site.

    b. Confirm sufficient Soil volumes to support canopy cover on site ($30m^3$ for street trees)

    c. Proposed species must not include invasive species and target a minimum of 50% native species

21. Minimum Setbacks

    a. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.

    b. Maintain 2.5m from curb

c. Coniferous species require a minimum 4.5m setback from curb, sidewalk or MUP/cycle track/pathway.

d. Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

22. Tree specifications

a. Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.

b. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage

c. Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and include watering and warranty as described in the specification (can be provided by Forestry Services).

d. Plant native trees whenever possible

e. No root barriers, dead-man anchor systems, or planters are permitted.

f. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

23. Hard surface planting

a. Curb style planter is highly recommended

b. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.

c. Trees are to be planted at grade

24. Soil Volume

a. Please document on the LP that adequate soil volumes can be met:

Tree Type/Size	Single Tree Soil Volume (m3)	Multiple Tree Soil Volume (m3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15

Large	30	18
Conifer	25	15

25. Sensitive Marine Clay

    a. Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines

Tree Canopy

26. The landscape plan shall show how the proposed tree planting will replace and increase canopy cover on the site over time, to support the City's 40% urban forest canopy cover target.

    At a site level, efforts shall be made to provide as much canopy cover as possible, through tree planting and tree retention, with an aim of 40% canopy cover at 40 years, as appropriate. Indicate on the plan the projected future canopy cover at 40 years for the site.

Feel free to contact Nancy Young (Nancy.young@ottawa.ca), Forester, for follow-up questions.

Parkland

Comments:

27. The amount of parkland dedication required is to be calculated as per the City of Ottawa Parkland Dedication By-law No. 2022-280.

28. This application would be exempt from parkland dedication under Section 11 – Exemptions 2(f) of the Parkland Dedication By-law 2022-280:

    Section 11 – Exemptions:

    2. No conveyance of land or payment of cash-in-lieu under this bylaw is required in the case of the development or redevelopment of:

    f. a college or university or a school as defined by subsection 1(1) of the Education Act, where the school provides for the students' outdoor recreational needs on-site at the time of development and maintains sufficient outdoor recreational space on-site at the time of redevelopment, all to the satisfaction of the General Manager;

29. Please note that the park comments are preliminary and will be finalized (and subject to change) upon receipt of the development application and any requested supporting documentation. Additionally, if the proposed land use

changes, then the parkland dedication requirement will be re-evaluated accordingly.

Feel free to contact Warren Bedford, Parks Planner, for follow-up questions.

Other

30. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design. The HPDS was passed by Council on April 13, 2022.

    a. At this time, the HPDS is not in effect and Council has referred the 2023 HPDS Update Report back to staff with direction to bring forward an updated report to Committee with recommendations for revised phasing timelines, resource requirements and associated amendments to the Site Plan Control By-law by no later than Q1 2024.

    b. Please refer to the HPDS information attached and ottawa.ca/HPDS for more information.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Yours Truly,
Katie Turk, Planner II, MCIP, RPP

Encl. SPIL
Urban Design Brief – Terms of Reference

c.c. Luke Teeft, Planner I
Lisa Stern, Urban Designer
Warren Bedford, Parks Planner
Josiane Gervais, TPM
Mathew Hayley, Environmental Planner
David Lacelle, OCDSB
Barry Boyd, OCDSB

PROPERTY LOCATION

LEGAL DESCRIPTION OF PROPERTY

PART OF LOT 3
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

SITE DATA

LOT AREA	97419 M SQ
EXISTING BUILDING AREA	13070 M SQ
ADDITION BUILDING AREA	1579 M SQ
TOTAL BUILDING AREA	14649 M SQ
LOT COVERAGE	15%

PARKING CALCULATIONS

MINIMUM PARKING REQUIREMENTS:
SECONDARY SCHOOL: 2 SPACES PER CLASSROOM
ELEMENTARY SCHOOL: 1.5 SPACES PER CLASSROOM

	USE	No. CLASS	SPACES PER	SPACES REQ'D
REQUIRED	EXISTING HIGH SCHOOL	50	2.0 / CLASS	100
	EXISTING ELEMENTARY	24	1.5 / CLASS	36
	EXISTING PORTABLES	12	2.0 / CLASS	24
	NEW SCHOOL ADDITION	25	2.0 / CLASS	50
	FUTURE PORTABLES	12	2.0 / CLASS	24
	TOTAL REQUIRED PARKING SPACES			234
	TOTAL REQUIRED PARKING SPACES FOR THE PHYSICALLY DISABLED			7

PROVIDED	EXISTING REGULAR	227
	EXISTING BARRIER FREE	5
	NEW REGULAR @ 5.2mD X 2.6mW	11
	NEW BARRIER FREE @ 5.2mD X 3.66mW	2
	TOTAL SPACES PROVIDED	245

BICYCLE PARKING CALCULATIONS

RATIO	1 PER 100m² OF GROSS FLOOR AREA

EXISTING BUILDING GROSS FL. AREA	13430.0 M SQ
NEW ADDITION GROSS FL. AREA	1973.0 M SQ
PORTABLE GROSS FL. AREA	840.0 M SQ
FUTURE GROSS FL. AREA	840.0 M SQ
TOTAL GROSS FLOOR AREA	17083.0 M SQ
TOTAL REQUIRED PARKING	171 PARKING SPOTS
NEW BICYCLE PARKING	36 PARKING SPOTS
EXISTING BICYCLE PARKING	180 PARKING SPOTS
TOTAL PROVIDED PARKING	216 PARKING SPOTS

CITY OF OTTAWA ZONING

REQUIRED			PROVIDED
MINOR INSTITUTIONAL ZONE: I1A			
LOT AREA	MIN.	400m²	97,419 SQ M
LOT WIDTH	MIN.	15.0m	374.3 M
BUILDING HEIGHT	MAX.	15.0m	9.5 M
FRONT YARD SETBACK	MIN.	7.5 M	51.5 M
REAR YARD SETBACK	MIN.	7.5 M	64.7 M
SIDE YARD SETBACK	MIN.	7.5 M	36.5 M
LANDSCAPE @ PARKING	MIN.	15%	20%

GENERAL NOTES

1. FOR SCHOOL SITE GRADING INFORMATION REFER TO SITE GRADING DRAWING AS PREPARED BY CIVIL ENGINEER.
2. FOR SOIL INVESTIGATION REPORT REFER TO GEOTECHNICAL REPORT.
3. ALL WORK OUTSIDE PROPERTY LINE TO BE CONSTRUCTED TO LOCAL MUNICIPALITY CONSTRUCTION STANDARDS.
4. RE-SOD ALL LANDSCAPING AREAS DISTURBED BY NEW CONSTRUCTION.
5. FOR SCHOOL SITE SERVICES REFER TO SITE SERVICE DRAWING PREPARED BY CIVIL ENGINEER.
6. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY ERRORS TO THE ARCHITECT. CONTRACTOR TO CO-ORDINATE WITH ALL DRAWINGS
7. FOR LANDSCAPING DESIGN REFER TO LANDSCAPING PLAN PREPARED BY LANDSCAPE ARCHITECT.
8. COORDINATE AND OBTAIN REQUIRED PERMITS FROM OTTAWA-MACDONALD CARTIER INTERNATIONAL AIRPORT AZR IN CONNECTION WITH THE ERECTION OF CONSTRUCTION EQUIPMENT SUCH AS BUT NOT LIMITED TO CONSTRUCTION CRANES.
9. NEW PARKING STALL SIZE: 2600mm x 5200mm
10. SLOPES OF CONCRETE/PAVING AT DEPRESSED CURBS SHALL NOT EXCEED 5%
11. FOR SITE SURVEY INFORMATION, SEE TOPOGRAPHIC SURVEY DRAWING PREPARED BY FARLEY, SMITH & DENIS SURVEYING LTD.

DRAWING LEGEND

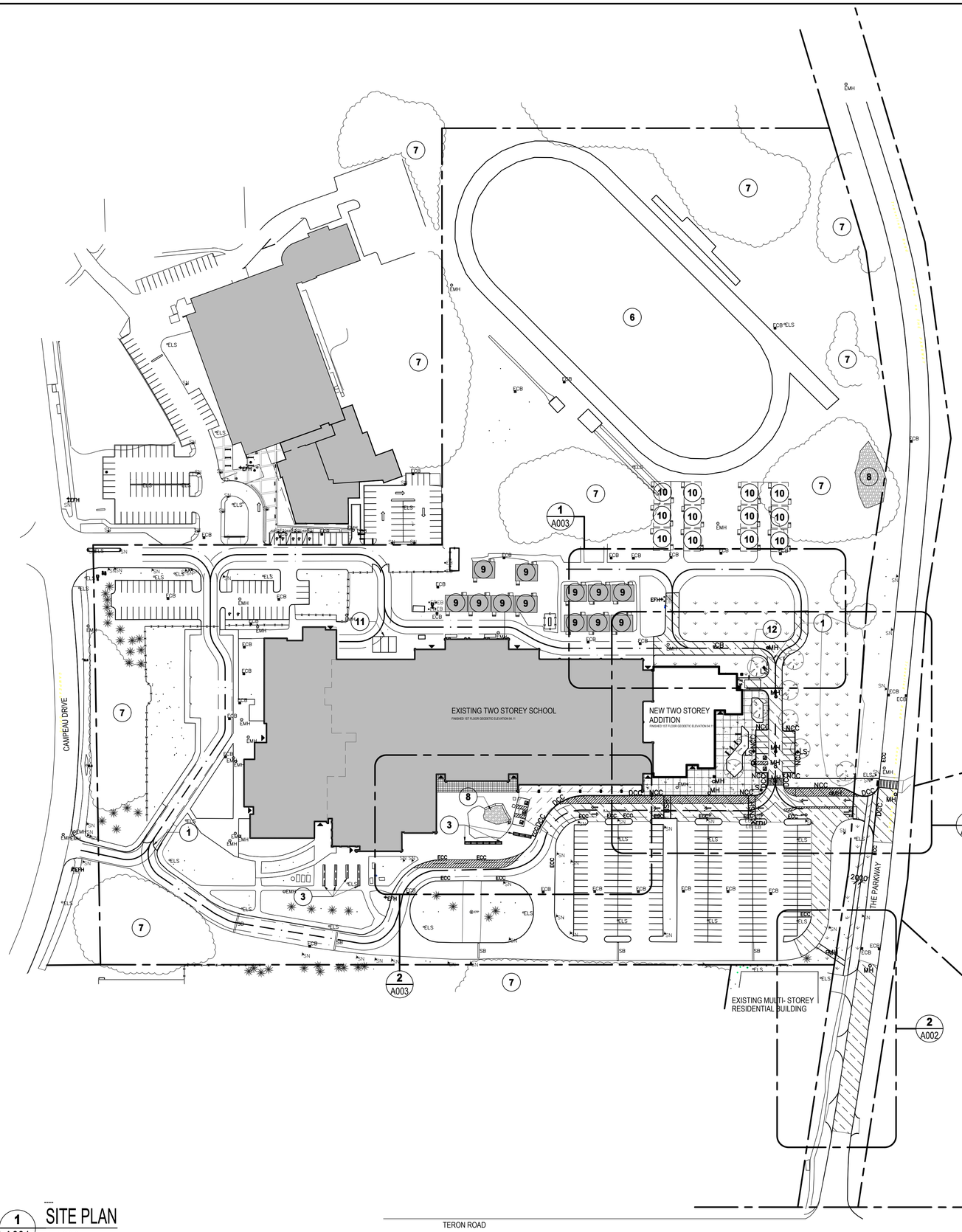
- BARRIER FREE PARKING
- BUILDING ENTRANCE/EXIT
- EXISTING BUILDING
- EXISTING INTERLOCK PAVERS
- EXISTING ASPHALT PAVING
- EXISTING CONCRETE WALKWAY
- NEW SOD AND TOPSOIL (REFER ALSO TO LANDSCAPE PLAN)
- NEW CONCRETE WALKWAY WITH CONTROL JOINTS
- NEW TYPE 1 ASPHALT – HEAVY DUTY (REFER TO SPEC.)
- NEW TYPE 2 ASPHALT – MEDIUM DUTY (REFER TO SPEC.)

- SB — EXISTING SPEED BUMPS TO REMAIN
- SN — EXISTING SIGN
- EB — EXISTING BOLLARD
- ECC — EXISTING CONCRETE CURB TO REMAIN
- EDC — EXISTING DEPRESSED CONCRETE CURB
- EFH — EXISTING FIRE HYDRANT
- NSH — NEW SPEED HUMPS
- NEW PAINTED PEDESTRIAN CROSSING
- NFR — NEW 'FIRE ROUTE' SIGN
- NBO — NEW 'NO ENTRY BUS ONLY' SIGN
- NB — NEW BOLLARD
- NCC — NEW CONCRETE CURB
- NDC — NEW DEPRESSED CONCRETE CURB
- NEW BICYCLE RACK
- EFP — EXISTING FLAG POLE
- ECB — EXISTING CATCH BASIN
- EUP — EXISTING UTILITY POLE
- ELS — EXISTING LIGHT STANDARD
- NLS — NEW PARKING LOT LIGHT STANDARD (REFER TO ELECTRICAL)
- GP — EXISTING GOAL POST
- EMH — EXISTING MAN HOLE
- MH — NEW MAN HOLE. REFER TO CIVIL
- CB — NEW CATCH BASIN. REFER TO CIVIL

- EXISTING FENCE
- PROPERTY LOT LINE
- PROPERTY SETBACK LINES
- FIRE ROUTE
- EXISTING TREE TO REMAIN, REFER TO LANDSCAPE DOCUMENTS
- EXISTING PORTABLE CLASSROOM
- FUTURE PORTABLE CLASSROOM
- NEW TREES – SEE LANDSCAPE DRAWINGS.

DRAWING NOTES

1. NEW GATE. REFER TO A004
2. EXISTING GATE.
3. EXISTING BICYCLE RACK.
4. NEW BICYCLE RACK.
5. EXISTING CHAINLINK FENCE.
6. EXISTING SPORTS FIELD AND RUNNING TRACK.
7. EXISTING WOODED AREA.
8. EXISTING ROCKY OUTCROP.
9. EXISTING PORTABLE CLASSROOM.
10. FUTURE PORTABLE CLASSROOM.
11. EXISTING LOADING SPACES.
12. NEW LOADING SPACES.



1 / A001 SITE PLAN
1:1000

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
1	0	2022/07/24	ISSUED FOR PAHSE 2 SITE PLAN CONTROL

TRUE NORTH | PLAN NORTH

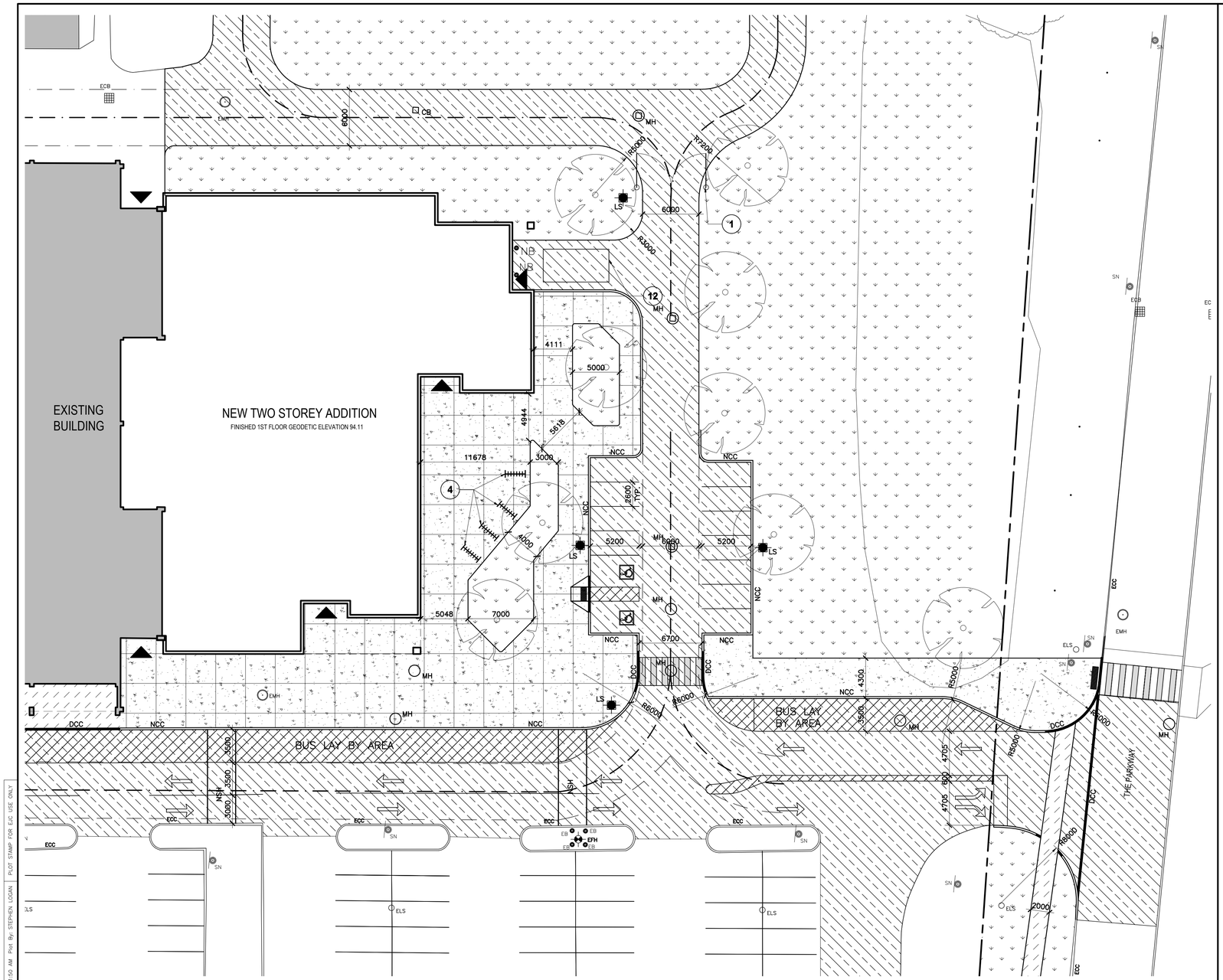
EDWARD J CUHACI & ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH SECONDARY SCHOOL ADDITION 2024
4 THE PARKWAY
KANATA, ON, K2K 1Y4

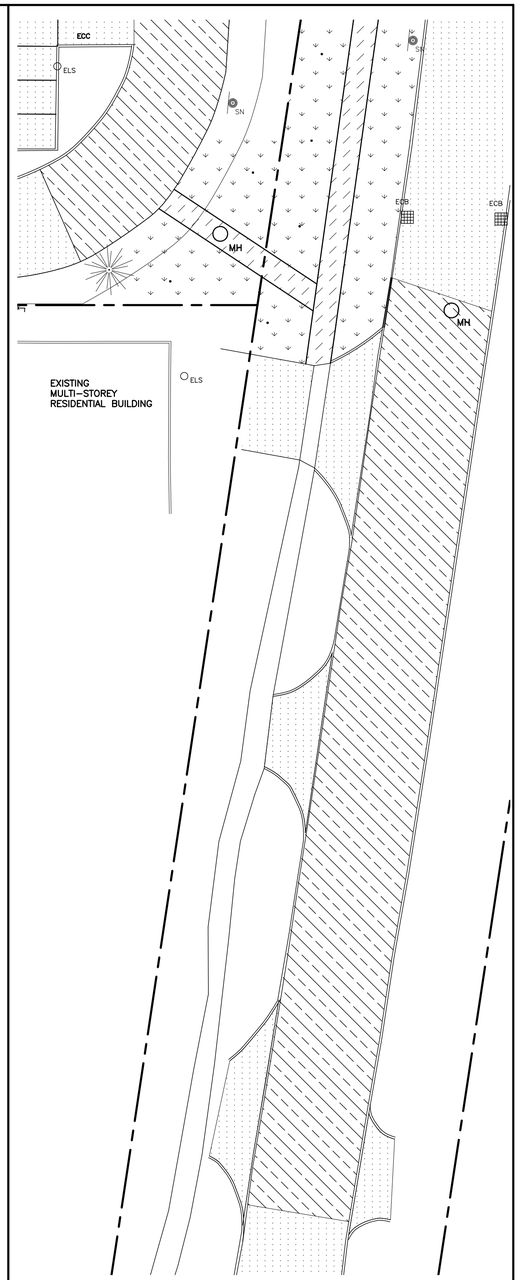
OTTAWA CARLETON DISTRICT SCHOOL BOARD
133 GREENBANK RD, OTTAWA

DRAWING TITLE/TITRE DU DESSIN
SITE PLAN

SCALE / ECHELLE	1:1000	PROJ. No 2411	ISSUE No 1 / REV. No 0
DRAWN BY / DESSINE PAR	AL/SL	DRAWING/DESSIN	A001
CHECKED BY / VERIFIE PAR	XF		
DATE	2024	ACAD FILE/FICHIER: 2411-A001.DWG	



1 A002 — PARTIAL SITE PLAN - NEW WORK
1:250



2 A002 — ASPHALT AND PATHWAY REINSTATEMENT
1:250

DRAWING LEGEND

- BARRIER FREE PARKING
- BUILDING ENTRANCE/EXIT
- EXISTING BUILDING
- EXISTING INTERLOCK PAVERS
- EXISTING ASPHALT PAVING
- EXISTING CONCRETE WALKWAY
- NEW SOD AND TOPSOIL (REFER ALSO TO LANDSCAPE PLAN)
- NEW CONCRETE WALKWAY WITH CONTROL JOINTS
- NEW TYPE 1 ASPHALT – HEAVY DUTY (REFER TO SPEC.)
- NEW TYPE 2 ASPHALT – MEDIUM DUTY (REFER TO SPEC.)
- SB EXISTING SPEED BUMPS TO REMAIN
- SN EXISTING SIGN
- EB EXISTING BOLLARD
- ECC EXISTING CONCRETE CURB TO REMAIN
- EDC EXISTING DEPRESSED CONCRETE CURB
- EFH EXISTING FIRE HYDRANT
- NSH NEW SPEED HUMPS
- NEW PAINTED PEDESTRIAN CROSSING
- NFR NEW "FIRE ROUTE" SIGN
- NBO NEW "NO ENTRY BUS ONLY" SIGN
- NB NEW BOLLARD
- NCC NEW CONCRETE CURB
- DCC NEW DEPRESSED CONCRETE CURB
- NEW BICYCLE RACK
- EFP EXISTING FLAG POLE
- ECB EXISTING CATCH BASIN
- EUP EXISTING UTILITY POLE
- ELS EXISTING LIGHT STANDARD
- NLS NEW PARKING LOT LIGHT STANDARD (REFER TO ELECTRICAL)
- GP EXISTING GOAL POST
- EMH EXISTING MAN HOLE
- MH NEW MAN HOLE. REFER TO CIVIL
- CB NEW CATCH BASIN. REFER TO CIVIL
- EXISTING FENCE
- PROPERTY LOT LINE
- PROPERTY SETBACK LINES
- FIRE ROUTE
- EXISTING TREE TO REMAIN, REFER TO LANDSCAPE
- EXISTING PORTABLE CLASSROOM
- FUTURE PORTABLE CLASSROOM
- NEW TREES – SEE LANDSCAPE DRAWINGS.

DRAWING NOTES

DRAWING NOTES CONTD'

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
1	0	2024/07/24	ISSUED FOR PHASE 2 SITE PLAN CONTROL

TRUE NORTH | PLAN NORTH

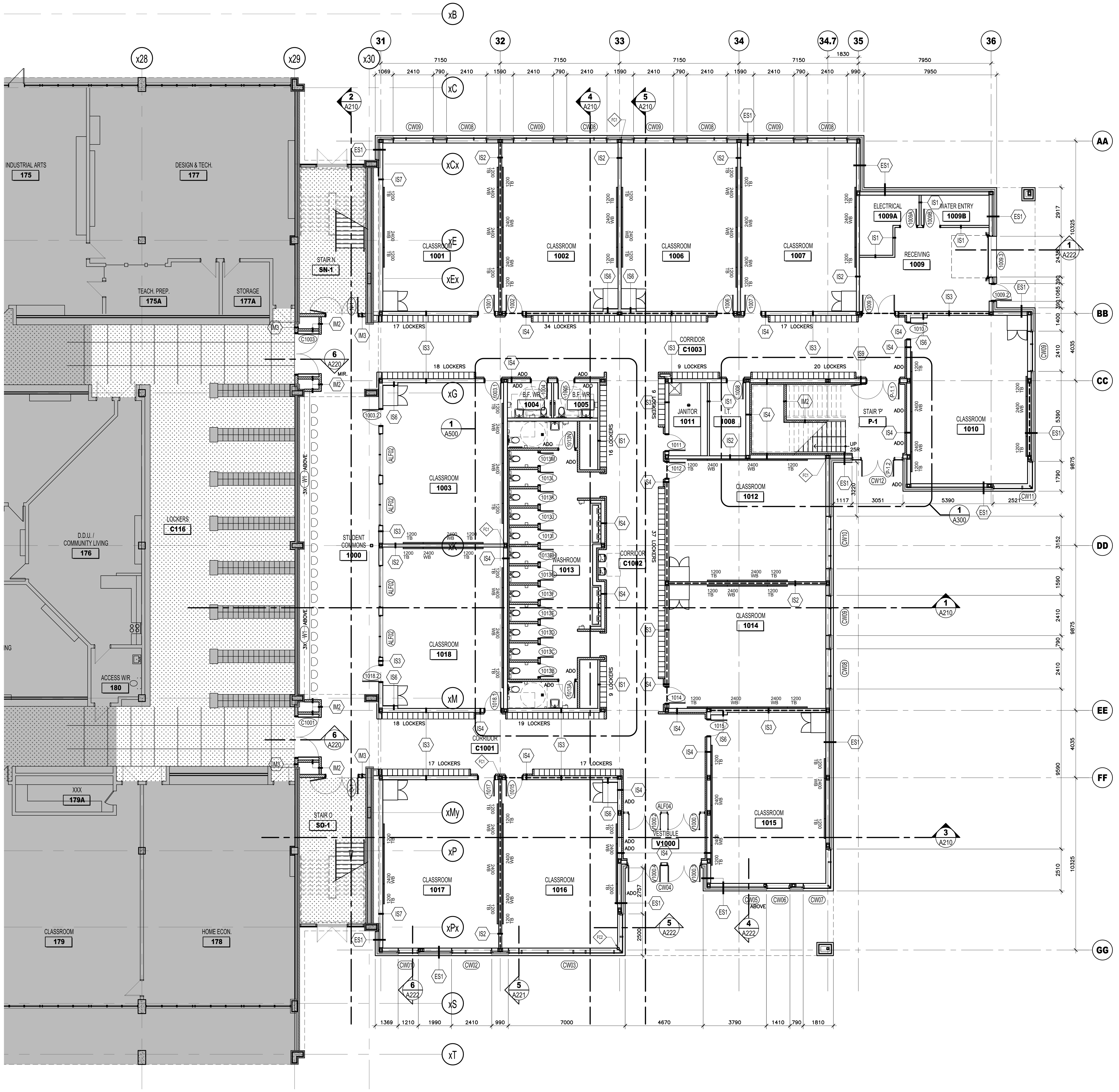
EDWARD J CUHACI & ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH SECONDARY SCHOOL ADDITION 2024
4 THE PARKWAY
KANATA, ON, K2K 1Y4

OTTAWA CARLETON DISTRICT SCHOOL BOARD
133 GREENBANK RD, OTTAWA

DRAWING TITLE/TITRE DU DESSIN
PARTIAL SITE PLAN

SCALE / ECHELLE	1:250	PROJ. No	ISSUE No	REV. No
		2411	1	0
DRAWN BY / DESSINE PAR	AL/SL	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	XF	A002		
DATE	2024	ACAD FILE/FICHIER: 2411-A002.DWG		



1 / A101 ADDITION GROUND FLOOR PLAN
1:100

OTTAWA–CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
1	0	2024/XX/XX	ISSUED FOR

TRUE NORTH | PLAN NORTH

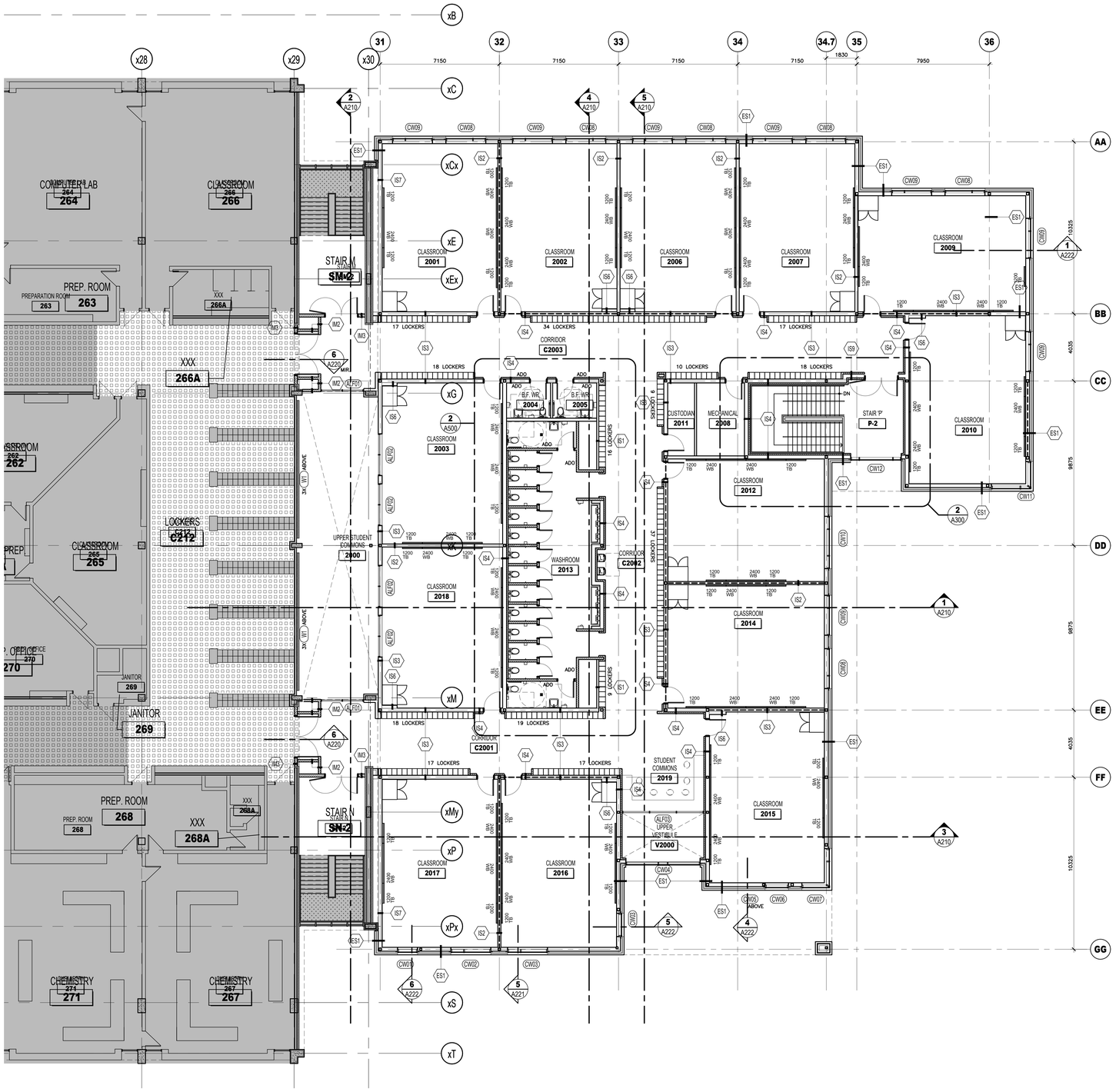
EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH SECONDARY SCHOOL ADDITION 2024
4 THE PARKWAY
KANATA, ON, K2K 1Y4

OTTAWA CARLETON DISTRICT SCHOOL BOARD
133 GREENBANK RD, OTTAWA

DRAWING TITLE/TITRE DU DESSIN
GROUND FLOOR ADDITION PLAN

SCALE / ECHELLE	AS SHOWN	PROJ. No 2411	ISSUE No 1	REV. No 0
DRAWN BY / DESSINE PAR	X.X.	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	XF	**A101**		
DATE	2023	ACAD FILE/FICHIER: 2411-A101.DWG		



1 A102 ADDITION SECOND FLOOR PLAN
1:100

OTTAWA–CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV NO.	DATE YY/MM/DD	ISSUE
1	0	2024/XX/XX	ISSUED FOR

TRUE NORTH | PLAN NORTH

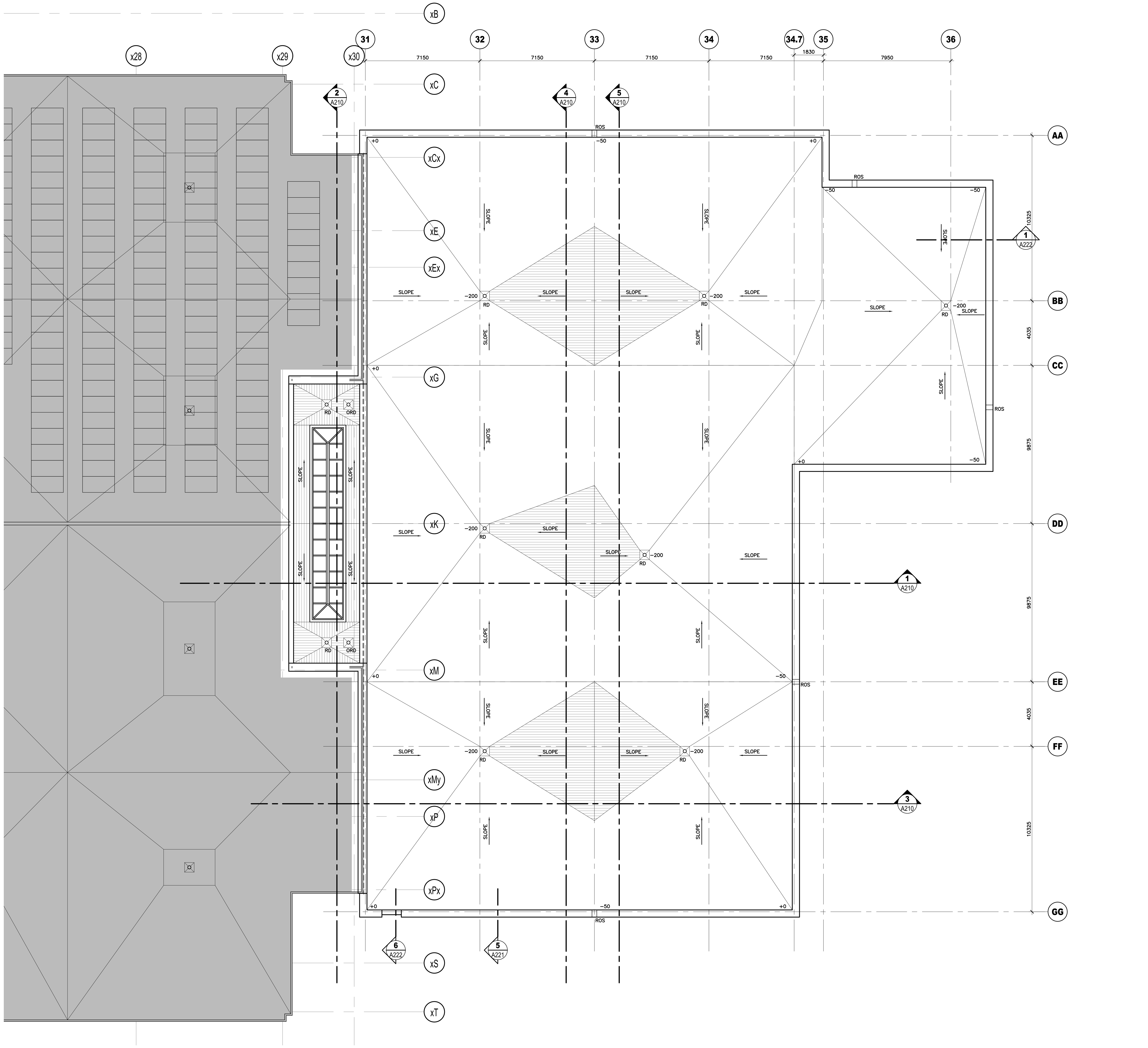
EDWARD J. CUHACI & ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH SECONDARY SCHOOL ADDITION 2024
4 THE PARKWAY
KANATA, ON, K2K 1Y4

OTTAWA CARLETON DISTRICT SCHOOL BOARD
133 GREENBANK RD, OTTAWA

DRAWING TITLE/TITRE DU DESSIN
SECOND FLOOR ADDITION PLAN

SCALE / ECHELLE	AS SHOWN	PROJ. No	ISSUE No	REV. No
		2411	1	0
DRAWN BY / DESSINE PAR	X.X.	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	XF	A102		
DATE	2023	ACAD FILE/FICHIER: 2411-A102.DWG		



1 A103 NEW ROOF PLAN
1:100

OTTAWA—CARLETON
DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
1	0	2024/XX/XX	ISSUED FOR

TRUE NORTH
PLAN NORTH

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

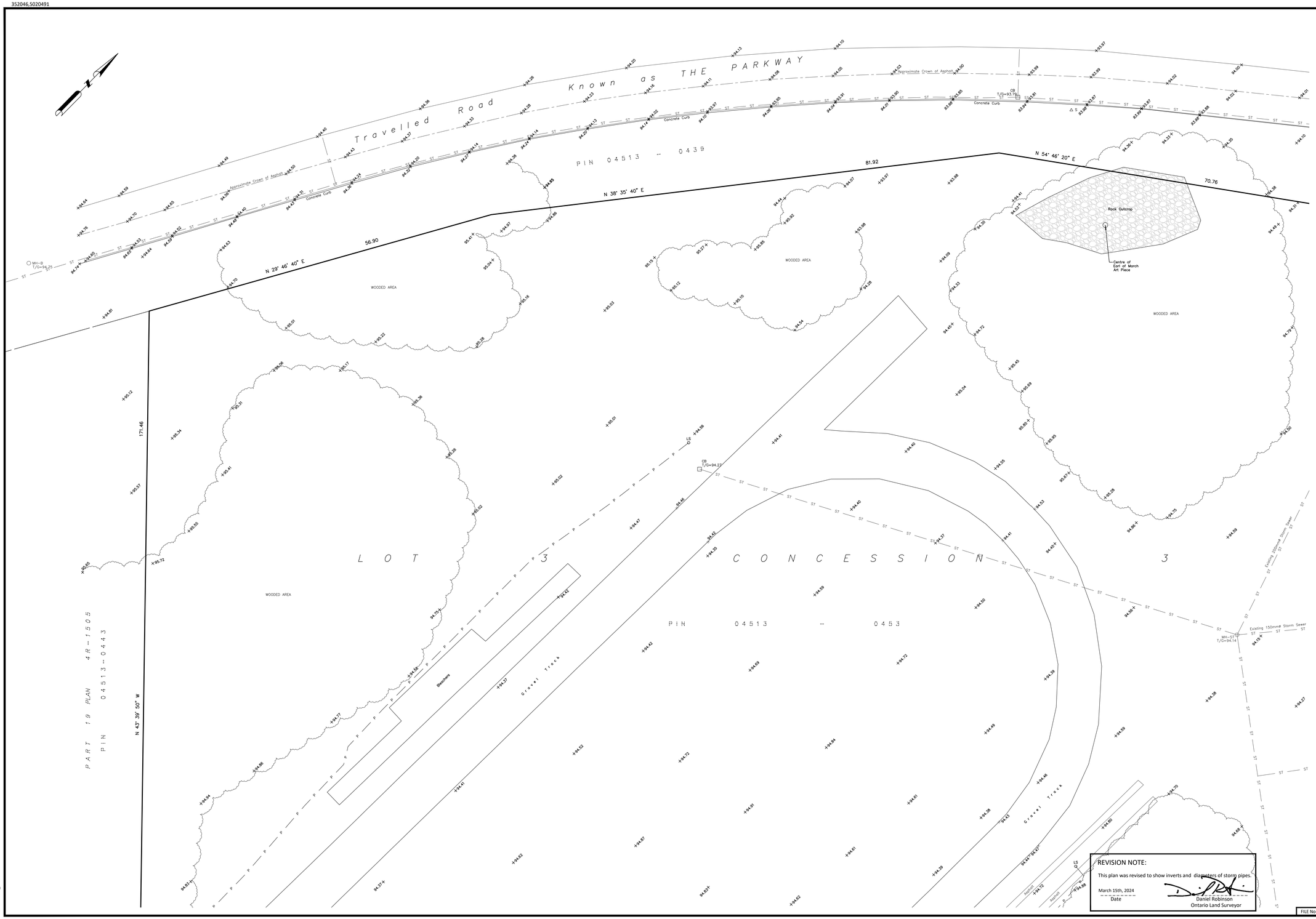
PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH SECONDARY SCHOOL ADDITION 2024
4 THE PARKWAY
KANATA, ON, K2K 1Y4

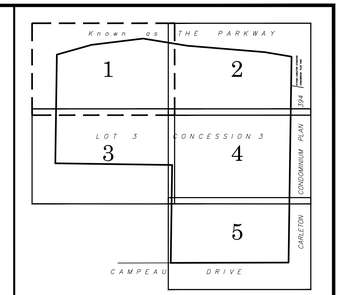
OTTAWA CARLETON DISTRICT SCHOOL BOARD
133 GREENBANK RD, OTTAWA

DRAWING TITLE/TITRE DU DESSIN
ROOF PLAN

SCALE / ECHELLE	AS SHOWN	PROJ. No 2411	ISSUE No 1	REV. No 0
DRAWN BY / DESSINE PAR	SL	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	XF	A103		
DATE	2023	ACAD FILE/FICHIER: 2411-A103.DWG		

352046,5020491





KEYMAP SCALE 1:4000

TOPOGRAPHIC SKETCH OF

SHEET 1 OF 5

PART OF LOT 3
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note
Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note
This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note
a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Notes & Legend

MH-ST	Denotes	Maintenance Hole (Storm)
MH-S	"	Maintenance Hole (Sanitary)
MH-B	"	Maintenance Hole (Bell)
MH-H	"	Maintenance Hole (Hydro)
MH-W	"	Maintenance Hole (Water)
MH	"	Maintenance Hole (Unidentified)
ST	"	Underground Storm Sewer
S	"	Underground Sanitary Sewer
W	"	Underground Water
P	"	Underground Hydro
G	"	Underground Gas
B	"	Underground Bell
FO	"	Underground Fibre Optic
OHW	"	Overhead Wires
UP	"	Utility Pole
AN	"	Anchor
LS	"	Light Standard
CB	"	Catch Basin
FH	"	Fire Hydrant
TB-C	"	Cable Terminal Box
TB-B	"	Bell Terminal Box
	"	Disabled Parking
H-T	"	Hydro Transformer
Inv.	"	Invert
T/G	"	Top of Grate
U/Eave	"	Underside of Eave
TpFdn	"	Top of Foundation
El	"	Elevation
C/L	"	Centreline
WV	"	Water Valve
GM	"	Gas Meter
B	"	Bollard
S	"	Sign
Ø	"	Diameter
SRW	"	Stone Retaining Wall
+ 65.00	"	Location of Elevations
+ *65.00*	"	Top of Concrete Curb / Retaining Wall Elevation
.	"	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol siol size depicted on this plan.
	"	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

TOPOGRAPHIC DATA WAS COLLECTED UNDER WINTER CONDITIONS. SNOW COVER AND ICE PRECLUDE DETERMINING LOCATION AND ELEVATION OF SOME TOPOGRAPHICAL DATA THAT IS OTHERWISE VISIBLE.

Fieldwork was completed on the 11th day of January, 2024.

January 17th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

REVISION NOTE:

This plan was revised to show inverts and diameters of storm pipes.

March 15th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

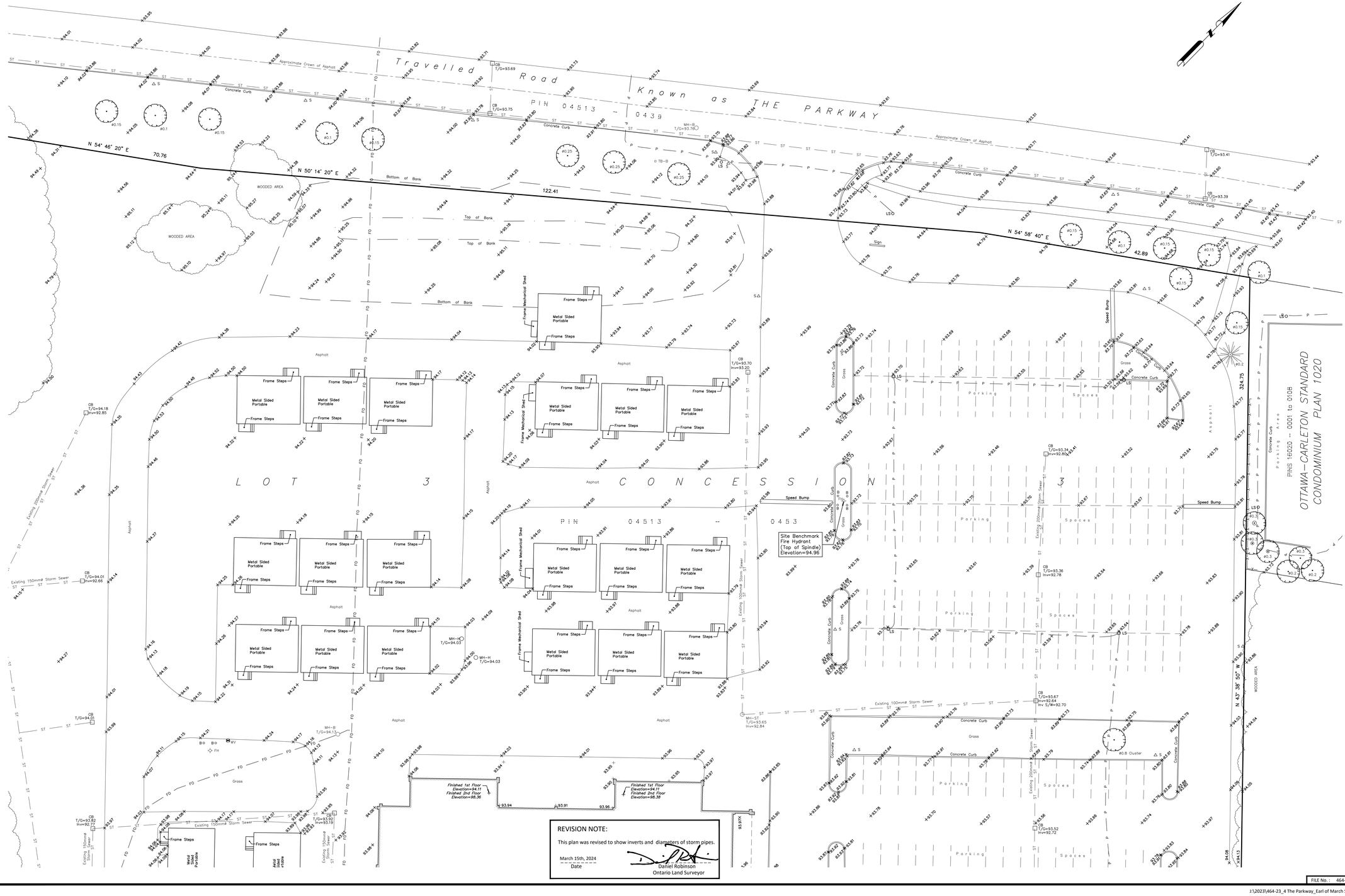
Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

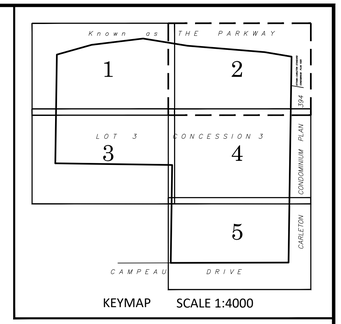
FILE No. : 464-23

TOPO 24X40_Sheet 1

J:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F2.dwg

352046,5020491





TOPOGRAPHIC SKETCH OF

SHEET 2 OF 5

PART OF LOT 3
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note
Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note
This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note
a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Notes & Legend

MH–ST	Denotes	Maintenance Hole (Storm)
MH–S	"	Maintenance Hole (Sanitary)
MH–B	"	Maintenance Hole (Bell)
MH–H	"	Maintenance Hole (Hydro)
MH–W	"	Maintenance Hole (Water)
MH	"	Maintenance Hole (Unidentified)
ST	"	Underground Storm Sewer
S	"	Underground Sanitary Sewer
W	"	Underground Water
P	"	Underground Hydro
G	"	Underground Gas
B	"	Underground Bell
FO	"	Underground Fibre Optic
OHW	"	Overhead Wires
UP	"	Utility Pole
AN	"	Anchor
LS	"	Light Standard
CB	"	Catch Basin
FH	"	Fire Hydrant
TB–C	"	Cable Terminal Box
TB–B	"	Bell Terminal Box
	"	Disabled Parking
H-T	"	Hydro Transformer
Inv.	"	Invert
T/G	"	Top of Grate
U/Eave	"	Underside of Eave
T/Pdn	"	Top of Foundation
El	"	Elevation
C/L	"	Centreline
WV	"	Water Valve
GM	"	Gas Meter
B	"	Bollard
S	"	Sign
Ø	"	Diameter
SRW	"	Stone Retaining Wall
+65.00	"	Location of Elevations
+65.00	"	Top of Concrete Curb / Retaining Wall Elevation
	"	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
	"	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

TOPOGRAPHIC DATA WAS COLLECTED UNDER WINTER CONDITIONS. SNOW COVER AND ICE PRECLUDE DETERMINING LOCATION AND ELEVATION OF SOME TOPOGRAPHICAL DATA THAT IS OTHERWISE VISIBLE.

Fieldwork was completed on the 11th day of January, 2024.

January 17th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

REVISION NOTE:

This plan was revised to show inverts and diameters of storm pipes.

March 15th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

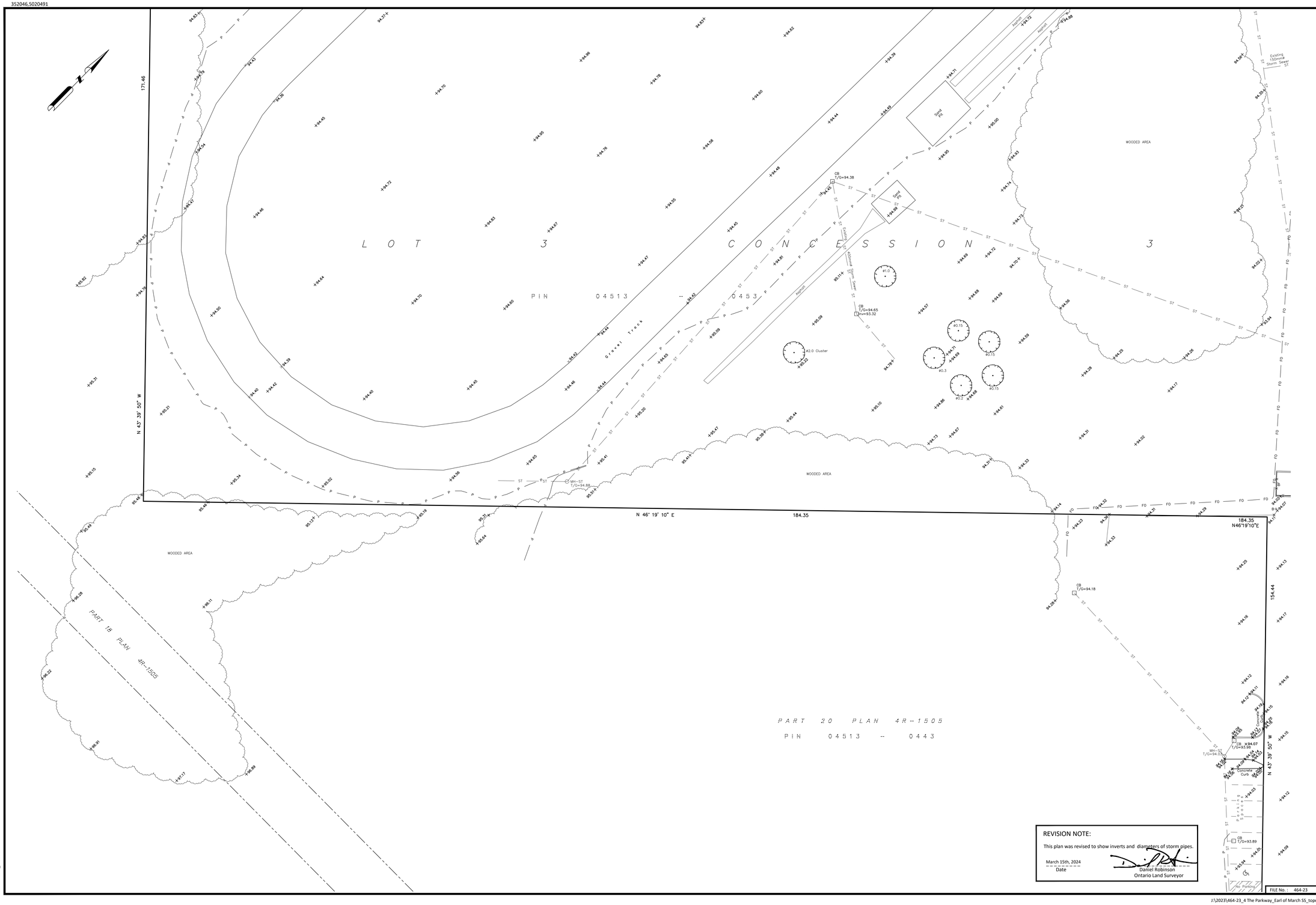
FILE No. : 464-23

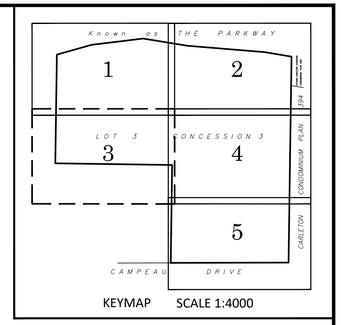
PINS 16020 -- 0001 to 0108
OTTAWA–CARLETON STANDARD CONDOMINIUM PLAN 1020

TOPO 24X40_Sheet 2

I:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F2.dwg

352046,5020491





TOPOGRAPHIC SKETCH OF

SHEET 3 OF 5

PART OF LOT 3 CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note
Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note
This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note
a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Notes & Legend

MH–ST	Denotes	=	Maintenance Hole (Storm)
MH–S		=	Maintenance Hole (Sanitary)
MH–B		=	Maintenance Hole (Bell)
MH–H		=	Maintenance Hole (Hydro)
MH–W		=	Maintenance Hole (Water)
MH		=	Maintenance Hole (Unidentified)
ST		=	Underground Storm Sewer
S		=	Underground Sanitary Sewer
W		=	Underground Water
P		=	Underground Hydro
G		=	Underground Gas
B		=	Underground Bell
FO		=	Underground Fibre Optic
OHW		=	Overhead Wires
UP		=	Utility Pole
AN		=	Anchor
LS		=	Light Standard
CB		=	Catch Basin
FH		=	Fire Hydrant
TB–C		=	Cable Terminal Box
TB–B		=	Bell Terminal Box
		=	Disabled Parking
H–T		=	Hydro Transformer
Inv.		=	Invert
T/G		=	Top of Grate
U/Eave		=	Underside of Eave
TpFdn		=	Top of Foundation
El		=	Elevation
C/L		=	Centreline
WV		=	Water Valve
GM		=	Gas Meter
B		=	Bollard
S		=	Sign
Ø		=	Diameter
SRW		=	Stone Retaining Wall
+65.00		=	Location of Elevations
+65.00		=	Top of Concrete Curb / Retaining Wall Elevation
		=	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
		=	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

TOPOGRAPHIC DATA WAS COLLECTED UNDER WINTER CONDITIONS. SNOW COVER AND ICE PRECLUDE DETERMINING LOCATION AND ELEVATION OF SOME TOPOGRAPHICAL DATA THAT IS OTHERWISE VISIBLE.

Fieldwork was completed on the 11th day of January, 2024.

January 17th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

REVISION NOTE:

This plan was revised to show inverts and diameters of storm pipes.

March 15th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

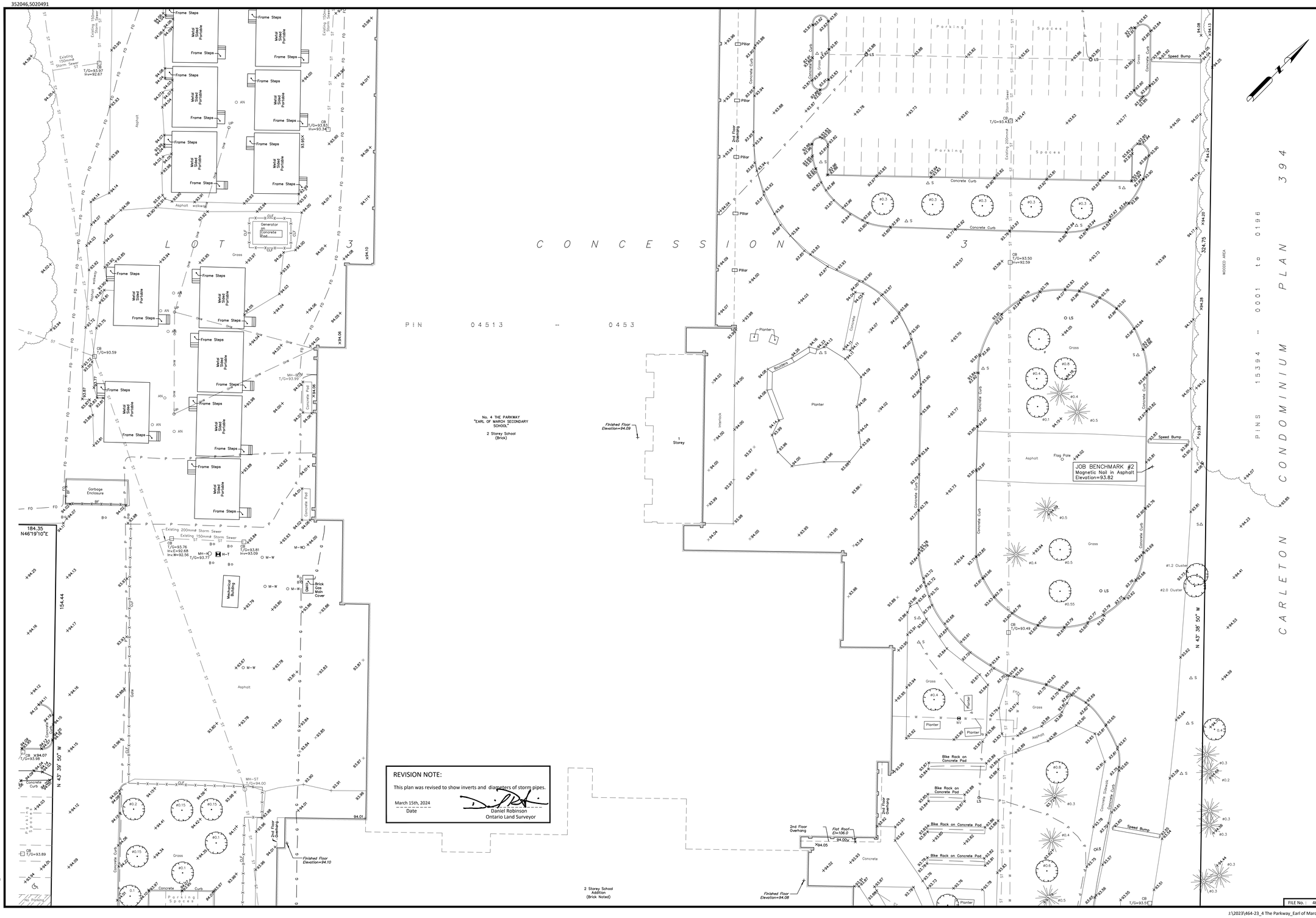
Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

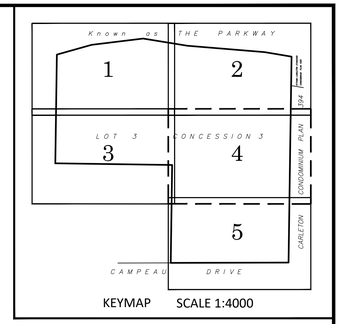
FILE No. : 464-23

TOPO 24X40_Sheet 3

J:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F2.dwg

352046,5020491





KEYMAP SCALE 1:4000

TOPOGRAPHIC SKETCH OF SHEET 4 OF 5

PART OF LOT 3
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note
Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note
This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note
a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Notes & Legend

	Denotes	
MH-ST	=	Maintenance Hole (Storm)
MH-S	=	Maintenance Hole (Sanitary)
MH-B	=	Maintenance Hole (Bell)
MH-H	=	Maintenance Hole (Hydro)
MH-W	=	Maintenance Hole (Water)
MH	=	Maintenance Hole (Unidentified)
ST	=	Underground Storm Sewer
S	=	Underground Sanitary Sewer
W	=	Underground Water
P	=	Underground Hydro
G	=	Underground Gas
B	=	Underground Bell
FO	=	Underground Fibre Optic
OHW	=	Overhead Wires
UP	=	Utility Pole
AN	=	Anchor
LS	=	Light Standard
CB	=	Catch Basin
FH	=	Fire Hydrant
TB-C	=	Cable Terminal Box
TB-B	=	Bell Terminal Box
	=	Disabled Parking
H-T	=	Hydro Transformer
Inv.	=	Invert
T/G	=	Top of Grate
U/Eave	=	Underside of Eave
T/Fdn	=	Top of Foundation
El	=	Elevation
C/L	=	Centreline
WV	=	Water Valve
GM	=	Gas Meter
	=	Bollard
	=	Sign
Ø	=	Diameter
SRW	=	Stone Retaining Wall
+ 65.00	=	Location of Elevations
+65.00	=	Top of Concrete Curb / Retaining Wall Elevation
	=	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
	=	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

REVISION NOTE:

This plan was revised to show inverts and diameters of storm pipes.

March 15th, 2024 — Date

Daniel Robinson
Ontario Land Surveyor

JOB BENCHMARK #2
Magnetic Nail in Asphalt
Elevation=93.82

TOPOGRAPHIC DATA WAS COLLECTED UNDER WINTER CONDITIONS. SNOW COVER AND ICE PRECLUDE DETERMINING LOCATION AND ELEVATION OF SOME TOPOGRAPHICAL DATA THAT IS OTHERWISE VISIBLE.

Fieldwork was completed on the 11th day of January, 2024.

January 17th, 2024 — Date

Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

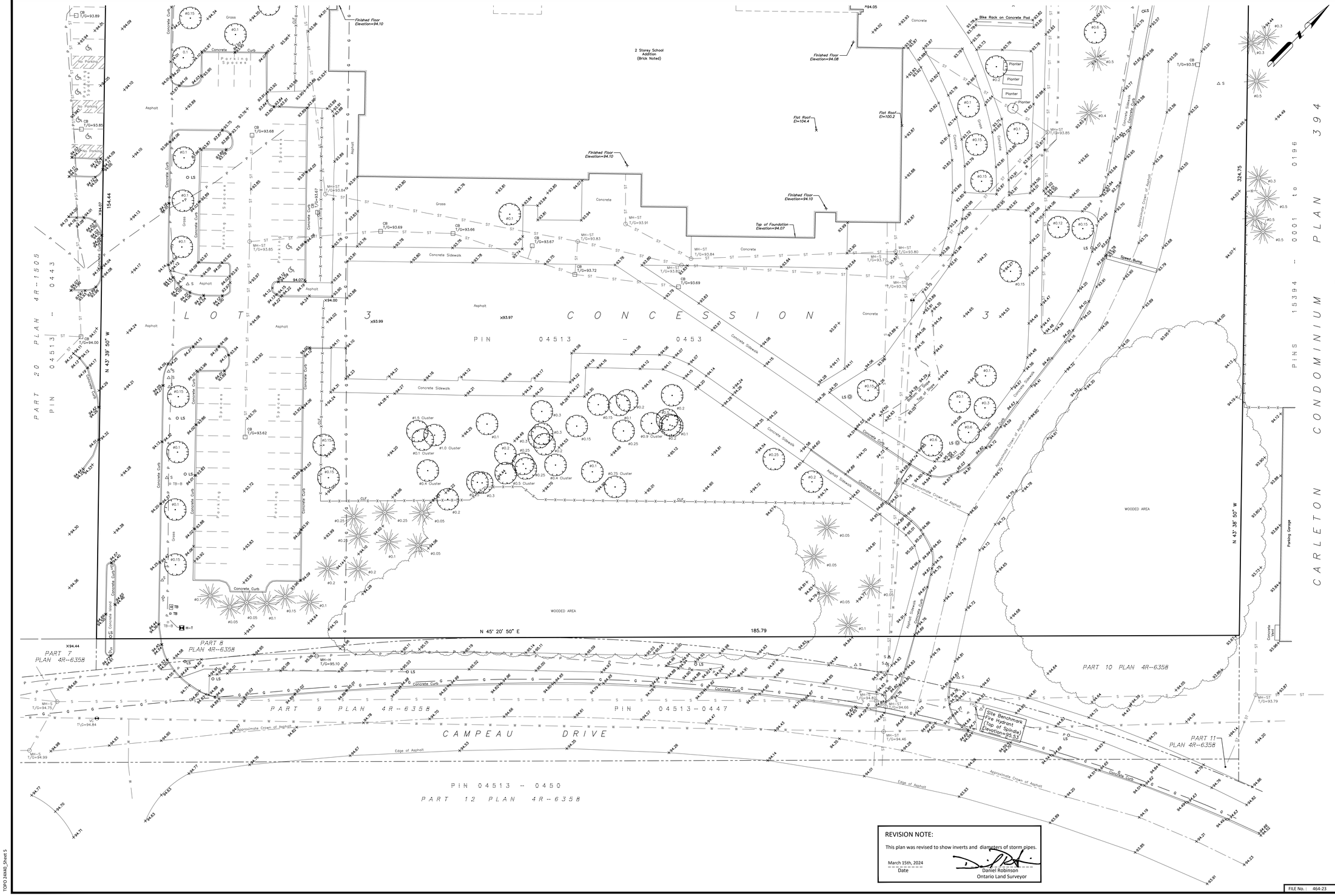
Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

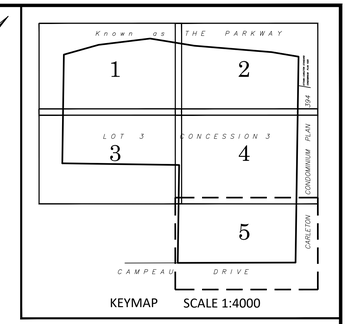
FILE No.: 464-23

TOPO 24X40_Sheet 4

J:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F2.dwg

352046,5020491





TOPOGRAPHIC SKETCH OF

SHEET 5 OF 5

PART OF LOT 3 CONCESSION 3

GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note

Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note

This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes

1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note

a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Notes & Legend

MH–ST	Denotes	Maintenance Hole (Storm)
MH–S	=	Maintenance Hole (Sanitary)
MH–B	=	Maintenance Hole (Bell)
MH–H	=	Maintenance Hole (Hydro)
MH–W	=	Maintenance Hole (Water)
MH	=	Maintenance Hole (Unidentified)
ST	=	Underground Storm Sewer
S	=	Underground Sanitary Sewer
W	=	Underground Water
P	=	Underground Hydro
G	=	Underground Gas
B	=	Underground Bell
FO	=	Underground Fibre Optic
OHW	=	Overhead Wires
UP	=	Utility Pole
AN	=	Anchor
LS	=	Light Standard
CB	=	Catch Basin
FH	=	Fire Hydrant
TB–C	=	Cable Terminal Box
TB–B	=	Bell Terminal Box
	=	Disabled Parking
H-T	=	Hydro Transformer
Inv.	=	Invert
T/G	=	Top of Grate
U/Eave	=	Underside of Eave
TpFdn	=	Top of Foundation
El	=	Elevation
C/L	=	Centreline
WV	=	Water Valve
GM	=	Gas Meter
	=	Bollard
	=	Sign
Ø	=	Diameter
SRW	=	Stone Retaining Wall
+ 65.00	=	Location of Elevations
+ 65.00	=	Top of Concrete Curb / Retaining Wall Elevation
	=	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
	=	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

TOPOGRAPHIC DATA WAS COLLECTED UNDER WINTER CONDITIONS. SNOW COVER AND ICE PRECLUDE DETERMINING LOCATION AND ELEVATION OF SOME TOPOGRAPHICAL DATA THAT IS OTHERWISE VISIBLE.

Fieldwork was completed on the 11th day of January, 2024.

January 17th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

REVISION NOTE:

This plan was revised to show inverts and diameters of storm pipes.

March 15th, 2024
Date

Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

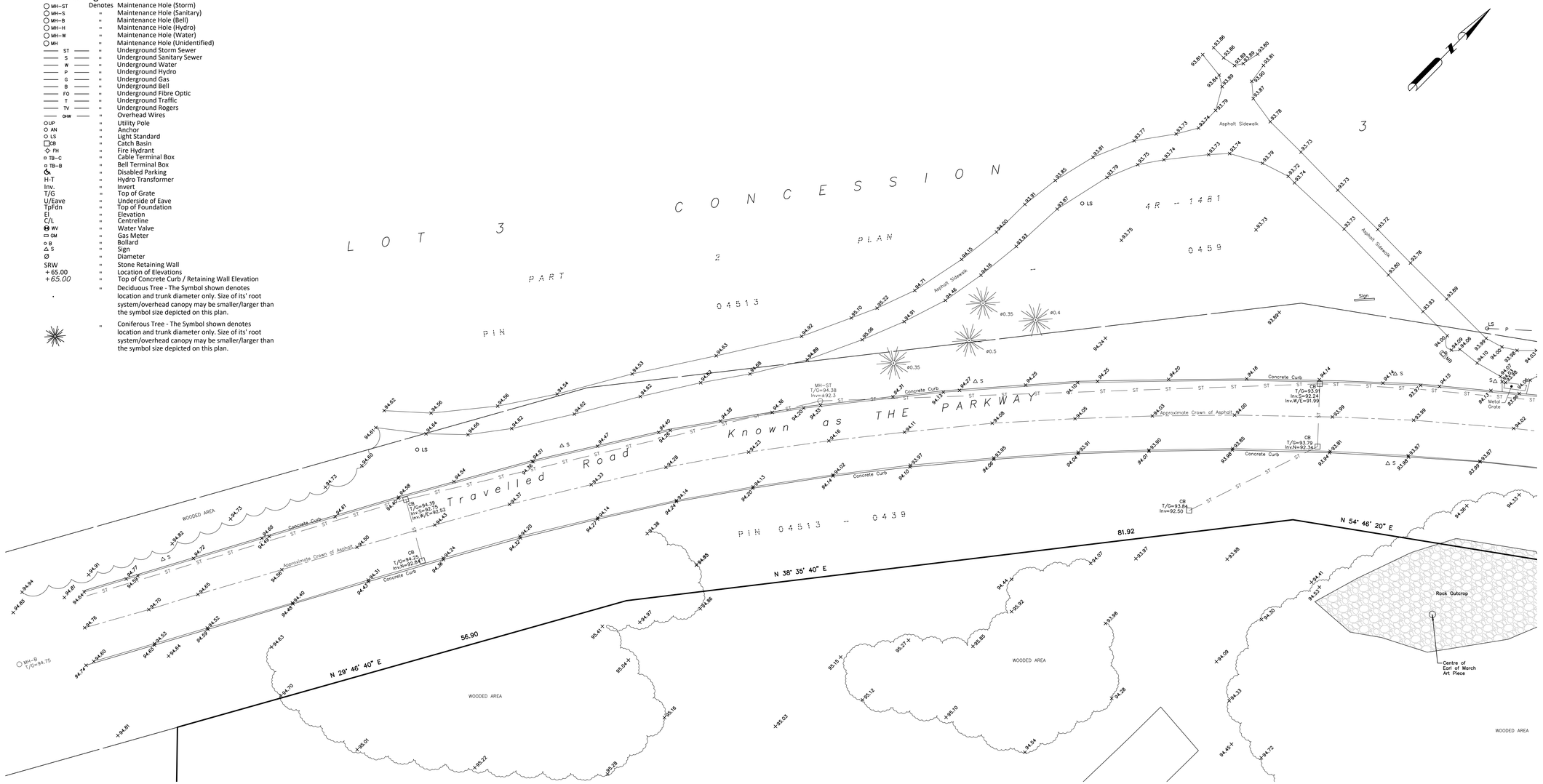
FILE No. : 464-23

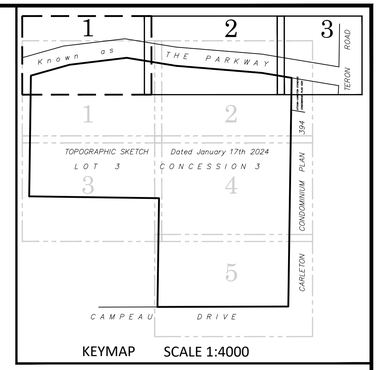
TOPO 22X40_Sheet 5

J:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F2.dwg

Notes & Legend

MH–ST	Denotes	Maintenance Hole (Storm)
MH–S	"	Maintenance Hole (Sanitary)
MH–B	"	Maintenance Hole (Bell)
MH–H	"	Maintenance Hole (Hydro)
MH–W	"	Maintenance Hole (Water)
MH	"	Maintenance Hole (Unidentified)
ST	"	Underground Storm Sewer
S	"	Underground Sanitary Sewer
W	"	Underground Water
P	"	Underground Hydro
G	"	Underground Gas
B	"	Underground Bell
FO	"	Underground Fibre Optic
T	"	Underground Traffic
TV	"	Underground Rogers
OHW	"	Overhead Wires
UP	"	Utility Pole
AN	"	Anchor
LS	"	Light Standard
CB	"	Catch Basin
FH	"	Fire Hydrant
TB–C	"	Cable Terminal Box
TB–B	"	Bell Terminal Box
	"	Disabled Parking
H-T	"	Hydro Transformer
Inv.	"	Invert
T/G	"	Top of Grate
U/Eave	"	Underside of Eave
TpFdn	"	Top of Foundation
El	"	Elevation
C/L	"	Centreline
WV	"	Water Valve
GM	"	Gas Meter
B	"	Bollard
S	"	Sign
Ø	"	Diameter
SRW	"	Stone Retaining Wall
+65.00	"	Location of Elevations
+65.00	"	Top of Concrete Curb / Retaining Wall Elevation
.	"	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
	"	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.





KEYMAP SCALE 1:4000

TOPOGRAPHIC SKETCH OF

SHEET 1 OF 3

PART OF LOT 3
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note
Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note
This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. Underground storm sewer data and inverts derived from City of Ottawa utility sheet reference: 13004p1, 13004p2, 13004p3 & 13762.
4. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note
a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Fieldwork was completed on the 12th day of June, 2024.

June 18, 2024
Date

Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.

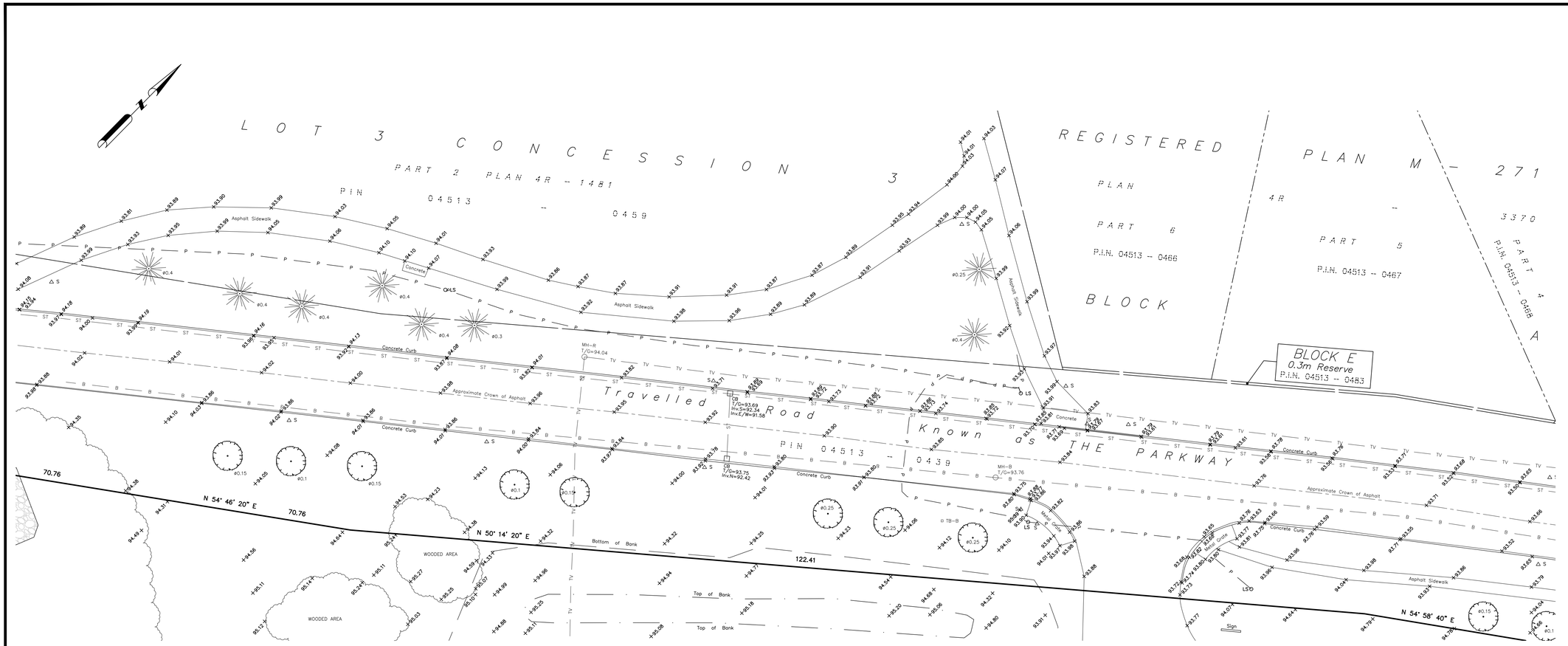
ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

FILE No. : 464-23

TOPO 18X36_Sheet 1

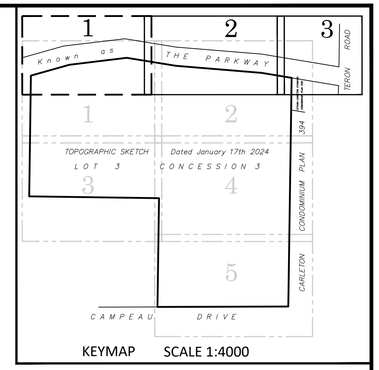
J:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F3.dwg



Notes & Legend

MH–ST	Denotes	Maintenance Hole (Storm)
MH–S	"	Maintenance Hole (Sanitary)
MH–B	"	Maintenance Hole (Bell)
MH–H	"	Maintenance Hole (Hydro)
MH–W	"	Maintenance Hole (Water)
MH–R	"	Maintenance Hole (Rogers)
MH	=	Maintenance Hole (Unidentified)
ST	=	Underground Storm Sewer
S	=	Underground Sanitary Sewer
W	=	Underground Water
P	=	Underground Hydro
G	=	Underground Gas
B	=	Underground Bell
FO	=	Underground Fibre Optic
T	=	Underground Traffic
TV	=	Underground Rogers
OHW	=	Overhead Wires
UP	"	Utility Pole
AN	"	Anchor
LS	"	Light Standard
CB	"	Catch Basin
FH	"	Fire Hydrant
TB–C	"	Cable Terminal Box
TB–B	"	Bell Terminal Box
	"	Disabled Parking
H-T	"	Hydro Transformer

Inv.		Invert
T/G	=	Top of Grate
U/Eave	=	Underside of Eave
TpFdn	=	Top of Foundation
El	=	Elevation
C/L	=	Centreline
WV	=	Water Valve
GM	=	Gas Meter
B	=	Bollard
S	=	Sign
Ø	=	Diameter
SRW	=	Stone Retaining Wall
+ 65.00	=	Location of Elevations
+65.00	=	Top of Concrete Curb / Retaining Wall Elevation
	=	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
	=	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.



KEYMAP SCALE 1:4000

TOPOGRAPHIC SKETCH OF SHEET 1 OF 3

PART OF LOT 3
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note
Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note
This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. Underground storm sewer data and inverts derived from City of Ottawa utility sheet reference: 13004p1, 13004p2, 13004p3 & 13762.
4. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note
a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Fieldwork was completed on the 12th day of June, 2024.

June 18, 2024
Date

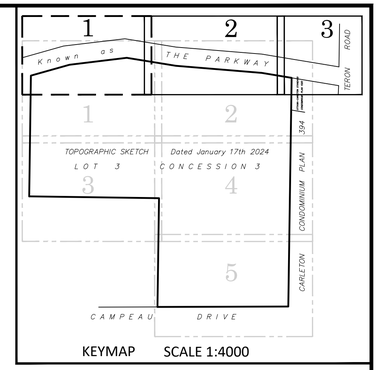
Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.
ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS
Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

FILE No. : 464-23

TOPO 18X36_Sheet 2

J:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F3.dwg



KEYMAP SCALE 1:4000

TOPOGRAPHIC SKETCH OF SHEET 1 OF 3

PART OF LOT 3
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF MARCH
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2024

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

Metric Note
Distances and/or coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Boundary Note
This Sketch is to be read in conjunction with a Plan of Survey dated January 17, 2024 (FSD Ref. 464-23)

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (Monument No. 19770765)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. Underground storm sewer data and inverts derived from City of Ottawa utility sheet reference: 13004p1, 13004p2, 13004p3 & 13762.
4. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Caution Note
a) This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.
b) This Sketch is protected by Copyright © .

Notes & Legend

MH–ST	Denotes	Maintenance Hole (Storm)
MH–S	"	Maintenance Hole (Sanitary)
MH–B	"	Maintenance Hole (Bell)
MH–H	"	Maintenance Hole (Hydro)
MH–W	"	Maintenance Hole (Water)
MH	"	Maintenance Hole (Unidentified)
ST	"	Underground Storm Sewer
S	"	Underground Sanitary Sewer
W	"	Underground Water
P	"	Underground Hydro
G	"	Underground Gas
B	"	Underground Bell
FO	"	Underground Fibre Optic
T	"	Underground Traffic
TV	"	Underground Rogers
OHW	"	Overhead Wires
UP	"	Utility Pole
AN	"	Anchor
LS	"	Light Standard
TL	"	Traffic Light
TCB	"	Traffic Control Box
CB	"	Catch Basin
FH	"	Fire Hydrant
TB–C	"	Cable Terminal Box
TB–B	"	Bell Terminal Box
	"	Disabled Parking
H-T	"	Hydro Transformer

Inv.	=	Invert
T/G	"	Top of Grate
U/Eave	=	Underside of Eave
TpFdn	=	Top of Foundation
El	=	Elevation
C/L	=	Centreline
WV	=	Water Valve
GM	=	Gas Meter
B	=	Bollard
S	=	Sign
Ø	=	Diameter
SRW	=	Stone Retaining Wall
+ 65.00	=	Location of Elevations
+65.00	=	Top of Concrete Curb / Retaining Wall Elevation
	=	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
	=	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

Fieldwork was completed on the 12th day of June, 2024.

June 18, 2024
Date

Daniel Robinson
Ontario Land Surveyor

FARLEY, SMITH & DENIS SURVEYING LTD.
ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS
Unit 275, 30 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J6
TEL. (613) 727-8226 E-mail: fsdsurveys@bellnet.ca

FILE No. : 464-23

TOPO 18X36_Sheet 3

J:\2023\464-23_4 The Parkway_Earl of March SS_topo\Final\464-23 4 The Parkway-Earl of March SS_LT3 C3 MA_Topo_F3.dwg

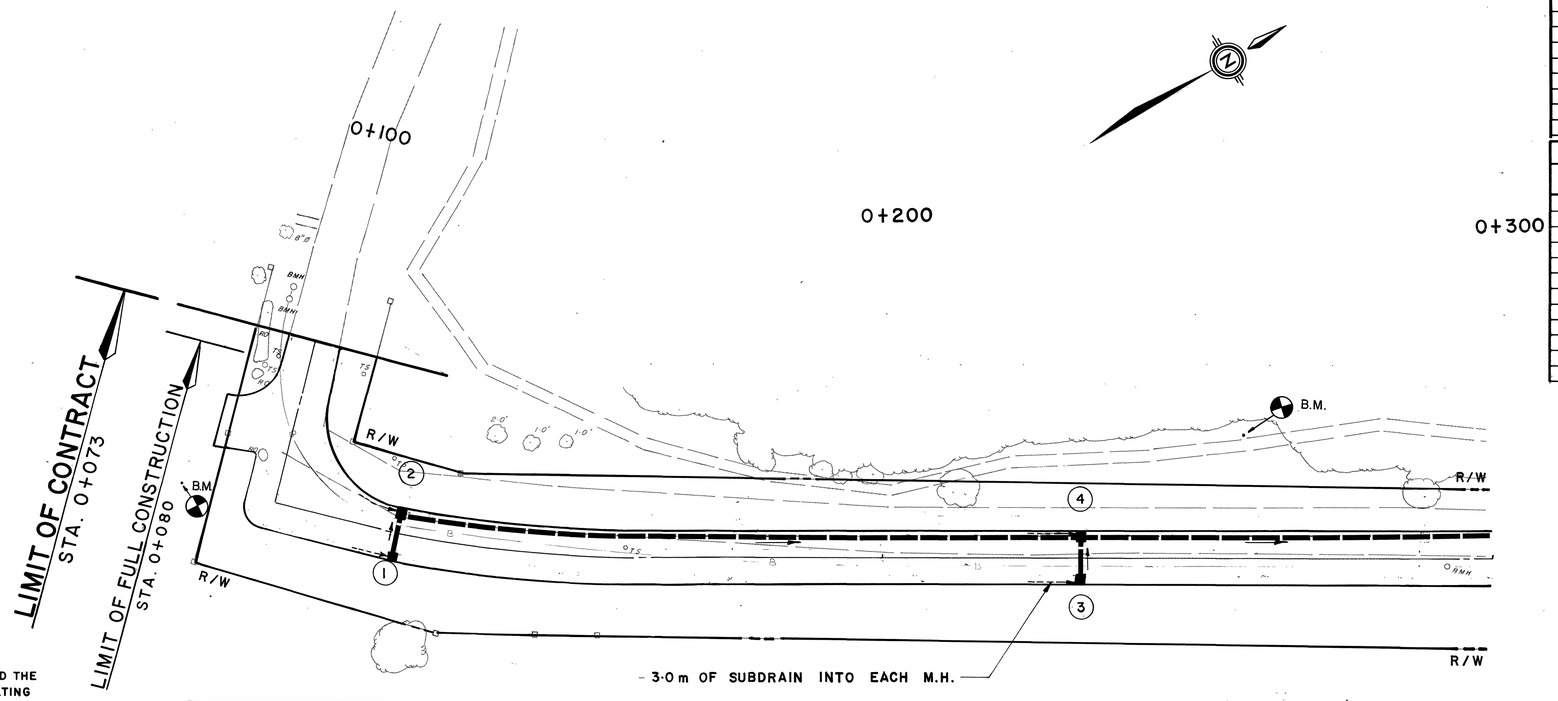
CITY OF KANATA

MANHOLE AND CATCHBASIN DATA

No.	STATION	OFFSET	TYPE		ELEVATION	
			STRUCT.	COVER	GRATE	LOW INV.
1	0+120	4·0 RT.	S-8	S-10	96·668	95·332
2	0+120	4·0 LT.	S-1	S-10	96·665	95·188
3	0+232	4·0 RT.	S-8	S-10	95·255	93·918
4	0+232	4·0 LT.	S-1	S-10	95·255	93·492

SEWER DATA

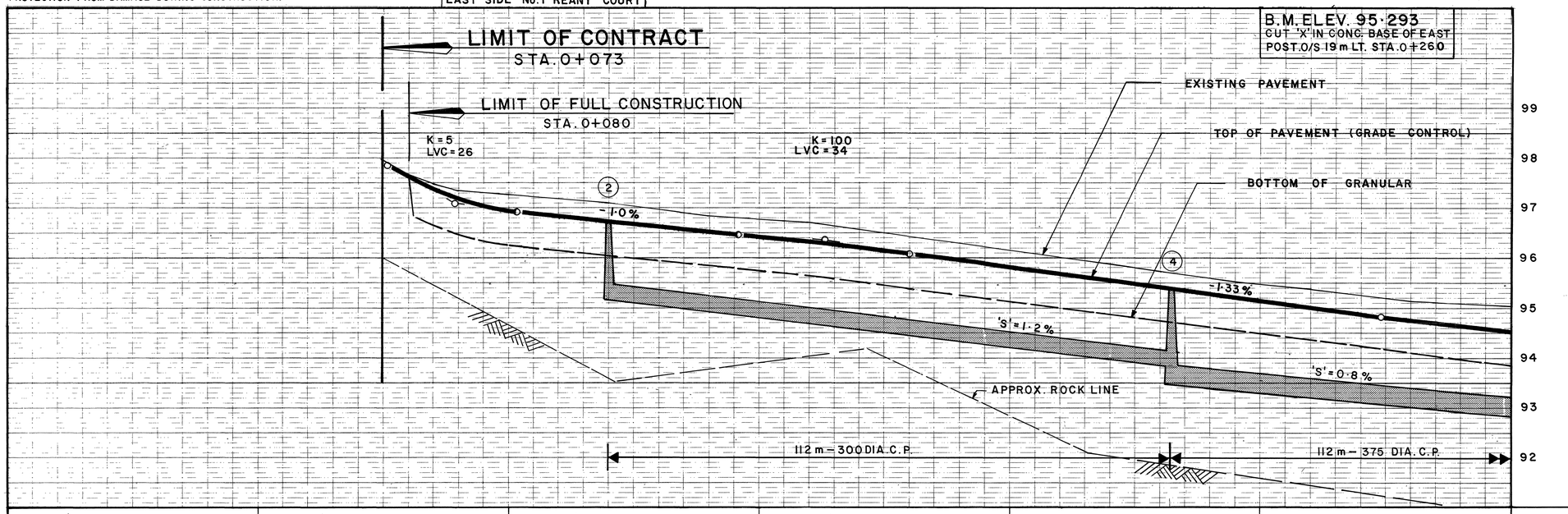
No.	to No.	SIZE	LENGTH	CLASS	INVERTS	
					INLET	OUTLET
1	2	300	8·0	C-14-ES	95·332	95·252
2	4	300	112·0	C-14-ES	95·188	93·844
3	4	300	8·0	C-14-ES	93·918	93·838
4	6	375	112·0	C-14-ES	93·492	92·596



NOTE:
THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.

B.M. ELEV. 98·475
CUT 'X' N.E. CORNER OF CONC. BASE BELL PEDESTAL EAST SIDE No.1 REANY COURT

THE PARKWAY



NO.	REVISIONS	BY	DATE

REGISTERED PROFESSIONAL ENGINEER
P. TURNER
PROVINCE OF ONTARIO

McCORMICK RANKIN
CONSULTING ENGINEERS

ENGINEERING DEPARTMENT
KANATA

D. FARMER P. ENG.
DIRECTOR OF WORKS

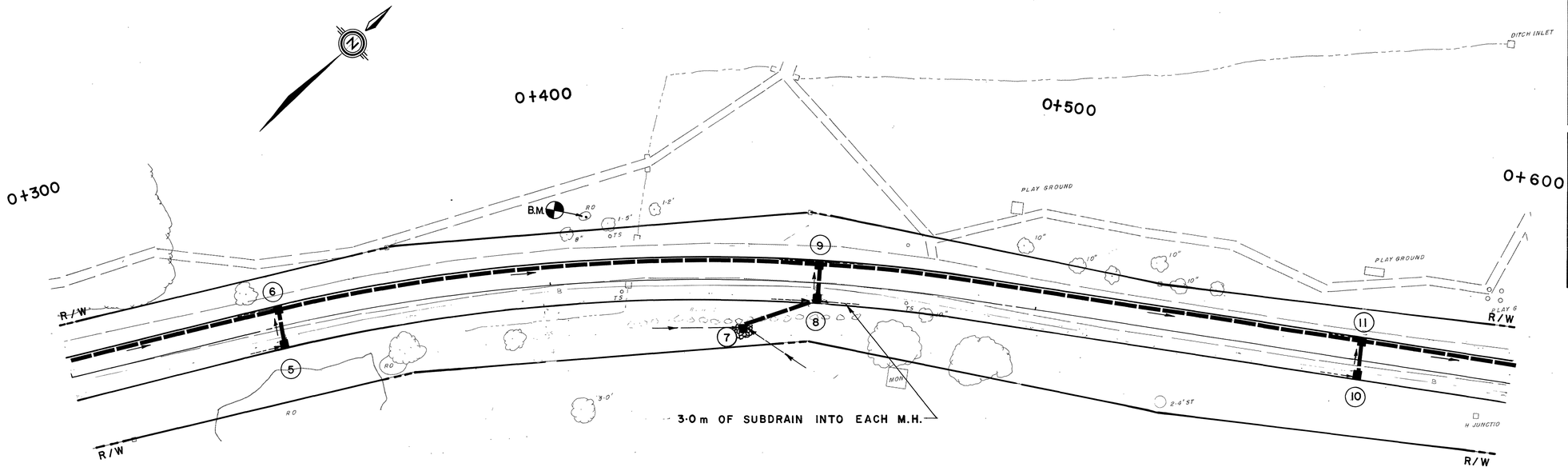
THE PARKWAY
LEACOCK WAY TO TERON ROAD

STORM SEWERS
STA. 0+073 TO STA. 0+300

DATE: AUGUST 1980	Des.: R.H.	Chkd.: P.T.	
Scale: Horz. 1:500 Vert. 1:50	Dwn.: D.H.	Chkd.: P.T.	
CONTRACT No 80-105	DWG. No 105-5		
	SHEET 5 OF 14		

4 PLAN & PROFILE
PARKWAY
STROM SEWERS STA 0+073 TO 0+300
BEAVERBROOK
N20-47
6
B-5-13A

CITY OF KANATA



THE PARKWAY

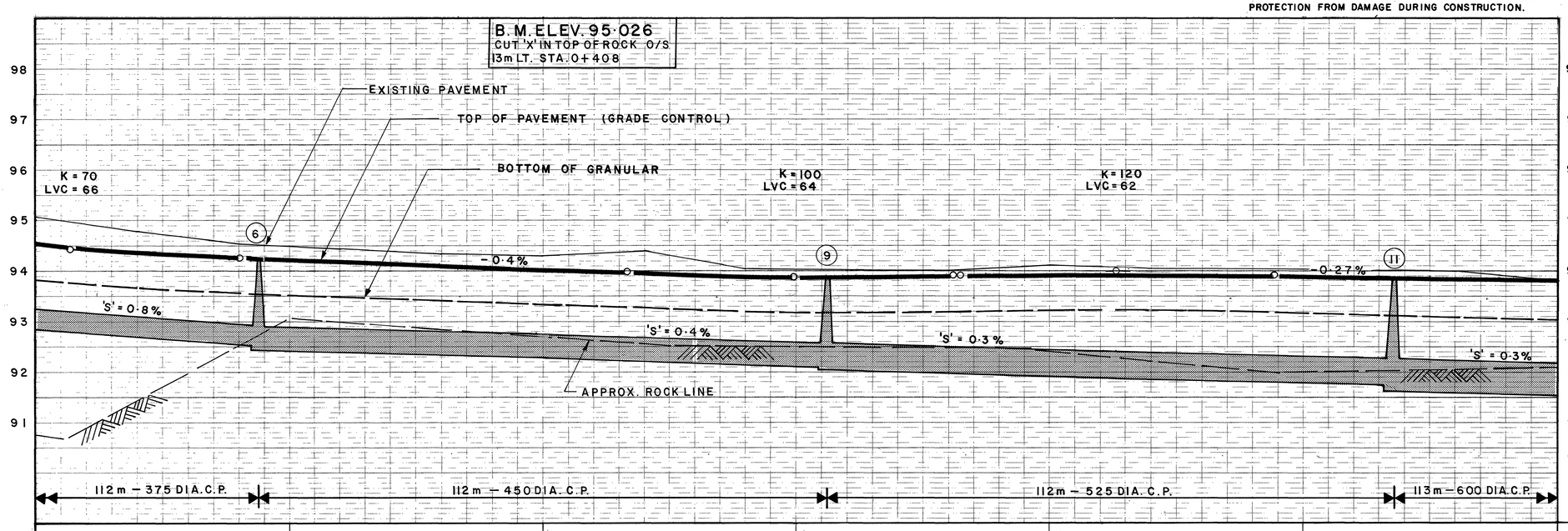
MANHOLE AND CATCHBASIN DATA

No.	STATION	OFFSET	TYPE		ELEVATION	
			STRUCT.	COVER	GRATE	LOW INV.
5	0+344	4.0 RT	S-8	S-10	94.172	92.836
6	0+344	4.0 LT	S-1	S-10	94.371	92.521
7	0+440	10.8 RT	DD-716A	DD-710	93.836	92.500
8	0+456	4.0 RT	S-8	S-10	93.806	92.340
9	0+456	4.0 LT.	S-1	S-10	94.017	91.998
10	0+568	4.0 RT	S-8	S-10	93.757	92.421
11	0+568	4.0 LT	S-1	S-10	93.764	91.584

SEWER DATA

No.	to No.	SIZE	LENGTH	CLASS	INVERTS	
					INLET	OUTLET
5	6	300	8.0	C-14-ES	92.836	92.756
6	9	450	112.0	C-76-IV	92.521	92.073
7	8	300	16.0	C-14-ES	92.500	92.340
8	9	300	8.0	C-14-ES	92.340	92.240
9	11	525	112.0	C-76-IV	91.998	91.662
10	11	300	8.0	C-14-IV	92.421	92.341

NOTE:
THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.



NO.	REVISIONS	BY	DATE

REGISTERED PROFESSIONAL ENGINEER
D. FARMER
PROVINCE OF ONTARIO

McCORMICK RANKIN
CONSULTING ENGINEERS

ENGINEERING DEPARTMENT
KANATA

D. FARMER P. ENG.
DIRECTOR OF WORKS

THE PARKWAY
LEACOCK WAY TO TERON ROAD

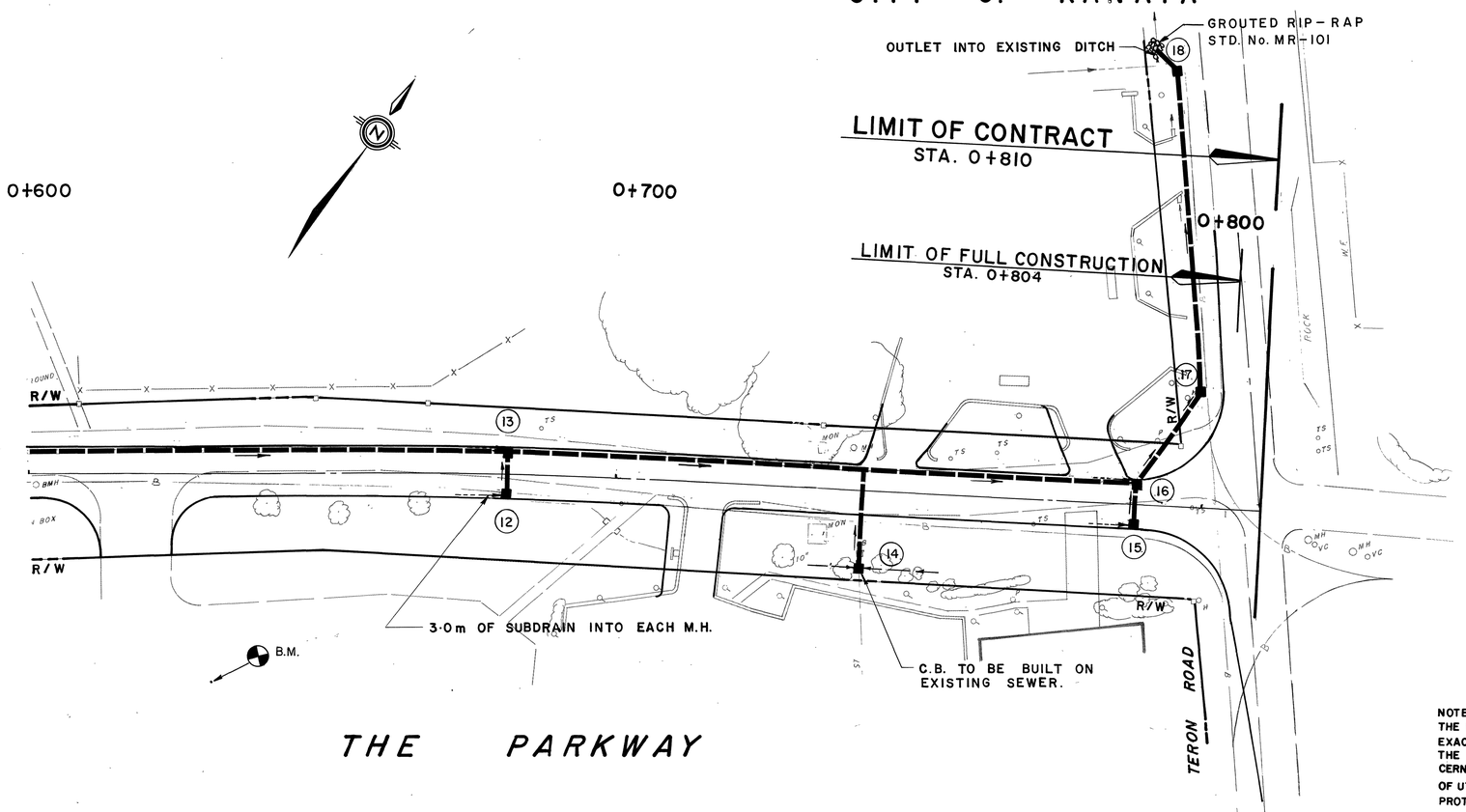
STORM SEWERS
STA. 0+300 TO STA. 0+600

DATE: AUGUST 1980	Des.: R.H.	Chkd.: P.T	
Scale: Horz. 1:500 Vert. 1:50	Dwn.: D.H.	Chkd.: P.T.	
CONTRACT No. 80-105	DWG. No. 105-6		
	SHEET 6 OF 14		

4 PLAN & PROFILE
PARKWAY
STROM SEWERS FROM STA 0+300 TO 0+600
BEAVERBROOK
N20-45

8-5-14A

CITY OF KANATA



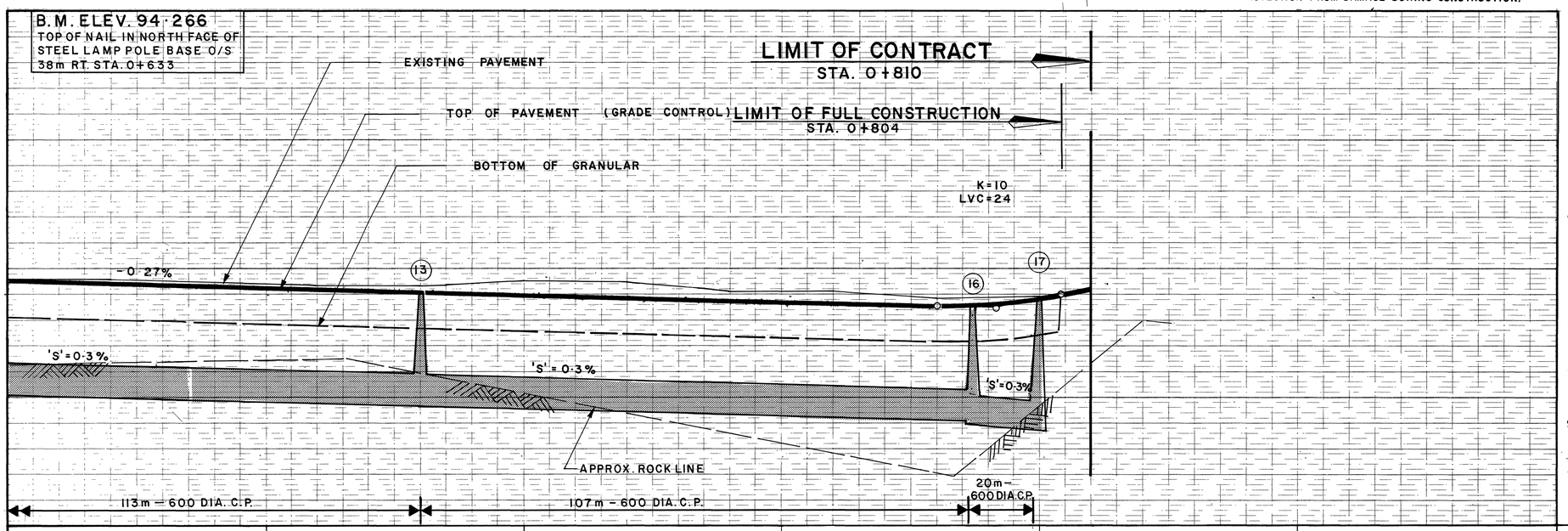
NOTE:
THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.

MANHOLE AND CATCHBASIN DATA

No.	STATION	OFFSET	TYPE		ELEVATION	
			STRUCT.	COVER	GRATE	LOW INV
~~16~~	~~0+684~~	~~4·0 LT.~~	~~S-8~~	~~S-10~~	~~93·606~~	~~92·270~~
~~17~~	~~0+630~~	~~4·0 RT.~~	~~S-1~~	~~S-10~~	~~93·590~~	~~91·416~~
12	0+681	4·0 LT.	S-8	S-10	93·455	92·119
13	0+681	4·0 RT.	S-1	S-10	93·455	91·248
~~20~~	~~0+733~~	~~4·0 LT.~~	~~S-8~~	~~S-10~~	~~93·312~~	~~91·976~~
~~21~~	~~0+733~~	~~4·0 RT.~~	~~S-1~~	~~S-10~~	~~93·312~~	~~91·080~~
15	0+788	4·0 RT.	S-8	S-10	93·225	91·889
16	0+788	4·0 LT.	S-1	S-10	93·225	90·927
17	0+799	20·0 LT.	S-1	S-7	93·30±	90·867
18	T 0+025	8·0 LT.	S-1	S-7	93·10±	90·702
14	0+742	13·5 RT.	S-8	S-10	93·30±	92·330

SEWER DATA

No.	to No.	SIZE	LENGTH	CLASS	INVERTS	
					INLET	OUTLET
~~16~~	~~17~~	~~300~~	~~10·0~~	~~C-14-ES~~	~~92·270~~	~~92·186~~
11	13	600	113·0	C-76-IV	91·587	91·248
12	13	300	8·0	C-14-ES	92·119	92·037
13	16	600	107·0	C-76-IV	91·248	90·927
14	TRUNK	300	18·0	C-14-ES	92·330	91·750
~~21~~	~~22~~	~~600~~	~~54·0~~	~~C-76-IV~~	~~91·080~~	~~90·912~~
15	16	300	8·0	C-14-ES	91·889	91·809
16	17	600	20·0	C-76-IV	90·927	90·867
17	18	600	55·0	C-76-IV	90·867	90·702
18	OUTLET	600	5·0	C-76-IV	90·702	90·687



NO.	REVISIONS	BY	DATE

D. FARMER P. ENG.
DIRECTOR OF WORKS

McCORMICK RANKIN
CONSULTING ENGINEERS

ENGINEERING DEPARTMENT
KANATA

THE PARKWAY
LEACOCK WAY TO TERON ROAD

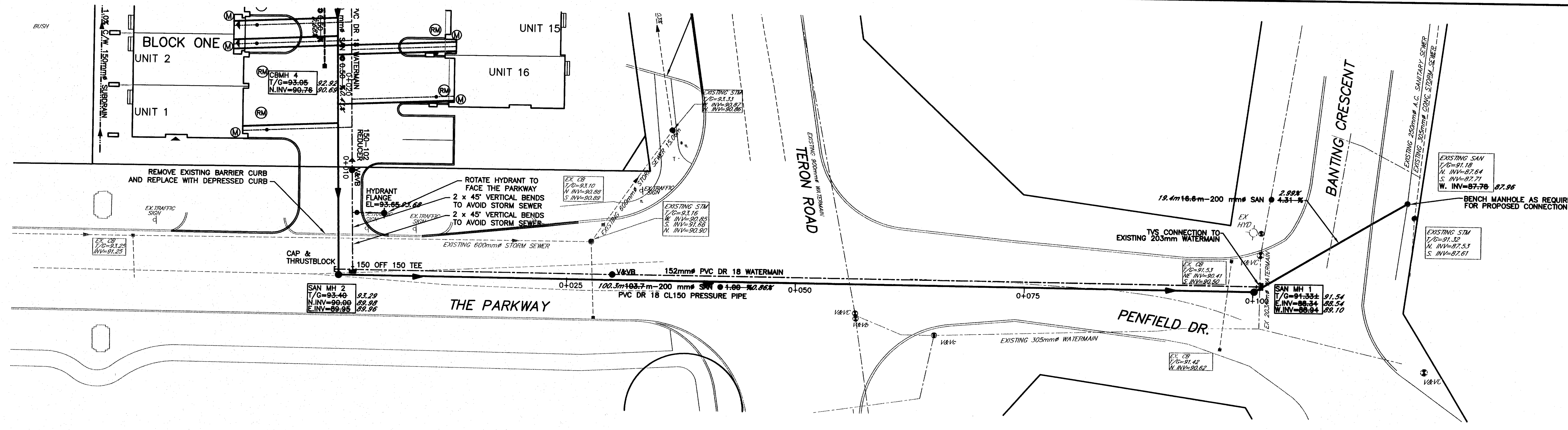
STORM SEWERS
STA. 0+600 TO STA. 0+810

DATE: AUGUST 1980	Des.: R.H.	Chkd.: P.T.	
Scale: Horz. 1:500 Vert. 1:50	Dwn.: D.H.	Chkd.: P.T.	
CONTRACT No. 80-105	DWG. No. 105-7		
	SHEET 7 OF 14		

4 PLAN & PROFILE 020-25 4

PARKWAY
STORM SEWERS TERON RD TO 0+600
BEAVERBROOK

B-5-15A



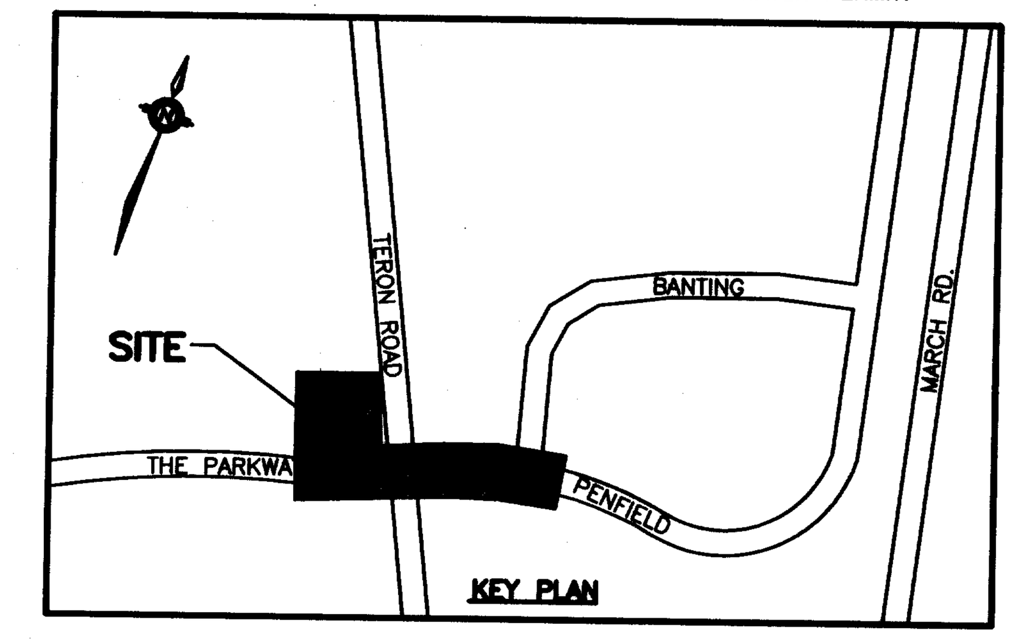
LEGEND

- HYDRANT
- VALVE AND VALVE BOX
- CB 1 — PROPOSED 600mm x 600mm CATCH BASIN
- CBMH 1 — PROPOSED 1200mmø CATCH BASIN MANHOLE
- MH 100 — PROPOSED 1200mmø SANITARY MANHOLE
- MH 200 — PROPOSED 1200mmø STORM MANHOLE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- SANITARY SEWER
- WATERMAIN
- STORM SEWER
- TELECOM OTTAWA

CONSTRUCTION NORTH

NOTES: WATERMAIN SERVICES

1. THE CONTRACTOR SHALL PROVIDE A DETAIL DRAWING CERTIFIED BY A PROFESSIONAL ENGINEER FOR THE PROPOSED METHOD OF SUPPORTING AND PROTECTING THE EXISTING 900mmø WATERMAIN ON TERON ROAD. THE DETAIL MUST BE SUBMITTED AND APPROVED BY CITY STAFF PRIOR TO ISSUANCE OF WATER PERMIT.



NOTE
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

Ottawa

No.	REVISION		
10.	AS-BUILT INFORMATION	SEP 5/08	MJG
9.	ISSUED FOR CONSTRUCTION	OCT 20/05	UB

No.	REVISION	DATE	BY
8.	ISSUED FOR APPROVAL	AUG 31/05	UB
7.	RE-ISSUED FOR SITE PLAN APPLICATION	JUNE 8/05	UB
6.	ISSUED FOR APPROVAL	DEC 16/03	UB
5.	ISSUED FOR APPROVAL	NOV 18/03	UB
4.	ISSUED FOR SITE PLAN APPLICATION	MAY 29/03	UB
3.	REVISED AS PER CLIENT COMMENTS	MAY 8/03	UB
2.	ISSUED FOR MOE APPROVAL	APR 21/03	UB
1.	ISSUED FOR APPROVAL	JAN 28/03	UB

LICENSED PROFESSIONAL ENGINEER — R.C. POLKINGHORNE — 100077519 — PROVINCE OF ONTARIO

DME Ltd.
David McManus Engineering Ltd.
400 – 30 Camelot Drive
Nepean Ontario, K2G 5X8
E-mail: mcmanus@dmel.on.ca
Ph. 225-1929 Fax 225-7330

BASEPLAN	D.M.E.
DESIGN	UB
CHECKED	UB
CAD	LSC
PROJ. MGR.	UB
APPROVED	UB

SCALE 1:250 (0 2.5 5 7.5 10)

TERON ROAD
UNIFORM URBAN DEVELOPMENTS
CITY OF OTTAWA

AS-BUILT PLAN AND PROFILE

PROJECT No. 2376
SURVEY BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
DATE AUGUST 2002
DRAWING No. 2376-P1AB

13762

APPENDIX

B

- FIRE UNDERWRITERS SURVEY – FIRE FLOW CALCULATION FOR ADDITION
- WATER DEMAND CALCULATION
- BOUNDARY CONDITION REQUEST
- HYDRANT FLOW TESTS

Fire Flow Design Sheet (FUS)
4 The Parkway
Kanata, Ontario
WSP Project No. CA0020000.3018
Date: 2024-05-28

Earl of March Secondary School and Addition
Fire Flow Requirements Based on Fire Underwriters Survey (FUS) 2020

1. An estimate of the Fire Flow required for a given fire area may be estimated by: $F = 220\ C\ \sqrt{A}$

F = required fire flow in litres per minute
C = coefficient related to the type of construction
- 1.5 for **Type V** Wood Frame Construction
- 0.8 for **Type IV-A** Mass Timber Construction
- 0.9 for **Type IV-B** Mass Timber Construction
- 1.0 for **Type IV-C** Mass Timber Construction
- 1.5 for **Type IV-D** Mass Timber Construction
- 1.0 for **Type III** Ordinary Construction
- 0.8 for **Type II** Noncombustible Construction
- 0.6 for **Type I** Fire resistive Construction

A =2-b) The single largest Floor Area plus 25% of each of the two immediately adjoining floors

A = 17265 m^2
C = 0.8
F = 23125.8 L/min

rounded off to 23,000 L/min (min value of 2000 L/min)

2. The value obtained in 1. may be reduced by as much as 25% for occupancies having a low contents fire hazard.

Non-combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

Reduction due to low occupancy hazard -15% x 23,000 = 19,550 L/min

3. The value obtained in 2. may be reduced by as much as 50% for buildings equipped with automatic sprinkler protection.
Note: The new addition and existing addition (constructed 2015) have sprinkler coverage, however the original building does not. Partial building coverage credits must be applied.

% of Sprinkler Coverage	34%
Adequate Sprinkler confirms to NFPA13	-30%
Water supply common for sprinklers & fire hoses	-10%
Fully supervised system	-10%
No Automatic Sprinkler System	0%

Reduction due to Sprinkler System -14% x 19,550 = -2,644 L/min

4. The value obtained in 2. is increased for structures exposed within 45 metres by the fire area under consideration.

Separation	Charge
0 to 3 m	25%
3.1 to 10 m	20%
10.1 to 20 m	15%
20.1 to 30 m	10%
30.1 to 45 m	0%

Side 1	100	0%	north side
Side 2	60	0%	east side
Side 3	110	0%	south side
Side 4	45	0%	west side
		0%	(Total shall not exceed 75%)

Increase due to separation 0% x 19,550 = 0 L/min

5. The flow requirement is the value obtained in 2., minus the reduction in 3., plus the addition in 4.

The fire flow requirement is	17,000 L/min	(Rounded to nearest 1000 L/min)
or	**283 L/sec**	
or	4,491 gpm (us)	
or	3,740 gpm (uk)	

Based on method described in:
"Water Supply for Public Fire Protection - A Guide to Recommended Practice", 2020
by Fire Underwriters Survey

Water Demand Calculation Sheet

Project:	**Earl of March Secondary School Addition**	**Date:**	**2024-06-10**
Location:	**Kanata, Ontario**	**Design:**	**ZA**
WSP Project No.	**CA0020000.3018**	**Page:**	**1 of 1**

Proposed Buildings	Residential			School	Non-Residential			Avg Day			Max Day			Peak Hour			Fire
	Units			Students*	Industrial	Institutional	Commercial	Demand (L/s)			Demand (L/s)			Demand (L/s)			Demand
	SF	APT	ST		(ha)	(ha)	(ha)	Res.	Non-Res.	Total	Res.	Non-Res.	Total	Res.	Non-Res.	Total	(L/min)
Existing School (Incl. Old Addition)				2450					4.76	4.76		7.15	7.15		12.86	12.86	17,000
New Addition				100					0.19	0.19		0.29	0.29		0.53	0.53	
Total				2550					4.96	4.96		7.44	7.44		13.39	13.39	

Population Densities

Single Family	3.4	person/unit
Semi-Detached	2.7	person/unit
Duplex	2.3	person/unit
Townhome (Row)	2.7	person/unit
Bachelor Apartment	1.4	person/unit
1 Bedroom Apartment	1.4	person/unit
2 Bedroom Apartment	2.1	person/unit
3 Bedroom Apartment	3.1	person/unit
4 Bedroom Apartment	4.1	person/unit
Avg. Apartment	1.8	person/unit

Avg Day Demand

Residential	280	L/cap/day
Light Industrial	35000	L/ha/day
Institutional	28000	L/ha/day
Commercial	28000	L/ha/day
School	70	L/day/person

assume 10h/day

Max Day Demand

Residential	2.5	x avg. day
Industrial	1.5	x avg. day
Institutional	1.5	x avg. day
Commercial	1.5	x avg. day

Peak Hour Demand

Residential	2.2	x max. day
Industrial	1.8	x max. day
Institutional	1.8	x max. day
Commercial	1.8	x max. day

Notes: * Existing student and staff count as per Genivar Servicing & SWM Report 2013

References: Ottawa Water Distribution Design Guidelines - Section 4
2020 Fire Underwriters Survey

From: Giovannitti, Terenzo <terenzo.giovannitti@ottawa.ca>
Sent: June 20, 2024 9:39 AM
To: Ali, Zarak
Cc: Yang, Winston; Mottalib, Abdul
Subject: RE: Boundary Conditions Request - Earl of March Secondary School Addition - 4 The Parkway
Attachments: Water Boundary Conditions Request.pdf; Earl of March School Boundary Condition(11June2024).docx

Good morning Zarak,

Please see attached result of your boundary condition request for the above noted development application (PC2024-0153).

Please note that the planned watermain within the Parkway ROW should become a public watermain with isolation valve at the property line to allow operation and maintenance in the future.

Regards,
Terenzo Giovannitti
Project Manager
Development Review – All Wards (DRAW)
Planning, Development and Building Services Department
City of Ottawa
110 Laurier Ave W. Ottawa, ON
613-580-2424 (ext. 23436)
terenzo.giovannitti@ottawa.ca

From: Ali, Zarak <Zarak.Ali@wsp.com>
Sent: June 10, 2024 2:10 PM
To: Mottalib, Abdul <Abdul.Mottalib@ottawa.ca>
Cc: Yang, Winston <winston.yang@wsp.com>
Subject: Boundary Conditions Request - Earl of March Secondary School Addition - 4 The Parkway

Hi Abdul,

I am requesting water boundary conditions for the proposed institutional development: 2-storey building addition to the existing Earl of March Secondary School, located at 4 The Parkway. The site is proposed to be serviced from the existing 152mm diameter PVC watermain stub (which will be extended to the site) along The Parkway. Note that the new addition and existing addition (see attached sketch) are protected with an automatic fire protection sprinkler system as per NFPA 13 while the original school has no sprinkler system.

See the attached Water Boundary Conditions Request sketch for the location of the proposed building services, fire flow separation distances and hydrant locations near the proposed development.

The water demands are listed below (demands for existing school + new addition):

- Avg. Day Demand = 4.96 L/s

- Max. Day Demand = 7.44 L/s
- Peak Hour Demand = 13.39 L/s
- Required Fire Flow Demand = 283 L/s

I have also attached the water demand calculations and 2020 FUS calculations for your reference. Please let me know if there is any further information you will require.

Regards,

Zarak Ali
Designer E.I.T
Municipal Engineering - Ottawa

T+ 1 343-227-9179
Zarak.ali@wsp.com

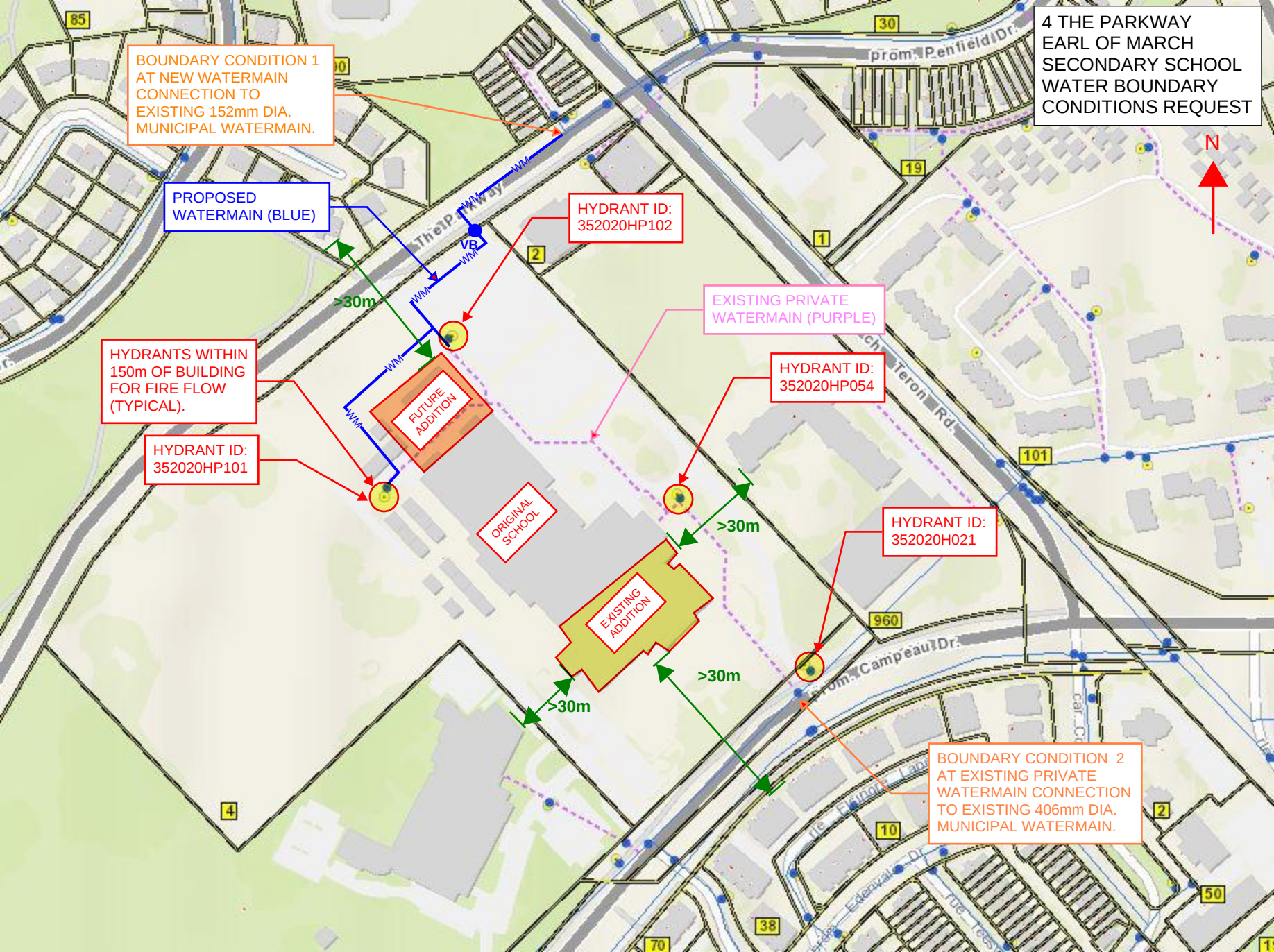
WSP Canada Inc.
2611 Queensview Drive, Suite 300
Ottawa, Ontario
K2B 8K2 Canada

wsp.com

-LAEmHhHzdJzBlTWfa4Hgs7pbKl

'

'


4 THE PARKWAY
EARL OF MARCH
SECONDARY SCHOOL
WATER BOUNDARY
CONDITIONS REQUEST
N
BOUNDARY CONDITION 1
AT NEW WATERMAIN
CONNECTION TO
EXISTING 152mm DIA.
MUNICIPAL WATERMAIN.
PROPOSED
WATERMAIN (BLUE)
HYDRANT ID:
352020HP102
EXISTING PRIVATE
WATERMAIN (PURPLE)
HYDRANTS WITHIN
150m OF BUILDING
FOR FIRE FLOW
(TYPICAL).
HYDRANT ID:
352020HP101
HYDRANT ID:
352020HP054
HYDRANT ID:
352020H021
FUTURE
ADDITION
ORIGINAL
SCHOOL
EXISTING
ADDITION
>30m
>30m
>30m
>30m
WM
VB
BOUNDARY CONDITION 2
AT EXISTING PRIVATE
WATERMAIN CONNECTION
TO EXISTING 406mm DIA.
MUNICIPAL WATERMAIN.
The Parkway
Penfield Dr
Teron Rd
Campeau Dr

Boundary Conditions
Earl of March – Secondary School Addition

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	298	4.96
Maximum Daily Demand	446	7.44
Peak Hour	803	13.39
Fire Flow Demand #1	17,000	283.33

Location

Results

Connection 1 - The Parkway

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	131.3	54.6
Peak Hour	127.0	48.5
Max Day plus Fire Flow #1	127.7	49.4

[1] Ground Elevation = 92.9 m

Connection 2 - Campeau Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	131.3	52.9
Peak Hour	127.0	46.9
Max Day plus Fire Flow #1	127.6	47.7

[1] Ground Elevation = 94.0 m

Notes

1. Any connection to a watermain 400 mm or larger should be approved by Drinking Water Service as per the Water Design Guidelines Section 2.4.
2. Typically, water boundary result is provided off the public looped watermains, not the dead-end main. Thus, demands for proposed Connection 1 at existing water main along The Parkway were assigned to upstream junction at Penfield Dr. The engineer must calculate head loss off the dead-end main.

Disclaimer

The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

FIRE HYDRANT INSPECTION

July 31st 2023

HYDRANTS R US INC.
53 FOREST CREEK DRIVE
STITTSVILLE, ONTARIO.
K2S-1M1

613-804-0088

OWNER: OCDSB

Customer 1224 Stittsville Main St
Address Stittsville ON, K2S 0E2

Location **4 The Pkwy, Kanata, ON K2K 1Y4**
Hydrant # EM H-01

HYDRANT MODEL AVK

INSPECTION CHECKLIST	***YES/NO***
1) Isolation Valve ok	YES
2) Is Hydrant Accessible?	YES
3) Grease all threads and Cap?	YES
4) Remove Caps, Inspect for wear, Rust, and Obstructions?	YES
5) Is Hydrant operating Nut in good condition?	YES
6) Is Hydrant Free of Leaks?	YES
7) Is Hydrant Barrel Dry and crack Free?	YES
8) Is Hydrant painted per NFPA Color Codes?	**NO**
9) Is Road Valve Box accessible and cap in place?	YES
10) Caps and Gaskets OK	YES
11) Fully open Hydrant	YES
12) Is Hydrant in operating condition?	YES

HYDRANT FLOW TEST DATA

Nozzle Size	2.5"
Static Pressure	**58** psi.
Residual Pressure	**50** psi.
Pressure at Full Flow	**25** psi.

HYDRANT FLOW TEST RESULTS

GPM **700**
GPM @ 20 PSI **1624**

COLOUR CODE BLUE

NOTES: RECOMMENDATIONS AND DEFICIENCIES

Needs to be painted to code

FIRE HYDRANT INSPECTION

July 31st 2023

HYDRANTS R US INC.
53 FOREST CREEK DRIVE
STITTSVILLE, ONTARIO.
K2S-1M1

613-804-0088

OWNER: OCDSB

Customer 1224 Stittsville Main St
Address Stittsville ON, K2S 0E2

Location **4 The Pkwy, Kanata, ON K2K 1Y4**
Hydrant # EM H-02

HYDRANT MODEL DARLING

INSPECTION CHECKLIST	***YES/NO***
1) Isolation Valve ok	YES
2) Is Hydrant Accessible?	YES
3) Grease all threads and Cap?	YES
4) Remove Caps, Inspect for wear, Rust, and Obstructions?	YES
5) Is Hydrant operating Nut in good condition?	YES
6) Is Hydrant Free of Leaks?	YES
7) Is Hydrant Barrel Dry and crack Free?	YES
8) Is Hydrant painted per NFPA Color Codes?	**NO**
9) Is Road Valve Box accessible and cap in place?	YES
10) Caps and Gaskets OK	YES
11) Fully open Hydrant	YES
12) Is Hydrant in operating condition?	YES

HYDRANT FLOW TEST DATA

Nozzle Size		2.5"
Static Pressure	**60**	psi.
Residual Pressure	**50**	psi.
Pressure at Full Flow	**32**	psi.

HYDRANT FLOW TEST RESULTS

GPM **792**
GPM @ 20 PSI **1675**

COLOUR CODE BLUE

NOTES: RECOMMENDATIONS AND DEFICIENCIES

Needs to be painted to code


Kanata Badminton Club
Earl Of March
Secondary School

APPENDIX

C

- STORM SEWER DESIGN SHEET
- DWG C08/C09 – STORM DRAINAGE AREA PLANS
- DWG C10 – ROOF DRAINAGE PLAN
- STORMWATER MANAGEMENT CALCULATIONS
- EFO4 DETAILS
- SANITARY SEWER DESIGN SHEET
- DWG C04A/C04B – GRADING PLANS
- DWG C05A/C05B – SERVICING PLANS

STORM SEWER DESIGN SHEET

OCDSB Earl of March Secondary School Addition
4 The Parkway
Project: CA0020000.3018
Date: November 2024

LOCATION				AREA (Ha)						RATIONAL DESIGN FLOW									PROPSOED SEWER DATA								
STREET	AREA ID	FROM	TO	C= 0.20	C= 0.35	C= 0.40	C= 0.70	C= 0.80	C= 0.90	IND 2.78AC	CUM 2.78 AC	INLET (min)	TOTAL (min)	i (2) (mm/hr)	i (5) (mm/hr)	i (100) (mm/hr)	5yr PEAK FLOW (L/s)	DESIGN FLOW (L/s)	MATERIAL PIPE	SIZE (mm)	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME IN PIPE	AVAIL CAP (5yr) (L/s)	AVAIL CAP (5yr) (%)
POST-DEVELOPMENT																											
* See Note 1	A-1	BUILDING	STMH 102	0.000					0.164	0.410	0.410	10.00	10.08	76.81	104.19	178.56	42.75	42.75	PVC DR-35	250	1.00	5.88	59.53	1.21	0.08	16.77	28.18%
		STMH 102	STMH 101							0.000	0.410	10.08	10.46	76.50	103.77	177.82	42.58	42.58	PVC DR-35	250	1.00	27.34	59.53	1.21	0.38	16.95	28.47%
	A-2a	CB 01	CBMH 100	0.078					0.032	0.123	0.123	10.00	10.38	76.81	104.19	178.56	12.80	12.80	PVC DR-35	200	1.00	23.77	32.83	1.04	0.38	20.03	61.01%
	A-2b	CBMH 100	CBMH 101	0.127					0.036	0.161	0.284	10.38	10.83	75.38	102.23	175.16	28.99	28.99	PVC DR-35	300	0.35	21.91	57.27	0.81	0.45	28.28	49.38%
	A-2c	CBMH 101	CBMH 102	0.107					0.033	0.142	0.425	10.83	11.34	73.76	100.00	171.31	42.54	42.54	PVC DR-35	375	0.25	24.33	87.75	0.79	0.51	45.21	51.52%
** See Note 2	A-2d	CBMH 102	OGS	0.052					0.112	0.309	0.735	11.34	11.46	72.01	97.60	167.16	71.71	71.71	PVC DR-35	375	0.35	6.65	103.83	0.94	0.12	32.12	30.93%
		OGS	STMH 101							0.000	0.735	11.46	11.58	71.62	97.07	166.23	71.32	71.32	PVC DR-35	375	0.35	6.57	103.83	0.94	0.12	32.51	31.31%
		STMH 101	STMH 103							0.000	1.145	11.58	12.21	71.24	96.54	165.33	110.55	110.55	PVC DR-35	450	0.25	34.19	142.70	0.90	0.64	32.15	22.53%
		STMH 103	STMH 100							0.000	1.145	12.21	12.57	69.24	93.80	160.59	107.41	107.41	PVC DR-36	450	0.25	19.20	142.70	0.90	0.36	35.29	24.73%

Definition:
Q=2.78CiA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (Ha)
i = Rainfall Intensity in millimeters per hour (mm/hr)
i = 732.951/(TC+6.199)^0.810 — 2 Year
i = 1174.184/(TC+6.014)^0.816 — 5 Year
i = 1735.688/(TC+6.014)^0.820 — 100 Year

Notes:
1. Mannings coefficient (n) = 0.013

* 100-Yr flow from controlled roof drains limited to 11.52 l/s

** 100-Yr flow restricted to 80 l/s

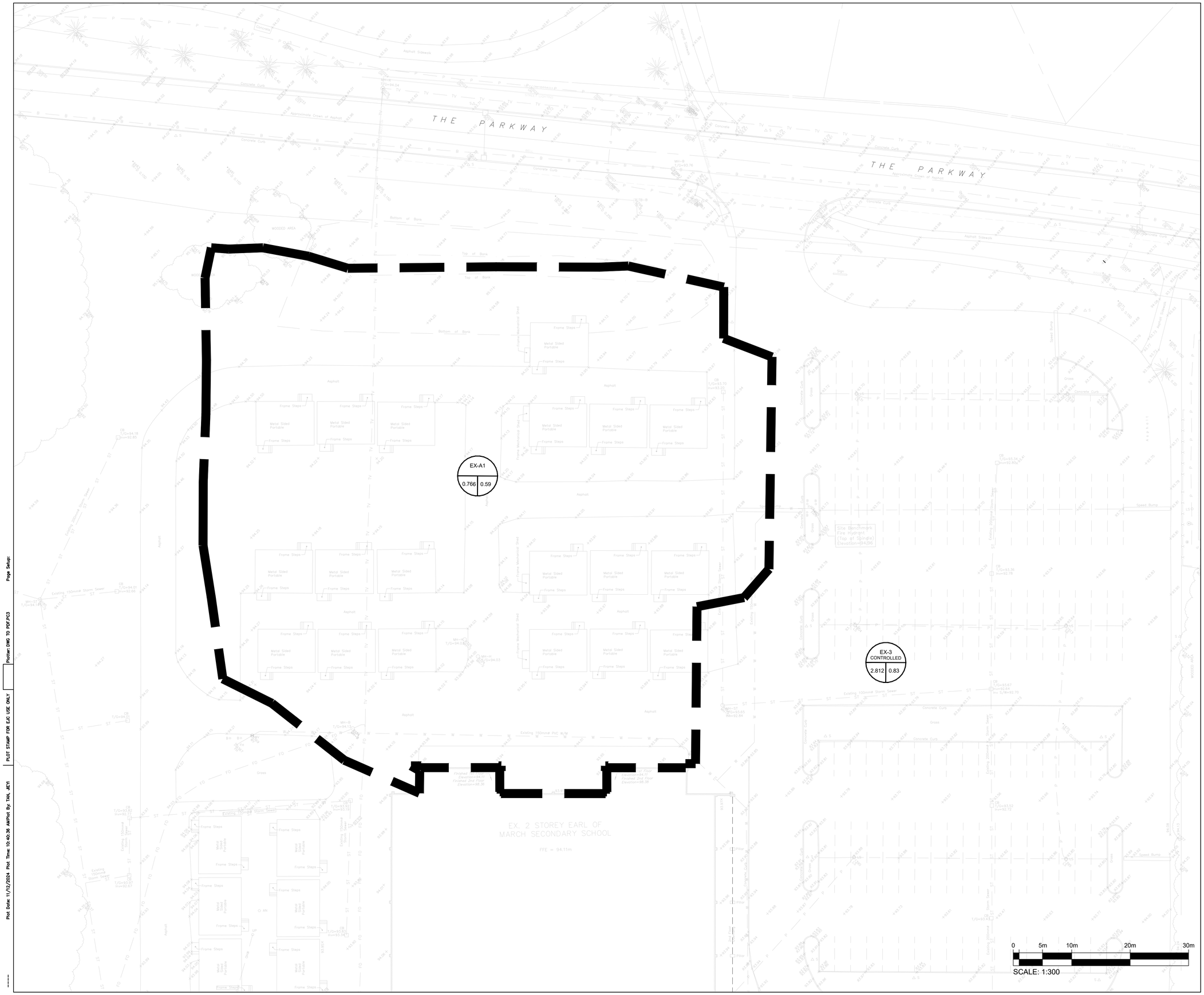
Time-of-Concentration in the Swale
FAA Equation: t (min) = 3.258 [(1.1 - C) L^0.5 / S^.33]
Where: Longest Watercourse Length, L (m). S (%)

No.	L (m)	S %	C	Tc (min)
1	98	1.50	0.50	20.00
2	83	1.30	0.50	20.00
3	76	1.00	0.40	20.00
4	51	1.00	0.40	20.00

Designed: Z.A.
Checked: D.B.Y.
Dwg. Reference: C05A/B

Revision	Date
City Submission No. 1	2024-07-22
City Submission No. 2	2024-12-12

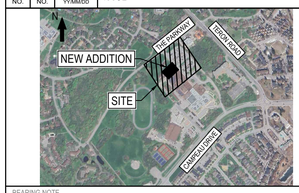
File | **Date:** | **Sheet No:** 1 of 1



Plot Date: 11/12/2024 Plot Time: 10:40:38 AMPlot By: TAN, JETI
PLOT STAMP FOR EXC USE ONLY
Plotter: DWG TO PDF.PC3
Page Setup:

OTTAWA-CARLETON
DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770765)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352210.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

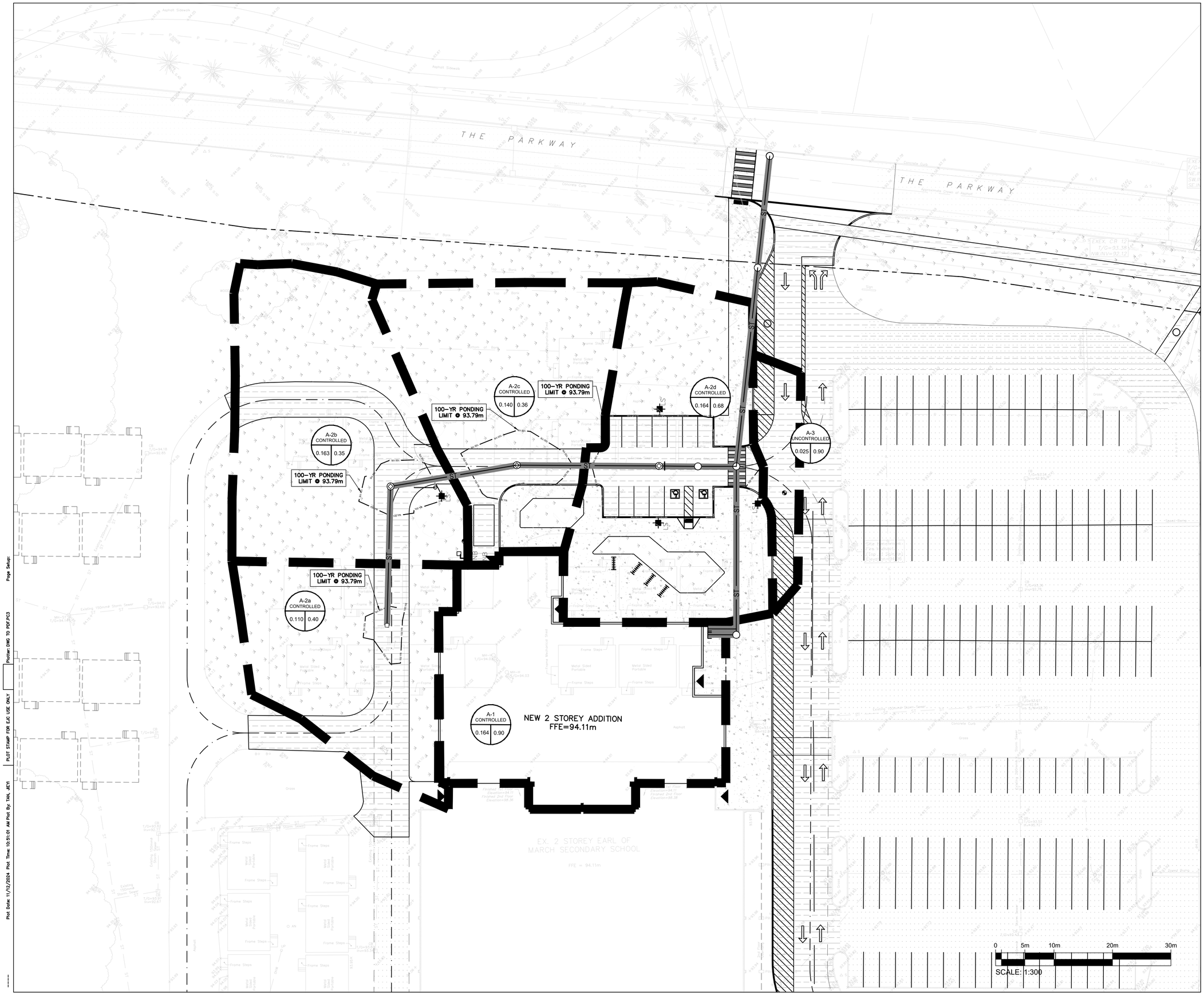
PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

PRE-DEVELOPMENT DRAINAGE AREA PLAN

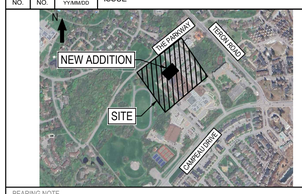
SCALE / ECHELLE	1:300	PROJ. No	ISSUE No	REV. No
		CA0020000.3018	2	0
DRAWN BY / DESSINE PAR	ZA/JT	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	DY	**C08**		
DATE	DECEMBER 2024	ACAD FILE/FICHIER:		



Plot Date: 11/12/2024 Plot Time: 10:51:01 AM Plot By: TAN, JE'I Page Setup: Plotter: DWG TO PDF.PC3 PLOT STAMP FOR EXISTING USE ONLY

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770765)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352110.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

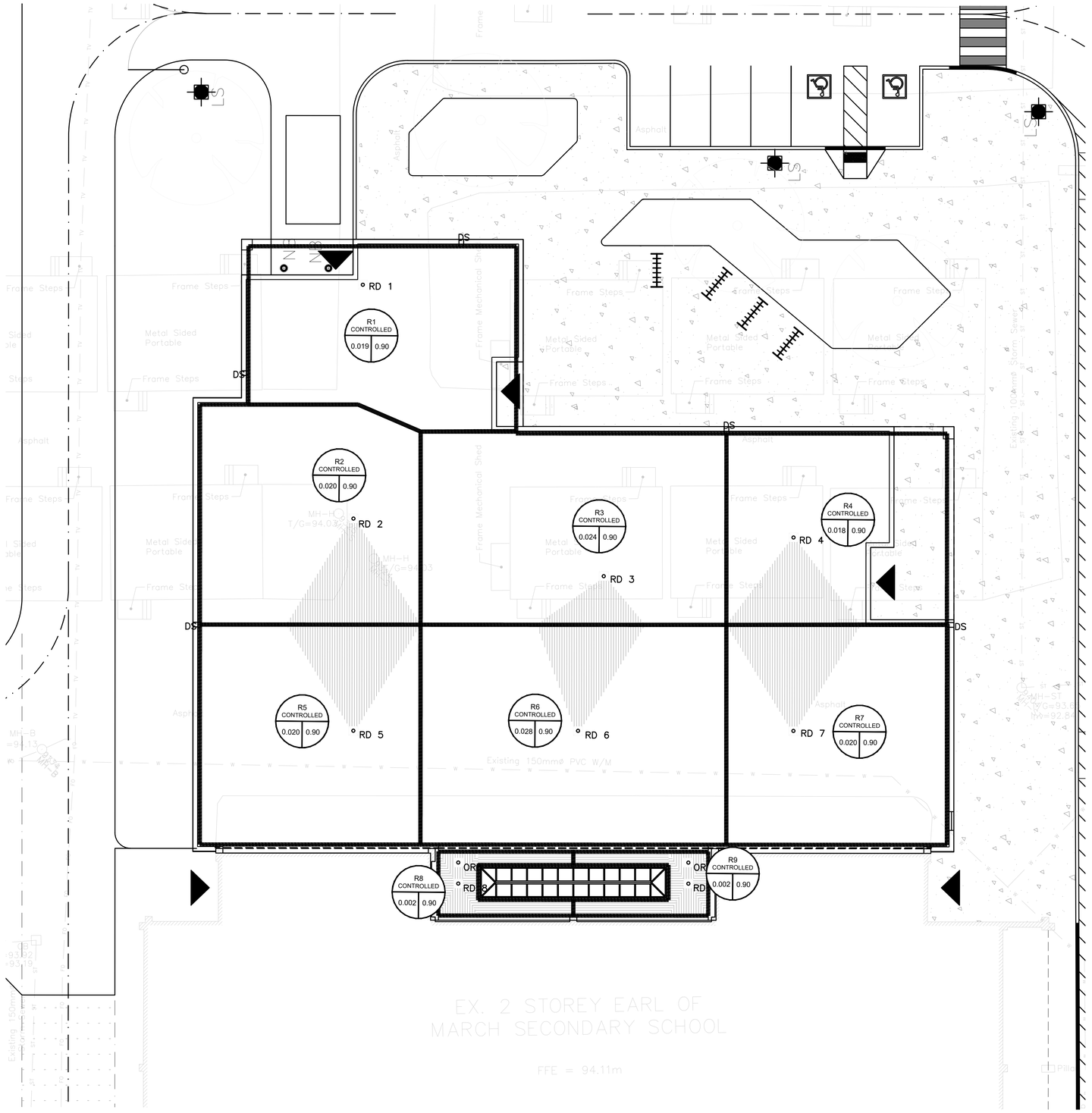
4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

POST-DEVELOPMENT DRAINAGE AREA PLAN

SCALE / ECHELLE	1:300	PROJ. No	ISSUE No	REV. No
		CA0020000.3018	2	0
DRAWN BY / DESSINE PAR	ZA/JT	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	DY	C09		
DATE	DECEMBER 2024	ACAD FILE/FICHIER:		

Roof Drain	Area (m^2)	Depth (m)	Theoretical Rooftop Storage Volume (m^3)	Storage Volume (m^3)	Max Flow Rate (L/s)
1	190	0.15	9.5	7.6	1.3
2	200	0.15	10.0	8.0	1.3
3	240	0.15	12.0	9.6	1.3
4	180	0.15	9.0	7.2	1.3
5	200	0.15	10.0	8.0	1.3
6	280	0.15	14.0	11.2	1.3
7	200	0.15	10.0	8.0	1.3
8	20	0.15	1.0	0.8	1.3
9	20	0.15	1.0	0.8	1.3
Total	**1530**			**61.2**	**11.5**



WATTS | Adjustable Accutrol Weir Tag: _____ | Adjustable Flow Control for Roof Drains

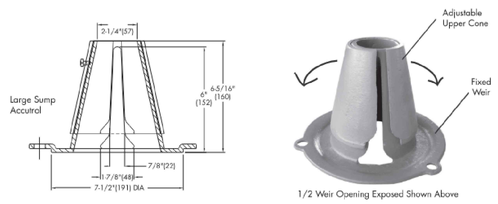
ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)

For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.
Note: Flow rates are directly proportional to the amount of weir opening that is exposed.

EXAMPLE:

For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2"of head will be restricted to 2-1/2 gpm per inch of head.

Therefore, at 3"of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:
[5 gpm (per inch of head) x 2 inches of head] + 2-1/2 gpm (for the third inch of head) = 12-1/2 gpm.



1/2 Weir Opening Exposed Shown Above

TABLE 1. Adjustable Accutrol Flow Rate Settings

Weir Opening Exposed	1"	2"	3"	4"	5"	6"
	Flow Rate (gallons per minute)					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	5	5	5	5	5

Job Name _____ Contractor _____
Job Location _____ Contractor's P.O. No. _____
Engineer _____ Representative _____

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

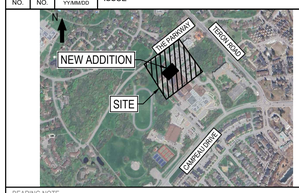
WATTS *A Watts Water Technologies Company*

USA: Tel: (800) 338-2581 • Fax: (828) 248-3929 • Watts.com
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • Watts.ca
Latin America: Tel: (52) 81-1001-8600 • Fax: (52) 81-8000-7091 • Watts.com

ES-WD-RD-ACCUTROLADJ-CAN 1615

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE
ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770765)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352210.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

N

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

ROOF DRAINAGE AREA PLAN

SCALE / ECHELLE	1:150	PROJ. No CA0020000.3018	ISSUE No 2	REV. No 0
DRAWN BY / DESSINE PAR	ZA/JT	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	DY	**C10**		
DATE	DECEMBER 2024	ACAD FILE/FICHIER:		

Plot Date: 11/12/2024 Plot Time: 10:41:04 AM Plot By: TAN, JEN1 | PLOT STAMP FOR EJC USE ONLY | Plotter: DWG TO PDF.PC3 | Page Setup:

OCDSB Earl of March Secondary School Addition
4 The Parkway
Project: CA0020000.3018
Date: November 2024

TABLE 1 - Pre-Development Area

Pre Dev run-off Coefficient "C"

			2 & 5 Year Event		100 Year Event	
Area	**Surface**	**Ha**	**"C"**	**C_{avg}**	**"C"+25%**	***C_{avg}**
Total	Gravel	0.000	0.70	0.59	0.88	0.67
0.766	Asphalt	0.427	0.90		1.00	
	Soft	0.339	0.20		0.25	
				0.50		**0.50**

Per City of Ottawa criteria pre development runoff coefficient shall be no greater than 0.5

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{tot}$

$*C = (A_{hard} \times 1.0 + A_{soft} \times 0.25)/A_{tot}$

*Runoff coefficients increased by 25% up to a maximum value of 1.0 for the 100-Year event

Pre Dev Free Flow - 5 Year Event

Pre Dev.	C	Intensity	Area
5 Year	0.50	104.19	0.766
2.78CIA=	110.94		
110.90	L/S		

**Use a 10 minute time of concentration for 2 year

Pre Dev Free Flow - 100 Year Event

Pre Dev.	C	Intensity	Area
100 Year	0.50	178.56	0.766
2.78CIA=	190.12		
190.10	L/S		

**Use a 10 minute time of concentration for 100 year

Equations:

Flow Equation

Q = 2.78 x C x I x A

Where:

C is the runoff coefficient

I is the intensity of rainfall, City of Ottawa IDF

i = 732.951/(TC+6.199)^0.810 2-year

i = 998.071/(TC+6.053)^0.814 5-year

i = 1735.688/(TC+6.014)^0.820 100-year

A is the total drainage area

OCDSB Earl of March Secondary School Addition
4 The Parkway
Project: CA0020000.3018
Date: November 2024

TABLE 2 - Uncontrolled Flow (Area A-3)

Post Dev run-off Coefficient "C"

			2 & 5 Year Event		100 Year Event	
Area	**Surface**	**Ha**	**"C"**	**C_{avg}**	**"C"+25%**	***C_{avg}**
Total	Gravel	0.000	0.70	**0.90**	0.88	**1.00**
0.025	Asphalt	0.025	0.90		1.00	
	Soft	0.000	0.20		0.25	

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{tot}$

$*C = (A_{hard} \times 1.0 + A_{soft} \times 0.25)/A_{tot}$

*Runoff coefficients increased by 25% up to a maximum value of 1.0 for the 100-Year event

Post Dev Free Flow
5 Year Event

Pre Dev.	C	Intensity	Area
5 Year	0.90	104.19	0.025
2.78CIA=	6.52		
6.50	L/S		

**Use a 10 minute time of concentration for 5 year

100 Year Event

Pre Dev.	C	Intensity	Area
100 Year	1.00	178.56	0.025
2.78CIA=	12.41		
12.40	L/S		

**Use a 10 minute time of concentration for 100 year

Equations:

Flow Equation

Q = 2.78 x C x I x A

Where:

C is the runoff coefficient

I is the intensity of rainfall, City of Ottawa IDF

A is the total drainage area

OCDSB Earl of March Secondary School Addition
4 The Parkway
Project: CA0020000.3018
Date: November 2024

TABLE 3 - Controlled Flow (Areas A-2a to A-2d)

Maximum Allowable Release Rate for the Site	110.90	l/s
Roof Drains Release Rate	11.52	l/s
Uncontrolled Release Rate	12.40	l/s
Maximum Allowable Release Rate to Municipal Sewer:	86.98	l/s
Proposed release rate:	**80.00**	**l/s**

Post Dev run-off Coefficient "C"

			2 & 5 Year Event		100 Year Event	
Area	**Surface**	**Ha**	**"C"**	**C_{avg}**	**"C" x 1.25**	**$C_{100\ avg}$**
Total	Gravel	0.000	0.70	**0.46**	0.88	**0.53**
0.577	Asphalt	0.213	0.90		1.00	
	Grass	0.364	0.20		0.25	

*Areas are approximate based on Architectural site plan and Storm Drainage Area Plan

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{tot}$

$*C = (A_{hard} \times 1.0 + A_{soft} \times 0.25)/A_{tot}$

*Runoff coefficients increased by 25% up to a maximum value of 1.0 for the 100-Year event

QUANTITY STORAGE REQUIREMENTS - 5 Year

0.577 = Area(ha)
0.46 = C
87.0 l/s = max allowable release rate

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m^3	Storage Avail m^3
	10	**104.19**	**76.88**	**73.45**	**3.43**	**2.06**	**49.56**
	20	70.25	51.84	73.45	-21.61	-25.93	49.56
	30	53.93	39.79	73.45	-33.66	-60.58	49.56
5 YEAR	40	44.18	32.60	73.45	-40.84	-98.03	49.56
	50	37.65	27.78	73.45	-45.66	-136.99	49.56
	60	32.94	24.31	73.45	-49.14	-176.90	49.56

QUANTITY STORAGE REQUIREMENTS - 100 Year

0.577 = Area(ha)
0.53 = *C
87.0 l/s = max allowable release rate

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Controlled Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd m^3	Storage Avail m^3
	10	**178.56**	**151.80**	**80.00**	**71.80**	**43.08**	**49.56**
	15	142.89	121.48	80.00	41.48	37.33	49.56
100 YEAR	20	119.95	101.98	80.00	21.98	26.37	49.56
	25	103.85	88.29	80.00	8.29	12.43	49.56
	30	91.87	78.10	80.00	-1.90	-3.41	49.56
	35	82.58	70.20	80.00	-9.79	-20.57	49.56
	40	75.15	63.88	80.00	-16.11	-38.67	49.56

Orifice Sizing

CBMH 102

Event	Flow (L/s)	Head (m)	ORIFICE AREA(m^2)	SQUARE (1-side mm)	CIRC (mmØ)
5 Year	73.45	1.56	0.022	149	168
100 Year	80.00	1.85	0.022	149	168

Orifice Control Sizing

Q = 0.6 x A x (2gh)1/2
Where:
Q is the release rate in m^3/s
A is the orifice area in m^2
g is the acceleration due to gravity, $9.81 m/s^2$
h is the head of water above the orifice centre in m
d is the diameter of the orifice in m

Orifice Invert =	91.860	m
Ponding Elevation @ 100 year=	93.790	m
Top of grate elevation	93.500	m

Equations:

Flow Equation

Q = 2.78 x C x I x A
Where:
C is the runoff coefficient
I is the intensity of rainfall, City of Ottawa IDF
A is the total drainage area

OCDSB Earl of March Secondary School Addition
4 The Parkway
Project: CA0020000.3018
Date: November 2024

TABLE 4 - Proposed Roof Drains

Allowable Release Rate

Total Roof Area =	0.164	Ha		
Total Roof Ponding Area =	1530	m²		
Ponding Depth =	0.150	m		
The flow rate through each Roof Drain will be =	20.000	gpm	(1/2 Exposure)	
	1.280	L/s		
Number of Roof Drains =	9.00			
Total flow rate =	11.52			

TABLE 1. Adjustable Accutrol Flow Rate Settings

Weir Opening Exposed	1"	2"	3"	4"	5"	6"
	Flow Rate (gallons per minute)					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	5	5	5	5	5

Post Dev run-off Coefficient "C"

			2 & 5 Year Event		100 Year Event	
Area	Surface	Ha	"C"	C_{avg}	"C" x 1.25	$C_{100\ avg}$
Total	Asphalt		0.90	**0.90**	0.99	**1.00**
0.164	Roof	0.164	0.90		1.00	
	Grass		0.20		0.25	

*Areas are approximate based on Architectural site plan

Runoff Coefficient Equation

$C = (A_{hard} \times 0.9 + A_{soft} \times 0.2)/A_{tot}$

$*C = (A_{hard} \times 1.0 + A_{soft} \times 0.25)/A_{tot}$

*Runoff coefficients increased by 25% up to a maximum value of 1.0 for the 100-Year event

QUANTITY STORAGE REQUIREMENTS - 5 Year

0.164 = Area(ha)
0.90 = C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd (m^3)	Storage Available* (m^3)
	10	104.19	42.75	11.52	31.23	18.74	61.20
	20	**70.25**	**28.83**	**11.52**	**17.31**	**20.77**	**61.20**
5 YEAR	30	53.93	22.13	11.52	10.61	19.09	61.20
	40	44.18	18.13	11.52	6.61	15.86	61.20
	50	37.65	15.45	11.52	3.93	11.79	61.20

QUANTITY STORAGE REQUIREMENTS - 100 Year

0.164 = Area(ha)
1.00 = *C

Return Period	Time (min)	Intensity (mm/hr)	Flow Q (L/s)	Allowable Runoff (L/s)	Net Runoff To Be Stored (L/s)	Storage Req'd (m^3)	Storage Available (m^3)
	10	178.56	81.41	11.52	69.89	41.93	61.20
	20	119.95	54.69	11.52	43.17	51.80	61.20
100 YEAR	**30**	**91.87**	**41.88**	**11.52**	**30.36**	**54.66**	**61.20**
	40	75.15	34.26	11.52	22.74	54.58	61.20
	50	63.95	29.16	11.52	17.64	52.91	61.20
	60	55.89	25.48	11.52	13.96	50.27	61.20
	70	49.79	22.70	11.52	11.18	46.96	61.20
	80	44.99	20.51	11.52	8.99	43.16	61.20
	90	41.11	18.74	11.52	7.22	39.01	61.20

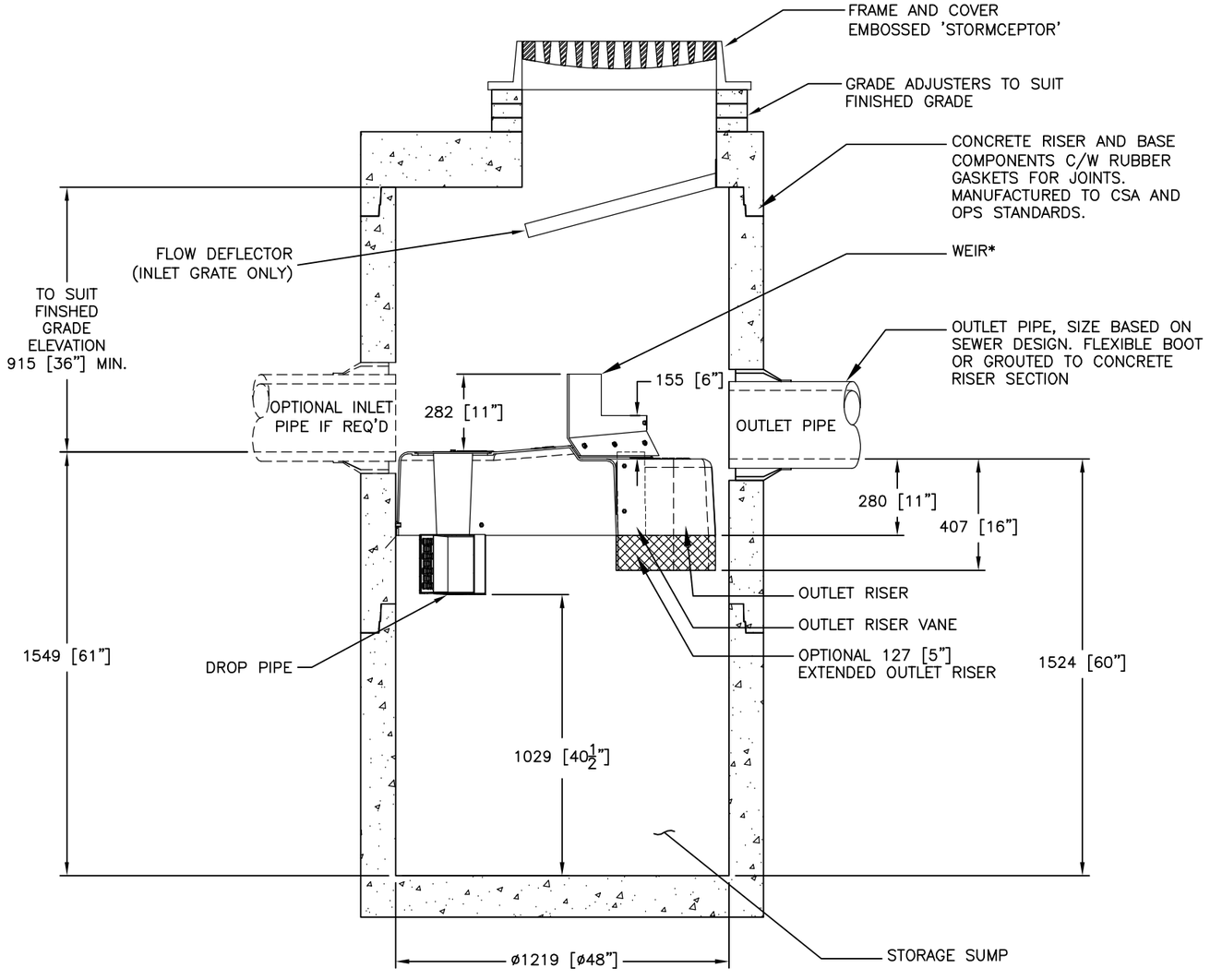
*Storage available is calculated using roof ponding area multiplied by the maximum ponding depth, divided by 3 for a conical pond, reduced by 20% to account for roof top equipment
**Refer to roof drains area and storage volume table on DWG C10 for details

Equations:

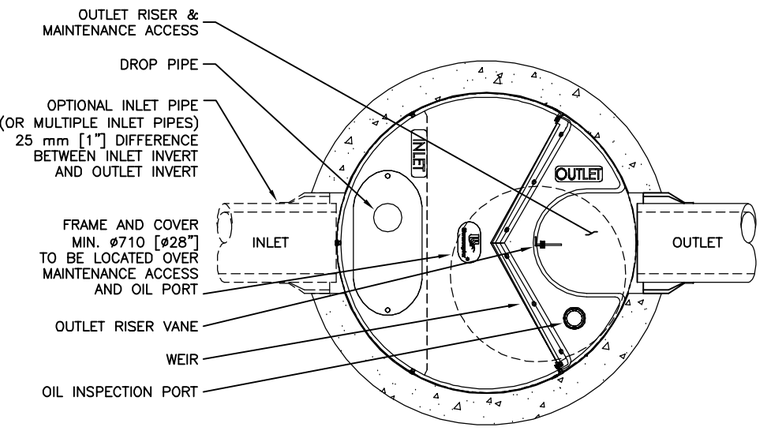
Flow Equation

$Q = 2.78 \times C \times I \times A$

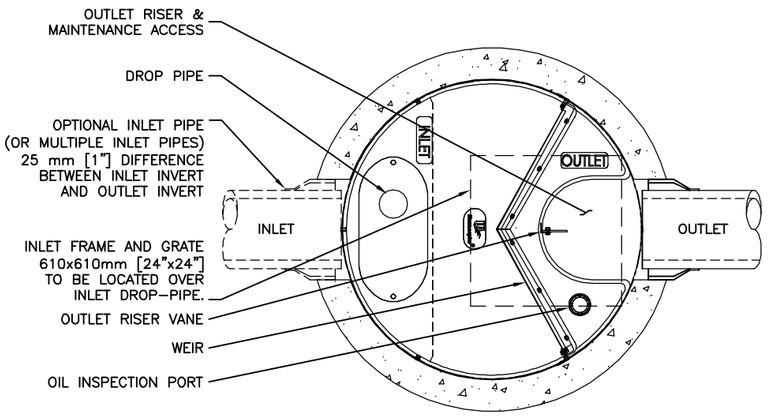
Where:
C is the runoff coefficient
I is the intensity of rainfall, City of Ottawa IDF
A is the total drainage area



SECTION VIEW



PLAN VIEW (STANDARD)



PLAN VIEW (INLET TOP)

FOR SITE SPECIFIC DRAWINGS PLEASE CONTACT YOUR LOCAL STORMCEPTOR REPRESENTATIVE. SITE SPECIFIC DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME. SOME FIELD REVISIONS TO THE SYSTEM LOCATION OR CONNECTION PIPING MAY BE NECESSARY BASED ON AVAILABLE SPACE OR SITE CONFIGURATION REVISIONS. ELEVATIONS SHOULD BE MAINTAINED EXCEPT WHERE NOTED ON BYPASS STRUCTURE (IF REQUIRED).

GENERAL NOTES:

* MAXIMUM SURFACE LOADING RATE (SLR) INTO LOWER CHAMBER THROUGH DROP PIPE IS 1135 L/min/m^2 (27.9 gpm/ft^2) FOR STORMCEPTOR EF4 AND 535 L/min/m^2 (13.1 gpm/ft^2) FOR STORMCEPTOR EFO4 (OIL CAPTURE CONFIGURATION). WEIR HEIGHT IS 150 mm (6 INCH) FOR EF04.

1. ALL DIMENSIONS INDICATED ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SPECIFIED.
2. STORMCEPTOR STRUCTURE INLET AND OUTLET PIPE SIZE AND ORIENTATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.
3. UNLESS OTHERWISE NOTED, BYPASS INFRASTRUCTURE, SUCH AS ALL UPSTREAM DIVERSION STRUCTURES, CONNECTING STRUCTURES, OR PIPE CONDUITS CONNECTING TO COMPLETE THE STORMCEPTOR SYSTEM SHALL BE PROVIDED AND ADDRESSED SEPARATELY.
4. DRAWING FOR INFORMATION PURPOSES ONLY. REFER TO ENGINEER'S SITE/UTILITY PLAN FOR STRUCTURE ORIENTATION.
5. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT THE DEVICE FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. DEVICE ACTIVATION, BY CONTRACTOR, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE STORMCEPTOR UNIT IS CLEAN AND FREE OF DEBRIS.

STANDARD DETAIL
NOT FOR CONSTRUCTION

SITE SPECIFIC DATA REQUIREMENTS

STORMCEPTOR MODEL	EFO4
STRUCTURE ID	*
HYDROCARBON STORAGE REQ'D (L)	*
WATER QUALITY FLOW RATE (L/s)	*
PEAK FLOW RATE (L/s)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
DRAINAGE AREA (HA)	*
DRAINAGE AREA IMPERVIOUSNESS (%)	*

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	*	*	*	*	*
INLET #2	*	*	*	*	*
OUTLET	*	*	*	*	*

* PER ENGINEER OF RECORD

MARK	DATE	REVISION DESCRIPTION	BY
1	6/8/18	UPDATES	JSK
0	5/26/17	INITIAL RELEASE	JSK

Stormceptor® EF

SCALE = NTS

imbrium®
407 FAIRVIEW DRIVE, WHITBY, ON, L1N 9A9
TF 800-565-4501 CA 416-800-9000 INTL +1-416-800-9000

DATE: 10/13/2017

DESIGNED:	DRAWN:
JSK	JSK
CHECKED:	APPROVED:
BSF	SP
PROJECT No.:	SEQUENCE No.:
EFO4	*

SHEET: 1 OF 1

Stormceptor®

Rinker MATERIALS® A QUIKRETE® COMPANY

Imbrium® OGS Net Annual Sediment Load Reduction Sizing Tool

Project Name: Earl of March School Addition **Site Name:** Earl of March School Addition **Location:** Ottawa / ON

Site has been updated successfully.

Download Stormceptor Specifications & Drawings

Download Stormceptor EFO Sizing Report

Design Summary

Net Annual Sediment (TSS) Load Reduction Sizing Summary	
Stormceptor Model	**TSS Removal Provided (%)**
EFO4	89
EFO6	96
EFO8	98
EFO10	99
EFO12	100

Recommended Stormceptor EFO Model: EFO4

Estimated Net Annual Sediment (TSS) Load Reduction (%): 89

Water Quality Runoff Volume Capture (%): > 90

Upstream Flow Controlled Results								
Rainfall Intensity (mm/hr)	Percent Rainfall Volume	Cumulative Rainfall Volume	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate ($L/min/m^2$)	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
0.5	8.6%	8.6%	0.42	25.2	21.0	100	8.6	8.6
1	20.3%	29.0%	0.84	50.4	42.0	100	20.3	29.0
2	16.2%	45.2%	1.68	100.8	84.0	98	16.0	44.9
3	12.0%	57.2%	2.52	151.2	126.0	93	11.2	56.1
4	8.4%	65.6%	3.36	201.6	168.0	88	7.4	63.6
5	5.9%	71.6%	4.20	252.0	210.0	83	4.9	68.5
6	4.6%	76.2%	5.04	302.3	252.0	81	3.7	72.2
7	3.1%	79.3%	5.88	352.7	293.9	79	2.4	74.6
8	2.7%	82.0%	6.72	403.1	335.9	77	2.1	76.8
9	3.3%	85.3%	7.56	453.5	377.9	75	2.5	79.3
10	2.3%	87.6%	8.40	503.9	419.9	73	1.7	80.9
11	1.6%	89.2%	9.24	554.3	461.9	71	1.1	82.1
12	1.3%	90.5%	10.08	604.7	503.9	69	0.9	83.0
13	1.7%	92.2%	10.92	655.1	545.9	67	1.2	84.1
14	1.2%	93.5%	11.76	705.5	587.9	66	0.8	84.9
15	1.2%	94.6%	12.60	755.9	629.9	64	0.7	85.7
16	0.7%	95.3%	13.44	806.2	671.9	64	0.4	86.1
17	0.7%	96.1%	14.28	856.6	713.9	64	0.5	86.6
18	0.4%	96.5%	15.12	907.0	755.9	63	0.3	86.8
19	0.4%	96.9%	15.96	957.4	797.8	63	0.3	87.1
20	0.2%	97.1%	16.80	1007.8	839.8	63	0.1	87.2
21	0.5%	97.5%	17.64	1058.2	881.8	62	0.3	87.5
22	0.2%	97.8%	18.48	1108.6	923.8	62	0.2	87.7
23	1.0%	98.8%	19.32	1159.0	965.8	62	0.6	88.3
24	0.3%	99.1%	20.16	1209.4	1007.8	62	0.2	88.5
25	0.9%	100.0%	21.00	1259.8	1049.8	60	0.6	89.0
30	0.9%	100.9%	25.20	1511.7	1259.8	56	0.5	89.6
35	-0.9%	100.0%	29.39	1763.7	1469.7	50	N/A	N/A
40	0.0%	100.0%	33.59	2015.6	1679.7	44	0.0	89.1
45	0.0%	100.0%	37.79	2267.6	1889.6	39	0.0	89.1

Download Stormceptor Specifications & Drawings

< Back Cancel Save Sizing Report

SANITARY SEWER DESIGN SHEET

OCDSB Earl of March Secondary School Addition
4 The Parkway
Project: CA0020000.3018

Date: November 2024

LOCATION				RESIDENTIAL AREA AND POPULATION												INDUSTRIAL				COMMERCIAL		INSTITUTIONAL		I+C+I	INFILTRATION			TOTAL	PIPE					
LOCATION	FROM M.H.	TO M.H.	SANITARY DRAINAGE AREA ID	INDV AREA (ha)	ACCU AREA (ha)	NUMBER OF UNITS						POPULATION		PEAK FACT.	PEAK FLOW (l/s)	GROSS AREA (ha)	DEVEL. AREA (ha)	ACCU. AREA (ha)	PEAK FACTOR	INDIV AREA (ha)	ACCU. AREA (ha)	AREA (ha)	Students*	PEAK FLOW (l/s)	INDIV AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	LENGTH (m)	DIA. (mm)	SLOPE (%)	CAP. (FULL) (l/s)	VEL. (FULL) (m/s)	AVAIL. CAP. (%)
						SINGLES	SEMIS	TOWNS	1-BED APT.	2-BED APT.	3-BED APT.	INDIV POP.	ACCU POP.																				
BASED ON POPULATION																																
New Addition	BUILDING	SAMH 103																				0.766	100.00	0.29	0.77	0.77	0.25	**0.54**	11.00	200	1.00	32.80	1.04	**98.34%**
	SAMH 103	SAMH 102																				0.00	0.00	0.00	0.00	0.77	0.25	**0.54**	53.79	200	0.65	26.44	0.84	**97.94%**
	SAMH 102	SAMH 101																				0.00	0.00	0.00	0.00	0.77	0.25	**0.54**	69.97	200	0.65	26.44	0.84	**97.94%**
	SAMH 101	SAMH 100																				0.00	0.00	0.00	0.00	0.77	0.25	**0.54**	19.89	200	0.65	26.44	0.84	**97.94%**
	SAMH 100	Ex. SAMH 2																				0.00	0.00	0.00	0.00	0.77	0.25	**0.54**	71.65	200	0.65	26.44	0.84	**97.94%**

DESIGN PARAMETERS

RESIDENTIAL AVG. DAILY FLOW =	280	l/cap/day	COMMERCIAL PEAK FACTOR =	1.5	(WHEN AREA > 20%)	PEAK POPULATION FLOW, (l/s) =	P*q*M/86400	UNIT TYPE	PERSONS/UNIT
COMMERCIAL AVG. DAILY FLOW =	28,000	l/ha/day		1.0	(WHEN AREA < 20%)	PEAK EXTRANEOUS FLOW, (l/s) =	I*Ac	SINGLES	3.4
	0.324	l/ha/s				RESIDENTIAL PEAKING FACTOR, M =	1+(14/(4+P^0.5))*K	SEMI-DETACHED	2.7
INSTITUTIONAL AVG. DAILY FLOW =	28,000	l/ha/day	INSTITUTIONAL PEAK FACTOR =	1.5	(WHEN AREA > 20%)	Ac = CUMULATIVE AREA (ha)		TOWNHOMES	2.7
	0.324	l/ha/s		1.0	(WHEN AREA < 20%)	P = POPULATION (THOUSANDS)		SINGLE APT. UNIT	1.4
LIGHT INDUSTRIAL FLOW =	35,000	l/ha/day						2-BED APT. UNIT	2.1
	0.405	l/ha/s	RESIDENTIAL CORRECTION FACTOR, K =	0.80		SEWER CAPACITY, Qcap (l/s) =	1/N S^(1/2) R^(2/3) Ac	3-BED APT. UNIT	3.1
HEAVY INDUSTRIAL FLOW =	55,000	l/ha/day	MANNING N =	0.013		(MANNING'S EQUATION)			
	0.637	l/ha/s	PEAK EXTRANEOUS FLOW, I (l/s/ha) =	0.33					
INSTITUTIONAL AVG. DAILY FLOW =	70	l/student/day				*Notes: Assume 10h day			

DESIGNED:	NO.	REVISION	DATE
Zarak Ali	1.	City Submission No.1	2024-07-22
CHECKED:		City Submission No.2	2024-11-14
Ding Bang Yang, P.Eng.			
PROJECT:			
EOM New Addition			
4 The Parkway			
LOCATION:			
Ottawa, Ontario			
PAGE NO:	**FILE & DWG. REFERENCE:** C05A/C05B		
1 of 1			

THE PARKWAY

APPROXIMATE LIMITS OF ROADWAY REINSTATEMENT (PER CITY STANDARD R10).

MAINTAIN AND PROTECT EXISTING UTILITY MANHOLE (TYP.).

MATCH INTO EXISTING CURB AND PAVEMENT ELEVATIONS (TYP.).

SLOPE 3:1 (MAX) FROM BERM TO MATCH INTO PROPOSED ELEVATIONS (TYP.).

TIE INTO EXISTING PAVEMENT ELEVATIONS (TYP.). REINSTATE EXISTING PAVEMENT AS REQUIRED TO PRE-EXISTING CONDITIONS.

100-YR PONDING LIMIT @ 93.79m

STMH 100

STMH 101

STMH 102

STMH 103

SAMH 102

SAMH 103

CBMH 100

CBMH 101

CBMH 102

EFO4

CB 01

VB

NEW 2 STOREY ADDITION
FFE=94.11m

EX. 2 STOREY EARL OF MARCH SECONDARY SCHOOL
FFE = 94.11m

TIE INTO EXISTING PAVEMENT ELEVATIONS (TYP.). REINSTATE EXISTING PAVEMENT AS REQUIRED TO PRE-EXISTING CONDITIONS.

MAINTAIN AND PROTECT EXISTING CB (TYP.).

TIE INTO EXISTING PAVEMENT ELEVATIONS (TYP.). REINSTATE EXISTING PAVEMENT AS REQUIRED TO PRE-EXISTING CONDITIONS.

MATCH INTO EXISTING CURB AND PAVEMENT ELEVATIONS (TYP.).

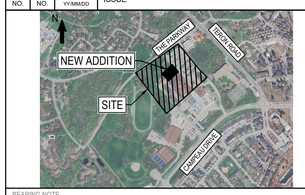
0 5m 10m 20m 30m

SCALE: 1:300

Plot Date: 11/12/2024 Plot Time: 10:38:42 AMPlot By: TAN, JIEYI | PLOT STAMP FOR E/C USE ONLY | Plotter: DWG TO PDF.PC3 | Page Setup:

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770765)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352210.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

N

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

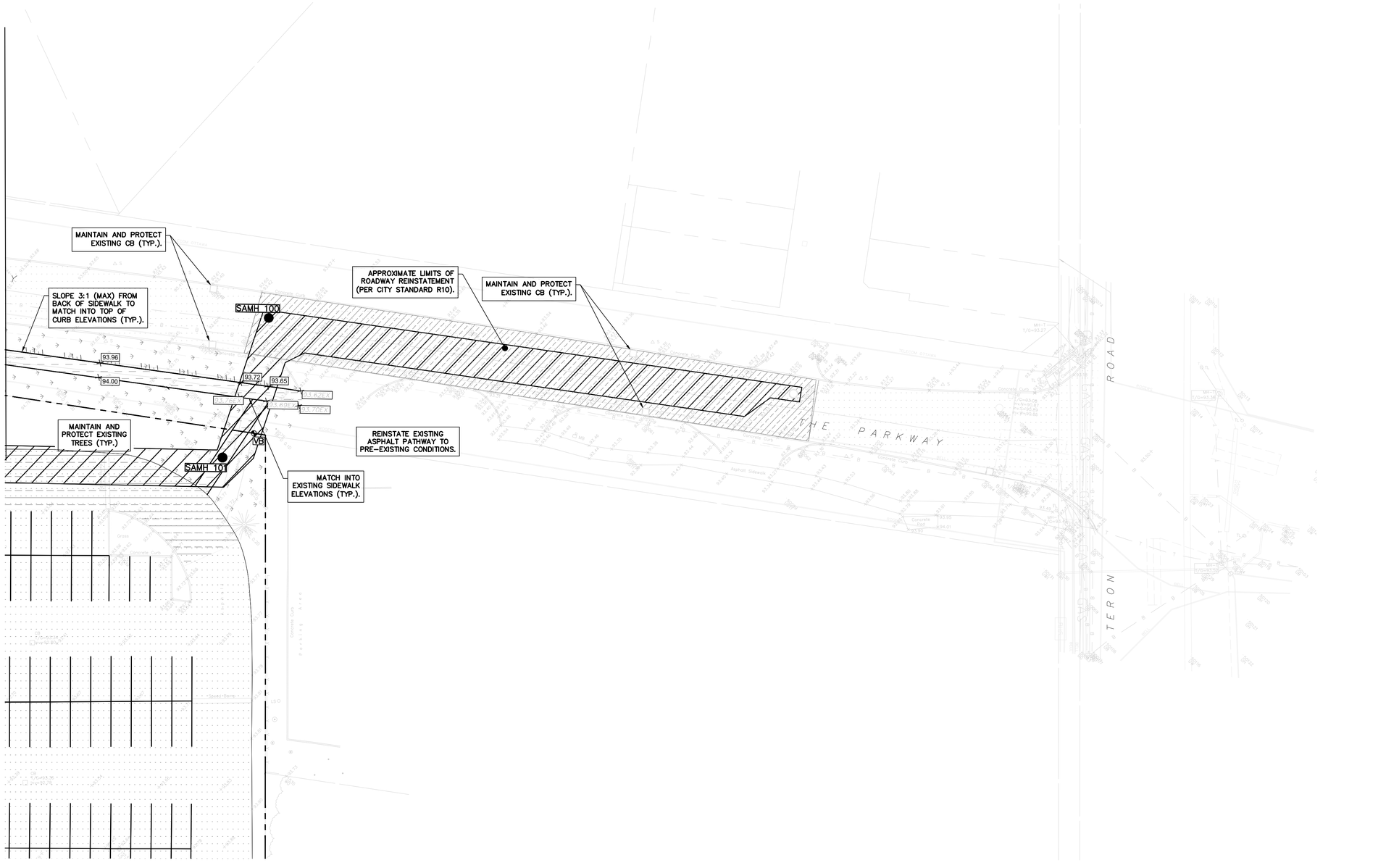
4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

GRADING PLAN

SCALE ECHELLE	1:300	PROJ. No CA0020000.3018	ISSUE No 2	REV. No 0
DRAWN BY DESSINE PAR	ZA/JT	DRAWING/DESSIN		
CHECKED BY VERIFIE PAR	DY	**C04A**		
DATE	DECEMBER 2024	ACAD FILE/FICHIER:		

MATCHING LINE
SEE DRAWING C04A

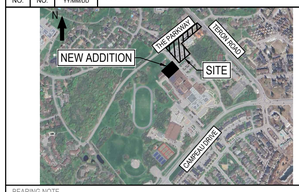


0 5m 10m 20m 30m

SCALE: 1:300

OTTAWA-CARLETON
DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770765)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352210.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

N

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

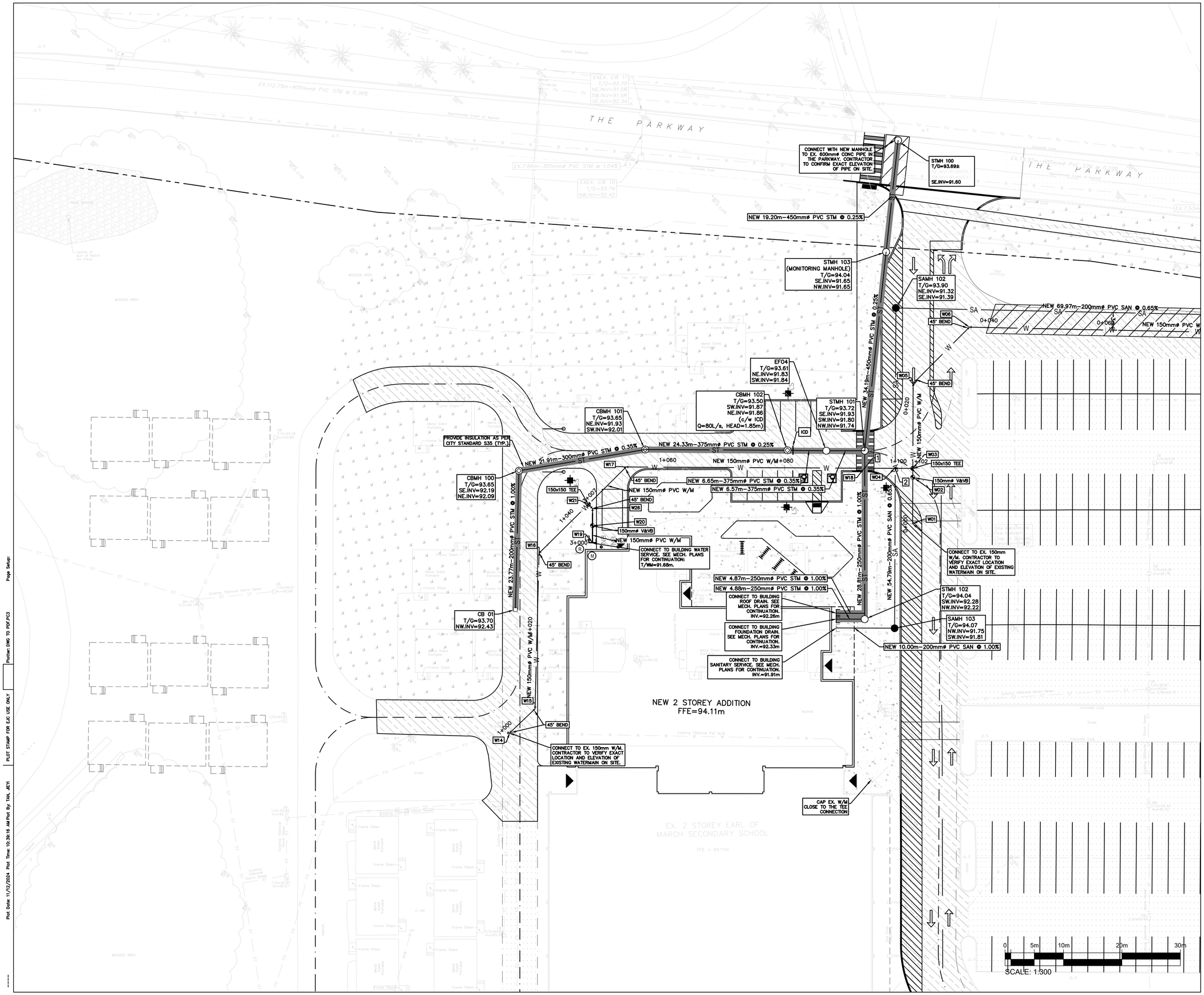
4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

GRADING PLAN

SCALE / ECHELLE	1:300	PROJ. No CA0020000.3018	ISSUE No 2	REV. No 0
DRAWN BY / DESSINE PAR	ZA/JT	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	DY	C04B		
DATE	DECEMBER 2024	ACAD FILE/FICHIER:		

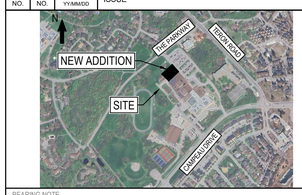
Plot Date: 11/12/2024 Plot Time: 10:38:59 AMPlot By: TAN, JEFI
PLOT STAMP FOR EJC USE ONLY
Plotter: DWG TO PDF.PC3
Page Setup:



Plot Date: 11/12/2024 Plot Time: 10:38:16 AM Plot By: TAN, JET1 | PLOT STAMP FOR EXC USE ONLY | Plotter: DWG TO PDF.PC3 | Page Setup: ----

OTTAWA-CARLETON
DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770785)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352210.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

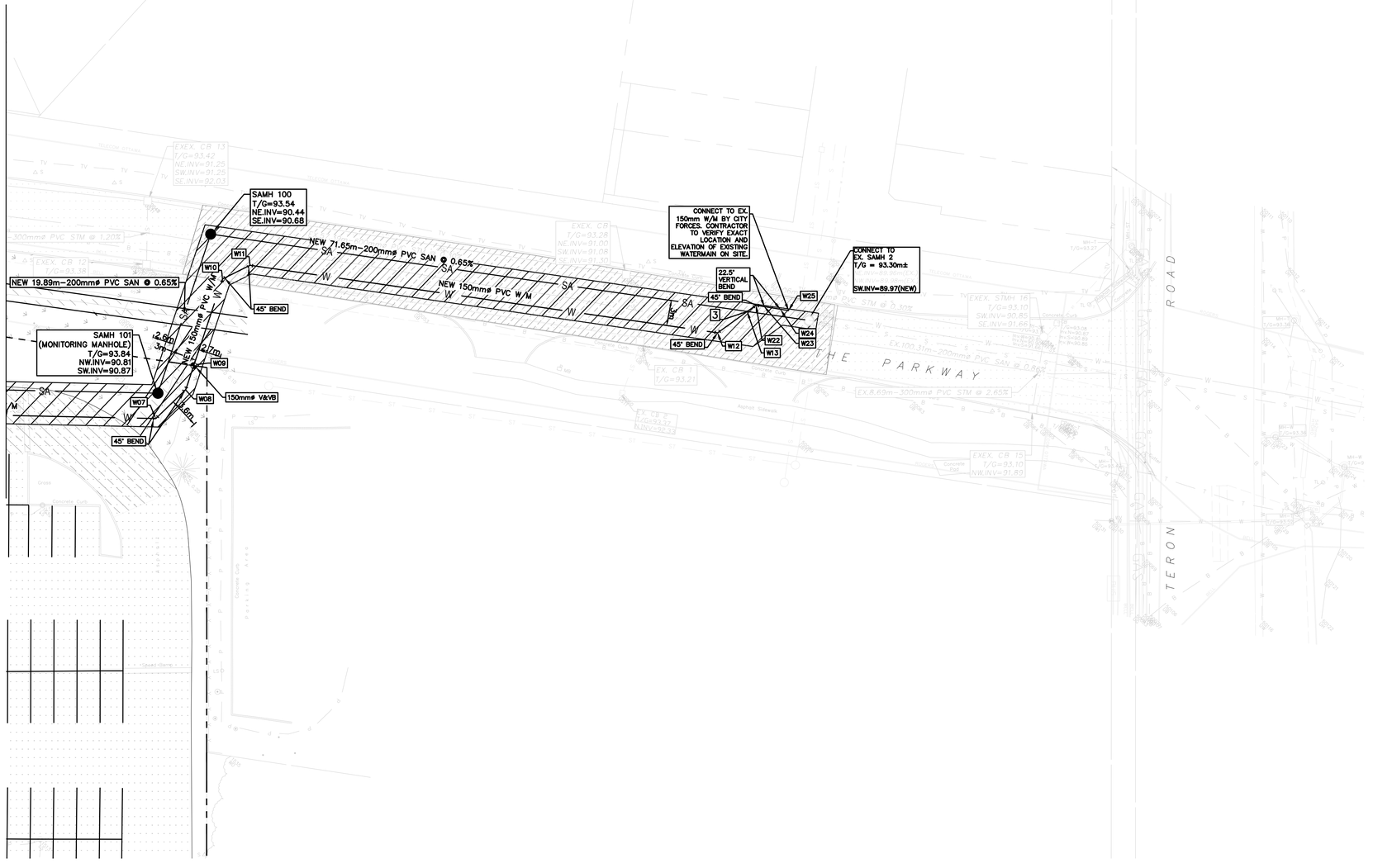
4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

SERVICING PLAN

SCALE / ECHELLE	1:300	PROJ. No CA0020000.3018	ISSUE No 2 / REV. No 0
DRAWN BY / DESSINE PAR	ZA/JT	DRAWING/DESSIN	
CHECKED BY / VERIFIE PAR	DY	C05A	
DATE	DECEMBER 2024	ACAD FILE/FICHIER:	

MATCHING LINE
SEE DRAWING C05A



0 5m 10m 20m 30m

SCALE: 1:300

Plot Date: 11/12/2024 Plot Time: 10:39:30 AMPlot By: TAN, JEIY | PLOT STAMP FOR E/C USE ONLY | Plotter: DWG TO PDF.PC3 | Page Setup:

OTTAWA-CARLETON
DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC

BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770765)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352210.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

N

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024–12–12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

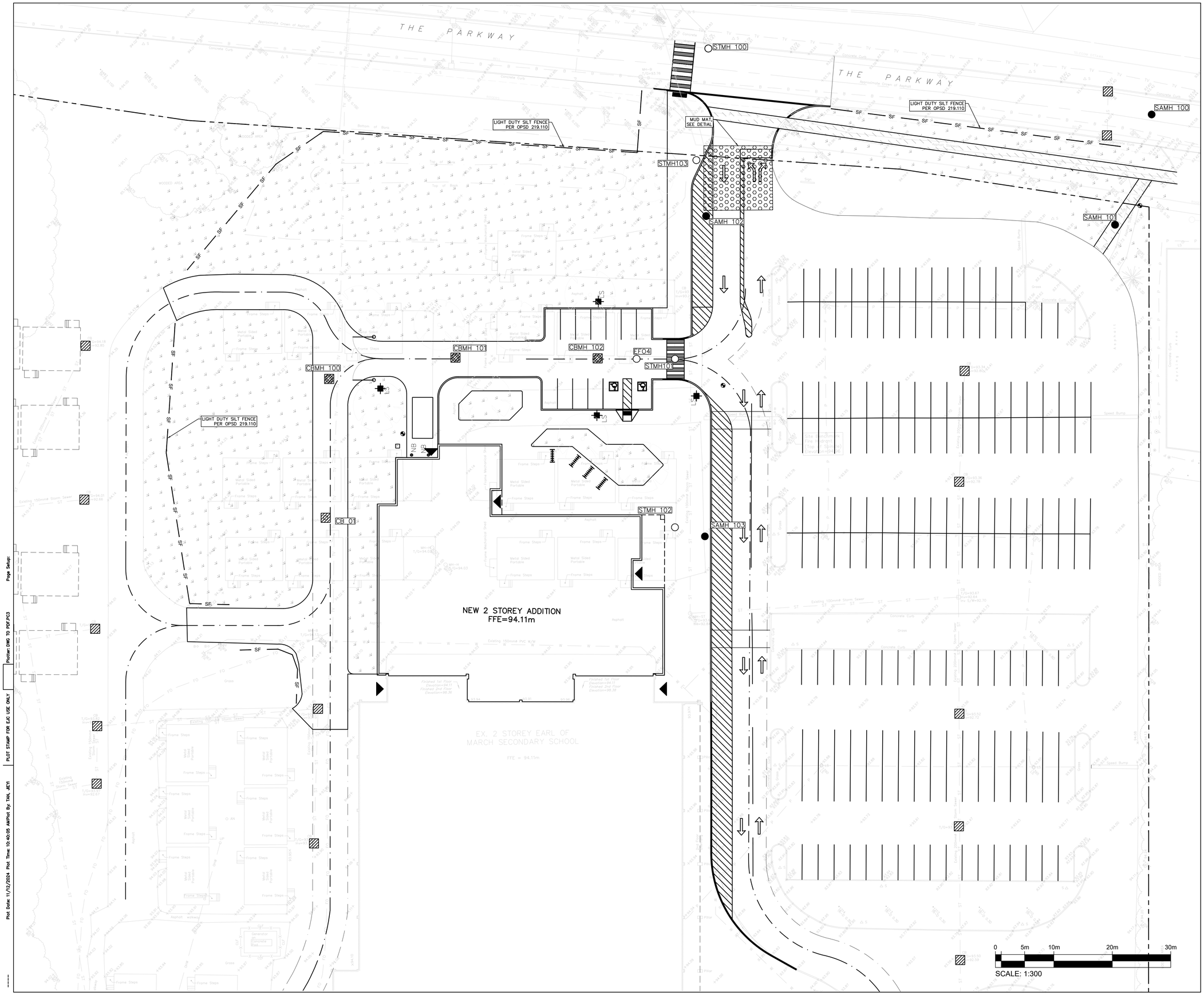
SERVICING
PLAN

SCALE / ECHELLE	1:300	PROJ. No CA0020000.3018	ISSUE No 2	REV. No 0
DRAWN BY / DESSINE PAR	ZA/JT	DRAWING/DESSIN		
CHECKED BY / VERIFIE PAR	DY	C05B		
DATE	DECEMBER 2024	ACAD FILE/FICHIER:		

APPENDIX

D

- DWG C07A/C07B - EROSION AND SEDIMENTATION CONTROL PLAN



Plot Date: 11/12/2024 Plot Time: 10:40:05 AMPlot By: TAN, JEYI

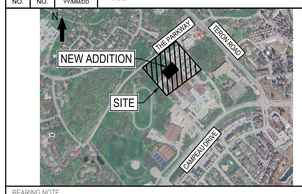
PLOT STAMP FOR EAC USE ONLY

Plotter: DWG TO PDF.PC3

Page Setup:

OTTAWA-CARLETON DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19707/65)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352210.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

N

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH SCHOOL ADDITION

4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

EROSION AND SEDIMENT CONTROL PLAN

SCALE ECHELLE	1:300	PROJ. No CA0020000.3018	ISSUE No 2	REV. No 0
DRAWN BY DESSINE PAR	ZA/JT	DRAWING/DESSIN		
CHECKED BY VERIFIE PAR	DY	C07A		
DATE	DECEMBER 2024	ACAD FILE/FICHIER:		

MATCHING LINE
SEE DRAWING C07A

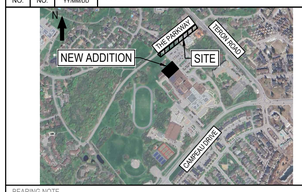
0 5m 10m 20m 30m

SCALE: 1:300

Plot Date: 11/12/2024 Plot Time: 10:40:19 AM Plot By: TAN, JEET | PLOT STAMP FOR E.C. USE ONLY | Plotter: DWG TO PDF.PC3 | Page Setup: | ----

OTTAWA-CARLETON
DISTRICT SCHOOL BOARD

ISSUE NO.	REV. NO.	DATE YY/MM/DD	ISSUE
2		24/12/12	REVISED AS PER CITY COMMENTS
1		24/07/22	ISSUED FOR SPC



BEARING NOTE

ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO GEODETIC DATUM CGVD-1928:1978.
(MONUMENT NO. 19770765)
BENCHMARK #1 N:5020636.734 E:352184.396 Z:94.96
BENCHMARK #2 N:5020583.341 E:352310.407 Z:93.82
BENCHMARK #3 N:5020432.991 E:352406.889 Z:95.53

WSP CANADA INC.
2611 QUEENSVIEW DRIVE, SUITE 300
OTTAWA, ONTARIO
CANADA K2B 8K2
PHONE: 613-829-2800
WWW.WSP.COM

N

LICENSED PROFESSIONAL ENGINEER
D. B. YANG
100230568
2024-12-12
PROVINCE OF ONTARIO

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 100, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
EARL OF MARCH
SCHOOL ADDITION

4 THE PARKWAY
OTTAWA, ON, K2K 1Y4

DRAWING TITLE/TITRE DU DESSIN

EROSION AND SEDIMENT CONTROL PLAN

SCALE / ECHELLE: 1:300		PROJ. No: CA0020000.3018	ISSUE No: 2	REV. No: 0
DRAWN BY / DESSINE PAR: ZA/JT		DRAWING/DESSIN: C07B		
CHECKED BY / VERIFIE PAR: DY				
DATE: DECEMBER 2024		ACAD FILE/FICHIER:		

APPENDIX

E

- SUBMISSION CHECK LIST

4.1 General Content

☒ Executive Summary (for larger reports only).

Comments: Refer to Servicing Report Section 1.1

☒ Date and revision number of the report.

Comments: *Refer to front page of the Report*

☒ Location map and plan showing municipal address, boundary, and layout of proposed development.

Comments: *Refer to Figure 1.1 Site Location for Location Map and Plan*

☒ Plan showing the site and location of all existing services.

Comments: *Refer to drawing C05A and C05B*

☒ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.

Comments: *Refer to Architectural Site Plan*

☒ Summary of Pre-consultation Meetings with City and other approval agencies.

Comments: Refer to Appendix A for Pre-Consultation Meeting Notes

☒ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.

Comments: *N/A*

☒ Statement of objectives and servicing criteria.

Comments: Refer to Servicing Report Section 1.7

☒ Identification of existing and proposed infrastructure available in the immediate area.

Comments: *Refer to drawing C05A and C05B*

☒ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).

Comments: *N/A*

☒ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.

Comments: *Refer to drawing C04A and C04B*

☒ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.

Comments: *N/A*

☒ Proposed phasing of the development, if applicable.

Comments: *N/A*

☒ Reference to geotechnical studies and recommendations concerning servicing.

Comments: *N/A*

☒ All preliminary and formal site plan submissions should have the following information:

- ☒ Metric scale
- ☒ North arrow (including construction North)
- ☒ Key plan
- ☒ Name and contact information of applicant and property owner
- ☒ Property limits including bearings and dimensions
- ☒ Existing and proposed structures and parking areas
- ☒ Easements, road widening and rights-of-way
- ☒ Adjacent street names

Comments: *Refer to drawing C04 to C09*

4.2 Development Servicing Report: Water

☒ Confirm consistency with Master Servicing Study, if available

Comments: *Refer to Servicing Report Section 2.1*

☒ Availability of public infrastructure to service proposed development

Comments: Refer to Servicing Report Section 2.1

☒ Identification of system constraints

Comments: N/A

☒ Identify boundary conditions

Comments: *Refer to Servicing Report Section 2.2*

☒ Confirmation of adequate domestic supply and pressure

Comments: *Refer to Servicing Report Section 2.3*

☒ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.

Comments: *Refer to Servicing Report Section 2.4*

☒ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.

Comments: *Refer to Servicing Report Section 2.5*

☒ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design

Comments: *Refer to Servicing Report Section 2.6*

☒ Address reliability requirements such as appropriate location of shut-off valves

Comments: *Refer to Servicing Report Section 2.7*

☒ Check on the necessity of a pressure zone boundary modification.

Comments: *Refer to Servicing Report Section 2.8*

☒ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range

Comments: *Refer to Servicing Report Section 2.9*

☒ Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.

Comments: *Refer to Servicing Report Section 2.10*

☒ Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.

Comments: *Refer to Servicing Report Section 2.11*

☒ Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.

Comments: *Refer to Servicing Report Section 2.12*

☒ Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.

Comments: *Refer to Servicing Report Section 2.13*

4.3 Development Servicing Report: Wastewater

☒ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).

Comments: *Refer to Servicing Report Section 3.1*

☒ Confirm consistency with Master Servicing Study and/or justifications for deviations.

Comments: *Refer to Servicing Report Section 3.2*

☒ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.

Comments: *Refer to Servicing Report Section 3.3*

☒ Description of existing sanitary sewer available for discharge of wastewater from proposed development.

Comments: *Refer to Servicing Report Section 3.4*

☒ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)

Comments: *Refer to Servicing Report Section 3.5*

☒ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.

Comments: Refer to Servicing Report Section 3.9 and 3.11

☒ Special considerations such as contamination, corrosive environment etc.

Comments: *Refer to Servicing Report Section 3.8*

4.4 Development Servicing Report: Stormwater

☒ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)

Comments: *Refer to Servicing Report Section 4.1*

☒ Analysis of available capacity in existing public infrastructure.

Comments: *Refer to Servicing Report Section 4.2*

☒ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.

Comments: *Refer to drawing C04A an C04B*

☒ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.

Comments: *Refer to Servicing Report Section 4.4*

☒ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.

Comments: *Refer to Servicing Report Section 4.5*

☒ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.

Comments: *Refer to Servicing Report Section 4.6-4.10*

☒ Set-back from private sewage disposal systems.

Comments: *N/A*

☒ Watercourse and hazard lands setbacks.

Comments: N/A

☒ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.

Comments: N/A

☒ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.

Comments: *N/A*

☒ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).

Comments: *Refer to Servicing Report Section 4.6-4.10 and Appendix D*

☒ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.

Comments: *Refer to Servicing Report Section 4.11*

☒ Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.

Comments: *Refer to Servicing Report Section 4.12*

☒ Any proposed diversion of drainage catchment areas from one outlet to another.

Comments: *Refer to Servicing Report Section 4.13*

☒ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.

Comments: Refer to Servicing Report Section 4.6-4.10, Appendix D and drawing C05A and C05B

☒ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.

Comments: Refer to Servicing Report Section 4.6-4.10 and Appendix D

☒ Identification of potential impacts to receiving watercourses

Comments: *Refer to Servicing Report Section 4.15*

☒ Identification of municipal drains and related approval requirements.

Comments: *Refer to Servicing Report Section 4.16*

☒ Descriptions of how the conveyance and storage capacity will be achieved for the development.

Comments: *Refer to Servicing Report Section 4.17*

☒ 100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.

Comments: Refer to drawings C04A and C04B

☒ Inclusion of hydraulic analysis including hydraulic grade line elevations.

Comments: *Refer to Servicing Report Section 4.18*

☒ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.

Comments: *Refer to Servicing Report Section 5.0*

☒ Identification of floodplains - proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.

Comments: *N/A*

☒ Identification of fill constraints related to floodplain and geotechnical investigation.

Comments: *N/A*

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

☐ Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.

Comments: Not applicable.

☐ Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.

Comments: Not applicable.

☐ Changes to Municipal Drains.

Comments: *Not applicable.*

☐ Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)

Comments: *Not applicable.*

4.6 Conclusion Checklist

☒ Clearly stated conclusions and recommendations

Comments:

☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.

Comments: *Further comments to be added following site plan application review.*

☒ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario

Comments: