TRAFALGAR ENGINEERING

# FUNCTIONAL SERVICING REPORT

Water, Sanitary, and Storm Drainage/Stormwater Management

## PROPOSED MID-RISE CONDOMINIUM, TOWNHOUSE, AND RETAIL DEVELOPMENT

21 DUNDAS STREET WEST AND 3000 SIXTH LINE
OAKVILLE, ONTARIO

OUR FILE: 1807

**PREPARED FOR SHOPPERS REALTY INC.**

**c/o DANIELS CITY BUILDERS COORPERATION**

**February 25, 2026**

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# 1.0 INTRODUCTION

## 1.1 Scope of Functional Servicing Report

This report has been prepared in support of the rezoning application for the subject lands located at 21 Dundas Street West and 3000 Sixth Line, in the Town of Oakville. A copy of the recent topographic survey and Architectural Site Plan for the property are enclosed in Appendix 'A' for reference purposes. This report discusses how the proposed development can be serviced for water, sanitary, and storm drainage/stormwater by the existing and proposed municipal infrastructure. This report may be updated and refined as the project moves through the planning approval process leading up to Site Plan approval and Building Permit issuance.

For the purpose of this report, Dundas Street West runs in an east-west direction, while Sixth Line runs in a north-south direction.

## 1.2 Site Location and Description

The subject lands are located at the northwest corner of Dundas Street West and Sixth Line in the Town of Oakville. 3000 Sixth Line is known as Block 114 of the underlying subdivision 20M-1114 and 21 Dundas Street West is known as Part 1, Plan 20R-19977.

The subject lands are approximately 1.76 ha and are generally vacant with sparse vegetation throughout. The subject lands are L-shaped and bound by new mid-rise condominiums to the west, a municipal stormwater management facility (SWM Pond 22 - Kaitting Pond) and residential street Kaitting Trail to the north, a church to the east across Sixth Line, and low density residential to the south across Dundas Street West. The site is encumbered by an emergency overland flow route, storm servicing easement (Part 5, Plan 20R-21122), and servicing easement (Part 1, 20R-19320) in a north-south direction from the stormwater management pond to the Dundas Street West right-of-way. The storm easement is 8.5 m wide and contains a 975 mm diameter storm sewer and the servicing easement is 5.0 m wide and contains a 200 mm diameter sanitary sewer. We note that there is also an existing hydro transformer at the northwest corner of the property and it also appears that a municipal fire hydrant encroaches the property's east side along Sixth Line.

Through a review of the topographic survey, it was determined the site generally slopes from the north to south of the property towards the Dundas Street West and Sixth Line road allowances.

## 1.3 Proposed Development

The proposed development entails an interim condition and ultimate condition as well as phased buildout. Appendix 'A' contains the Architectural drawings for reference purposes. A general description of the proposed development is provided below.

### 1.3.1 Interim Condition

The proponent is proposing to build 3 mid-rise condominium buildings (buildings A, B, and C), varying between 9 and 10 storeys along Dundas Street West, two rows of townhouse blocks along the north side of the property abutting the existing stormwater management facility, and a standalone retail building at the northeast corner of the site. The site will feature two separate underground parking garages, each with two levels of underground parking. Buildings A, B, and townhouse blocks 1 and 2 will share one parking garage, while Building C will use the other. The two parking garages are separated by the aforementioned easement that encumbers the subject lands. Parking for the retail building will be at grade. An internal driveway will provide vehicular access to Kaitting Trail, Sixth Line, and Dundas Street West. The parking garages and at grade entrances to the buildings will also be accessed from the internal driveway.

### 1.3.2 Ultimate Condition

In the ultimate condition, the retail building and associated at-grade parking will be replaced by a fourth condominium building (Building D), row of townhouses (Townhouse Blocks 3 & 4), and third underground parking garage constructed in its place. The driveway entrance from Kaitting Trail will be shifted slightly, while the other two entrances will remain unaffected.

# 2.0 WATER

## 2.1 Existing Water Infrastructure

There are existing watermains on all three roads abutting the subject lands. The watermains are identified in the Area Servicing Plan for the North Oakville East Secondary Plan.

### 2.1.1 Dundas Street West

There is an existing 750 mm diameter concrete transmission watermain on the north side of Dundas Street West and a 600 mm diameter concrete watermain on the south side of Dundas Street West, located in pressure zone O3 per Figure 4 of the Region of Halton's 2019 Area Servicing Plan.

2.1.2 Sixth Line

There is an existing 600 mm diameter concrete watermain on the west side of Sixth Line within the west boulevard and a 750 mm diameter concrete transmission watermain on the east side of the road. The 600 mm diameter watermain is in pressure Zone O4.

2.1.3 Kaitting Trail

There is an existing local 300 mm diameter PVC watermain on Kaitting trail. This watermain is in Zone O4 and is connected to the above mentioned 600 mm diameter watermain on Sixth Line. There is a 200 mm diameter fireline and 100 mm diameter domestic water service connection from the watermain on Kaitting Trail to the east block of the subject lands (Block 114, 20M-1114). The services terminate at the property line with valve and boxes. Refer to the subdivision drawing Underground Servicing Plan (20M-1114-02) and subdivision drawing Watermain Layout Plan (20M-1114-36) in Appendix 'A' for details.

## 2.2 Proposed Water Servicing

*Following the first ZBA submission Region of Halton Engineering staff advised that the feasibility of one of the following two options is required:*

- *A local main off Dundas Street West or,*
- *A looped watermain from Kaitting Trail.*

*Email correspondence with Regional staff from May 2025 is provided in Appendix 'B' for reference.*

The proposed development will be serviced via a new local 300 mm diameter PVC watermain is proposed on Dundas Street West. The new watermain will be connected to the 750 mm concrete watermain on the north side of Dundas Street West. The local watermain will connect to the 750 mm transmission main in accordance with the Region of Halton's Standard Drawing RH 413.010 for service mains connected to transmission mains.

To service buildings A, B, and C, three water service connections to the new 300mm diameter watermain on the north side of Dundas Street West are proposed. All three water services will be 200 mm diameter and provide for a 200 mm diameter fireline and 100 mm diameter branch for domestic water complete with valve and boxes at the property line. The water services will connect to the 300 mm diameter PVC watermain via tapping sleeve and vales. These water services will enter mechanical rooms on the P1 level of the underground parking garage for buildings A, B, and C. Townhouse blocks 1 and 2 will also be serviced internally by these connections.

To service the retail building, the existing water service connection on Kaitting Trail will be used. To service the future building (Building D) and future townhouse blocks 3 and 4 which replace the retail building in the ultimate condition, this existing water service connection will be re-used.

Buildings A, B, and C will be serviced by watermains in Pressure Zone O3, while the retail building (Building D in the ultimate condition) will be serviced by a watermain in Pressure Zone O4. All water services for buildings which share an underground parking garage will be connected to watermains within the same Pressure Zone.

It is important to note that because of the different pressure zones servicing the site, cross connections between the buildings is not permitted.

See the interim and ultimate servicing plans (1807-S1, 1807-S2) in Appendix 'D' for more details.

### 2.3 Estimated Water Demands

The equivalent population for the ultimate and interim conditions were estimated using the Region of Halton's Linear Design Manual. Using the unit count and type together with Table A-4 of the Region of Halton's 2022 Development Charges Background Study population density guidelines for residential dwellings (1.356 persons/unit for apartments with less than two bedrooms, 1.831 persons/unit for apartments with 2 or more bedrooms, and 2.018 persons/unit for townhomes with less than 3 bedrooms) the equivalent population for the residential component is estimated to be 891 persons in the interim condition and 1142 persons in the ultimate condition. The commercial population is estimated using Page A-21 of the Region of Halton 2022 DC Background Study population density for commercial developments (403 $ft^2$/employee) resulting in an equivalent population for the commercial component of 37 persons in the interim condition and 11 persons in the ultimate condition. This results in a larger equivalent population and water demand for the ultimate condition. The domestic water usage for the ultimate condition is estimated with 1153 persons and 275 L/cap/day. The fire flow is estimated for demand purposes only using the Fire Underwriter's Survey methodology and should be confirmed by a sprinkler consultant at the building permit stage. The estimated flows are summarized below, with detailed supporting calculations shown in Appendix 'B'.

**Table 1: Estimated Water Demands**

| | | |
|---|---|---|
| Average Daily Demand | 220 | (L/min) |
| Minimum Hourly Demand | 220 | (L/min) |
| Maximum Hourly Demand | 877 | (L/min) |
| Maximum Daily Demand | 496 | (L/min) |
| Estimated Fire Demand (FUS 1999) | 10000 | (L/min) |
| Maximum Daily Plus Fire Demand | 10496 | (L/min) |

Fire flow tests were undertaken to confirm adequate firefighting flows. These tests were conducted on the 600 and 750 mm diameter watermains on Dundas Street West and the 300 mm diameter watermain on Kaitting Trail.

EPANET was used to model the proposed 300 mm diameter local watermain on Dundas Street West to ensure sufficient fire fighting pressure and flow at the service. The results for the Dundas Street West flow tests are summarized below, with the estimated max daily plus fire service pressure taken from the EPANET model. A copy of the fire flow tests and EPANET model results are included in Appendix 'B'.

**Table 2: Flow Hydrant #H175507 (750mm Dundas)**

| | |
|---|---|
| Static Pressure | 40 psig |
| Flow 839 usgpm (53 L/s) | 39 psig |
| Flow 1162 usgpm (73 L/s) | 38 psig |
| Theoretical Flow 4229 usgpm (227 L/s) | residual 20 psig |
| Estimated Max. Daily Plus Fire Service Pressure | 23 psig |

*The existing 750 mm diameter watermain on Dundas Street West, as well as the proposed 300 mm diameter local watermain, do not satisfy the Region of Halton domestic water pressure criteria, which recommend operating pressures under normal conditions between 50 and 80 psi, but not less than 40 psi.*

*To address this deficiency, Buildings A, B, and C will be equipped with domestic booster pump systems to ensure adequate internal water pressures are maintained.*

*To confirm the feasibility of servicing the development from the proposed 300 mm diameter local watermain on Dundas Street, the mechanical consultant for the project was consulted. The mechanical review confirmed that OBC guidelines for domestic water pressures can be readily achieved through the implementation of booster pumps. Furthermore, it was noted that to adequately service medium to high rise buildings, booster pumps for domestic water are typically required regardless of the pressures in the municipal system.*

*With respect to fire protection, the available pressure and flow from the municipal system exceed the minimum requirement of 20 psi under combined maximum daily and fire flow demand conditions, thereby satisfying fire servicing criteria.*

The Kaitting Trail fire flow tests are included in Appendix 'B' and summarized below:

**Table 3: Flow Hydrant H#45472(300mm Kaitting Trail)**

| | |
|---|---|
| Static Pressure | 88 psig |
| Flow 1267 usgpm (79 L/s) | 85 psig |
| Flow 2276 usgpm (143 L/s) | 83 psig |
| Theoretical Flow 6834 usgpm (431 L/s) | residual 20 psig |
| Estimated Max. Daily Plus Fire Service Pressure | 76 psig |

The Site Servicing Plan in Appendix 'D' shows existing and proposed watermains and service connections.

## 2.4 Water Pressure Zone Analysis

The proposed development is currently in pressure Zones O3 and O4 with an existing TWL (Top Water Level) of 198 m and 236 m respectively ("Existing"). The Region of Halton has planned a future (and interim) adjustment to the existing pressure zone boundaries, and the retail building (and building D) fall within the adjusted Zone O4, with a TWL of 223.5 m ("Future"). The Region of Halton has requested this evaluation to determine the impact on the proposed development as a result of the changes to the pressure boundaries. The TWL of 236 m for the "Interim" condition is the same as "Existing" and thus no analysis of the "Interim" scenario is required.

In undertaking this evaluation, we have considered the elevation of the existing connection on Kaitting Trail as the elevation analysed. An Assessment of the existing and future static pressures is provided in Table 3 below.

**Table 4: Existing and Future Static Pressure based on Elevation**

| | Existing | Future |
|---|---|---|
| TWL (m) | 236 | 223.5 |
| Elevation (m) at connection | 169.70 | |
| Elevation Difference (m) | 66.3 | 53.8 |
| Static Pressure (psi) | 94.2 | 76.5 |

The pressure zone realignment will decrease the pressure at the service connection however it is still within the Region's operating guidelines for domestic and fire service.

## 3.0 SANITARY

### 3.1 Existing Sanitary Infrastructure

There is an existing 200 mm diameter PVC sanitary sewer that traverses the stormwater facility lands (Block 116, Plan 20M-1114) and more specifically, within an easement (Part 2, 20R-19320). The sewer drains in a southerly direction and traverses the subject lands within an easement (Part 1, 20R-19320) in the favour of the Region of Halton before outletting to the 900 mm diameter concrete sanitary sewer on Dundas Street West. The 900 mm diameter concrete sanitary sewer on Dundas is approximately 11 m deep and drains west. There is an existing 200 mm sanitary service lateral and manhole which connects to the 200 mm diameter sanitary sewer at the existing manhole depicted as MH57358 on the Region's operating maps and, within the easement to service Block 114 of the subject lands as part of the underlying subdivision design. Refer to the subdivision drawing Underground Servicing Plan (20M-1114-02) in Appendix 'A' for more details.

Flows from the subject lands (Block 114, 20M-1114 and Part 1, 20R-19977) were accounted for in the underlying subdivision design. See the subdivision drawing Sanitary Drainage Area Plan (20M-1114-10) for more details.

### 3.2 Proposed Sanitary Servicing

Building's A and B as well as Townhouse Blocks 1 and 2 are proposed to be serviced from the existing 200 mm diameter sanitary sewer situated in the easement over Part 1, 20R-19320 described above in section 3.1. A 200 mm diameter service lateral connection to the existing manhole depicted as MH57358 on the Region's operating maps is proposed. The service lateral will be provided with an inspection manhole just outside the easement limits before entering the southeast corner of the underground parking.

Building C will utilize the existing 200 mm diameter service connection and manhole described in section 3.1 above.

The retail building is proposed to be serviced from the existing 200 mm diameter sanitary sewer situated in the easement within the pond lands over Part 2, 20R19320 described above in section 3.1. A 200 mm diameter service lateral connection is proposed to the manhole within the easement (MH57356).

In the ultimate condition the service connection to the manhole for the retail building will be abandoned. Building D and Townhouse Blocks 3 and 4 will be serviced through Building C and outlet using the 200 mm service connection to MH57359

### 3.3 Estimated Sanitary Demands

The subject lands were accounted for by the underlying subdivision for sanitary servicing using a population density of 135 persons/ha for the lands upon which Buildings A and B, and Townhouse Blocks 1 and 2 (Part 1, 20R 199777) are proposed. The remainder of the subject lands (Block 114, 20M-1114) was also accounted for using a population density of 90 persons/ha for the lands upon which Buildings C and D/Retail and Townhouse Blocks 3 and 4 are proposed. These densities are from the Region of Halton's outdated design guidelines for townhouse and commercial uses and result in an equivalent population of 399 persons for the interim condition and 476 persons in the ultimate condition. This methodology fails to realistically determine equivalent population given the proposed land uses.

To estimate the proposed sanitary demands the same population from section 2.3 will be used. Sanitary demands will be estimated using a residential population of 1142 persons and commercial population of 11 persons in the ultimate condition (as determined in section 2.3 using the 2022 Region of Halton DC Study Guidelines) and 275L/cap/day. The proposed sanitary discharge is estimated below (See Appendix 'C' for supporting calculations).

**Table 5: Estimated Ultimate Sanitary Flow**

| | | |
|---|---|---|
| Average Daily Dry Weather Flow | 4.2 | (L/s) |
| Modified Harmon Peaking Factor | 3.76 | (L/s) |
| Infiltration Allowance (0.26L/s-ha) | 0.50 | (L/s) |
| Peak Daily Flow | 14.24 | (L/s) |

To ensure there is sufficient capacity in the 200 mm diameter sanitary sewer with the increased population over what was designed for in the underlying subdivision, a sanitary sewer analysis was undertaken. The upstream land area and population density were taken as described in the sanitary drainage area plans for the subdivision (20M-1114-10 and 20M-1114-11) and entered into a sanitary sewer design sheet along with the proposed populations in the ultimate condition. The final design flow including the upstream, and subject lands, in the 200 mm diameter sanitary sewer is 31L/s. The capacity of the existing 200 mm diameter sewer is 28.4 L/s, thus there is a minor surcharge in the 200 mm diameter sewer before it reaches the 900 mm diameter sanitary sewer on Dundas Street West.

As a result of the surcharge, the final leg of 200 mm sanitary sewer (MH57358 to MH57359) will be upsized to 300 mm to accommodate the increase in flows. The existing inverts will be maintained and the existing drop structure to the 900 mm sanitary sewer on Dundas Street will be maintained. Refer to the sanitary sewer design sheet in Appendix 'B'.

## 4.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

### 4.1 Existing Drainage

The topographic survey shows the existing site slopes generally from north to south, with runoff flowing uncontrolled to the Dundas Street West and Sixth Line road allowances.

The site is below the elevation of the adjacent storm pond and developments. Storm drainage for the site is accounted for by the underlying subdivision. The underlying subdivision provided two appropriately sized (675 mm diameter) storm connections for the site, complete with property line manholes. The storm connections outlet directly to the stormwater management facility. Refer to the Interim and Ultimate Servicing Plans (1807S1 & 1807S2) in Appendix 'D' for the location of each storm connection.

There is an emergency overland flow path and overland flow easement from the pond through the site to the Dundas Street West Right-of-Way. Refer to the subdivision's Underground Servicing Plan (20M-1114-02) for more details. A site walk was carried out by this office on January 4th, 2023 to confirm the existing drainage patterns.

### 4.2 Minor System

There are existing property line storm manholes on the west side of Block 114, 20M-1114 and the east side of Part 1, 20R-19977 of the subject lands, henceforth referred to as the west and east pond outlets respectively. Both manholes are connected to separate, 675 mm diameter storm sewers connected to the stormwater management facility. Both sewers were designed to convey flows generated during the 5-year storm from the subject lands using a runoff coefficient of 0.9 as part of the underlying subdivision.

The proposed site servicing design utilizes the storm outlets, with runoff from Buildings A, B, and C, and Townhouse Blocks 1 and 2 directed to the west outlet. Runoff from the retail building in the interim condition, and Building D and Townhouse Blocks 3 and 4 in the ultimate condition will be directed to the east outlet. Runoff from the emergency overland flow easement from the stormwater management facility flows uncontrolled to Dundas Street West.

Given that the storm connections are designed for the 5-year storm and that it is not feasible to design the site grading such that flows in excess of the 5-year storm are directed to the stormwater management facility, on-site storage is required. Furthermore, the storage volumes will need to suit the pumping rates.

The maximum pump rate for each tank will be the 5-year runoff rate with a runoff coefficient of C=0.9 as per the underlying subdivision design. This results in an allowable release rate of 258 L/s

and 245 L/s for the east and west stormwater connections respectively. See Appendix 'C' for supporting calculations.

Due to mechanical restrictions associated with pumping stormwater flows at the allowable 5-year release rates of 258 L/s and 245 L/s, the release rates will be reduced to a maximum of 65 L/s.

Stormwater runoff from all events up to the 100-year storm and *Regional storm* from Buildings A and B and Townhomes 1 and 2 will be captured and conveyed to a stormwater management tank in the underground parking garage of Building A and pumped to the west stormwater outlet.

Stormwater runoff from all events up to the 100-year storm *and Regional storm* from Building C will be captured and conveyed to a stormwater management tank in the underground parking garage of Building C, and pumped to the west stormwater outlet, through the underground parking garage of Buildings A and B. Refer to Table 6 and 7 below for a summary of the stormwater flow from Buildings A & B, Townhomes 1 & 2 and Building C.

***Table 6: Stormwater Flows Buildings A & B and Townhomes 1 & 2 (West Pond Outlet)***

| Return | Peak Inflows (L/s) | Maximum Pumping Rate (L/s) | Storage Required ($m^3$) | Storage Provided ($m^3$) |
|---|---|---|---|---|
| 5-Year | 236 | 65 | 118 | 308 |
| 10-Year | 281 | 65 | 161 | 308 |
| 25-Year | 340 | 65 | 209 | 308 |
| 50-Year | 382 | 65 | 244 | 308 |
| 100-Year | 422 | 65 | 283 | 308 |
| Regional | 120 | 65 | 264 | 308 |

**Table 7: Stormwater Flows Building C (West Pond Outlet)**

| Return | Peak Inflows (L/s) | Maximum Pumping Rate (L/s) | Storage Required ($m^3$) | Storage Provided ($m^3$) |
|---|---|---|---|---|
| 5-Year | 90 | 65 | 22 | 165 |
| 10-Year | 106 | 65 | 27 | 165 |
| 25-Year | 129 | 65 | 51 | 165 |
| 50-Year | 145 | 65 | 55 | 165 |
| 100-Year | 160 | 65 | 60 | 165 |
| Regional | 45 | 65 | 18 | 165 |

Storage requirements are governed by the ultimate condition for Building C

In the interim condition, stormwater runoff from all events up to the 100-year storm and Regional storm from the retail building and associated parking will be captured and conveyed to either the east stormwater outlet or to the municipal storm sewer on Sixth Line. The catchbasin's which are above the SWM ponds regional storm operating level will be directed uncontrolled by gravity to the pond, alongside the roof drainage from the retain building. The catchbasin's which are below the SWM pond's Regional storm operating level will be capture drainage and direct it to an ACO Stormbrixx underground chamber system. Release from this system will be controlled to the 5-year predevelopment runoff rate of the tributary area by way of a 75 mm dia. orifice tube. Refer to table 8 and 9 below for a summary of the stormwater flow from the retail site.

**Table 8: Stormwater Flows Retail (East Pond Outlet)**

| Return | Peak Inflows (L/s) | Maximum Release Rate (L/s) | Storage Required ($m^3$) | Storage Provided ($m^3$) |
|---|---|---|---|---|
| 5-Year | 101 | 101 | 0 | 0 |
| 10-Year | 120 | 120 | 0 | 0 |
| 25-Year | 145 | 145 | 0 | 0 |
| 50-Year | 163 | 163 | 0 | 0 |
| 100-Year | 180 | 180 | 0 | 0 |
| Regional | 51 | 51 | 0 | 0 |

**Table 9: Stormwater Flows Retail (Sixth Line Storm Sewer)**

| Return | Peak Inflows (L/s) | Maximum Release Rate (L/s) | Storage Required ($m^3$) | Storage Provided ($m^3$) |
|---|---|---|---|---|
| 5-Year | 39 | 6.3 | 29 | 95 |
| 10-Year | 46 | 6.8 | 36 | 95 |
| 25-Year | 56 | 7.4 | 45 | 95 |
| 50-Year | 62 | 7.8 | 52 | 95 |
| 100-Year | 69 | 8.2 | 58 | 95 |
| Regional | 20 | 9.5 | 80 | 95 |

In the ultimate condition, stormwater runoff from all events up to the 100-year and Regional storms for Building D will be captured and conveyed to a stormwater management tank in the underground parking garage of Building D. Stormwater will be pumped to the east stormwater outlet. Refer to Table 10 below for a summary of the stormwater flows for Building D.

**Table 10: Stormwater Flows Building D and Townhomes 3 & 4 (East Pond Outlet)**

| Return | Peak Inflow (L/s) | Maximum Pumping Rate (L/s) | Storage Required ($m^3$) | Storage Provided ($m^3$) |
|---|---|---|---|---|
| 5-Year | 138 | 65 | 50 | 171 |
| 10-Year | 165 | 65 | 69 | 171 |
| 25-Year | 200 | 65 | 97 | 171 |
| 50-Year | 225 | 65 | 111 | 171 |
| 100-Year | 249 | 65 | 128 | 171 |
| Regional | 70 | 65 | 29 | 171 |

The total flow to each outlet in the interim condition is summarized in Table 11 below.

**Table 11: Flow Direction Summary Interim Condition**

| Drainage Direction | Area ($m^2$) | Peak Flows (L/s) 5-yr | 100-yr | Regional |
|---|---|---|---|---|
| West Pond Outlet | 11,059 | **130** | **130** | **130** |
| East Pond Outlet | 3471 | **101** | **180** | 51 |
| Overland to Pond | 395 | 2 | **9** | 5 |
| Sixth Line Storm Sewer | 1328 | 6 | 8 | **10** |
| Overland to Sixth Line | 458 | 3 | **11** | 6 |
| Overland to Dundas Street West | 908 | 5 | **18** | 11 |

The total flow to each outlet in the ultimate condition is summarized in Table 12 below.

**Table 12: Flow Direction Summary Ultimate Condition**

| Drainage Direction | Area ($m^2$) | Peak Flows (L/s) 5-yr | 100-yr | Regional |
|---|---|---|---|---|
| West Pond Outlet | 11,132 | **130** | **130** | **130** |
| East Pond Outlet | 4785 | **65** | **65** | **65** |
| Overland to Pond | 488 | 3 | **11** | 7 |
| Overland to Sixth Line | 311 | 2 | **7** | 4 |
| Overland to Dundas Street West | 908 | 5 | **18** | 11 |

Refer to Appendix 'C' for the HydroCAD outputs for the interim and ultimate, controlled and uncontrolled flows and the interim and ultimate storm drainage area plans (dwg. 1807F1 and 1807F2)

Appendix 'D' contains the Interim and Ultimate Site Servicing Plans (1807-S1, 1807-S2) showing how the site will be serviced internally for storm drainage by utilizing the existing storm connections.

*The Town of Oakville's Engineering Staff have expressed concern with this approach and more specifically storm drainage systems which are reliant on pumped systems. A grading investigation will take place at the Site Plan stage in an effort to address these concerns.*

#### 4.2.1 Sixth Line Capacity Analysis

A capacity analysis of the Sixth Line storm sewer was conducted to ensure sufficient capacity to receive the controlled flows from the portion of the Shopper's parking lot which cannot drain by gravity to the SWM Pond. The storm sewer runs from Kaitting Trail to Dundas Street West where it joins the trunk outlet from the SWM Pond. The sewer was analyzed using both the 5-year and 100-year storms. There is sufficient capacity during both the 5-year and 100-year storm to receive the controlled flows from the subject lands. Refer to the storm drainage area plan for Sixth Line (dwg. 1807F3) and the storm sewer design sheets for the 5- and 100-year storm in Appendix 'C'.

### 4.3 Major System

The design of the underlying subdivision has a well-defined overland flow route along the municipal roads, and spill points from the roads to the stormwater management facility. The stormwater management facility is designed to spill during the Regional storm when the outlet is 50% blocked, to Dundas Street via an overland flow route through the subject lands. The route is protected by way of an easement (Part 1, 20R19320). and through the subject lands to Dundas Street West. Emergency overland flow from the subject lands will be directed to Dundas Street West and Sixth Line by way of the stormwater management overland flow route and easement and driveway access for the site.

*To address Town of Oakville Engineering concerns regarding emergency overland flow being directed to Dundas Street West, an investigation will take place at the Site Plan stage to determine if it is feasible to direct emergency overland flow to the Stormwater Management Pond. Considerations for this design include but are not limited to the following:*

- *Grading challenges related to the difference in elevation between the required elevation to spill towards the pond and the driveway accesses to Dundas Street West and Sixth Line.*
- *Grading challenges related to the ponds emergency overland flow easement / spillway.*

- *Grading challenges related to the Urban Design intent of having grade related access to the shoppers building as well as grade related access to the residential buildings along Dundas Street West.*

*We will work alongside Town of Oakville Engineering Staff to ensure the design of the Site satisfies Town requirements to the highest extent possible.*

### 4.4 Stormwater Management Facility Overland Flow Conveyance

As mentioned in Section 1.2, the subject lands are bound to the north by the Town of Oakville's municipal Stormwater Management Pond 22 and are encumbered by an emergency overland flow easement from the pond through the site to Dundas Street West. This overland flow easement is designed to convey flows in the event of an emergency, from the pond to the Dundas Street West ROW.

Within the Pond Design Brief prepared by David Schaeffer Engineering Limited (DSEL) dated February 2011, a design flow rate through the easement was determined to be 0.670 $m^3/s$, spilling during the regional storm with the pond outlet 50% blocked. Given that the proposed development features underground parking, a conservative approach was used to size and configure the overland flow from the facility. Conservatively the peak inflow rate to the pond for the 100-year storm and Regional storm were used to model the facilities overland flow through the site. This conservative approach effectively provides a level of protection equivalent to back to back storm events. During the Regional and 100-year storms peak inflow rates of 2.120 $m^3/s$, and 6.820 $m^3/s$ respectively were modelled.

Manning's equation was used to estimate the depth of flow through the 8.5 m easement during each of the above-mentioned storms. See Table 8 below for a summary of the flows and depths estimated using Mannings Equation.

**Table 13: Manning's Estimated Overland Flows**

| | Flow ($m^3/s$) | Flow Depth (m) |
|---|---|---|
| 50% Blocked Pond Overflow | 0.670 | 0.11 |
| Regional Inflow to Pond | 2.120 | 0.22 |
| 100-year Inflow to Pond | 6.820 | 0.44 |

### 4.5 Hydraulics

A 2D unsteady flow HEC-RAS model was setup to map the flow through the subject property and confirm the flow depths estimated above.

### 4.5.1 Geometry

A digital terrain was generated using 2018 lidar data obtained from the Province of Ontario. The lidar is provided in raster format with a vertical datum in CGVD2013. Prior to its use in the model, the terrain was vertically adjusted to CGVD28:78 by +0.42 m (to be consistent with the vertical datum used in the topographic survey for the site).

A 3D surface was created in AutoCAD CIVIL 3D to reflect the proposed grading design within the overland flow easement and adjacent lands. Elevations on the 3D surface match those on the proposed grading plan.

A 2D flow area was established for the proposed geometry (Proposed Surface) that encapsulates the overland flow easement and adjacent areas. A cell size of 0.5 m was applied with a Manning's n of 0.03, conservatively representative of an urban area.

An upstream flow hydrograph boundary condition was applied just south of the berm of the existing pond. This hydrograph is populated with the emergency spills from the pond, as discussed in section 4.4 above. Downstream normal depth boundary conditions were applied along the south of the 2D flow area with a 2% friction slope to match the Dundas Street West boulevard.

### 4.5.2 Unsteady Flow

An unsteady flow model simulation was selected in order to appropriately account for any attenuation/detention storage available in the system. The flow hydrographs are trapezoidal in shape, with flows increasing from zero to peak over two data intervals and hold steady for the duration of the hydrograph before decreasing to zero over the last two data intervals. This is to ensure that the model is able to stabilize at peak flows.

### 4.5.3 Model Parameters

The model was set up with a 5 second computation interval adjusted based on maximum and minimum Courant's of 3 and 1 respectively. The maximum doubling base time steps is 3 and the maximum halving base time steps is 2. All other computation tolerances are default values. The model was run using each of the three equation sets: diffusion wave, SWE-ELM, and SWE-EM. The maximum flooding extent occurs when using the SWE-ELM equation set.

### 4.5.4 Model Results

Review of the model results for the three storms indicate varying degrees of water spill elevations and flooding extents. To analyze these further, cross sections were drawn at three sections across the easement and one along the easement. See Figure 1 below for the locations of these sections; A-A, B-B, C-C and D-D.

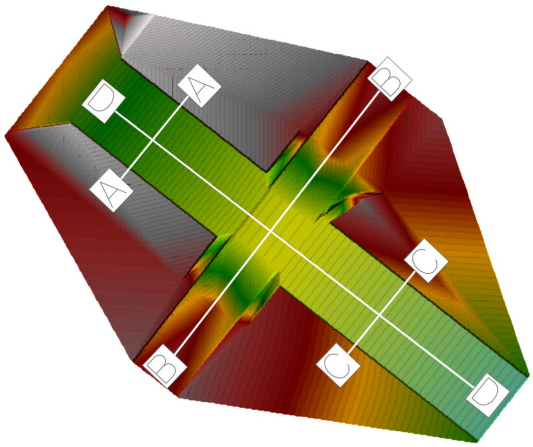



**Figure 1: Cross Section Locations**

Cross Section A-A examines the flows in the easement upstream of where it crosses the interior driveway. Here, depths range from 0.095 m during the 50% blocked spill event to a maximum depth of 0.45 m during the 100-year pond inflows. See Figure 2 below for the maximum water surface elevations at cross section A-A for each of the three conditions.

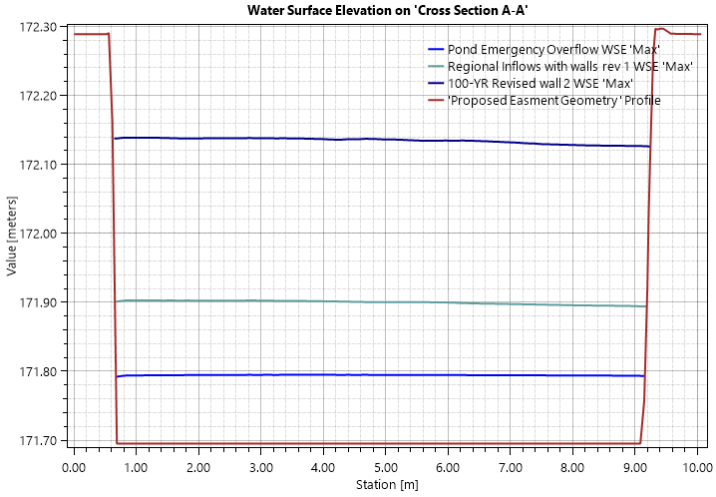



**Figure 2: Cross Section A-A**

Cross section B-B examines the flows across the easement at the interior driveway, where flows are no longer contained by the retaining walls running parallel the easement and expand along the road surface. During the 100-Year inflow event the maximum WSE across the roadway is 171.93 with a depth of 0.45 m. See Figure 3 below for the maximum WSE across the section for all three events.

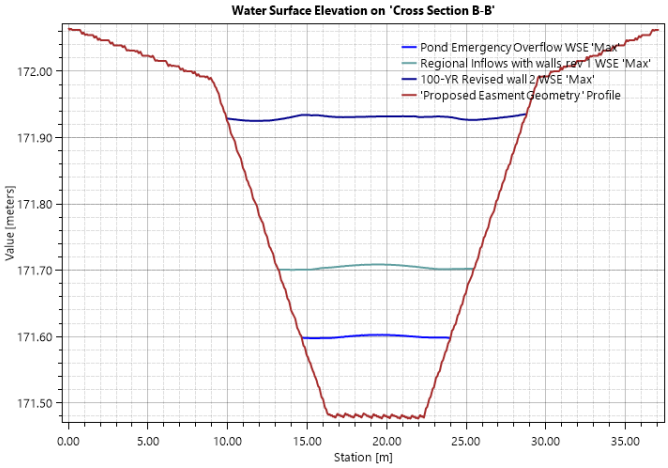



**Figure 3: Cross Section B-B**

Cross section C-C examines the flows once again within the channelized section of the easement, this time south of the proposed driveway. Flows here are contained within the retaining walls ranging from a depth of 0.11 m during the 50% blocked pond overflow event to a maximum of 0.45 m with the regional storm pond inflows.

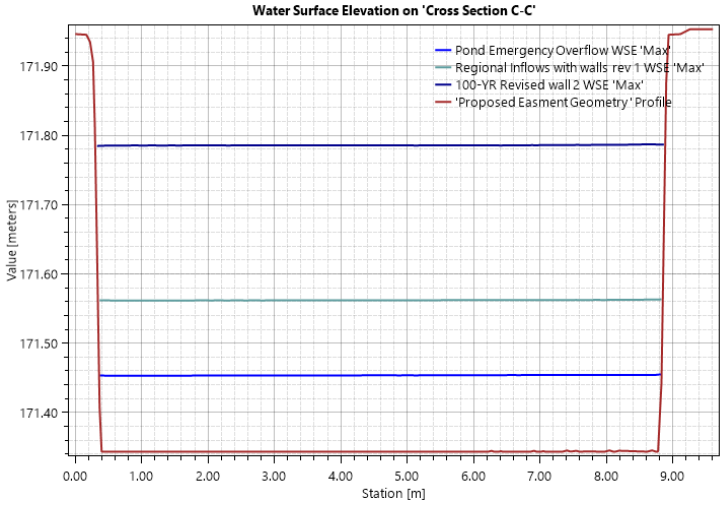



**Figure 4: Cross Section C-C**

Cross section D-D examines the flow depth as it travels longitudinally along the easement. Average depths of flow for the three events were measured as 0.11 m, 0.22 m, and 0.45 m for the 50% block regional overflow, regional pond inflow, and 100-year pond inflow events respectively. These values confirm the manning's equation estimated depths and validate the model's results.

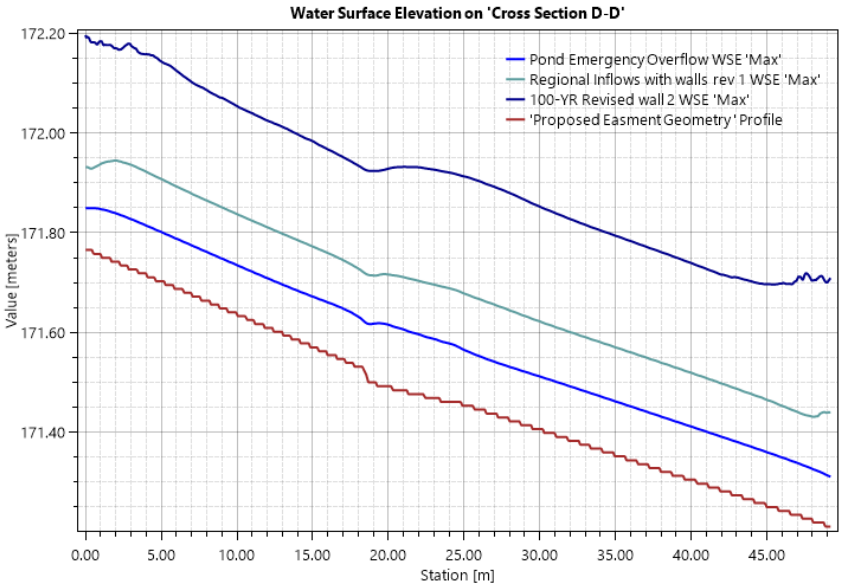



**Figure 5: Cross Section D-D**

The maximum depth and velocity product was measured across the study area for each of the three events. An average max depth and velocity product of approximately 0.85 $m^2/s$ was observed within the easement during the 100-year inflows to the pond event. While high, this value falls within the upper guidelines set out by The Water Survey of Canada which states the depth velocity product should be less than 0.9 $m^2/s$. Under the flow which the easement is designed to experience in the event of the regional storm and 50% blockage of the outlet, the average maximum depth velocity product is approximately 0.1 $m^2/s$. This value is well within the 0.9 $m^2/s$ guideline and is defined as low risk by the Water Survey of Canada for being under 0.4 $m^2/s$.

See Figure 6 below for the depth velocity product during the regional storm, with 50% blockage of the pond's outlet.

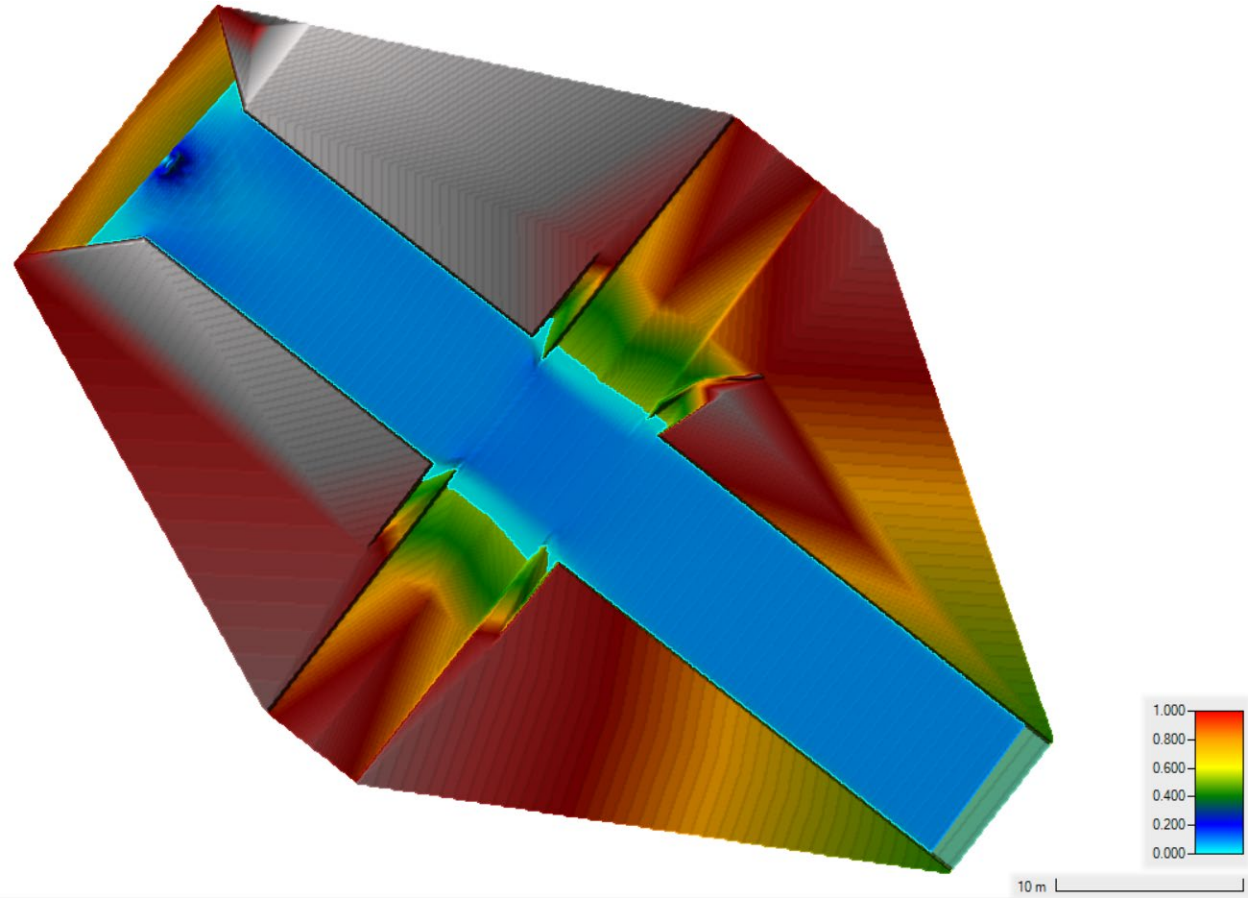



**Figure 6: Depth Velocity Product**

The results of the HEC-RAS model are summarized in Table 9 below.

**Table 14: HEC-RAS Estimated Overland Flows**

| | Flow ($m^3/s$) | Flow Depth (m) |
|---|---|---|
| 50% Blocked Pond Overflow | 0.670 | 0.11 |
| Regional Inflow to Pond | 2.120 | 0.22 |
| 100-year Inflow to Pond | 6.820 | 0.45 |

The HEC-RAS model confirms the validity of the flow depths estimated using Manning's Equation. Refer to Appendix 'D' for the Details and Sections Plan (1807-D1) which shows the water surface limits through the subject lands across the overland flow easement.

## 4.6 WATER QUALITY

The stormwater management pond provides an enhanced level of water quality, as a result no further water quality infrastructure is proposed. In the interim condition a small section of the subject lands are directed towards the Sixth Line storm sewer. Enhanced water quality is achieved for these flows using a treatment train approach, consisting of CB shields on the catchbasin's and a downstream Stormceptor OGS. Refer to the Interim Servicing Plan (dwg. 1807S1) in Appendix 'D' for more details.

## 4.7 GROUNDWATER

A geotechnical study must be prepared as this application moves through the re-zoning and site plan approval process to determine groundwater conditions at the subject lands. The Town of Oakville does not permit permanent groundwater dewatering and generally requires developments to retain the first 25 mm of rainfall on site for water balance. Each of these requirements will be assessed once the groundwater conditions have been determined through a geotechnical assessment prepared by a professional engineer.

# 5.0 SITE GRADING

The proposed grading has been designed to capture runoff from all storms up to the 100-year and Regional storms with the exception of runoff which falls within the 8.5 m overland flow easement. Grading within the easement has been designed to convey flows from the stormwater management pond to Dundas Street West under emergency conditions triggered by the failure of the stormwater management pond.

Refer to the interim and ultimate grading plans (1807-G1, 1807-G2) in Appendix 'D' for more details.

*The Town of Oakville's Engineering Staff have expressed concern with the minor and major storm drainage systems proposed. A grading investigation will take place at the Site Plan stage in an effort to address these concerns.*

# 6.0 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

Erosion and sediment controls must be installed prior to the commencement of any construction and must take place in the construction staging sequence as indicated on the Erosion and Sediment Control Plan which shall be prepared at the Site Plan Stage. Erosion and sediment control measures shall be implemented as follows:

- Double Wrapped Catchbasins: the proposed and existing storm sewer catchbasins and catchbasin manholes located within and off, the subject site shall be double wrapped in a non-woven geotextile material. Non-woven geotextile material is to be replaced periodically when accumulated sediments interfere with drainage.
- Stone Access Pad: A stone access mat shall be installed at the entrance to the construction zone to prevent mud tracking from the site to the adjacent municipal roads.
- Silt Fencing: Silt fence shall be installed along the property line to intercept sheet flow and mitigate the transport of sediment laden runoff to the abutting road or properties.
- The abutting streets should be monitored and if required, the owner shall ensure that streets shall be swept to mitigate the accumulation of tracked material on the roads on a routine basis in keeping with good construction housekeeping practices.

## 7.0 SUMMARY

In general, the information presented in this Functional Servicing and Storm Drainage/Stormwater Management Report demonstrates that the proposed development and the zoning amendments being sought can be serviced by the existing and proposed adjacent infrastructure for water, sanitary, and stormwater and can meet the Town of Oakville's stormwater management criteria.

The following is a summary of the report findings:

- A 300 mm diameter local watermain is proposed along Dundas Street West connected to the 750 mm diameter transmission main to service the development.
- The subject lands' domestic and fire water service connections for Buildings A, B, C and Townhomes 1 and 2 will be by way of three, 200 mm service connections to the proposed 300 mm diameter PVC watermain on Dundas Street West. Each building will have a 100 mm diameter domestic water service and 200 mm diameter fire service.
- The subject lands' domestic and fire water service connections for Building D and the retail building utilizes the existing 100 mm diameter domestic and 200 mm diameter fire water services connected to the 300 mm diameter watermain on Kaitting Trail in Pressure Zone O3.
- There is no impact to the development based on the Region's future water pressure zone realignment.
- The sanitary service connection for Buildings A and B will be by way of a shared 200 mm diameter sanitary lateral to the 200 mm diameter sanitary sewer within the easement on

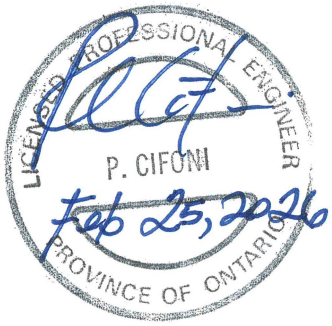
the subject lands. The 200 mm diameter service lateral will connect to the existing sanitary manhole.

- The sanitary service connection for Building C will use the existing 200 mm diameter sanitary lateral and manhole connected to the 200 mm diameter sanitary sewer within the easement on the subject lands.
- The sanitary service connection for the retail building will be by way of a 200 mm diameter sanitary lateral to the existing sanitary manhole connected to the 200 mm sanitary sewer within the easement on the stormwater management pond lands.
- The sanitary service connection for Building D will be through the underground parking garage of Building C and will utilize the same 200 mm diameter sanitary lateral as Building C.
- The final leg of the existing 200 mm diameter sanitary sewer before the 900 mm trunk sewer will be upgraded to 300 mm to accommodate the increase in flows from the subject lands.
- Stormwater runoff for Buildings A and B and Townhouse Blocks 1 and 2 is conveyed to a storage tank within the underground parking garage, and pumped at a rate of 65 L/s to the existing storm manhole on the southwest edge of the stormwater management pond.
- Stormwater runoff for Building C is conveyed to a storage tank within Building C's underground parking garage and pumped at a rate of 65 L/s through the underground parking garage for Buildings A & B to the existing storm manhole on the southwest edge of the stormwater management pond.
- In the interim condition stormwater runoff for the retail building is either conveyed by gravity directly to the east stormwater management pond inlet, or to an underground chamber system and controlled by an orifice tube to the 5-year predevelopment rate to the storm sewer on Sixth Line.
- In the ultimate condition stormwater runoff for Building D and Townhouse Blocks 3 and 4 is conveyed to a storage tank within Building D's underground parking garage and pumped at a rate of 65 L/s to the existing storm manhole on the east edge of the stormwater management pond.
- Stormwater quality has been accounted for the subject lands by the existing stormwater management facility and thus no additional stormwater quality controls are required.
- Enhanced stormwater quality will be achieved for the portion of lands which cannot drain to the pond using a treatment train approach consisting of CB shields and a downstream OGS.

- *The Town of Oakville's Engineering Staff have expressed concern with the minor and major drainage systems proposed. A grading investigation will take place at the Site Plan stage in an effort to address these concerns.*

This report and the drawings included in the report provide a framework from which more detailed designs can evolve as the project makes its way through the planning approval process.

**PREPARED BY TRAFALGAR ENGINEERING LTD.**




**Malcolm Wallace, EIT**
Senior Designer

**Paul Cifoni, P.Eng**
Consulting Engineer

# Appendix 'A'

Topographic Survey

Architectural Site Plan

Record Drawings

Subdivision Record Drawings (20M-1114)

SURVEYOR'S REAL PROPERTY REPORT

PART 1 – PLAN OF SURVEY WITH TOPOGRAPHY OF

# PART OF LOT 16
# CONCESSION 1
NORTH OF DUNDAS STREET
(GEOGRAPHIC TOWNSHIP OF TRAFALGAR)

# ALL OF \BLOCK 114
# REGISTERED PLAN 20M–1114
# TOWN OF OAKVILLE
REGIONAL MUNICIPALITY OF HALTON

SCALE 1 : 300

5 0 5 10 15 20 25 30 metres


**SPEIGHT, VAN NOSTRAND & GIBSON LIMITED**
ONTARIO LAND SURVEYORS
2023



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## PART 2 – REPORT SUMMARY

DESCRIPTION OF LAND:

THE PROPERTY IS COMPRISED OF PIN No.'s 24929–0992(LT) AND 24929–3845(LT)

PIN 24929–0992 (LT)

BEING BLOCK 114, REGISTERED PLAN 20M–1114, TOWN OF OAKVILLE

REGISTERED EASEMENTS AND/OR RIGHTS OF WAY

SUBJECT TO EASEMENT OVER PART 1, PLAN 20R–19320 AS IN INST. No.'s HR1041784 AND HR1043994

SUBJECT TO EASEMENT OVER PART 1, PLAN 20R–19319 AS IN INST. No. HR1047414

ADDITIONAL REMARKS

NOTE THE LOCATION OF FENCES WITH RESPECT TO PROPERTY LIMITS

NOTE THE LOCATION OF A FIRE HYDRANT WITH RESPECT TO THE EAST PROPERTY LIMIT

NOTE THE LOCATION OF WATER VALVES WITH RESPECT TO THE NORTH PROPERTY LIMIT

NOTE THE LOCATION OF THE NORTH EDGE OF THE ASPHALT PATH WITH RESPECT TO THE SOUTH PROPERTY LIMIT

PIN 24929–3845 (LT)

BEING PART OF LOT 16, CONCESSION 1, TRAFALGAR, NORTH OF DUNDAS STREET, TOWN OF OAKVILLE

REGISTERED EASEMENTS AND/OR RIGHTS OF WAY

NONE

ADDITIONAL REMARKS

NOTE THE LOCATION OF FENCES AND WALLS WITH RESPECT TO PROPERTY LIMITS

## NOTE

THIS REPORT CAN BE UPDATED BY THIS OFFICE. HOWEVER NO ADDITIONAL PRINTS OF THIS ORIGINAL REPORT WILL BE ISSUED SUBSEQUENT TO THE DATE OF CERTIFICATION.

THIS REPORT WAS PREPARED FOR THE DANIELS CORPORATION AND ALL OTHER PARTIES TO THE TRANSACTION.

## ELEVATION NOTE

ELEVATIONS ARE BASED ON THE TOWN OF OAKVILLE BENCHMARK No. 174, WITH PUBLISHED ELEVATION 171.841 metres.

## BEARING NOTE

BEARINGS SHOWN HEREON ARE GRID AND ARE REFERRED TO THE SOUTHEASTERLY LIMIT OF HALTON STANDARD CONDOMINIUM PLAN No. HC749 HAVING A BEARING OF N51°55'00"W.

## METRIC

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

## LEGEND

| | | | | | |
|---|---|---|---|---|---|
| ■ | DENOTES | SURVEY MONUMENT FOUND | COL | – | COLUMN |
| □ | – | SURVEY MONUMENT PLANTED | FH | – | FIRE HYDRANT |
| WIT | – | WITNESS MONUMENT | GM | – | GAS METER |
| SIB | – | STANDARD IRON BAR | GUY | – | GUY WIRE |
| SSIB | – | SHORT STANDARD IRON BAR | GV | – | GAS VALVE |
| IB | – | IRON BAR | HMH | – | HYDRO MANHOLE |
| CC | – | CUT CROSS | HYT | – | HYDRO TRANSFORMER |
| N,S,E,W | – | NORTH, SOUTH, EAST, WEST | MH | – | MANHOLE |
| OU | – | ORIGIN UNKNOWN | MLS | – | METAL LIGHT STANDARD |
| SVNG | – | SPEIGHT, VAN NOSTRAND & GIBSON LIMITED, O. L. S. | MP | – | METAL POLE |
| RPE | – | RADY–PENTEK AND EDWARD SURVEYING LIMITED, O.L.S. | OH | – | OVERHEAD WIRE |
| 950 | – | CUNNINGHAM McCONNELL LIMITED, O.L.S. | PB | – | PULL BOX |
| 1370 | – | KRCMAR SURVEYORS LIMITED, O.L.S. | SMH | – | SEWER MANHOLE |
| RP | – | REGISTERED PLAN 20M–1114 | WMH | – | WATER MANHOLE |
| P1 | – | PLAN 20R–21122 | WP | – | WOODEN POLE |
| P2 | – | PLAN 20R–20505 | WV | – | WATER VALVE |
| P3 | – | HALTON CONDOMINIUM PLAN No. 749 | ○ | – | DECIDUOUS TREE |
| P4 | – | PLAN 20R–19977 | ⊛ | – | CONIFEROUS TREE |
| ATS | – | AUTOMATIC TRAFFIC SIGNAL | | – | CONCRETE |
| B | – | BOLLARD | | – | GRAVEL |
| BB | – | BELL BOX | | – | ASPHALT |
| BMH | – | BELL MANHOLE | | | |
| CB | – | CATCH BASIN | 172.34 | – | TOP ELEVATION |
| CLS | – | CONCRETE HYDRO POLE | | | |

## SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON SEPTEMBER 7, 2023

DATE : SEPTEMBER 27, 2023

L. S. RUDNICKI
ONTARIO LAND SURVEYOR


**SPEIGHT, VAN NOSTRAND & GIBSON LIMITED**
ONTARIO LAND SURVEYORS
750 OAKDALE ROAD, Units 65 & 66
TORONTO, ONTARIO M3N 2Z4
TEL. 416 749–SVNG(7864) FAX 416 749–7866
E–MAIL: toronto@svng.on.ca


| | | | |
|---|---|---|---|
| DRAWN : | F. P. B./M. M. | FILE NAME : | A230139.DWG |
| CHECKED : | L. S. R. | PLOT SCALE : | MET. 1=0.30 |
| JOB No. : | 230–0139 | PLOTTED : | |
| REF. No. : | 2–20M–1114 | UPDATED : | |

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V–56896

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29(3)

PROJECT STATISTICS

## DUNDAS & SIXTH - Mixed Use Development-Master plan

**OAKVILLE, ONTARIO**

2026-02-18 Project No. 23-011

### 1.0 ZONING

**1.1 North Oakville Zoning By-Law 2009-189**

| Coverage (based on Total Site Area) | Percentage Coverage (%) | m² | ft² |
|---|---|---|---|
| 1.2 Building Coverage "A,B,C,D" (Ultimate Condition) | 43.94 | 7739.00 | 83302 |
| **TOTAL SITE AREA** | **43.94** | **7739.00** | **83302** |

### 2.0 LOT AREA

| | Part | m² | Acres | Hectares |
|---|---|---|---|---|
| 2.1 | Storm Easement | 516.54 | 0.1276 | 0.0517 |
| | Phase 1/4 | 4,593.00 | 1.1350 | 0.4593 |
| | Phase 2 | 8,577.02 | 2.1194 | 0.8577 |
| | Phase 3 | 3,925.00 | 0.9699 | 0.3925 |
| | **TOTAL GROSS LOT AREA** | **17,611.56** | **4.3519** | **1.7612** |

### 3.0 FLOOR SPACE INDEX

**3.1 FLOOR SPACE INDEX (FSI) INTERIM CONDITION** **2.23**

*Means the* ***FLOOR AREA*** *of all buildings on a lot divided by the* ***LOT AREA -*** *(Zoning By-Law 2009-189)*

**3.2 FLOOR SPACE INDEX (FSI) ULTIMATECONDITION** **2.87**

### 4.0 PROJECT FLOOR AREAS

**4.1 Floor Area Definition - (Zoning By-Law 2009-189)**

Means the total area of all floors of a building within the outside walls or outside finished partitions of the walls, but does not include a porch, non-walk-in bay window, attic, basement, enclosed or roofed walkways or loading dock.

**4.2 Leasable Floor Area Definition - (Zoning By-Law 2009-189)**

Means the total area of all floors of a building within the outside walls or outside finished furred partitions of the walls, but does not include the area of walls, stair wells, elevators, escalators, ventilating shafts, attics, attached enclosed and covered loading docks and related enclosed corridors used for loading purposes, and common areas such as mechanical rooms.

**4.3 Total Floor Areas(Interim Condition)**

| Proposed Residential Floor Areas | m² | ft² |
|---|---|---|
| Phase 2 | 25,322.40 | 272,568.04 |
| Phase 3 | 12,623.39 | 135,877.04 |
| **Total** | **37,945.79** | **408,445.08** |

| Retail Floor Areas | m² | ft² |
|---|---|---|
| Phase 1(Retail) | **1,393.00** | **14,994.13** |
| **Total Floor Area (Interim Condition)** | **39,338.79** | **423,439.21** |

**4.4 Total Floor Areas(Ultimate Condition)**

| Proposed Residential Floor Areas | m² | ft² |
|---|---|---|
| Phase 2 | 25,322.40 | 272,568.04 |
| Phase 3 | 12,623.39 | 135,877.04 |
| Phase 4 | 12,112.04 | 130,372.91 |
| **Total** | **50,057.83** | **538,818.00** |

| Retail Floor Areas | m² | ft² |
|---|---|---|
| Phase 4(Retail) | **402.22** | **4,329.46** |
| **Total Floor Area (Ultimate Condition)** | ***50,460.05*** | ***543,147.46*** |

### 5.0 UNIT COUNT & MIX

| | TH | *Studio* | *1 Bed* | *1 Bed + D* | *2 Bed* | *2 Bed +D* | *3 Bed* | Totals |
|---|---|---|---|---|---|---|---|---|
| **5.1 Proposed Residential Unit** | | | | | | | | |
| Phase 2 | 17 | 37 | 108 | 104 | 79 | | | ***345*** |
| Phase 3 | | 24 | 52 | 78 | 43 | | | ***197*** |
| **Total Unit (Interim Condition)** | 17 | 61 | 160 | 182 | 122 | | | ***542*** |

| | TH | *Studio* | *1 Bed* | *1 Bed + D* | *2 Bed* | *2 Bed +D* | *3 Bed* | Totals |
|---|---|---|---|---|---|---|---|---|
| **5.2 Proposed Residential Unit** | | | | | | | | |
| Phase 2 | 17 | 37 | 108 | 104 | 79 | | | ***345*** |
| Phase 3 | | 24 | 52 | 78 | 43 | | | ***197*** |
| Phase 4 | 11 | 21 | 28 | 55 | 34 | | | ***149*** |
| **Total Unit (Ultimate Condition)** | 28 | 82 | 188 | 237 | 156 | | | ***691*** |

### 6.0 PARKING

**6.1 Required Parking Spaces - PHASE ONE,TWO & THREE (INTERIM CONDITION)**

| Description (Parking Type) | Required Ratio | | Area | no. of units | Totals |
|---|---|---|---|---|---|
| Non Residential Visitor Parking | 1 per 30 sqm | (Note 1) | 1,393.00 | 0 | 46 |
| Residential Visitor Parking | 0.20 | | | 542 | 108 |
| Residential Parking | 0 to 1.25 | (Note 2) | | 525 | 0 to 678 |
| Townhomes Parking Spaces | 1 per TH Unit | | | 17 | 17 |

**6.2 Required Parking Spaces - PHASE TWO,THREE & FOUR (ULTIMATE CONDITION)**

| Description (Parking Type) | Required Ratio | | Area | no. of units | TOTALS |
|---|---|---|---|---|---|
| Non Residential Visitor Parking | 1 per 30 sqm | (Note 1) | 402.22 | 0 | 13 |
| Residential Visitor Parking | 0.20 | | | 691 | 138 |
| Residential Parking | 0 to 1.25 | (Note 2) | | 663 | 0 to 866 |
| Townhomes Parking Spaces | 1 per TH Unit | | | 28 | 28 |

**6.3 Provided Parking Spaces - PHASE ONE,TWO & THREE (INTERIM CONDITION)**

| Description (Parking Type) | Provided Ratio | | Area | no. of units | TOTALS |
|---|---|---|---|---|---|
| Non Residential Visitor Parking | 1 per 30 sqm | (Note 1) | 1,393.00 | 0 | 47 |
| Residential Visitor Parking | 0.20 | | | 542 | 108 |
| Residential Parking | 0.88 | | | 525 | 461 |
| Townhomes Parking Spaces | 1 per TH Unit | | | 17 | 17 |
| **Total Required Parking Spaces** | | | | | **633** |

**6.4 Provided Parking Spaces -PHASE TWO,THREE & FOUR (ULTIMATE CONDITION)**

| Description (Parking Type) | Provided Ratio | | Area | no. of units | TOTALS |
|---|---|---|---|---|---|
| Non Residential Visitor Parking | 1 per 30 sqm | (Note 1) | 402.22 | 0 | 14 |
| Residential Visitor Parking | 0.20 | | | 691 | 139 |
| Residential Parking | 0.92 | | | 663 | 611 |
| Townhomes Parking Spaces | 1 per TH Unit | | | 28 | 28 |
| **Total Required Parking Spaces** | | | | | **792** |

### 7.0 BICYCLE PARKING

| | Retail | Visitor | Residential | TOTALS |
|---|---|---|---|---|
| **7.1 Provided Bicycle Spaces** | | | | |
| **Phase 1** | 5 | | | 5 |
| **Phase 2** | | 34 | 100 | 134 |
| **Phase 3** | | 18 | 50 | 68 |
| **Total Provided Bicycle Spaces(Interim Condition)** | | | | **207** |

| | Retail | Visitor | Residential | TOTALS |
|---|---|---|---|---|
| **7.2 Provided Bicycle Spaces** | | | | |
| **Phase 2** | 0 | 34 | 100 | 134 |
| **Phase 3** | | 18 | 50 | 68 |
| **Phase 4** | 6 | 33 | 112 | 151 |
| **Total Provided Bicycle Spaces(Ultimate Condition)** | | | | **353** |

** Note 1: This rate is taken from Zoning By-Law 2020*

** Note 2: Table 5.1A (4) No minimum Residential Parking requirement*

PROJECT STATISTICS

## DUNDAS & SIXTH - Mixed Use Development PHASE TWO - Building A& B

**OAKVILLE, ONTARIO**

2026-02-18 Project No. 23-011

### 1.0 LOT AREA

| | Part | m² | Acres | Hectares |
|---|---|---|---|---|
| 1.1 | Phase 2 | 8,577.02 | 2.1194 | 0.8577 |
| | **Total Gross Lot Area** | **8,577.02** | **2.1194** | **0.8577** |

### 2.0 FLOOR SPACE INDEX

**2.1 FLOOR SPACE INDEX (FSI)** **2.95** **times**

*Means the* ***FLOOR AREA*** *of all buildings on a lot divided by the* ***LOT AREA -*** *(Zoning By-Law 2009-189)*

### 3.0 PHASE TWO FLOOR AREAS

**3.1 Floor Area Definition - (Zoning By-Law 2009-189)**

Means the total area of all floors of a building within the outside walls or outside finished partitions of the walls, but does not include a porch, non-walk-in bay window, attic, basement, enclosed or roofed walkways or loading dock.

**3.2 Proposed Residential Floor Areas**

BUILDING 'A'

| Floor Levels | no. floors | Area per floor (m²) | TOTAL AREA m² | TOTAL AREA ft² |
|---|---|---|---|---|
| Level 1 | 1 | 1,627.21 | 1,627.21 | 17,515 |
| Level 2 | 1 | 1,624.94 | 1,624.94 | 17,491 |
| Level 3-8 | 6 | 1,486.76 | 8,920.56 | 96,020 |
| Mechanical Penthouse (MPH) | 1 | 500.74 | 500.74 | 5,390 |
| **Total Proposed Residential FLOOR AREA - BUILDING 'A'** | **9** | | **12,673.45** | **136,416** |

BUILDING 'B'

| Floor Levels | no. floors | Area per floor (m²) | TOTAL AREA m² | TOTAL AREA ft² |
|---|---|---|---|---|
| Level 1 | 1 | 1,182.87 | 1,182.87 | 12,732 |
| Level 2-8 | 7 | 1,168.91 | 8,182.37 | 88,074 |
| Mechanical Penthouse (MPH) | 1 | 331.50 | 331.50 | 3,569 |
| **Total Proposed Residential FLOOR AREA - BUILDING 'B'** | **9** | | **9,696.74** | **104,375** |

TOWNHOUSE '1'

| Floor Levels | no. floors | Area per floor (m²) | TOTAL AREA m² | TOTAL AREA ft² |
|---|---|---|---|---|
| Level 1 | 1 | 585.65 | 585.65 | 6,304 |
| Level 2 | 1 | 568.85 | 568.85 | 6,123 |
| Level 3 | 1 | 440.57 | 440.57 | 4,742 |
| **Total Proposed Residential FLOOR AREA - TOWNHOUSE '1'** | **3** | | **1,595.07** | **17,169** |

TOWNHOUSE '2'

| Floor Levels | no. floors | Area per floor (m²) | TOTAL AREA m² | TOTAL AREA ft² |
|---|---|---|---|---|
| Level 1 | 1 | 497.83 | 497.83 | 5,359 |
| Level 2 | 1 | 484.09 | 484.09 | 5,211 |
| Level 3 | 1 | 375.22 | 375.22 | 4,039 |
| **Total Proposed Residential FLOOR AREA - TOWNHOUSE '2'** | **3** | | **1,357.14** | **14,608** |

| | | | |
|---|---|---|---|
| 3.3 | Total Residential Floor Area Building 'A', 'B' | 22,370.19 | 240,791 |
| | Total Residential Floor Area Townhomes '1', & '2' | 2,952.21 | 31,777 |
| | **Total Residential Floor Area A - PHASE TWO** | **25,322.40** | **272,568** |

### 4.0 UNIT COUNT & MIX

**4.1 Unit Count & Typology - PHASE TWO - BUILDINGS 'A', 'B' & TOWNHOMES '1', & '2'**

PHASE TWO - BUILDINGS 'A', 'B' & TOWNHOMES '1', & '2'

BUILDING A

| Floor Level | No. of floors | TH | Studio AVG 399 (SQ.FT) | 1 Bed AVG 512 (SQ.FT) | 1 Bed + D AVG 561 (SQ.FT) | 2 Bed AVG 708 (SQ.FT) | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Level 1 | 1x | | 1 | 5 | 2 | 2 | | | 10 | 10 Units |
| Level 2 | 1x | | 2 | 7 | 8 | 5 | | | 22 | 22 Units |
| Levels 3-8 | 6x | | 2 | 7 | 8 | 7 | | | 24 | 144 Units |
| **Total Units** | **8** | | **15** | **54** | **58** | **49** | | | | **176 Units** |
| **Unit Mix % Building A** | | 0% | 9% | 31% | 33% | 28% | 0% | 0% | | |

BUILDING B

| Floor Level | No. of floors | TH | Studio AVG 399 (SQ.FT) | 1 Bed AVG 512 (SQ.FT) | 1 Bed + D AVG 561 (SQ.FT) | 2 Bed AVG 708 (SQ.FT) | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Level 1 | 1x | | 1 | 5 | 4 | 2 | | | 12 | 12 Units |
| Level 2-8 | 7x | | 3 | 7 | 6 | 4 | | | 20 | 140 Units |
| **Total Units** | **8** | | **22** | **54** | **46** | **30** | | | | **152 Units** |
| **Unit Mix % Building B** | | 0% | 14% | 36% | 30% | 20% | 0% | 0% | | |

TOWNHOUSE 1

| Floor Level | No. of floors | TH AVG 1735 (SQ FT) | Studio | 1 Bed | 1 Bed + D | 2 Bed | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Levels 1-3 | 3x | 9 | | | | | | | 9 | 9 Units |
| **Total Units** | **3** | **9** | | | | | | | | **9 Units** |
| **Unit Mix % Townhouse 1** | | 100% | 0% | 0% | 0% | 0% | 0% | 0% | | |

TOWNHOUSE 2

| Floor Level | No. of floors | TH AVG 1735 (SQ FT) | Studio | 1 Bed | 1 Bed + D | 2 Bed | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Levels 1-3 | 3x | 8 | | | | | | | 8 | 8 Units |
| **Total Units** | **3** | **8** | | | | | | | | **8 Units** |
| **Unit Mix % Townhouse 2** | | 100% | 0% | 0% | 0% | 0% | 0% | 0% | | |

| | | |
|---|---|---|
| **4.2 Total Units PHASE TWO - BUILDINGS 'A', 'B'** | | **328 Units** |
| **Total Units PHASE TWO - TOWNHOMES '1', & '2'** | | **17 Units** |
| **Total Units PHASE TWO - BUILDINGS 'A', 'B' & TOWNHOMES '1', & '2'** | | **345 Units** |

**4.3 Barrier Free Units (Required & Proposed) - PHASE TWO - BUILDINGS 'A', 'B' & TOWNHOMES '1', & '2'**

| Total Unit Count x %15 | Studio | 1 Bed (including 1B + D) | 2 Bed (including 2B + D) | 3 Bed (including 3B + D) |
|---|---|---|---|---|
| 51.75 | 5.55 | 31.8 | 14.4 | 0.0 |
| **Total Barrier Free Unit Required** | | | **52** | |
| **Total Barrier Free Unit Provided** | | | **52** | |

** Note 3: Total Unit Counts include Barrier Free Units. For Barrier Free Unit breakdown, refer to sections 6.5 & 6.6*

### 5.0 AMENITY AREAS

**5.1 Proposed Indoor Amenity Space**

| Block | Floor Levels | no. floors | Area per floor (m²) | TOTAL AREA m² | TOTAL AREA ft² |
|---|---|---|---|---|---|
| 1 | Level 1 (Lobby and Amenity) *(Note 4)* | 1 | *307.22* | *307.22* | 3,307 |
| 2 | Level 1 (Lobby and Amenity) | 1 | 326.98 | 326.98 | 3,520 |
| **Total Proposed Indoor Amenity - BLOCK '1' & '2'** | | | | **634.20** | **6,826** |

** Note 4: Denotes areas such as lobby & gathering spaces designed for passive enjoyment of the residents within the building*

** Note 5: Indoor Amenity areas broken out in Section 5.1 have already been accounted for in the Floor Area Calculation in Section3*

### 6.0 PARKING

**6.1 Required Parking Spaces - PHASE TWO - BUILDINGS 'A', 'B' & TOWNHOMES '1', & '2'**

| Description (Parking Type) | Required Ratio | | Area | no. of units | TOTALS |
|---|---|---|---|---|---|
| Residential Visitor Parking | 0.20 | | | 345 | 69 |
| Residential Parking | 0 to 1.25 | (Note 2) | | 345 | 0 to 431 |
| **Total Required Accesible Parking Spaces** | | | | | **9** |
| ** Note 2: Table 5.1A (4) No minimum Residential Parking requirement* | | | | | *(Note 6)* |

** Note 6: Total Required Parking Spaces is inclusive of the Total Required Accessible Parking Spaces*

**6.2 Provided Parking Spaces**

| Floor Levels | Level P1 | Level P2 | | TOTALS |
|---|---|---|---|---|
| *BF Residential* | *1* | *5* | *6* | *304* |
| *Residential Parking Spaces* | *83* | *215* | *298* | |
| *BF Visitor Parking Spaces* | *3* | | *3* | *108* |
| *Visitor Parking Spaces* | *105* | | *105* | |
| *Townhomes Parking Spaces* | *17* | | *17* | *17* |
| **Total Provided Parking Spaces** | **209** | **220** | | **429** |

### 7.0 BICYCLE PARKING

| | | Level 1 | TOTALS |
|---|---|---|---|
| **7.1 Provided Bicycle Spaces** | | | |
| *Residential* | *(Note 7)* | 100 | 100 |
| *Residential - Visitor* | *(Note 7)* | 34 | 34 |
| **Total Provided Bicycle Spaces** | | **134** | **134** |

** Note 7: Table 5.7A Minimum Residential Bicycle Parking Spaces for Occupant is 0.75/unit and for Visitor is 0.25/unit with a maximum of 200 for Site*

### 8.0 STORAGE LOCKERS

| Provided Storage Lockers | Building A&B | TOTALS |
|---|---|---|
| Level P2 | 165 | 165 |
| Level P1 | 77 | 77 |
| Level 1 | 0 | 0 |
| Level 2 | 15 | 15 |
| Level 3-8 | 90 | 90 |
| **Total Provided Storage Lockers** | **347** | **347** |

PROJECT STATISTICS

## DUNDAS & SIXTH - Mixed Use Development PHASE THREE - Building C

**OAKVILLE, ONTARIO**

2026-02-18 Project No. 23-011

### 1.0 LOT AREA

| | Part | m² | Acres | Hectares |
|---|---|---|---|---|
| 1.1 | Phase 3 | 3,925.00 | 0.9699 | 0.3925 |
| | **Total Gross Lot Area** | **3,925.00** | **0.9699** | **0.3925** |

### 2.0 FLOOR SPACE INDEX

**2.1 FLOOR SPACE INDEX (FSI)** **3.22** **times**

*Means the* ***FLOOR AREA*** *of all buildings on a lot divided by the* ***LOT AREA -*** *(Zoning By-Law 2009-189)*

### 3.0 PHASE THREE FLOOR AREAS

**3.1 Floor Area Definition - (Zoning By-Law 2009-189)**

Means the total area of all floors of a building within the outside walls or outside finished partitions of the walls, but does not include a porch, non-walk-in bay window, attic, basement, enclosed or roofed walkways or loading dock.

**3.2 Proposed Residential Floor Areas**

PHASE THREE

BUILDING 'C'

| Floor Levels | no. floors | Area per floor (m²) | Total Area m² | Total Area ft² |
|---|---|---|---|---|
| Level 1 | 1 | 1,376.00 | 1,376.00 | 14,811 |
| Level 2 | 1 | 1,351.95 | 1,351.95 | 14,552 |
| Level 3-9 | 7 | 1,348.29 | 9,438.03 | 101,590 |
| Mechanical Penthouse (MPH) | 1 | 457.41 | 457.41 | 4,924 |
| **Total Proposed Residential FLOOR AREA - BLOCK '3'** | **10** | | **12,623.39** | **135,877** |

| | | | |
|---|---|---|---|
| **3.30 Total Residential Floor Area - PHASE THREE** | **12,623.39** | **135,877** |

### 4.0 UNIT COUNT & MIX

**4.1 Unit Count & Typology - PHASE THREE - BUILDING 'C'**

BUILDING C

| Floor Level | No. of floors | TH | Studio AVG 399 (SQ.FT) | 1 Bed AVG 512 (SQ.FT) | 1 Bed + D AVG 561 (SQ.FT) | 2 Bed AVG 708 (SQ.FT) | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Level 1 | 1x | | | 4 | 6 | 3 | | | 13 | 13 Units |
| Level 2 | 1x | | 3 | 6 | 9 | 5 | | | 23 | 23 Units |
| Levels 3-9 | 7x | | 3 | 6 | 9 | 5 | | | 23 | 161 Units |
| **Total Units** | **9** | | **24** | **52** | **78** | **43** | | | | **197 Units** |
| **Unit Mix % Building C** | | 0% | 12% | 26% | 40% | 22% | 0% | 0% | | |

| | |
|---|---|
| **4.2 Total Units PHASE THREE - BUILDINGS 'C'** | **197 Units** |
| ** Note 3: Total Unit Counts include Barrier Free Units. For Barrier Free Unit breakdown, refer to sections 6.5 & 6.6* (Note 3) | |

**4.3 Barrier Free Units (Required & Proposed) - PHASE THREE - BUILDINGS 'C'**

| Total Unit Count x %15 | Studio | 1 Bed (including 1B + D) | 2 Bed (including 2B + D) | 3 Bed (including 3B + D) |
|---|---|---|---|---|
| 29.55 | 3.60 | 19.5 | 6.5 | 0.0 |
| **Total Barrier Free Unit Required** | | | **30** | |
| **Total Barrier Free Unit Provided** | | | **30** | |

### 5.0 AMENITY AREAS

**5.1 Proposed Indoor Amenity Space**

| Block | Floor Levels | no. floors | Area per floor (m²) | Total Area m² | Total Area ft² |
|---|---|---|---|---|---|
| 1 | Level 1 (Lobby and Amenity) *(Note 4)* | 1 | 200.00 | 200.00 | 2,153 |
| **Total Proposed Indoor Amenity** | | | | **200.00** | **2,153** |

** Note 4: Denotes areas such as lobby & gathering spaces designed for passive enjoyment of the residents within the building*

** Note 5: Indoor Amenity areas broken out in Section 5.1 have already been accounted for in the Floor Area Calculation in Section3.*

### 6.0 PARKING

**6.1 Required Parking Spaces - PHASE THREE - BUILDINGS 'C'**

| Description (Parking Type) | Required Ratio | Area | no. of units | Totals |
|---|---|---|---|---|
| Residential Visitor Parking | 0.20 | | 197 | 39 |
| Residential Parking | 0 to 1.25 (Note 2) | | 197 | 0 to 246 |
| **Total Required Accesible Parking Spaces** | | | | **6** |
| ** Note 2: Table 5.1A (4) No minimum Residential Parking requirement* | | | | *(Note 6)* |

** Note 6: Total Required Parking Spaces is inclusive of the Total Required Accessible Parking Spaces*

**6.2 Provided Parking Spaces**

| Floor Levels | Level P1 | Level P2 | | | Totals |
|---|---|---|---|---|---|
| *BF Residential* | *3* | *3* | | *6* | *157* |
| *Residential Parking Spaces* | *67* | *84* | | *151* | |
| *BF Visitor Parking Spaces* | *39 Visitor Parking Provided in Phase 2* | | | | |
| *Visitor Parking Spaces* | | | | | |
| **Total Provided Parking Spaces** | **70** | **87** | | | **157** |

### 7.0 BICYCLE PARKING

| | | Level 1 | Level P1 | TOTALS |
|---|---|---|---|---|
| **7.1 Provided Bicycle Spaces** | | | | |
| *Residential* | *(Note 7)* | | 50 | 50 |
| *Residential - Visitor* | *(Note 7)* | 18 | | 18 |
| **Total Provided Bicycle Spaces** | | **18** | **50** | **68** |

** Note 7: Table 5.7A Minimum Residential Bicycle Parking Spaces for Occupant is 0.75/unit and for Visitor is 0.25/unit with a maximum of 200 for Site*

### 8.0 STORAGE LOCKERS

| Provided Storage Lockers | Building C | TOTALS |
|---|---|---|
| Level P2 | 75 | 75 |
| Level P1 | 47 | 47 |
| Level 1 | 0 | 0 |
| Level 2 | 0 | 0 |
| Level 3-8 | 0 | 0 |
| **Total Provided Storage Lockers** | **122** | **122** |

PROJECT STATISTICS

## DUNDAS & SIXTH - Mixed Use Development PHASE FOUR - BUILDING D

**OAKVILLE, ONTARIO**

2026-02-18 Project No. 23-011

### 1.0 LOT AREA

| | Part | m² | Acres | Hectares |
|---|---|---|---|---|
| 1.1 | Phase 4 | 4,593.00 | 1.1350 | 0.4593 |
| | **Total Gross Lot Area** | **4,593.00** | **1.1350** | **0.4593** |

### 2.0 FLOOR SPACE INDEX

**2.1 FLOOR SPACE INDEX (FSI)** **2.72** **times**

*Means the* ***FLOOR AREA*** *of all buildings on a lot divided by the* ***LOT AREA -*** *(Zoning By-Law 2009-189)*

### 3.0 PHASE FOUR FLOOR AREAS

**3.1 Floor Area Definition - (Zoning By-Law 2009-189)**

Means the total area of all floors of a building within the outside walls or outside finished partitions of the walls, but does not include a porch, non-walk-in bay window, attic, basement, enclosed or roofed walkways or loading dock.

**3.2 Proposed Residential Floor Areas**

PHASE FOUR (ULTIMATE CONDITION)

BUILDING 'D'

| Floor Levels | no. floors | Area per floor (m²) | Total Area m² | Total Area ft² |
|---|---|---|---|---|
| Level 1 | 1 | 1,224.78 | 1,224.78 | 13,183 |
| Level 2 | 1 | 1,148.69 | 1,148.69 | 12,364 |
| Level 3-8 | 6 | 1,260.65 | 7,564.08 | 81,419 |
| Mechanical Penthouse (MPH) | 1 | 273.61 | 273.61 | 2,945 |
| **Total Proposed Residential FLOOR AREA - BUILDING 'D'** | **9** | | **10,211.16** | **109,912** |

TOWNHOUSE '3'

| Floor Levels | no. floors | Area per floor (m²) | Total Area m² | Total Area ft² |
|---|---|---|---|---|
| Level 1 | 1 | 263.02 | 263.02 | 2,831 |
| Level 2 | 1 | 263.02 | 263.02 | 2,831 |
| Level 3 | 1 | 263.02 | 263.02 | 2,831 |
| **Total Proposed Residential FLOOR AREA - TOWNHOUSE '3'** | **3** | | **789.06** | **8,493** |

TOWNHOUSE '4'

| Floor Levels | no. floors | Area per floor (m²) | Total Area m² | Total Area ft² |
|---|---|---|---|---|
| Level 1 | 1 | 424.40 | 424.40 | 4,568 |
| Level 2 | 1 | 424.40 | 424.40 | 4,568 |
| Level 3 | 1 | 263.02 | 263.02 | 2,831 |
| **Total Proposed Residential FLOOR AREA - TOWNHOUSE '4'** | **3** | | **1,111.82** | **11,968** |

| | | | |
|---|---|---|---|
| 3.3 | **Total Residential FLOOR AREA - PHASE FOUR (ULTIMATE CONDITION)** | **12,112.04** | **130,373** |
| 3.4 | Total Residential Floor Area | 12,112.04 | 130,373 |
| | Total Retail Floor Area | 402.22 | 4,329 |
| | **Total Floor Area - PHASE FOUR** | **12,514.26** | **134,702** |

### 4.0 UNIT COUNT & MIX

**4.1 Unit Count & Typology - PHASE 4 - BUILDING 'D'**

PHASE FOUR - BUILDING 'D' & TOWNHOMES '3', & '4'

BUILDING D

| Floor Level | No. of floors | TH | Studio AVG 399 (SQ.FT) | 1 Bed AVG 512 (SQ.FT) | 1 Bed + D AVG 561 (SQ.FT) | 2 Bed AVG 708 (SQ.FT) | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Level 1 | 1x | | | | | | | | 0 | 0 Units |
| Level 2 | 1x | | 3 | 4 | 7 | 4 | | | 18 | 18 Units |
| Levels 3-8 | 6x | | 3 | 4 | 8 | 5 | | | 20 | 120 Units |
| **Total Units** | **8** | | **21** | **28** | **55** | **34** | | | | **138 Units** |
| **Unit Mix % Building C** | | 0% | 15% | 20% | 40% | 25% | 0% | 0% | | |

TOWNHOUSE 3

| Floor Level | No. of floors | TH AVG 1735 (SQ FT) | Studio | 1 Bed | 1 Bed + D | 2 Bed | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Levels 1-3 | 3x | 4 | | | | | | | 4 | 4 Units |
| **Total Units** | **3** | **4** | | | | | | | | **4 Units** |
| **Unit Mix % Townhouse 1** | | 100% | 0% | 0% | 0% | 0% | 0% | 0% | | |

TOWNHOUSE 4

| Floor Level | No. of floors | TH AVG 1735 (SQ FT) | Studio | 1 Bed | 1 Bed + D | 2 Bed | 2 Bed +D | 3 Bed | Units Per Floor | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Levels 1-3 | 3x | 7 | | | | | | | 7 | 7 Units |
| **Total Units** | **3** | **7** | | | | | | | | **7 Units** |
| **Unit Mix % Townhouse 1** | | 100% | 0% | 0% | 0% | 0% | 0% | 0% | | |

| | | |
|---|---|---|
| **4.2 Total Units PHASE FOUR - BUILDINGS 'D'** | | **138 Units** |
| **Total Units PHASE FOUR - TOWNHOMES '3', & '4'** | | **11 Units** |
| **Total Units PHASE FOUR - BUILDINGS 'D' & TOWNHOMES '3', & '4'** | | **149 Units** |

**4.3 Barrier Free Units (Required & Proposed) - PHASE FOUR - BUILDINGS 'D' & TOWNHOMES '3', & '4'**

| Total Unit Count x %15 | Studio | 1 Bed (including 1B + D) | 2 Bed (including 2B + D) | 3 Bed (including 3B + D) |
|---|---|---|---|---|
| 22.35 | 3.15 | 12.5 | 6.8 | 0.0 |
| **Total Barrier Free Unit Required** | | | **22** | |
| **Total Barrier Free Unit Provided** | | | **22** | |

** Note 3: Total Unit Counts include Barrier Free Units. For Barrier Free Unit breakdown, refer to sections 6.5 & 6.6*

### 5.0 AMENITY AREAS

**5.1 Proposed Indoor Amenity Space**

| Block | Floor Levels | no. floors | Area per floor (m²) | Total Area m² | Total Area ft² |
|---|---|---|---|---|---|
| 1 | Level 1 (Lobby and Amenity) *(Note 4)* | 1 | 277.75 | 277.75 | 2,990 |
| **Total Proposed Indoor Amenity** | | | | **277.75** | **2,990** |

** Note 4: Denotes areas such as lobby & gathering spaces designed for passive enjoyment of the residents within the building*

** Note 5: Indoor Amenity areas broken out in Section 5.1 have already been accounted for in the Floor Area Calculation in Section3*

### 6.0 PARKING

**6.1 Required Parking Spaces - PHASE FOUR - BUILDINGS 'D' & TOWNHOMES '3', & '4'**

| Description (Parking Type) | Required Ratio | Area | no. of units | Totals |
|---|---|---|---|---|
| Residential Visitor Parking | 0.20 | | 149 | 30 |
| Residential Parking | 0 to 1.25 (Note 2) | | 149 | 0 to189 |
| Retail | 1 per 30 sqm | 402.22 | | 13 |
| Total Required Accesible Parking Spaces | | | | 7 |
| ** Note 2: Table 5.1A (4) No minimum Residential Parking requirement* | | | | *(Note 6)* |

** Note 6: Total Required Parking Spaces is inclusive of the Total Required Accessible Parking Spaces*

**6.2 Provided Parking Spaces**

| Floor Levels | Level P1 | Level P2 | Ratio | Totals |
|---|---|---|---|---|
| *BF Residential* | *3* | *2* | *5* | *150* |
| *Residential Parking Spaces* | *41* | *104* | *145* | |
| *BF Visitor Parking Spaces* | *1* | | *1* | *31* |
| *Visitor Parking Spaces* | *30* | | *30* | |
| *Townhomes Parking Spaces* | *11* | | *11* | *11* |
| *Retail-BF* | *1* | | | *14* |
| *Retail* | *13* | | | |
| **Total Provided Parking Spaces** | **100** | **106** | | **206** |

### 7.0 BICYCLE PARKING

| | | Level 1 | Level P1 | Level P2 | Totals |
|---|---|---|---|---|---|
| **7.1 Provided Bicycle Spaces** | | | | | |
| *Residential* | *(Note 7)* | | | 112 | 112 |
| *Residential - Visitor* | *(Note 7)* | 5 | 28 | | 33 |
| *Retail - Visitor* | | 6 | | | 6 |
| **Total Provided Bicycle Spaces** | | **11** | **28** | **112** | **151** |

** Note 7: Table 5.7A Minimum Residential Bicycle Parking Spaces for Occupant is 0.75/unit and for Visitor is 0.25/unit with a maximum of 200 for Site*

### 8.0 STORAGE LOCKERS

| Provided Storage Lockers | Building D | Totals |
|---|---|---|
| Level P2 | 62 | 62 |
| Level P1 | 52 | 52 |
| Level 1 | 0 | 0 |
| Level 2 | 0 | 0 |
| Level 3-8 | 0 | 0 |
| **Total Provided Storage Lockers** | **114** | **114** |

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Date:

KIRKOR
ARCHITECTS AND PLANNERS
20 De Boers Drive Suite 400
Toronto ON M3J 0H1

Revisions:

| No.: | Revision: | Date: |
|---|---|---|
| 3. | Zoning By-law Amendment | Feb. 25, 2026 |
| 2. | Zoning By-law Amendment | Sept. 12, 2025 |
| 1. | Zoning By-law Amendment | Dec. 12, 2024 |

Issued For: Date:

Drawing Title:

Statistics

Client:

Shoppers Realty Inc.

Project:

3000 Sixth Line & 21
Dundas Street West

Oakville, Ontario

Scale:

Drawn by: ND, JH

Checked by: AL

Project No.: 23-011

Date: Feb. 18, 2026

Drawing No.:

dA1.02



v 2021.11.03

PDF Print: 2026-02-18 9:39:53 PM File Path: C:\Users\ND\OneDrive - KIRKOR ARCHITECTS AND PLANNERS\Desktop\3000 Sixth Line & 21 Dundas Street West - Oakville_2026-02-18_ND.pln

KAITTING TRAIL

KAITTING POND

ADJACENT MATTAMY HOMES
4 & 6 STOREY

ADJACENT
MATTAMY HOMES
5 & 7 STOREY

**BUILDING "A"**
8 STOREY RESIDENTIAL
(176 SUITES)
FFE=172.50

**BUILDING "B"**
8 STOREY RESIDENTIAL
(152 SUITES)
FFE=172.50

**BUILDING "C"**
9 STOREY RESIDENTIAL
(197 SUITES)
FFE=172.24

**BLOCK 1 TOWNHOUSE TYPE 2B**
3 STOREY (8 UNITS)
FFE=172.60

**BLOCK 2 TOWNHOUSE TYPE 2B**
3 STOREY (8 UNITS)
FFE=172.60

**RETAIL (SHOPPERS DRUG MART)**
FFE=171.75

OUTDOOR AMENITY

STORM EASEMENT

SIXTH LINE

DUNDAS ST W

Dundas Street Center Line

Centre Line of of Dundas Street (Regional RD 5)

DUNDAS STREET CENTER LINE

35.00 m DISTANCE TO SITE ACCESS

DISTANCE TO SITE ACCESS

MIN. DISTANCE TO HYDRO POLE

LEGEND

TREE PROTECTION ZONE (TPZ)

1 Site Plan - Interim Condition
1:350

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Date:

KIRKOR
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Toronto ON M3J 0H1

Revisions:

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| 1. | Zoning By-law Amendment | Dec. 12, 2024 |

Issued For: Date:

Drawing Title:

Site Plan - Interim Condition

Client:

Shoppers Realty Inc.

Project:

3000 Sixth Line & 21
Dundas Street West

Oakville, Ontario

Scale: 1 : 350

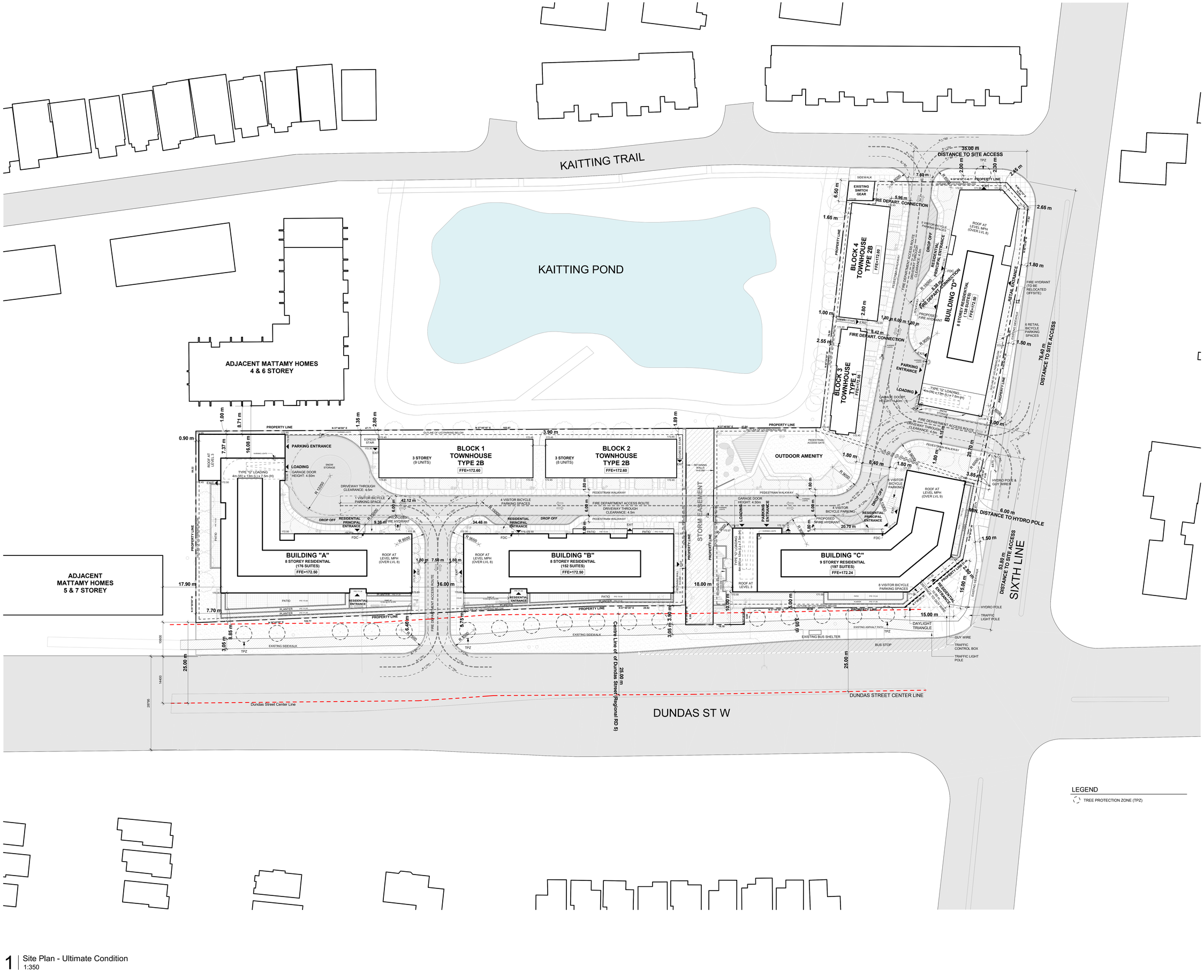
Drawn by: ND, JH

Checked by: AL

Project No.: 23-011

Date: Feb. 18, 2026

Drawing No.: dA1.04




1 | Site Plan - Ultimate Condition
1:350

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Date:

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ARCHITECTS AND PLANNERS
20 De Boers Drive Suite 400
Toronto ON M3J 0H1

Revisions:

| No.: | Revision: | Date: |
|---|---|---|
| 3. | Zoning By-law Amendment | Feb. 25, 2026 |
| 2. | Zoning By-law Amendment | Sept. 12, 2025 |
| 1. | Zoning By-law Amendment | Dec. 12, 2024 |

Drawing Title:

Site Plan - Ultimate Condition

Client:

Shoppers Realty Inc.

Project:

3000 Sixth Line & 21 Dundas Street West

Oakville, Ontario

Scale: 1 : 350
Drawn by: ND, JH
Checked by: AL
Project No.: 23-011
Date: Feb. 18, 2026
Drawing No.: dA1.05

v.2021.11.03

20M-1114

02 - GENERAL PLAN (UNDERGROUND SERVICES)

**NOTE:**
WATER SERVICES FOR LOTS 102 TO 104 FRONTING JANICE DRIVE TO BE INSTALLED UNDER STORM PIPE TO THE SATISFACTION OF REGION OF HALTON

**NOTE:**
ALL AS-CONSTRUCTED INFORMATION PROVIDED BY CON-DRAIN COMPANY (1983) LTD.

**NOTE** RE: SAN SYSTEM SWITCHOVER

FOR THE "SWITCHOVER" OF THE INTERIM SANITARY SYSTEM TO THE ULTIMATE SYSTEM TO BE COMPLETED BY THE DEVELOPER AS PER THE FOLLOWS AND SEE DETAIL ON DWG. 27, UPON COMPLETION OF 900mm CPP TRUNK SYSTEM:

1. INSTALLING TEMP. PLUG AT DOWNSTREAM PIPE AT MH 21A AND DIVERT THE FLOW TO THE SAN. TRUNK MH DOWNSTREAM OF MH 100A (+/-98m) BY PUMPING.
2. INSTALLING MH 100A, SAN CONNECTION "SWITCHOVER" MH OVER 900mm CPP; REMOVING 900mm CPP AND 200mm PVC PIPE WITHIN.
3. INSTALLING INTERNAL DROP STRUCTURE (RH 303.01) FOR UPSTREAM OF 200mm PVC PIPE AND BENCHING
4. ABANDONING INTERIM 200mm PVC PIPE FROM MH 100A TO EX. MH 21A ON WEST FIELD TRAIL BY FILLING UNSHRINKABLE FILL AND PLUGGING THE PIPE AT DOWNSTREAM OF MH 100A AND UPSTREAM OF EX. MH 21A AND BOTH INVERTS OF MHs 22A AND 23A
5. ABANDONING MHs 22A AND 23A BY REMOVING THE COVER/FRAME AND FILLING WITH SAND AND CAPPED.
6. RE-BENCHING EX. MH 21A
7. REMOVING TEMP. PLUG AT DOWNSTREAM OF MH 21A AND SWITCHING OVER
8. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
9. ANY DISTURBED AREAS, INCLUDING BOULEVARD, TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
10. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

**NOTE** RE: WORKS WITHIN WEST FIELD TRAIL AND BUFFER BLOCK

PROPOSED 200mm PVC SANITARY SEWER WITHIN ROW OF WEST FIELD TRAIL AND BUFFER BLOCK TO BE CONSTRUCTED AS PER THE FOLLOWS:

1. 200mm PVC SANITARY SEWER TO BE CONSTRUCTED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL. SEE DETAIL ON DWG. 40B.
2. FOR TYPICAL RESTORATION DETAILS WITHIN ROADWAY PAVEMENT, SHOULDER, DITCH AND BOULEVARD, REFER TO DETAILS ON DWG. 40B.
3. DISTURBED Ex. CURB AND SIDEWALK WITHIN THE WORKING ZONE TO BE REINSTALLED AS PER OPSD 600.040 AND 310.010, RESPECTIVELY
4. FOR LANDSCAPE RESTORATION WITHIN THE BOULEVARD AND BUFFER BLOCK, REFER TO LANDSCAPE DWG. FOR DETAIL
5. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
6. ANY DISTURBED AREAS TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
7. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
8. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

**NOTE** RE: WORKS WITHIN DUNDAS STREET

PROPOSED STORM AND SANITARY SEWER WITHIN ROW OF DUNDAS STREET TO BE CONSTRUCTED AS PER THE FOLLOWS:

1. STORM AND SANITARY SEWER TO BE CONSTRUCTED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL. SEE DETAIL ON DWG. 40B.
2. FOR TYPICAL RESTORATION DETAILS WITHIN ROADWAY PAVEMENT, SHOULDER, DITCH AND BOULEVARD, REFER TO DETAILS ON DWG. 40B.
3. FOR TEMP. PROTECTION WITH STEEL PLATES IN ROADWAY AREAS, REFER TO DETAIL ON DWG. 40B
4. FOR WORKS ADJACENT TO EX. CEMETERY, REFER TO SEPARATE NOTES
5. DISTURBED Ex. CURB AND SIDEWALK WITHIN THE WORKING ZONE TO BE REINSTALLED AS PER OPSD 600.040 AND 310.010, RESPECTIVELY
6. FOR LANDSCAPE RESTORATION WITHIN THE BOULEVARD, REFER TO LANDSCAPE DWG. FOR DETAIL, IF APPLICABLE
7. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
8. ANY DISTURBED AREAS TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
9. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
10. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

**NOTE** RE: EXISTING MH 21A

1. CORE INTO EXISTING MH 21A TO CONNECT THE PROPOSED 200mm SANITARY SEWER.
2. EXISTING MH 21A TO BE REBENCHED.
3. ALL WORKS TO BE COMPLETED TO THE SATISFACTION OF THE AUTHORITY HAVING THE JURISDICTION

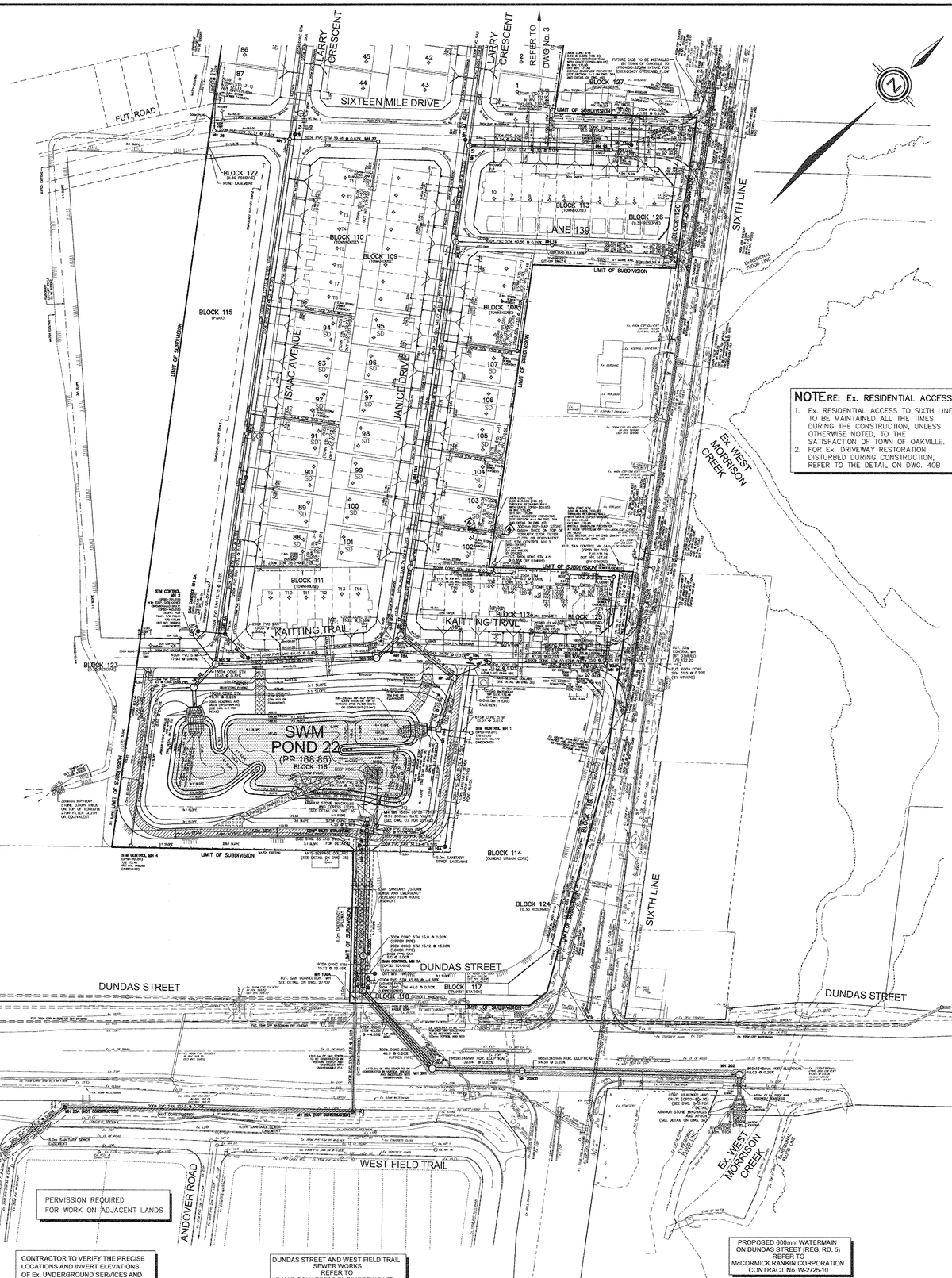
ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION

CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION

DUNDAS STREET AND WEST FIELD TRAIL SEWER WORKS
REFER TO
DAVID SCHAEFFER ENGINEERING LTD.
PROJECT No. 07-306
REGION FILE: DO-694

PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS

PROPOSED 600mm WATERMAIN ON DUNDAS STREET (REG. RD. 5) REFER TO
McCORMICK RANKIN CORPORATION
CONTRACT No. W-2725-10




ALL DWELLINGS ARE TO BE PROVIDED WITH SUMP PUMPS. SEE DETAIL ON DWG. 40.

**LEGEND**

- STORM MANHOLE
- SANITARY MANHOLE
- SANITARY MANHOLE BY OTHERS
- DOUBLE SANITARY HOUSE CONNECTION
- SINGLE SANITARY HOUSE CONNECTION
- SINGLE STORM HOUSE CONNECTION
- WATER CONNECTION
- CURB STOP SERVICE
- HYDRANT
- TEE
- VALVE & BOX
- VALVE & CHAMBER
- SINGLE/DOUBLE CATCHBASIN
- DOUBLE CATCHBASINS WITH 300ø LEADS UNLESS OTHERWISE NOTED
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE A (Q max = 19.7 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE B (Q max = 22.0 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE C (Q max = 36.5 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE D (Q max = 54.6 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE F (Q max = 77.2 l/s)
- LOTS EQUIPPED WITH SUMP PUMP
- LOTS EQUIPPED WITH WITH SANITARY CLEAN OUT CHAMBER. (SEE DETAIL ON DWG. 40)
- UNDERGROUND SERVICE TO BE CONSTRUCTED WITHIN Ex. PAVEMENT. LENGTH AS NOTED.

**NOTE** RE: Ex. RESIDENTIAL ACCESS

1. Ex. RESIDENTIAL ACCESS TO SIXTH LINE TO BE MAINTAINED ALL THE TIMES DURING THE CONSTRUCTION, UNLESS OTHERWISE NOTED, TO THE SATISFACTION OF TOWN OF OAKVILLE.
2. FOR Ex. DRIVEWAY RESTORATION DISTURBED DURING CONSTRUCTION, REFER TO THE DETAIL ON DWG. 40B

FOR ENLARGED ROAD CONNECTION DETAIL OF SIXTEEN MILE DRIVE TO SIXTH LINE, REFER TO DWG. No. 42

FOR ENLARGED ROAD CONNECTION DETAIL OF KAITTING TRAIL TO SIXTH LINE, REFER TO DWG. No. 42

**NOTE:**
FOR RLCB LAYOUT
REFER TO DRAWING No. 40

**NOTE** RE: WORKS WITHIN SIXTH LINE

PROPOSED 600mm CPP WATERMAIN WITHIN ROW OF SIXTH LINE TO BE CONSTRUCTED AS PER THE FOLLOWS:

1. 600mm CPP WATERMAIN TO BE CONSTRUCTED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL, UNLESS OTHERWISE NOTED. SEE DETAIL ON DWG. 40B.
2. FOR TYPICAL RESTORATION DETAILS WITHIN ROADWAY PAVEMENT, Ex. RESIDENTIAL DRIVEWAY, SHOULDER, DITCH AND BOULEVARD, REFER TO DETAILS ON DWG. 40B.
3. DISTURBED Ex. CURB AND SIDEWALK WITHIN THE WORKING ZONE TO BE REINSTALLED AS PER OPSD 600.040 AND 310.010, RESPECTIVELY
4. FOR LANDSCAPE RESTORATION WITHIN THE BOULEVARD, REFER TO LANDSCAPE DWG. FOR DETAIL, IF APPLICABLE
5. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
6. ANY DISTURBED AREAS TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
7. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
8. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

**NOTE** RE: KAITTING TRAIL AT SIXTH LINE

UPON FUTURE DEVELOPMENT OF Ex. RESIDENTIAL AREAS, THE FOLLOWING WORKS TO BE COMPLETED TO THE SATISFACTION OF TOWN OF OAKVILLE, UNLESS OTHERWISE NOTED:

1. FUTURE STORM SEWER FROM THE BEND TO FUTURE STORM CONTROL MH AND FUTURE SANITARY SEWER TO BE INSTALLED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL
2. TEMP. MH 31 AND STORM SEWER DEFLECTION TO BE REMOVED
3. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
4. ANY DISTURBED AREAS, INCLUDING CURB, SIDEWALK AND BOULEVARD, TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
5. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
6. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

**NOTE** RE: TEMP. MH 31

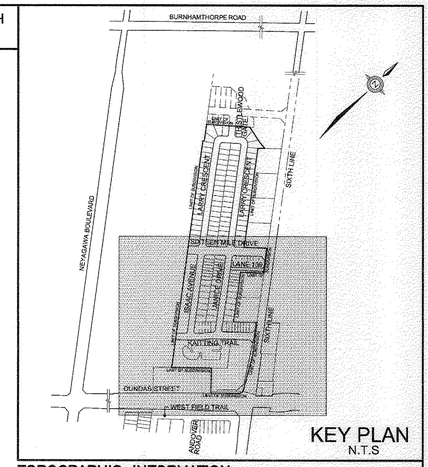
MH COVER TO BE LOCKING COVER (OPSD 401.060) AND TO BE BOLTED DOWN AT ALL TIMES. MH IS TO BE REMOVED UPON THE EXTENSION OF THE STORM SEWER TO THE EAST.

**NOTE** RE: Ex. RESIDENTIAL ACCESS

1. Ex. RESIDENTIAL ACCESS TO SIXTH LINE TO BE MAINTAINED ALL THE TIMES DURING THE CONSTRUCTION, UNLESS OTHERWISE NOTED, TO THE SATISFACTION OF TOWN OF OAKVILLE.
2. FOR Ex. DRIVEWAY RESTORATION DISTURBED DURING CONSTRUCTION, REFER TO THE DETAIL ON DWG. 40B

**NOTE** RE: WORKS ADJACENT TO EX. CEMETERY

WORKS ADJACENT TO EX. CEMETERY TO MEET ALL REQUIREMENTS OF THE ONTARIO CEMETERIES ACT (RSO 1990) AND SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND WITHIN THE WORKING ZONE DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE SHOULD BE NOTIFIED IMMEDIATELY




KEY PLAN
N.T.S

**TOPOGRAPHIC INFORMATION**
TOPOGRAPHIC INFORMATION PROVIDED BY RADY-PENTEK & EDWARD SURVEYING LTD., JOB No. 05-344, TOPOGRAPHIC SURVEY DATED ON DEC 08, 2010 & JUNE 10, 2011

**LEGAL INFORMATION**
CALCULATED M-PLAN PROVIDED BY RADY-PENTEK & EDWARD SURVEYING LTD., PROJECT No. 10-214, SURVEY DATED DECEMBER 23, 2011.

# AS-CONSTRUCTED

**BENCHMARK No. 00819818116** ELEVATION = 175.722m

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO BENCHMARK No. 00819818116 HAVING AN ELEVATION OF 175.722m, CONCRETE CULVERT UNDER BURNHAMTHORPE RD., 1.6km EAST OF THE JCT OF BURNHAMTHORPE RD AND TRAFALGAR RD IN OAKVILLE, 1.4km WEST OF THE JCT OF BURNHAMTHORPE RD AND NINTH LINE RD., AND 8.8m NORTH OF THE CENTRELINE OF BURNHAMTHORPE RD., TABLET IS SET VERTICALLY IN TOP OF NORTH END OF CULVERT, 1.25m SOUTH OF NORTH END OF CULVERT AND 73cm EAST OF WEST FACE OF CULVERT.

| No. | DATE | BY | REVISIONS | APPROVED |
|---|---|---|---|---|
| 7. | 15-05-15 | K.A. | AS-CONSTRUCTED SUBMISSION: SAN. STM., WM. & ROAD CENTRELINE | |
| 6. | 12-09-28 | A.S. | AS-CONSTRUCTED: SANITARY, STORM AND WATERMAIN. | |
| 5. | 12-07-17 | Z.L. | ADDITIONAL DRAIN PIPE ADDED FOR LOT 1 AND BLOCK 112 | |
| 4. | 12-05-07 | Z.L. | SWM UNLAINING TRAIL INTERSECTION 100 YEAR HYDRAULIC GRADE REVISED (MISED ON SR CROSS FALL) | |
| 3. | 12-04-27 | Z.L. | LANDS OF MARRIOTT AND TOWN CONNECTIONS MISSED ON PREVIOUS "AS-BUILT" SUBMISSION | |
| 2. | 12-04-19 | Z.L. | AS-CONSTRUCTED | |
| 1. | 12-03-26 | Z.L. | ELLIPTICAL PIPELINE FROM MH 20302 TO HEADWALL REVISED AND REALIGNED | |

| | | | | |
|---|---|---|---|---|
| DESIGNED BY: | K.M. | CHECKED BY: | Z.L. | DATE: JANUARY 2011 |
| DRAWN BY: | M.Z./W.L. | CHECKED BY: | Z.L. | |

SCALE HORIZ. 1:1000 (0, 10, 20, 30, 40)

REFERENCES

FIELD NOTES

**APPROVALS**

MUNICIPAL

APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFIATIONS

PHILIP KELLY (ORIGINALLY SIGNED) — MANAGER OF DEVELOPMENT ENGINEERING — MAR. 9, 2012 — DATE

BELL ☐ HYDRO ☐ GAS ☐ CABLE ☐ TRAFFIC ☐ WATER ☐

REGIONAL

APPROVAL DESIGN OF SANITARY, WATER SERVICES AND REGIONAL ROAD WORKS APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS & SPECIFICATIONS & LOCATIONAL APPROVAL FROM AREA MUNICIPALITY

RON MACKENZIE (ORIGINALLY SIGNED) — LEGISLATIVE AND PLANNING SERVICES — MAR. 5, 2012 — DATE

STAMP

ORIGINALLY SEALED BY ZHENYONG LI, P.ENG DATED DEC. 2, 2010

THIS DRAWING HAS BEEN UPDATED BY DSEL TO REPRESENT THE "AS-BUILT" CONDITION OF THE INFRASTRUCTURE CONSTRUCTED. THE INFORMATION CONTAINED HEREIN HAS BEEN PROVIDED BY THIRD PARTIES. IN OUR OPINION ALL AS-CONSTRUCTED INFORMATION PROVIDE IS IN GENERAL CONFORMANCE TO THE ORIGINAL DESIGN AND TOWN STANDARDS, ALTHOUGH THE INFORMATION IS BELIEVED TO CORRECTLY REFLECT CONDITIONS AT THE TIME OF CERTIFICATION, DSEL PROVIDES NO WARRANTY AS TO THE CURRENCY, ACCURACY, OR COMPLETENESS OF THE INFORMATION SHOWN. THERE MAY HAVE BEEN CHANGES TO THE INFRASTRUCTURE REPRESENTED SINCE THE COMPLETION OF THE SUBJECT DEVELOPMENT AND OTHERS INTENDING TO REFERENCE THIS INFORMATION ARE ADVISED TO OBTAIN INDEPENDENT THIRD PARTY CONFIRMATION OF ITS ACCURACY PRIOR TO ITS USE.

STAMP

LICENSED PROFESSIONAL ENGINEER — T.D. McNAIR — 100151369 — 15-05-15 — PROVINCE OF ONTARIO


DSEL david schaeffer engineering ltd
600 Alden Road, Suite 500
Markham, Ontario, L3R 0E7
Tel. (905) 475-3080
Fax. (905) 475-3081
www.DSEL.ca


MUNICIPALITY: OAKVILLE DEVELOPMENT ENGINEERING

REGION: Halton — The Regional Municipality of Halton

DEVELOPER: TIMSIN HOLDING CORP.

WOODLAND TRAILS

PROJECT: TIMSIN PHASE 1
20M-1114 24T-05025

TITLE: GENERAL PLAN (UNDERGROUND SERVICES)

© DSEL

| MUNICIPAL FILE NO. | REGIONAL FILE NO. |
|---|---|
| SD-581 | DO-683 |
| PROJECT NO. 07-306 | SHEET 2 OF 55 |

20M-1114

06 - GRADING PLAN

ALL DWELLINGS ARE TO BE PROVIDED WITH SUMP PUMPS. SEE DETAIL ON DWG. 40.

## LEGEND

- 199.35 PROPOSED ELEVATION
- *198.50* EXISTING ELEVATION
- [199.35] FUTURE PROPOSED ELEVATION
- 198.00 EXISTING CONTOUR ELEVATION
- SWALE
- 211.90 FRONT HOUSE GRADE
- 212.16 SPECIFIED HOUSE GRADE
- 212.13 REAR HOUSE GRADE
- S SPLIT DRAINING LOT
- PROPOSED OVERLAND FLOW DIRECTION
- REAR YARD OVERLAND FLOW DIRECTION
- EXTERNAL OVERLAND FLOW DIRECTION
- HYDRANT
- VALVE & CHAMBER
- VALVE & BOX
- 3:1 MAXIMUM SLOPE
- HYDRO TRANSFORMER
- ENGINEERED FILL
- LS LIGHT STANDARD
- SINGLE CATCHBASIN
- DOUBLE CATCHBASINS WITH 300ø
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE A (Q max = 19.7 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE B (Q max = 22.0 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE C (Q max = 36.5 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE D (Q max = 54.6 l/s)
- CATCHBASINS WITH INLET CONTROL DEVICE TYPE F (Q max = 77.2 l/s)
- LOTS EQUIPPED WITH SUMP PUMP
- STORM MANHOLE
- SANITARY MANHOLE
- SANITARY MANHOLE BY OTHERS
- 2.4m HIGH ACOUSTIC FENCE
- 1.2m HIGH BLACK VINYL CHAIN LINK FENCE UNLESS OTHERWISE NOTED
- 1.2m HIGH PREFABRICATED METAL FENCE UNLESS OTHERWISE NOTED
- RETAINING WALL (SEE NOTES ON DWG. 1 AND R-W-1, RW-1B, RW-2, RW-3 FOR DETAILS)
- SD SEMI-DETACHED HOUSE
- COMMUNITY MAILBOX AND PAD LOCATION (WITH SIDEWALK)
- TEMPORARY MAILBOX
- SIDE YARD DETAIL REFER TO DWG.40 FOR SHORT SIDES OF SIDE YARD DETAIL (UNLESS OTHERWISE NOTED)

**NOTE:** FOR CROSS SECTION 1–1, 2–2, AND 3–3 REFER TO DRAWING No. 39A

**NOTE:** FOR CROSS SECTION F–F, REFER TO DRAWING No. 38

**NOTE:** FOR CROSS SECTION G–G, H–H, AND I–I REFER TO DRAWING No. 39

**NOTE:** FOR CROSS SECTION K–K, J–J, L–L, M–M, N–N, O–O AND P–P REFER TO DRAWING D10

### NOTE RE: WORKS WITHIN WEST FIELD TRAIL AND BUFFER BLOCK

PROPOSED 200mm PVC SANITARY SEWER WITHIN ROW OF WEST FIELD TRAIL AND BUFFER BLOCK TO BE CONSTRUCTED AS PER THE FOLLOWS:

1. 200mm PVC SANITARY SEWER TO BE CONSTRUCTED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL. SEE DETAIL ON DWG. 40B.
2. FOR TYPICAL RESTORATION DETAILS WITHIN ROADWAY PAVEMENT, SHOULDER, DITCH AND BOULEVARD, REFER TO DETAILS ON DWG. 40B.
3. DISTURBED Ex. CURB AND SIDEWALK WITHIN THE WORKING ZONE TO BE REINSTALLED AS PER OPSD 600.040 AND 310.010, RESPECTIVELY
4. FOR LANDSCAPE RESTORATION WITHIN THE BOULEVARD AND BUFFER BLOCK, REFER TO LANDSCAPE DWG. FOR DETAIL.
5. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
6. ANY DISTURBED AREAS TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
7. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
8. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

### NOTE RE: WORKS WITHIN DUNDAS STREET

PROPOSED STORM AND SANITARY SEWER WITHIN ROW OF DUNDAS STREET TO BE CONSTRUCTED AS PER THE FOLLOWS:

1. STORM AND SANITARY SEWER TO BE CONSTRUCTED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL. SEE DETAIL ON DWG. 40B.
2. FOR TYPICAL RESTORATION DETAILS WITHIN ROADWAY PAVEMENT, SHOULDER, DITCH AND BOULEVARD, REFER TO DETAILS ON DWG. 40B.
3. FOR TEMP. PROTECTION WITH STEEL PLATES IN ROADWAY AREAS, REFER TO DETAIL ON DWG. 40B
4. FOR WORKS ADJACENT TO EX. CEMETERY, REFER TO SEPARATE NOTES
5. DISTURBED Ex. CURB AND SIDEWALK WITHIN THE WORKING ZONE TO BE REINSTALLED AS PER OPSD 600.040 AND 310.010, RESPECTIVELY
6. FOR LANDSCAPE RESTORATION WITHIN THE BOULEVARD, REFER TO LANDSCAPE DWG. FOR DETAIL, IF APPLICABLE
7. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
8. ANY DISTURBED AREAS TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
9. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
10. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

### NOTE RE: WORKS WITHIN SIXTH LINE

PROPOSED 600mm CPP WATERMAIN WITHIN ROW OF SIXTH LINE TO BE CONSTRUCTED AS PER THE FOLLOWS:

1. 600mm CPP WATERMAIN TO BE CONSTRUCTED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL, UNLESS OTHERWISE NOTED. SEE DETAIL ON DWG. 40B.
2. FOR TYPICAL RESTORATION DETAILS WITHIN ROADWAY PAVEMENT, Ex. RESIDENTIAL DRIVEWAY, SHOULDER, DITCH AND BOULEVARD, REFER TO DETAILS ON DWG. 40B
3. DISTURBED Ex. CURB AND SIDEWALK WITHIN THE WORKING ZONE TO BE REINSTALLED AS PER OPSD 600.040 AND 310.010, RESPECTIVELY
4. FOR LANDSCAPE RESTORATION WITHIN THE BOULEVARD, REFER TO LANDSCAPE DWG. FOR DETAIL, IF APPLICABLE
5. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
6. ANY DISTURBED AREAS TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
7. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
8. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

### NOTE RE: WORKS ADJACENT TO EX. CEMETERY

WORKS ADJACENT TO EX. CEMETERY TO MEET ALL REQUIREMENTS OF THE ONTARIO CEMETERIES ACT (RSO 1990) AND SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND WITHIN THE WORKING ZONE DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE SHOULD BE NOTIFIED IMMEDIATELY

DUNDAS STREET AND WEST FIELD TRAIL SEWER WORKS REFER TO DAVID SCHAEFFER ENGINEERING LTD. PROJECT No. 07-306 REGION FILE: DO-694

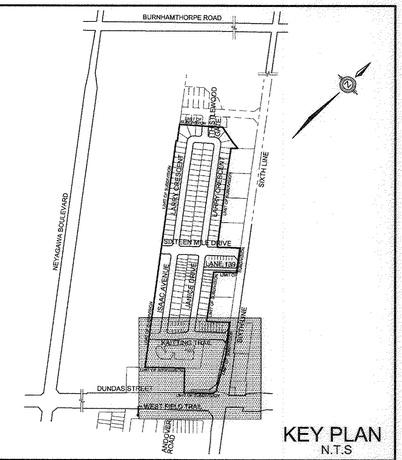
ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION

**NOTE:** FOR RESTORATION PLAN ON BUFFER BLOCKS ALONG WEST FIELD TRAIL / DUNDAS STREET RELATED TO SANITARY SEWER CONSTRUCTION, REFER TO LANDSCAPE DRAWING FOR DETAIL.

PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS

**NOTE:** ALL EXISTING BUILDING, BARN, POST & WIRE FENCE, TREE, UTILITY WIRE, POLE AND CULVERT WITHIN LOTS AND BLOCKS TO BE REMOVED, UNLESS OTHERWISE NOTED

**NOTE:** EXISTING UTILITY FEATURES WITHIN THE SUBDIVISION TO BE RELOCATED / ADJUSTED UPON FIELD REVIEW




KEY PLAN N.T.S

## TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY RADY–PENTEK & EDWARD SURVEYING LTD., JOB No. 05–344, TOPOGRAPHIC SURVEY DATED ON DEC 08, 2010 & JUNE 10, 2011.

## LEGAL INFORMATION

CALCULATED M–PLAN PROVIDED BY RADY–PENTEK & EDWARD SURVEYING LTD., PROJECT No. 10–214, SURVEY DATED DECEMBER 23, 2011.

**AS-CONSTRUCTED** | ROAD CENTRELINE ONLY

**BENCHMARK No. 00819818116 ELEVATION = 175.722m**

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO BENCHMARK No. 00819818116 HAVING AN ELEVATION OF 175.722m, CONCRETE CULVERT UNDER BURNHAMTHORPE RD, 1.6km EAST OF THE JCT OF BURNHAMTHORPE RD AND TRAFALGAR RD IN OAKVILLE, 1.4km WEST OF THE JCT OF BURNHAMTHORPE RD AND NINTH LINE RD, AND 8.8m NORTH OF THE CENTRELINE OF BURNHAMTHORPE RD. TABLET IS SET VERTICALLY IN TOP OF NORTH END OF CULVERT, 1.25m SOUTH OF NORTH END OF CULVERT AND 73cm EAST OF WEST FACE OF CULVERT.

| No. | DATE | BY | REVISIONS | APPROVED |
|---|---|---|---|---|
| 2. | 15–05–15 | K.A. | AS–CONSTRUCTED SUBMISSION. SAN, STM, WM & ROAD CENTRELINE | |
| 1. | 12–05–07 | Z.L. | SIXTH LINE/KAITING TRAIL INTERSECTION 100 YEAR INTAKE GRADES REVISED BASED ON 2% CROSS FALL | |

| | | | | | |
|---|---|---|---|---|---|
| DESIGNED BY: | K.M./I.V. | CHECKED BY: | Z.L. | DATE | JANUARY 2011 |
| DRAWN BY: | I.V. | CHECKED BY: | Z.L. | | |
| SCALE | HORIZ. 1:500 0 5 10 15 20 | | | REFERENCES | |

APPROVALS

MUNICIPAL

APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS

PHILIP KELLY (ORIGINALLY SIGNED) — APR. 18, 2012
MANAGER OF DEVELOPMENT ENGINEERING — DATE

REGIONAL

APPROVAL DESIGN OF SANITARY, WATER SERVICES AND REGIONAL ROAD WORKS APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS & SPECIFICATIONS & LOCATIONAL APPROVAL FROM AREA MUNICIPALITY

LEGISLATIVE AND PLANNING SERVICES — DATE

FIELD NOTES

| | | | |
|---|---|---|---|
| BELL | ☐ | HYDRO | ☐ |
| GAS | ☐ | CABLE | ☐ |
| TRAFFIC | ☐ | WATER | ☐ |

STAMP

ORIGINALLY SEALED BY ZHENYONG LI, P.ENG DATED DEC. 2, 2010

THIS DRAWING HAS BEEN UPDATED BY DSEL TO REPRESENT THE "AS–BUILT" CONDITION OF THE INFRASTRUCTURE CONSTRUCTED. THE INFORMATION CONTAINED HEREIN HAS BEEN PROVIDED BY THIRD PARTIES. IN OUR OPINION ALL AS–CONSTRUCTED INFORMATION PROVIDE IS IN GENERAL CONFORMANCE TO THE ORIGINAL DESIGN AND TOWN STANDARDS. ALTHOUGH THE INFORMATION IS BELIEVED TO CORRECTLY REFLECT CONDITIONS AT THE TIME OF CERTIFICATION, DSEL PROVIDES NO WARRANTY AS TO THE CURRENCY, ACCURACY, OR COMPLETENESS OF THE INFORMATION SHOWN. THERE MAY HAVE BEEN CHANGES TO THE INFRASTRUCTURE REPRESENTED SINCE THE COMPLETION OF THE SUBJECT DEVELOPMENT AND OTHERS INTENDING TO REFERENCE THIS INFORMATION ARE ADVISED TO OBTAIN INDEPENDENT THIRD PARTY CONFIRMATION OF ITS ACCURACY PRIOR TO ITS USE.

STAMP

LICENCED PROFESSIONAL ENGINEER T.D. MCNAIR 100161969 15/05/15 PROVINCE OF ONTARIO


DSEL david schaeffer engineering ltd
600 Alden Road, Suite 500
Markham, Ontario, L3R 0E7
Tel. (905) 475-3080
Fax. (905) 475-3081
www.DSEL.ca


MUNICIPALITY: OAKVILLE DEVELOPMENT ENGINEERING

REGION: Halton — The Regional Municipality of Halton

DEVELOPER: TIMSIN HOLDING CORP.

WOODLAND TRAILS

PROJECT: TIMSIN PHASE 1 — 20M–1114 24T–05025

TITLE: GRADING PLAN

© DSEL

| MUNICIPAL FILE NO. | REGIONAL FILE NO. |
|---|---|
| SD–581 | DO–683 |
| PROJECT NO. 07–306 | SHEET 6 OF 55 |

20M-1114

36 - WATERMAIN LAYOUT PLAN

**NOTE:**
ALL AS-CONSTRUCTED INFORMATION PROVIDED BY CON-DRAIN COMPANY (1983) LTD.

**NOTE:**
WATER SERVICES FOR LOTS 102 TO 104 FRONTING JANICE DRIVE TO BE INSTALLED UNDER STORM PIPE TO THE SATISFACTION OF REGION OF HALTON

VALVE CHAMBER No. 3 (STD RH 400.02)
IN CHAMBER:
1 – 300x300mm CROSS
2 – 300mm VALVES
2 – 200mm VALVES
300ø PVC WATERMAIN
300ø VALVE
200ø PVC WATERMAIN
200ø VALVE
300x200ø CROSS

VALVE CHAMBER No. 2 (STD RH 400.02)
IN CHAMBER:
1 – 300x200mm CROSS
2 – 300mm VALVES
2 – 200mm VALVES
300ø PVC WATERMAIN
300ø VALVE
200ø PVC WATERMAIN
200ø VALVE
300x200ø CROSS

VALVE CHAMBER No. 7 (STD RH 400.02)
IN CHAMBER:
1 – 300x200mm TEE
2 – 300mm VALVES
1 – 200mm VALVE
300ø PVC WATERMAIN
300ø VALVE
200ø PVC WATERMAIN
200ø VALVE
300x200ø TEE

VALVE CHAMBER No. 5 PRECAST CHAMBER (SEE DETAIL ON DWG 40A)
IN CHAMBER:
2 – 600mm FLANGED BRANCH OUTLETS
1 – 300mm FLANGED BRANCH OUTLET
2 – 600mm FLANGED GATE VALVES
1 – 300mm FLANGED GATE VALVE
600ø CPP WATERMAIN
600ø FLANGED GATE VALVE
200ø PVC WATERMAIN
300ø FLANGED GATE VALVE
300ø PVC WATERMAIN
300ø FLANGED GATE VALVE
300mm FLANGED BRANCH OUTLET

VALVE CHAMBER No. 8 (STD RH 400.02)
IN CHAMBER:
1 – 300x200mm TEE
2 – 300mm VALVES
1 – 200mm VALVE
200ø PVC WATERMAIN
200ø VALVE
300ø PVC WATERMAIN
300ø VALVE
300x200ø TEE

VALVE CHAMBER No. 9 (STD RH 400.02)
IN CHAMBER:
1 – 300x200mm TEE
2 – 300mm VALVES
1 – 200mm VALVE
300x200ø TEE
300ø PVC WATERMAIN
300ø VALVE
200ø PVC WATERMAIN
200ø VALVE

VALVE CHAMBER No. 10 PRECAST CHAMBER (SEE DETAIL ON DWG 40A)
IN CHAMBER:
2 – 600mm FLANGED BRANCH OUTLETS
1 – 300mm FLANGED BRANCH OUTLET
2 – 600mm FLANGED GATE VALVES
1 – 300mm FLANGED GATE VALVE
1 – AIR RELEASE VALVE
600ø CPP WATERMAIN
600ø FLANGED GATE VALVE
300ø PVC WATERMAIN
300ø FLANGED GATE VALVE
300mm FLANGED BRANCH OUTLET
600ø CPP WATERMAIN
600ø FLANGED GATE VALVE

REFER TO DWG No. 37

LARRY CRESCENT
SIXTEEN MILE DRIVE
FUT. ROAD
LIMIT OF SUBDIVISION
SIXTH LINE
ISAAC AVENUE
JANICE DRIVE
KATTING TRAIL
LANE 139
DUNDAS STREET
Ex. WEST MORRISON CREEK

BLOCK 122 (0.30 RESERVE) ROAD EASEMENT
BLOCK 127 (0.30 RESERVE)
BLOCK 113 (TOWNHOUSE)
BLOCK 126 (0.30 RESERVE)
BLOCK 110 (TOWNHOUSE)
BLOCK 109 (TOWNHOUSE)
BLOCK 108 (TOWNHOUSE)
BLOCK 115 (PARK)
BLOCK 120 (0.30 RESERVE)
BLOCK 111 (TOWNHOUSE)
BLOCK 112 (TOWNHOUSE)
BLOCK 121 (0.30 RESERVE)
BLOCK 123 (0.30 RESERVE)
BLOCK 116 (TEMP. ROAD)
BLOCK 114 (DUNDAS UNIUM GAS)
BLOCK 124 (0.30 RESERVE)
BLOCK 117 (TOWARD STATION)
BLOCK 118 (STREET WIDENING)

PROPOSED 600mm WATERMAIN ON DUNDAS STREET (REG. RD. 5) REFER TO McCORMICK RANKIN CORPORATION CONTRACT No. W-2725-10

**NOTE** RE: WORKS WITHIN SIXTH LINE

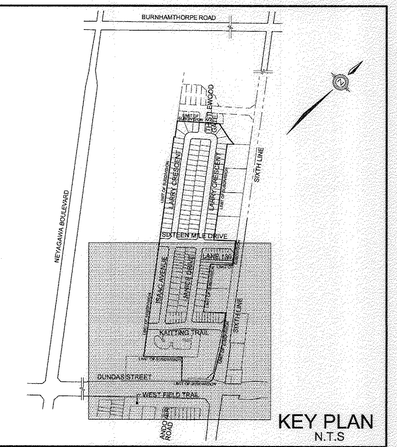
PROPOSED 600mm CPP WATERMAIN WITHIN ROW OF SIXTH LINE TO BE CONSTRUCTED AS PER THE FOLLOWS:
1. 600mm CPP WATERMAIN TO BE CONSTRUCTED IN VERTICAL TRENCH AND BACKFILLED WITH UNSHRINKABLE FILL, UNLESS OTHERWISE NOTED. SEE DETAIL ON DWG. 40B.
2. FOR TYPICAL RESTORATION DETAILS WITHIN ROADWAY PAVEMENT, Ex. RESIDENTIAL DRIVEWAY, SHOULDER, DITCH AND BOULEVARD, REFER TO DETAILS ON DWG. 40B.
3. DISTURBED Ex. CURB AND SIDEWALK WITHIN THE WORKING ZONE TO BE REINSTALLED AS PER OPSD 600.040 AND 310.010, RESPECTIVELY
4. FOR LANDSCAPE RESTORATION WITHIN THE BOULEVARD, REFER TO LANDSCAPE DWG. FOR DETAIL, IF APPLICABLE
5. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
6. ANY DISTURBED AREAS TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER
7. ALL REMOVED ASPHALT PAVEMENT TO BE DEPOSITED OFF SITE
8. ALL WORKS INCLUDING REMOVAL AND RESTORATION TO THE SATISFACTION OF AUTHORITIES HAVING JURISDICTION

**NOTE** RE: Ex. RESIDENTIAL ACCESS

1. Ex. RESIDENTIAL ACCESS TO SIXTH LINE TO BE MAINTAINED ALL THE TIMES DURING THE CONSTRUCTION, UNLESS OTHERWISE NOTED, TO THE SATISFACTION OF TOWN OF OAKVILLE.
2. FOR Ex. DRIVEWAY RESTORATION DISTURBED DURING CONSTRUCTION, REFER TO THE DETAIL ON DWG. 40B

## LEGEND

- WATER CONNECTION
- HYDRANT
- TEE
- VALVE & BOX
- CURB STOP SERVICE
- VALVE & CHAMBER




KEY PLAN N.T.S

## TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY RADY-PENTEK & EDWARD SURVEYING LTD., JOB No. 05-344, TOPOGRAPHIC SURVEY DATED ON DEC 08, 2010 & JUNE 10, 2011

## LEGAL INFORMATION

CALCULATED M-PLAN PROVIDED BY RADY-PENTEK & EDWARD SURVEYING LTD., PROJECT No. 10-214, SURVEY DATED DECEMBER 23, 2011.

# AS-CONSTRUCTED

**BENCHMARK No. 00819818116** ELEVATION = 175.722m

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO BENCHMARK No. 00819818116 HAVING AN ELEVATION OF 175.722m, CONCRETE CULVERT UNDER BURNHAMTHORPE RD, 1.6km EAST OF THE JCT OF BURNHAMTHORPE RD AND TRAFALGAR RD IN OAKVILLE, 1.4km WEST OF THE JCT OF BURNHAMTHORPE RD AND NINTH LINE RD, AND 8.8m NORTH OF THE CENTRELINE OF BURNHAMTHORPE RD. TABLET IS SET VERTICALLY IN TOP OF NORTH END OF CULVERT, 1.25m SOUTH OF NORTH END OF CULVERT AND 73cm EAST OF WEST FACE OF CULVERT.

| No. | DATE | BY | REVISIONS | APPROVED |
|---|---|---|---|---|
| 3. | 15-05-15 | K.A. | AS-CONSTRUCTED SUBMISSION. SAN, STM, WM & ROAD CENTRELINE | |
| 2. | 12-10-17 | A.S. | AS-CONSTRUCTED SANITARY, STORM AND WATERMAIN. | |
| 1. | 12-04-25 | Z.L. | WEST SIXTEEN MILE DRIVE REALIGNED AND ROAD EASEMENT ADDED, SIXTH LINE/LANE 139 INTERSECTION REVISED AND CULVERT UPDATED | |

| | | | | |
|---|---|---|---|---|
| DESIGNED BY: | K.M. | CHECKED BY: | Z.L. | DATE: JANUARY 2011 |
| DRAWN BY: | M.Z./W.L. | CHECKED BY: | Z.L. | |

SCALE HORIZ. 1:1000 (0 10 20 30 40)

REFERENCES

APPROVALS

FIELD NOTES

MUNICIPAL

APPROVED IN PRINCIPLE SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO TOWN OF OAKVILLE STANDARDS AND SPECIFICATIONS

MANAGER OF DEVELOPMENT ENGINEERING — DATE

BELL ☐ HYDRO ☐ GAS ☐ CABLE ☐ TRAFFIC ☐ WATER ☐

REGIONAL

APPROVAL DESIGN OF SANITARY, WATER SERVICES AND REGIONAL ROAD WORKS APPROVED SUBJECT TO DETAIL CONSTRUCTION CONFORMING TO HALTON REGION STANDARDS & SPECIFICATIONS & LOCATIONAL APPROVAL FROM AREA MUNICIPALITY

RON MACKENZIE (ORIGINALLY SIGNED) — APR. 27, 2012
LEGISLATIVE AND PLANNING SERVICES — DATE

STAMP

ORIGINALLY SEALED BY ZHENYONG LI, P.ENG DATED DEC. 2, 2010

THIS DRAWING HAS BEEN UPDATED BY DSEL TO REPRESENT THE "AS-BUILT" CONDITION OF THE INFRASTRUCTURE CONSTRUCTED. THE INFORMATION CONTAINED HEREIN HAS BEEN PROVIDED BY THIRD PARTIES. IN OUR OPINION ALL AS-CONSTRUCTED INFORMATION PROVIDE IS IN GENERAL CONFORMANCE TO THE ORIGINAL DESIGN AND TOWN STANDARDS, ALTHOUGH THE INFORMATION IS BELIEVED TO CORRECTLY REFLECT CONDITIONS AT THE TIME OF CERTIFICATION, DSEL PROVIDES NO WARRANTY AS TO THE CURRENCY, ACCURACY, OR COMPLETENESS OF THE INFORMATION SHOWN. THERE MAY HAVE BEEN CHANGES TO THE INFRASTRUCTURE REPRESENTED SINCE THE COMPLETION OF THE SUBJECT DEVELOPMENT AND OTHERS INTENDING TO REFERENCE. THIS INFORMATION ARE ADVISED TO OBTAIN INDEPENDENT THIRD PARTY CONFIRMATION OF ITS ACCURACY PRIOR TO ITS USE.

STAMP: LICENCED PROFESSIONAL ENGINEERS — T.D. MCNAIR — 100151969 — 15-05-15 — PROVINCE OF ONTARIO


DSEL david schaeffer engineering ltd
600 Alden Road, Suite 500
Markham, Ontario, L3R 0E7
Tel. (905) 475-3080
Fax. (905) 475-3081
www.DSEL.ca


MUNICIPALITY: OAKVILLE DEVELOPMENT ENGINEERING

REGION: Halton — The Regional Municipality of Halton

DEVELOPER: TIMSIN HOLDING CORP.

WOODLAND TRAILS

PROJECT: TIMSIN PHASE 1 20M-1114 24T-05025

TITLE: WATERMAIN LAYOUT PLAN

© DSEL

| MUNICIPAL FILE NO. | REGIONAL FILE NO. |
|---|---|
| SD-581 | DO-683 |
| PROJECT NO. 07-306 | SHEET 36 OF 55 |

## Appendix 'B'

Estimated Water Demands

*Fire Flow Test Results*

*EPANET Model Results*

Estimated Sanitary Demands

Sanitary Sewer Design Sheet

*Email Correspondence with Region of Halton Staff (May 2025)*

## TRAFALGAR ENGINEERING LTD.

### ESTIMATED PROPOSED WATER DEMAND (ULTIMATE CONDITION)

REGION OF HALTON 2022 DC BACKGROUND STUDY CRITERIA

**Project:** Sixth Line and Dundas
**Desc:** Rezoning/OPA

**Project No.:** 1807
**Prepared By:** MW
**Checked By:** PC

| | Occupancy Data | | | | | Peaking Factors | | | Demand Flow | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use / Occupancy Type | Unit Count / GFA | Population Density (pers/unit) | Eq. Population (cap.) | Per Cap. Demand (L/cap. Day) | Average Daily Demand (L/min) | Min. Hour | Peak Hour | Max. Daily | Min. Hour Demand (L/min) | Max. Hour Demand (L/min) | Max. Daily Demand (L/min) |
| Apartments - Less than 2 bedrooms | 270 | 1.4 | 366 | 275 | 70 | 1.00 | 4.00 | 2.25 | 70 | 280 | 157 |
| Apartments - Two bedrooms or more | 393 | 1.8 | 720 | 275 | 137 | 1.00 | 4.00 | 2.25 | 137 | 550 | 309 |
| Townhouse | 28 | 2.0 | 57 | 275 | 11 | 1.00 | 4.00 | 2.25 | 11 | 43 | 24 |
| Commercial/Retail | 423.61 | 37.4 | 11 | 276 | 2 | 1.00 | 2.25 | 2.25 | 2 | 5 | 5 |
| **TOTAL** | **1115** | | **1154** | | **220** | | | | **220** | **877** | **496** |

**Average Daily Demand:** **220 (L/min)**
**Minimum Hourly Demand:** **220 (L/min)**
**Maximum Hourly Demand:** **877 (L/min)**
**Maximum Daily Demand:** **496 (L/min)**
**Max. Daily Plus Fire:** **10496 (L/min)**

**Fire Flow**
**Using Fire Underwriters Survey Methodology:**

**1.** **An estimate of the fire flow is given by the formula** $F = 220C\sqrt{A}$

Where:
F = The required fire flow in litres per minute
C = Coefficient related to the type of construction
A = The total floor area in square metres (including all storeys but excluding basements at least 50% below grade)

Type of Construction: Non-Combustible  Coefficient: 0.80  Total Floor Area: 2646 ($m^2$)

**F = 9000 (L/min)**

Adequately Protected Vertical Openings: Yes

**Area Note:** For adequately protected vertical openings consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors.

**2.** **Adjust the value in No. 1 for occupancy surcharge/reduction**

Occupancy Contents: Combustible  Factor: 0%

**F = 9000 (L/min)**

**3.** **Adjust the value in No. 2 for sprinkler**

| | | | |
|---|---|---|---|
| NFPA 13 Sprinkler: | Yes | Reduction: | 20% |
| Standard Water Supply: | Yes | Reduction: | 10% |
| Fully Supervised: | Yes | Reduction: | 10% |

**Total Reduction:** **40%**
**Sprinkler Reduction:** **3600 (L/min)**

**4. Adjust the value in No. 2 for exposure**

| | Separation (m) | Charge |
|---|---|---|
| North | 9 | 20% |
| East | 50 | 0% |
| South | 15 | 15% |
| West | 10 | 15% |

**Total Charge:** **50%**
**Exposure Charge:** **4500 (L/min)**

**5.** **Estimated Fire Flow is value in No. 2 less *Sprinkler Reduction* plus *Exposure Charge* , rounded to the nearest 1000**

**F = 10000 (L/min)**

**TRAFALGAR ENGINEERING LTD.**

**ESTIMATED PROPOSED WATER DEMAND (INTERIM CONDITION)**

2022 DEVELOPMENT CHARGES BACKGROUND STUDY CRITERIA

**Project:** Sixth Line and Dundas
**Desc:** Rezoning/OPA

**Project No.:** 1807
**Prepared By:** MW
**Checked By:** PC

| | Occupancy Data | | | | | Peaking Factors | | | Demand Flow | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use / Occupancy Type | Unit Count / GFA | Population Density (pers/unit) ($m^2$/person) | Eq. Population (cap.) | Per Cap. Demand (L/cap. Day) | Average Daily Demand (L/min) | Min. Hour | Peak Hour | Max. Daily | Min. Hour Demand (L/min) | Max. Hour Demand (L/min) | Max. Daily Demand (L/min) |
| Apartments - Less than 2 bedrooms | 221.00 | 1.4 | 300 | 275 | 57 | 1.00 | 4.00 | 2.25 | 57 | 229 | 129 |
| Apartments - Two bedrooms or more | 304 | 1.8 | 557 | 275 | 106 | 1.00 | 4.00 | 2.25 | 106 | 425 | 239 |
| Townhouse | 17.00 | 2.0 | 34 | 275 | 7 | 1.00 | 4.00 | 2.25 | 7 | 26 | 15 |
| Commercial | 1363.00 | 37.4 | 36 | 276 | 7 | 1.00 | 2.25 | 2.25 | 7 | 16 | 16 |
| **TOTAL** | **1905** | | **927** | | **177** | | | | **177** | **696** | **398** |

**Fire Flow**

**Using Fire Underwriters Survey Methodology:**

**Average Daily Demand:** 177 (L/min)
**Minimum Hourly Demand:** 177 (L/min)
**Maximum Hourly Demand:** 696 (L/min)
**Maximum Daily Demand:** 398 (L/min)
**Max. Daily Plus Fire:** 10398 (L/min)

**1.** **An estimate of the fire flow is given by the formula** $F = 220C\sqrt{A}$

Where:
F = The required fire flow in litres per minute
C = Coefficient related to the type of construction
A = The total floor area in square metres (including all storeys but excluding basements at least 50% below grade)

Type of Construction: Non-Combustible  Coefficient: 0.80  Total Floor Area: 2646 ($m^2$)

**F = 9000 (L/min)**

Adequately Protected Vertical Openings: Yes

**Area Note:** For adequately protected vertical openings consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors.

**2.** **Adjust the value in No. 1 for occupancy surcharge/reduction**

Occupancy Contents: Combustible  Factor: 0%

**F = 9000 (L/min)**

**3.** **Adjust the value in No. 2 for sprinkler**

| | | | |
|---|---|---|---|
| NFPA 13 Sprinkler: | Yes | Reduction: | 20% |
| Standard Water Supply: | Yes | Reduction: | 10% |
| Fully Supervised: | Yes | Reduction: | 10% |
| | | **Total Reduction:** | **40%** |
| | | **Sprinkler Reduction:** | **3600 (L/min)** |

**4. Adjust the value in No. 2 for exposure**

| | Separation (m) | Charge |
|---|---|---|
| North | 9 | 20% |
| East | 15 | 15% |
| South | 50 | 0% |
| West | 10 | 15% |
| **Total Charge:** | | **50%** |
| **Exposure Charge:** | | **4500 (L/min)** |

**5.** **Estimated Fire Flow is value in No. 2 less *Sprinkler Reduction* plus *Exposure Charge*, rounded to the nearest 1000**

**F = 10000 (L/min)**

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# Fire Flow Testing Report

## Trafalgar Engineering - Kaiting Trail

## Oakville, Ontario

| Flow Hydrant #1 | | |
|---|---|---|
| **Watermain Size** | 300mm PVC | |
| **Location** | RoH Fire Hydrant #H45472 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 08:30 | AVK 2780 | 2m South |
| **Static Pressure (psi)** | **Pitot 1 Port Open (psi)** | **Pitot 2 Ports Open (psi)** |
| 88 | 57 | 46 |

| Residual Hydrant #1 | | |
|---|---|---|
| **Watermain Size** | 300mm PVC | |
| **Location** | RoH Fire Hydrant #H45473 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 08:30 | AVK 2780 | 2m South |
| **Static Pressure (psi)** | **Residual Pressure 1 Port Open (psi)** | **Residual Pressure 2 Ports Open (psi)** |
| 88 | 85 | 83 |

| Fire Flow Calculation #1 | | | |
|---|---|---|---|
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 1 Port Open (GPM)** | **Residual Pressure (psi)** | **TFF #1 1 Port Open at 20 psi (GPM)** |
| 57 | **1,267** | 85 | **6,834** |
| **Pitot Reading: 2 Ports Open (psi)** | **Field Flow 2 Ports Open (GPM)** | **Residual Pressure (psi)** | **TFF #2 2 Ports Open at 20 psi (GPM)** |
| 46 | **2,276** | 83 | **9,318** |
| **Hydrant Classification** | **AA** | **Colour Scheme** | **Light Blue** |

**TFF = Theoretical Fire Flow  GPM = US Gallons Per Minute**

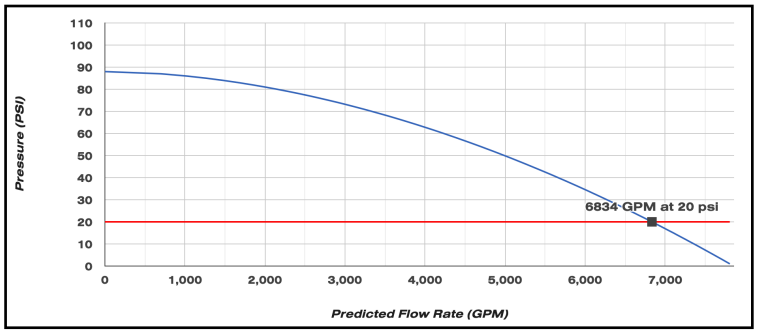
| Flow Hydrant #2 | | |
|---|---|---|
| **Watermain Size** | 300mm PVC | |
| **Location** | RoH Fire Hydrant #H45473 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 08:40 | AVK 2780 | 2m South |
| **Static Pressure (psi)** | **Pitot 1 Port Open (psi)** | **Pitot 2 Ports Open (psi)** |
| 88 | 56 | 45 |

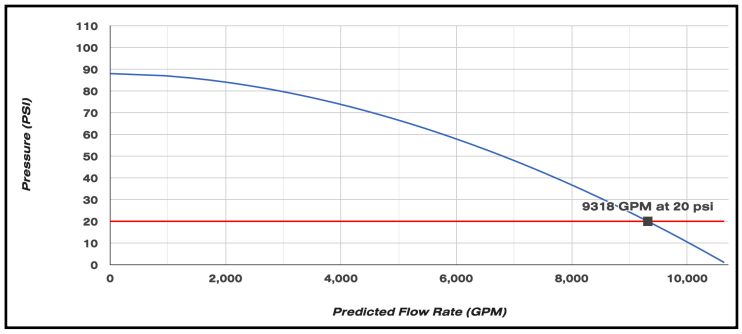
| Residual Hydrant #2 | | |
|---|---|---|
| **Watermain Size** | 300mm PVC | |
| **Location** | RoH Fire Hydrant #H45472 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 08:40 | AVK 2780 | 2m South |
| **Static Pressure (psi)** | **Residual Pressure 1 Port (psi)** | **Residual Pressure 2 Ports (psi)** |
| 88 | 85 | 84 |

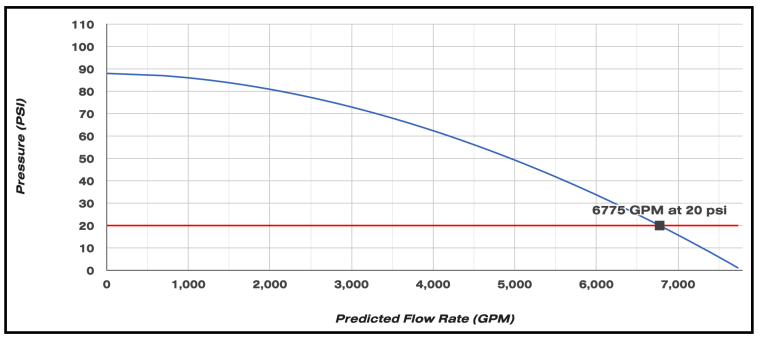
| Fire Flow Calculation #2 | | | |
|---|---|---|---|
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 1 Port Open (GPM)** | **Residual Pressure (psi)** | **TFF #3 1 Port Open at 20 psi (GPM)** |
| 56 | **1,256** | 85 | **6,775** |
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 2 Ports Open (GPM)** | **Residual Pressure (psi)** | **TFF #4 2 Ports Open at 20 psi (GPM)** |
| 54 | **2,252** | 84 | **10,400** |
| **Hydrant Classification** | **AA** | **Colour Scheme** | **Light Blue** |

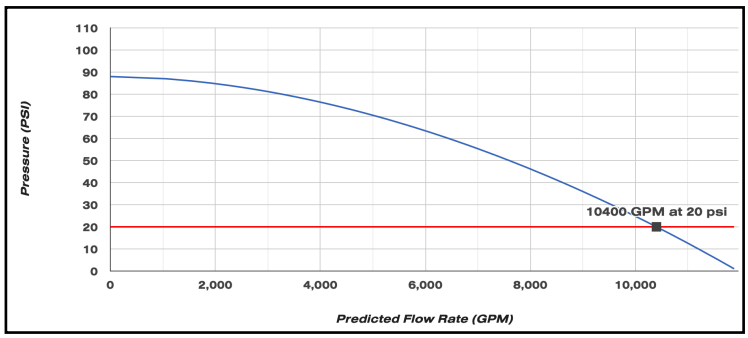
**TFF = Theoretical Fire Flow  GPM = US Gallons Per Minute**

**This flow test report is representative of the static water pressure and flow rates only at the time the tests were completed. Results may vary during peak usage hours.**




| NFPA Classification and Marking of Hydrants | | | |
|---|---|---|---|
| **Hydrant Classification** | **Colour Scheme** | **Hydrant Capacity (GPM)** | **Hydrant Capacity (L/min)** |
| **AA** | **Light Blue** | **>1500** | **>5700** |
| **A** | **Green** | **1000-1499** | **3800-5699** |
| **B** | **Orange** | **500-599** | **1900-3799** |
| **C** | **Red** | **<500** | **<1900** |

**Source: NFPA.org (Zevotek 2024)**

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# Fire Flow Testing Report

## Trafalgar Engineering - Sixth Line

## Oakville, Ontario

| Flow Hydrant #1 | | |
|---|---|---|
| **Watermain Size** | 600mm CPP | |
| **Location** | RoH Fire Hydrant #H44235 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:00 | AVK 2780 | 2m East |
| **Static Pressure (psi)** | **Pitot 1 Port Open (psi)** | **Pitot 2 Ports Open (psi)** |
| 90 | 54 | 45 |

| Residual Hydrant #1 | | |
|---|---|---|
| **Watermain Size** | 600mm CPP | |
| **Location** | RoH Fire Hydrant #H45470 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:00 | AVK 2780 | 1.5m East |
| **Static Pressure (psi)** | **Residual Pressure 1 Port Open (psi)** | **Residual Pressure 2 Ports Open (psi)** |
| 90 | 87 | 85 |

| Fire Flow Calculation #1 | | | |
|---|---|---|---|
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 1 Port Open (GPM)** | **Residual Pressure (psi)** | **TFF #1 1 Port Open at 20 psi (GPM)** |
| 54 | **1,233** | 87 | **6,756** |
| **Pitot Reading: 2 Ports Open (psi)** | **Field Flow 2 Ports Open (GPM)** | **Residual Pressure (psi)** | **TFF #2 2 Ports Open at 20 psi (GPM)** |
| 45 | **2,252** | 85 | **9,364** |
| **Hydrant Classification** | **AA** | **Colour Scheme** | **Light Blue** |

**TFF = Theoretical Fire Flow  GPM = US Gallons Per Minute**

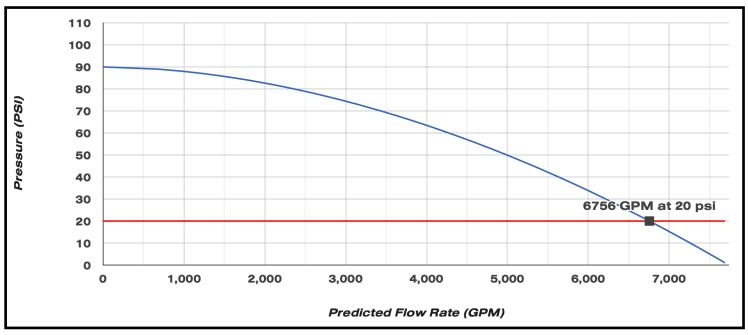
| Flow Hydrant #2 | | |
|---|---|---|
| **Watermain Size** | 600mm CPP | |
| **Location** | RoH Fire Hydrant #H45470 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:10 | AVK 2780 | 1.5m East |
| **Static Pressure (psi)** | **Pitot 1 Port Open (psi)** | **Pitot 2 Ports Open (psi)** |
| 90 | 61 | 45 |

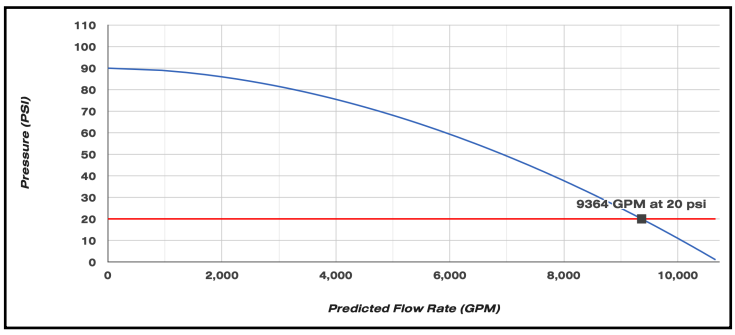
| Residual Hydrant #2 | | |
|---|---|---|
| **Watermain Size** | 600mm CPP | |
| **Location** | RoH Fire Hydrant #H44235 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:10 | AVK 2780 | 2m East |
| **Static Pressure (psi)** | **Residual Pressure 1 Port (psi)** | **Residual Pressure 2 Ports (psi)** |
| 90 | 86 | 84 |

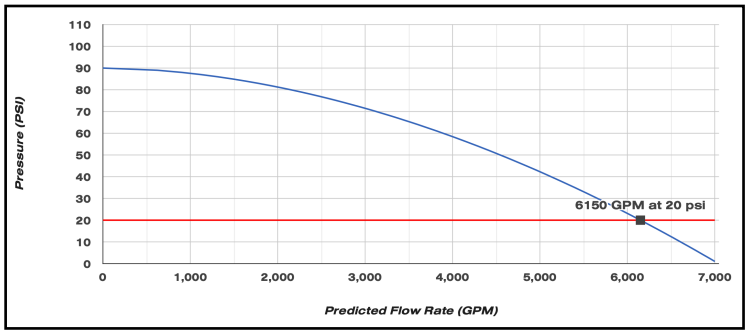
| Fire Flow Calculation #2 | | | |
|---|---|---|---|
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 1 Port Open (GPM)** | **Residual Pressure (psi)** | **TFF #3 1 Port Open at 20 psi (GPM)** |
| 61 | **1,311** | 86 | **6,150** |
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 2 Ports Open (GPM)** | **Residual Pressure (psi)** | **TFF #4 2 Ports Open at 20 psi (GPM)** |
| 45 | **2,252** | 84 | **8,486** |
| **Hydrant Classification** | **AA** | **Colour Scheme** | **Light Blue** |

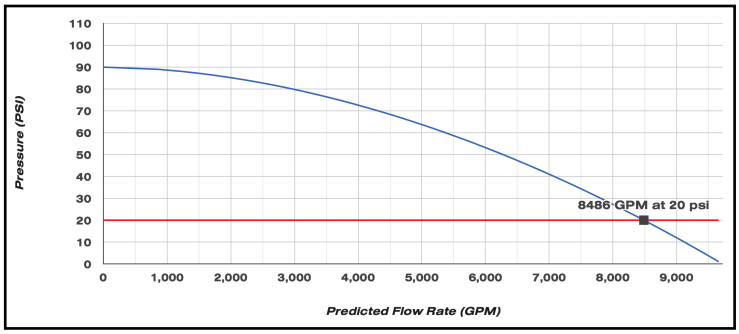
**TFF = Theoretical Fire Flow  GPM = US Gallons Per Minute**

**This flow test report is representative of the static water pressure and flow rates only at the time the tests were completed. Results may vary during peak usage hours.**




| NFPA Classification and Marking of Hydrants | | | |
|---|---|---|---|
| **Hydrant Classification** | **Colour Scheme** | **Hydrant Capacity (GPM)** | **Hydrant Capacity (L/min)** |
| AA | Light Blue | >1500 | >5700 |
| A | Green | 1000-1499 | 3800-5699 |
| B | Orange | 500-599 | 1900-3799 |
| C | Red | <500 | <1900 |

**Source: NFPA.org (Zevotek 2024)**

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# Fire Flow Testing Report

## Trafalgar Engineering - Westfield Trail

## Oakville, Ontario

| Flow Hydrant #1 | | |
|---|---|---|
| **Watermain Size** | 600 DI | |
| **Location** | RoH Fire Hydrant #H7237 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:20 | Mueller Century | 4m South |
| **Static Pressure (psi)** | **Pitot 1 Port Open (psi)** | **Pitot 2 Ports Open (psi)** |
| 40 | 31 | 22 |

| Residual Hydrant #1 | | |
|---|---|---|
| **Watermain Size** | 750 CPP | |
| **Location** | RoH Fire Hydrant #H175507 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:20 | Mueller Century | 2m North |
| **Static Pressure (psi)** | **Residual Pressure 1 Port Open (psi)** | **Residual Pressure 2 Ports Open (psi)** |
| 40 | 39 | 38 |

| Fire Flow Calculation #1 | | | |
|---|---|---|---|
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 1 Port Open (GPM)** | **Residual Pressure (psi)** | **TFF #1 1 Port Open at 20 psi (GPM)** |
| 31 | **934** | 39 | **4,708** |
| **Pitot Reading: 2 Ports Open (psi)** | **Field Flow 2 Ports Open (GPM)** | **Residual Pressure (psi)** | **TFF #2 2 Ports Open at 20 psi (GPM)** |
| 22 | **1,574** | 38 | **5,457** |
| **Hydrant Classification** | **AA** | **Colour Scheme** | **Light Blue** |

**TFF = Theoretical Fire Flow  GPM = US Gallons Per Minute**

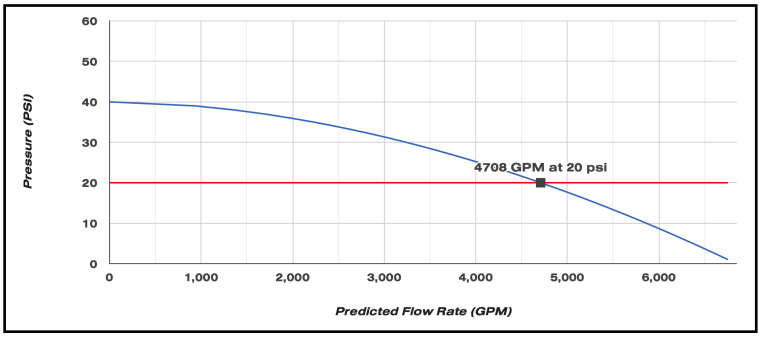
| Flow Hydrant #2 | | |
|---|---|---|
| **Watermain Size** | 750 CPP | |
| **Location** | RoH Fire Hydrant #H175507 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:30 | Mueller Century | 2m North |
| **Static Pressure (psi)** | **Pitot 1 Port Open (psi)** | **Pitot 2 Ports Open (psi)** |
| 40 | 25 | 12 |

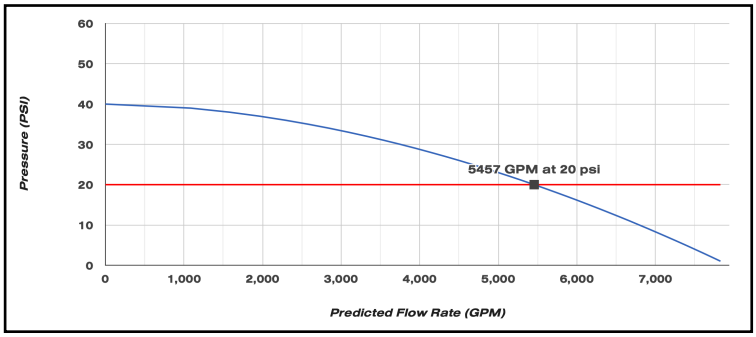
| Residual Hydrant #2 | | |
|---|---|---|
| **Watermain Size** | 600 DI | |
| **Location** | RoH Fire Hydrant #H7237 | |
| **Date & Time** | **Make/Model of Hydrant** | **Secondary Valve Location** |
| May 8th 09:30 | Mueller Century | 4m South |
| **Static Pressure (psi)** | **Residual Pressure 1 Port (psi)** | **Residual Pressure 2 Ports (psi)** |
| 40 | 39 | 37 |

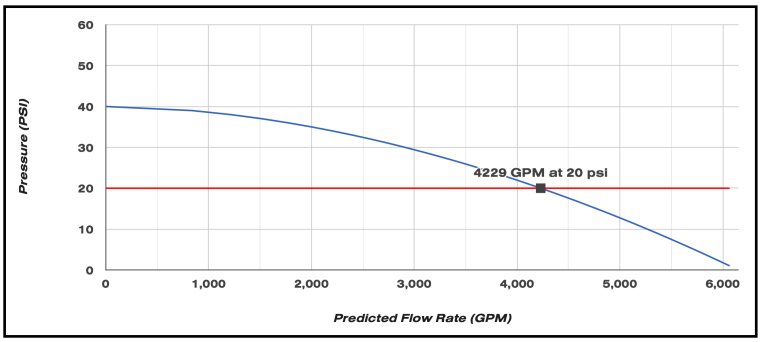
| Fire Flow Calculation #2 | | | |
|---|---|---|---|
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 1 Port Open (GPM)** | **Residual Pressure (psi)** | **TFF #3 1 Port Open at 20 psi (GPM)** |
| 25 | **839** | 39 | **4,229** |
| **Pitot Reading: 1 Port Open (psi)** | **Field Flow 2 Ports Open (GPM)** | **Residual Pressure (psi)** | **TFF #4 2 Ports Open at 20 psi (GPM)** |
| 12 | **1,162** | 38 | **4,029** |
| **Hydrant Classification** | **AA** | **Colour Scheme** | **Light Blue** |

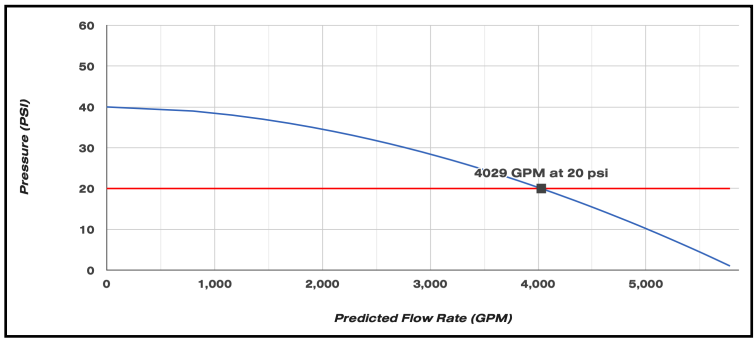
**TFF = Theoretical Fire Flow  GPM = US Gallons Per Minute**

**This flow test report is representative of the static water pressure and flow rates only at the time the tests were completed. Results may vary during peak usage hours.**




| NFPA Classification and Marking of Hydrants | | | |
|---|---|---|---|
| **Hydrant Classification** | **Colour Scheme** | **Hydrant Capacity (GPM)** | **Hydrant Capacity (L/min)** |
| **AA** | **Light Blue** | **>1500** | **>5700** |
| **A** | **Green** | **1000-1499** | **3800-5699** |
| **B** | **Orange** | **500-599** | **1900-3799** |
| **C** | **Red** | **<500** | **<1900** |

**Source: NFPA.org (Zevotek 2024)**

```
*********************************************************************
*                            E P A N E T                            *
*                     Hydraulic and Water Quality                   *
*                     Analysis for Pipe Networks                    *
*                          Version 2.2                              *
*********************************************************************

Input File: Dundas Local Main BLDG A.net
```

Link - Node Table:

| Link ID | Start Node | End Node | Length m | Diameter mm | |
|---|---|---|---|---|---|
| 750D1 | 10 | LocalConnect1 | 62 | 750 | |
| 750D2 | 10 | LocalConnect2 | 62 | 750 | |
| 300L1 | LocalConnect1 | BldgCservice | 16.5 | 300 | |
| 300L2 | BldgCservice | BldgBService | 29.3 | 300 | |
| 300L4 | LocalConnect2 | BldgAService | 12.9 | 300 | |
| 200SA | BldgA | BldgAService | 3.8 | 200 | |
| 300L3 | BldgAService | BldgBService | 91 | 300 | |
| 200SB | BldgBService | BldgB | 5.6 | 200 | |
| 200SC | BldgCservice | BldgC | 10.8 | 200 | |
| H175507 | DUNDASHYD | 10 | #N/A | #N/A | Pump |

Energy Usage:

| Pump | Usage Factor | Avg. Effic. | Kw-hr /m3 | Avg. Kw | Peak Kw | Cost /day |
|---|---|---|---|---|---|---|
| H175507 | 100.00 | 75.00 | 0.08 | 49.76 | 49.76 | 0.00 |
| | | | | Demand Charge: | | 0.00 |
| | | | | Total Cost: | | 0.00 |

Node Results:

| Node ID | Demand LPM | Head m | Pressure m | Quality |
|---|---|---|---|---|
| BldgC | 0.00 | 21.91 | 21.91 | 0.00 |
| 10 | 0.00 | 22.05 | 22.05 | 0.00 |
| LocalConnect2 | 0.00 | 22.04 | 22.04 | 0.00 |
| LocalConnect1 | 0.00 | 22.05 | 22.05 | 0.00 |
| BldgB | 0.00 | 21.79 | 21.79 | 0.00 |
| BldgBService | 0.00 | 21.79 | 21.79 | 0.00 |
| BldgCservice | 0.00 | 21.91 | 21.91 | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| BldgAService | 0.00 | 21.53 | 21.53 | 0.00 | |
| BldgA | 10362.00 | 16.25 | 16.25 | 0.00 | |
| DUNDASHYD | -10362.00 | 0.00 | 0.00 | 0.00 | Reservoir |



Link Results:

| Link ID | Flow LPM | VelocityUnit m/s | Headloss m/km | Status | |
|---|---|---|---|---|---|
| 750D1 | 3389.95 | 0.13 | 0.03 | Open | |
| 750D2 | 6972.05 | 0.26 | 0.10 | Open | |
| 300L1 | 3389.95 | 0.80 | 8.11 | Open | |
| 300L2 | 3389.95 | 0.80 | 4.14 | Open | |
| 300L4 | 6972.05 | 1.64 | 39.72 | Open | |
| 200SA | -10362.00 | 5.50 | 1388.87 | Open | |
| 300L3 | -3389.95 | 0.80 | 2.88 | Open | |
| 200SB | 0.00 | 0.00 | 0.00 | Open | |
| 200SC | 0.00 | 0.00 | 0.00 | Open | |
| H175507 | 10362.00 | 0.00 | -22.05 | Open | Pump |

# TRAFALGAR ENGINEERING LTD.

## KAITING TRAIL
## ESTIMATED DEMAND PRESSURE
## (AT MAIN)

**Project:** Dundas Sixth Line
**Desc:** 2nd Submission OPA/ZBA

**Project No.:** 1807
**Prepared By:** MW
**Checked By:** PC

### Hydrant Residual Flow (Refer to Attached Flow Test Results)

| | | | |
|---|---|---|---|
| Coefficient | $C=$ | 0.9 | |
| Port Diameter | $D=$ | 2.5 | (inch) |
| Pitot Pressure | $P_{pit}=$ | 57 | (psig) |
| Residual Flow | $Q_R=$ | 1267 | (us gpm) |
| Residual Flow | $Q_R=$ | 4796 | (L/min) |

### Hydrant Theoretical Flow (Refer to Attached Flow Test Results)

| | | | |
|---|---|---|---|
| Static Pressure | $P_{stat}=$ | 88 | (psig) |
| Residual Pressure | $P_{res}=$ | 85 | (psig) |
| Theoretical Pressure | $P_{theo}=$ | 20 | (psig) |
| Theoretical Flow | $Q_T=$ | 6834 | (us gpm) |
| Theoretical Flow | $Q_T=$ | 25867 | (L/min) |

### Max. Demand Pressure

| | | | |
|---|---|---|---|
| Maximum Demand | $Q_D=$ | 10362 | (L/min) |
| Maximum Demand | $Q_D=$ | 2738 | (us gpm) |
| Calculated Pressure | $P=$ | 76 | (psig) |

Where:

$$Q_R = 29.84 \times C \times D^2 \times P_{pit}^{0.5}$$

$$Q_T = Q_R \times [(P_{stat} - P_{theo})/(P_{stat} - P_{res})]^{0.54}$$

$$P = P_{stat} - (Q_D/Q_R)^{1.852} \times (P_{stat} - P_{res})$$

Notes:

Refer to attached hydrant flow test results for 300mm main on Church Street prepared by Jackson Waterworks dated May 2, 2016.

## TRAFALGAR ENGINEERING LTD.

### ESTIMATED PROPOSED SANITARY FLOW

**Project:** Sixth Line and Dundas
**Desc:** Rezoning/OPA

**Project No.:** 1807
**Prepared By:** MW
**Checked By:** PC

**Residential**

| Land Use / Occupancy Type | Unit Count / GFA | Population Density (pers/unit) | Eq. Population (cap.) | Per Cap. Demand (L/cap. Day) | Average Daily Dry Weather Flow (L/s) |
|---|---|---|---|---|---|
| Apartments - Less than 2 bedrooms | 221.00 | 1.4 | 300 | 275 | 0.95 |
| Apartments - Two bedrooms or more | 304 | 1.8 | 557 | 275 | 1.77 |
| Townhouse | 17.00 | 2.0 | 34 | 275 | 0.11 |
| **TOTAL** | **542.00** | | **891** | | **2.83** |

**Industrial / Commercial / Institutional**

| Land Use / Occupancy Type | GFA ($m^2$) | Population Density (pers/ha) | Eq. Population (cap.) | Per Cap. Demand (L/cap. Day) | Average Daily Dry Weather Flow (L/s) |
|---|---|---|---|---|---|
| Commercial | 1363.00 | 37.4 | 36 | 275 | 0.1 |
| **TOTAL** | **1363.00** | | **36** | | **0.12** |

| | | |
|---|---|---|
| Residential Peaking Factor: | 3.83 | |
| ICI Peaking Factor: | 4.34 | |
| Include ICI Peaking? | No | |
| Tributary Area: | 1.76 | (ha) |
| Infiltration Allowance: | 0.286 | (L/s ha) |
| Foundation Drain Allowance: | 0.00 | (L/s ha) |
| Residential + Infilitration Avg Flow: | 3.3 | (L/s) |
| ICI Average Flow: | 0.1 | (L/s) |
| Groundwater Discharge: | | (L/s) |
| **Total Average Flow:** | **3.5** | **(L/s)** |
| Residential Peak Flow: | 11.4 | (L/s) |
| ICI Peak Flow: | 0.1 | (L/s) |
| Groundwater Discharge: | | (L/s) |
| **Total Peak Flow:** | **11.52** | **(L/s)** |

## TRAFALGAR ENGINEERING LTD.

### ESTIMATED PROPOSED SANITARY FLOW (ULTIMATE CONDITION)

REGION OF HALTON 2022 DC BACKGROUND STUDY CRITERIA

**Project:** Sixth Line and Dundas
**Desc:** Rezoning/OPA

**Project No.:** 1807
**Prepared By:** MW
**Checked By:** PC

**Residential**

| Land Use / Occupancy Type | Unit Count | Population Density (pers/unit) | Eq. Population (cap.) | Per Cap. Demand (L/cap. Day) | Average Daily Dry Weather Flow (L/s) |
|---|---|---|---|---|---|
| Building A - 1 Bedroom | 73 | 1.4 | 99 | 275 | 0.32 |
| Building A - 2+ Bedroom | 92 | 1.8 | 168 | 275 | 0.54 |
| Building B - 1 Bedroom | 72 | 1.4 | 98 | 275 | 0.31 |
| Building B - 2+ Bedroom | 91 | 1.8 | 167 | 275 | 0.53 |
| Townhouse Blocks 1&2 | 17 | 2.0 | 34 | 275 | 0.11 |
| Buidling C - 1 Bedroom | 76 | 1.4 | 103 | 275 | 0.33 |
| Buidling C - 2 + Bedroom | 121 | 1.8 | 222 | 275 | 0.71 |
| Building D - 1 Bedroom | 49 | 1.4 | 66 | 275 | 0.21 |
| Building D - 2 + Bedroom | 89 | 1.8 | 163 | 275 | 0.52 |
| Townhouse Blocks 3&4 | 11 | 2.0 | 22 | 275 | 0.07 |
| **TOTAL** | **691** | | **1142** | | **3.64** |

**Industrial / Commercial / Institutional**

| Land Use / Occupancy Type | GFA ($m^2$) | Population Density (pers/ha) | Eq. Population (cap.) | Per Cap. Demand (L/cap. Day) | Average Daily Dry Weather Flow (L/s) |
|---|---|---|---|---|---|
| Commercial/Retail | 423.61 | 37.4 | 11 | 275 | 0.04 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| **TOTAL** | **423.61** | | **11** | | **0.04** |

| | | |
|---|---|---|
| Residential Peaking Factor: | 3.76 | |
| ICI Peaking Factor: | 4.41 | |
| Include ICI Peaking? | No | |
| Tributary Area: | 1.76 | (ha) |
| Infiltration Allowance: | 0.286 | (L/s ha) |
| Foundation Drain Allowance: | 0.00 | (L/s ha) |
| | | |
| Residential + Infilitration Avg Flow: | 4.1 | (L/s) |
| ICI Average Flow: | 0.0 | (L/s) |
| Groundwater Discharge: | | (L/s) |
| **Total Average Flow:** | **4.2** | **(L/s)** |
| | | |
| Residential Peak Flow: | 14.2 | (L/s) |
| ICI Peak Flow: | 0.0 | (L/s) |
| Groundwater Discharge: | | (L/s) |
| **Total Peak Flow:** | **14.24** | **(L/s)** |

TRAFALGAR ENGINEERING

**Prepared By:** MW
**Checked By:** PC
**Project No. :** 1807

# SANITARY SEWER DESIGN SHEET

**Regional Municipality of Halton**

**Project Name :** DUNDAS SIXTH LINE
**Municipal Number:**
**Date:** 2024-01-16
**Sheet:** 1 of 1

| | | | TRIBUTARY AND FLOW DATA | | | | | | | | | | | | | | | | | | PIPE DATA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Tributary Area | | | | | Population Tributary | | | Average Demand | | | | Peaking Factor | | | | | | | | | | | | Velocity | | | | | |
| | | | Residential | | ICI | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LOCATION | FROM MH | TO MH | Area (ha) | Density (ppha) | Area (ha) | Density (ppha) | Total (ha) | Res (pers.) | ICI (pers.) | Total (pers.) | Res (L/cap. Day) | ICI (L/cap. Day) | Incr. Avg. Q (L/s) | Total Avg. Q (L/s) | $K_{avg}$ | $M_{avg}$ | Peak Q, $Q_P$ (L/s) | Infiltr. (L/s) | Design Flow, $Q_D$ (L/s) | Length, L (m) | Pipe Dia., D (mm) | Slope, s (%) | Manning's Coeff., n | Full Flow Capacity, $Q_F$ (L/s) | Full (m/s) | Actual (m/s) | Flow Depth, d (mm) | d/D | Type | Class |
| Upstream Drainage Areas | 99A | 98A | 0.60 | 55 | | | 0.60 | 33 | | 33 | 275 | | 0.1 | 0.1 | 1.0 | 4.35 | 0.5 | 0.2 | 0.6 | | | | | | | | | | | |
| | | | 0.42 | 55 | | | 1.02 | 23 | | 56 | 275 | | 0.1 | 0.2 | 1.0 | 4.30 | 0.8 | 0.3 | 1.1 | | | | | | | | | | | |
| | | | 0.15 | 55 | | | 1.17 | 8 | | 64 | 275 | | 0.0 | 0.2 | 1.0 | 4.29 | 0.9 | 0.3 | 1.2 | | | | | | | | | | | |
| | | | 0.09 | 55 | | | 1.26 | 5 | | 69 | 275 | | 0.0 | 0.2 | 1.0 | 4.28 | 0.9 | 0.4 | 1.3 | | | | | | | | | | | |
| | | | 0.14 | 55 | | | 1.40 | 8 | | 77 | 275 | | 0.0 | 0.2 | 1.0 | 4.27 | 1.0 | 0.4 | 1.4 | | | | | | | | | | | |
| | | | 1.07 | 55 | | | 2.47 | 59 | | 136 | 275 | | 0.2 | 0.4 | 1.0 | 4.20 | 1.8 | 0.7 | 2.5 | | | | | | | | | | | |
| | | | 0.67 | 55 | | | 3.14 | 37 | | 173 | 275 | | 0.1 | 0.6 | 1.0 | 4.17 | 2.3 | 0.9 | 3.2 | | | | | | | | | | | |
| | | | 0.50 | 55 | | | 3.64 | 28 | | 201 | 275 | | 0.1 | 0.6 | 1.0 | 4.15 | 2.7 | 1.0 | 3.7 | | | | | | | | | | | |
| | | | 1.05 | 55 | | | 4.69 | 58 | | 259 | 275 | | 0.2 | 0.8 | 1.0 | 4.10 | 3.4 | 1.3 | 4.7 | | | | | | | | | | | |
| | | | 1.04 | 55 | | | 5.73 | 57 | | 316 | 275 | | 0.2 | 1.0 | 1.0 | 4.07 | 4.1 | 1.6 | 5.7 | | | | | | | | | | | |
| | | | 1.61 | 135 | | | 7.34 | 217 | | 533 | 275 | | 0.7 | 1.7 | 1.0 | 3.96 | 6.7 | 2.1 | 8.8 | | | | | | | | | | | |
| | | | 0.58 | 135 | | | 7.92 | 78 | | 611 | 275 | | 0.2 | 1.9 | 1.0 | 3.93 | 7.6 | 2.3 | 9.9 | | | | | | | | | | | |
| | | | 0.58 | 135 | | | 8.50 | 78 | | 689 | 275 | | 0.2 | 2.2 | 1.0 | 3.90 | 8.5 | 2.4 | 11.0 | | | | | | | | | | | |
| | | | 0.31 | 135 | | | 8.81 | 42 | | 731 | 275 | | 0.1 | 2.3 | 1.0 | 3.88 | 9.0 | 2.5 | 11.6 | | | | | | | | | | | |
| | | | 0.46 | 135 | | | 9.27 | 62 | | 793 | 275 | | 0.2 | 2.5 | 1.0 | 3.86 | 9.7 | 2.7 | 12.4 | | | | | | | | | | | |
| | | | 0.55 | 100 | | | 9.82 | 55 | | 848 | 275 | | 0.2 | 2.7 | 1.0 | 3.85 | 10.4 | 2.8 | 13.2 | | | | | | | | | | | |
| | | | 0.30 | 100 | | | 10.12 | 30 | | 878 | 275 | | 0.1 | 2.8 | 1.0 | 3.84 | 10.7 | 2.9 | 13.6 | | | | | | | | | | | |
| | | | 0.46 | 100 | | | 10.58 | 46 | | 924 | 275 | | 0.1 | 2.9 | 1.0 | 3.82 | 11.2 | 3.0 | 14.3 | | | | | | | | | | | |
| | | | 0.19 | 100 | | | 10.77 | 19 | | 943 | 275 | | 0.1 | 3.0 | 1.0 | 3.82 | 11.5 | 3.1 | 14.5 | | | | | | | | | | | |
| | | | 0.49 | 100 | | | 11.26 | 49 | | 992 | 275 | | 0.2 | 3.2 | 1.0 | 3.80 | 12.0 | 3.2 | 15.2 | | | | | | | | | | | |
| | | | 0.34 | 100 | | | 11.60 | 34 | | 1026 | 275 | | 0.1 | 3.3 | 1.0 | 3.79 | 12.4 | 3.3 | 15.7 | | | | | | | | | | | |
| | | | 0.80 | 135 | | | 12.40 | 108 | | 1134 | 275 | | 0.3 | 3.6 | 1.0 | 3.76 | 13.6 | 3.5 | 17.1 | | | | | | | | | | | |
| | | | 0.27 | 135 | | | 12.67 | 36 | | 1170 | 275 | | 0.1 | 3.7 | 1.0 | 3.76 | 14.0 | 3.6 | 17.6 | | | | | | | | | | | |
| | | | 0.11 | 135 | | | 12.78 | 15 | | 1185 | 275 | | 0.0 | 3.8 | 1.0 | 3.75 | 14.1 | 3.7 | 17.8 | | | | | | | | | | | |
| Pond Easement | | | 0.32 | 135 | | | 13.10 | 43 | | 1228 | 275 | | 0.1 | 3.9 | 1.0 | 3.74 | 14.6 | 3.7 | 18.4 | | | | | | | | | | | |
| | MH18A | MH19A | 0.51 | 0 | | | 13.61 | 0 | | 1228 | 275 | | 0.0 | 3.9 | 1.0 | 4.50 | 17.6 | 3.9 | 21.5 | 81.7 | 200 | 0.5 | 0.013 | 24.2 | 0.75 | 0.85 | 148.34 | 0.73 | PVC | DR-35 |
| | MH19A | MH20A | 0.05 | 0 | | | 13.66 | 0 | | 1228 | 275 | | 0.0 | 3.9 | 1.0 | 3.74 | 14.6 | 3.9 | 18.5 | 36.2 | 200 | 0.5 | 0.013 | 24.2 | 0.75 | 0.83 | 132.08 | 0.65 | PVC | DR-35 |
| | MH20A | MH21A | 0.02 | 0 | | | 13.68 | 0 | | 1228 | 275 | | 0.0 | 3.9 | 1.0 | 3.74 | 14.6 | 3.9 | 18.5 | 54.6 | 200 | 0.7 | 0.013 | 27.8 | 0.86 | 0.93 | 119.89 | 0.59 | PVC | DR-35 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building's A&B, Towns 1&2 | PR MH1B | MH21A | 1.00 | N/A | | | 1.00 | 566 | | 566 | 275 | | 1.8 | 1.8 | 1.0 | 3.95 | 7.1 | 0.3 | 7.4 | 5.0 | 200 | 2.0 | 0.013 | 48.4 | 1.49 | 1.10 | 52.83 | 0.26 | PVC | DR-35 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Building's C, D, Towns 3&4 | EX MH2B | MH21A | 0.76 | N/A | | | 0.76 | 576 | 11 | 587 | 275 | 275 | 1.9 | 1.9 | 1.0 | 3.94 | 7.4 | 0.2 | 7.6 | 5.0 | 200 | 2.0 | 0.013 | 48.4 | 1.49 | 1.13 | 52.83 | 0.26 | PVC | DR-35 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Outlet to Trunk | MH21A | MH22A | 0.02 | 0 | | | 15.46 | 0 | | 2381 | 275 | | 0.0 | 7.6 | 1.0 | 3.53 | 26.7 | 4.4 | 31.1 | 5.0 | 300 | 0.7 | 0.013 | 83.8 | 1.15 | 1.07 | 128.02 | 0.42 | PVC | DR-35 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **TRIBUTARY AREA TOTAL** | | | 15.46 | | 0.00 | | **15.46** | 2370 | 11 | **2381** | | | | | | | | | | | | | | | | | | | | |

Notes:
1) Pipe diameter is nominal
2) Capacity and velocity are based on Imperial I.D. (Nom. Dia x 25.4/25)

Peaking Factor $M = K_{avg} \times (1+14 / (4+P^{1/2}))$
Where P is Total population in thousands
$K_{avg} = (A_R + 0.8 \times A_{ICI}) / (A_{Total})$
Infiltration = 0.286 L/ha/s

Full Flow Capacity (Manning's Equation), $Q_F$
$Q_F = (1/n) \times A \times R^{2/3} \times s^{1/2}$
$= (1/n) \times 311.7 \times D^{8/3} \times s^{1/2}$

## Malcolm Wallace

**From:** Peers, Tyler <Tyler.Peers@halton.ca>
**Sent:** May 21, 2025 4:02 PM
**To:** Malcolm Wallace
**Cc:** Paul Cifoni
**Subject:** RE: 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)
**Attachments:** Existing Pressure Zones - May 2020.pdf; Future Pressure Zones - May 2020.pdf; Interim Pressure Zone - May 2020.pdf

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

**EXTERNAL SENDER:** This email originated outside of Trafalgar Engineering.

Hi Malcolm,

Further to the meeting, please see responses below regarding water servicing options.

- Applicant is required to prepare a revised FSR to provide options demonstrating feasibility – a local main off Dundas Street West, or looped from Kaitting Trail (existing 300mm main).
- Applicant is required to address the surcharging issue in the easement; upsizing would address this. Applicant to determine the size required.
- "H" only required if servicing strategies are not satisfied.

Pressure mains information:

Please find **attached** the zone boundary re-alignment information for your use. Applicant is required to prepare a design brief with analysis that demonstrates what the impact of the Interim and Future/Ultimate zone realignment will be on this development and submit it to the Region for review. The parameter information is as follows:

Interim Phase:
The interim phase is reliant on the operation of the new Zone 4 (Ashgrove) Reservoir and new PRVs in north Oakville. At the moment, the Reservoir is being commissioned and the PRVs are in place; this phase will happen fairly soon. The Ashgrove Reservoir will operate at a TWL of ~250 m (potentially a bit lower when it first begins to operate). Once the reservoir is operational it will service all of existing Milton Zone M4L and a small portion of Oakville Zone O4. These two zones (M4L and O4) are currently (existing state) at a TWL of 236 m. In the interim phase, M4L will transfer completely to TWL 250 m. The northern portion of O4 will transfer to TWL 250 m and the remainder of O4 will remain at 236 m.

Future Phase:
The future phase is reliant on the completion of 6 infrastructure projects that are part of the Regional 2020 Allocation Program. These projects include upgrades to pump stations, linear infrastructure work and the installation of additional PRVs. These projects are currently scheduled for completion in 2025.

Listed below are the key changes in the future phase:

1) Milton Zone M5L (TWL 267 m) will be reduced in size. Much of M5L will be transferred to TWL 250 m, including the Halton Hills/401 Corridor lands.
2) Oakville Zone O4 (TWL 236 m) will transition to a TWL of 223.5 m.
3) The southeast corner of Milton (along Tremaine Road) will transition from TWL 250 m to TWL 223.5 m.
4) Oakville O3 (TWL 198 m) boundary will change.

Regarding drop pipes, the following is the Region's standard per the Linear Design Manual:

> *3.6.6. Maintenance holes, d.:* "An external drop structure shall be provided for Sewers entering a maintenance hole at an elevation of 610 mm or more above the maintenance hole outlet pipe invert. The drop pipe shall be one size smaller than the wastewater main."

If you have any questions, please let me know.

Thanks,
Tyler

---

**From:** Malcolm Wallace <mwallace@trafalgareng.com>
**Sent:** Wednesday, May 14, 2025 9:47 AM
**To:** Peers, Tyler <Tyler.Peers@halton.ca>
**Cc:** Paul Cifoni <pcifoni@trafalgareng.com>
**Subject:** RE: 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)

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Hi Tyler,

Hope you're keeping well. I wanted to follow up on the meeting we had with Regional Staff a few weeks ago to see if your team had the chance to go back and look at the questions raised in the meeting regarding the water servicing options.

Thanks,

Malcolm

TRAFALGAR ENGINEERING
www.trafalgareng.com

**Malcolm Wallace, EIT**
**Intermediate Designer**
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Oakville, Ontario, L6K 3W6
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---

**From:** Peers, Tyler <Tyler.Peers@halton.ca>
**Sent:** April 14, 2025 3:23 PM
**To:** Malcolm Wallace <mwallace@trafalgareng.com>
**Cc:** Paul Cifoni <pcifoni@trafalgareng.com>; smillar@danielscorp.com
**Subject:** RE: 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)

**EXTERNAL SENDER:** This email originated outside of Trafalgar Engineering.

Thanks for confirming. I've sent the virtual meeting invite.

If there are any further questions ahead of time, please let me know.

Thanks,
Tyler

---

**From:** Malcolm Wallace <mwallace@trafalgareng.com>
**Sent:** Monday, April 14, 2025 2:19 PM
**To:** Peers, Tyler <Tyler.Peers@halton.ca>
**Cc:** Paul Cifoni <pcifoni@trafalgareng.com>; smillar@danielscorp.com
**Subject:** RE: 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)

Hi Tyler,

Tomorrow at 2:00 PM sounds good.

Thanks

Malcolm

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**Malcolm Wallace, EIT**
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---

**From:** Peers, Tyler <Tyler.Peers@halton.ca>
**Sent:** April 14, 2025 2:11 PM
**To:** Malcolm Wallace <mwallace@trafalgareng.com>
**Cc:** Paul Cifoni <pcifoni@trafalgareng.com>; smillar@danielscorp.com
**Subject:** RE: 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)

**EXTERNAL SENDER:** This email originated outside of Trafalgar Engineering.

Hi Malcolm,

Please confirm tomorrow Tues April 15 @ 2:00 PM and I'll send the invite (Microsoft Teams). Alternatively, Thurs, April 17 @ 11:00 AM is also an option.

Thanks,
Tyler

**From:** Malcolm Wallace <mwallace@trafalgareng.com>
**Sent:** Friday, April 11, 2025 4:33 PM
**To:** Peers, Tyler <Tyler.Peers@halton.ca>
**Cc:** Paul Cifoni <pcifoni@trafalgareng.com>; smillar@danielscorp.com
**Subject:** RE: 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)

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Hi Tyler,

Thanks for getting back to me so quickly, we'd like to discuss the following comments:

- Provide an alternate water servicing strategy without the connections to the 600mm dian transmission mains.

And

- Demonstrate that the existing sanitary sewer system can accommodate the proposed development and there are no surcharging or capacity concerns.

Both of the dates/times you've listed work for us. Let me know if you have any other questions ahead of the meeting.

Thanks,

Malcolm

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**From:** Peers, Tyler <Tyler.Peers@halton.ca>
**Sent:** April 11, 2025 4:15 PM
**To:** Malcolm Wallace <mwallace@trafalgareng.com>
**Cc:** Paul Cifoni <pcifoni@trafalgareng.com>; smillar@danielscorp.com
**Subject:** RE: 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)

**EXTERNAL SENDER:** This email originated outside of Trafalgar Engineering.

Hi Malcolm,

I'm organizing the review of the file and would be happy to arrange a meeting for next week with relevant Regional staff. Can you please clarify which comments you're looking to discuss?

Please advise if any of the following dates work on your end:

- Tues, April 15th: 2:00 or 3:00 PM
- Thurs, April 17th: 11:00 AM

Thanks,
Tyler

**Tyler Peers**
**Intermediate Planner - Oakville, Public Works**
Strategic Initiatives & Government Relations
CAO's Office
**Halton Region**
905-825-6000, ext. | 1-866-442-5866



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---

**From:** Malcolm Wallace <mwallace@trafalgareng.com>
**Sent:** Friday, April 11, 2025 9:33 AM
**To:** Peers, Tyler <Tyler.Peers@halton.ca>
**Cc:** Paul Cifoni <pcifoni@trafalgareng.com>; smillar@danielscorp.com
**Subject:** 21 Dundas Street West & 3000 Sixth Line Comments (OPA 1316.12; Z 1316.12) (1807)

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Hi Tyler,

I hope you're doing well. We've received comments from the Region for a proposed development going through OPA/ZBA at 21 Dundas Street West and 3000 Sixth Line and are hoping to setup a meeting to review the comments with the Region. Could you put me in touch with the reviewer on the file? We would like to set something up next week.

Thanks,

Malcolm

TRAFALGAR ENGINEERING
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**Malcolm Wallace, EIT**
**Intermediate Designer**
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## Appendix 'C'

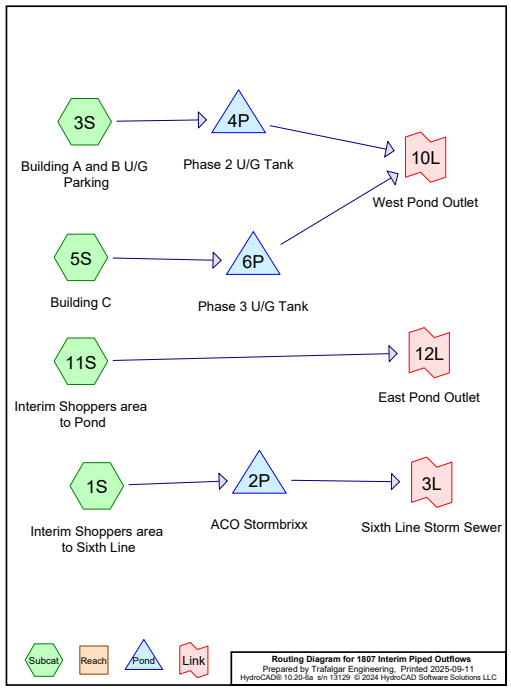
Stormwater Management Calculations

*Storm Drainage Area Plans (1807F1, 1807F2, 1807F3)*

*Storm Sewer Design Sheet Sixth Line*

HEC-RAS Model (Included Digitally)

INTERIM CONTROLLED HYDROCAD OUTPUT






### Area Listing (all nodes)

| Area (sq-meters) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 15,940.0 | 98 | (1S, 3S, 5S, 11S) |



### Summary for Subcatchment 1S: Interim Shoppers area to Sixth Line

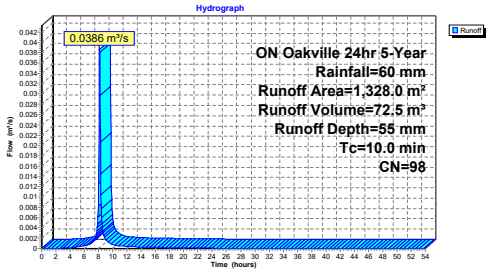
Runoff = 0.0386 m³/s @ 8.13 hrs, Volume= 72.5 m³, Depth= 55 mm
Routed to Pond 2P : ACO Stormbrixx

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 1,328.0 | 98 | |
| | 1,328.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 1S: Interim Shoppers area to Sixth Line






### Summary for Pond 2P: ACO Stormbrixx

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.0386 m³/s @ 8.13 hrs, Volume= 72.5 m³
Outflow = 0.0063 m³/s @ 8.45 hrs, Volume= 72.5 m³, Atten= 84%, Lag= 18.7 min
Primary = 0.0063 m³/s @ 8.45 hrs, Volume= 72.5 m³
Routed to Link 3L : Sixth Line Storm Sewer

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.759 m @ 8.45 hrs Surf.Area= 163.4 m² Storage= 29.4 m³

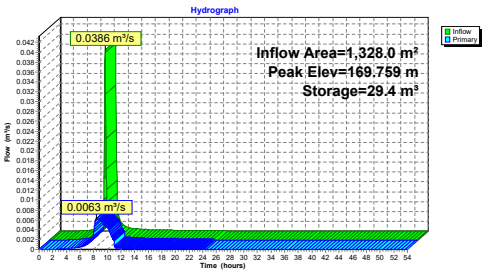
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 36.7 min ( 589.7 - 553.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 169.570 m | 95.0 m³ | **ACO StormBrixx HD 1** x 225<br>Inside= 603 mmW x 612 mmH => 0.350 m² x 1.21 mL = 0.42 m³<br>Outside= 603 mmW x 612 mmH => 0.369 m² x 1.21 mL = 0.44 m³<br>225 Chambers in 5 Rows |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 169.530 m | **Tube/Siphon/Float Valve** 75.00 mm Diameter, C= 0.700<br>1.50 m Long Tube, Hazen-Williams C= 130<br>Inlet / Outlet Elev. = 169.530 m / 169.500 m |

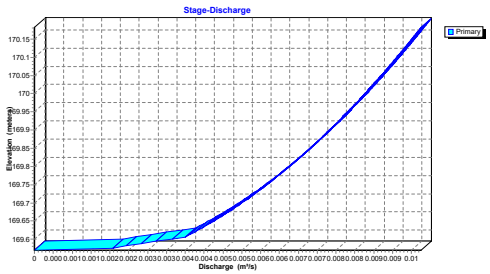
**Primary OutFlow** Max=0.0063 m³/s @ 8.45 hrs HW=169.759 m TW=0.000 m (Dynamic Tailwater)
↑**1=Tube/Siphon/Float Valve** (Tube Controls 0.0063 m³/s @ 1.42 m/s)

### Pond 2P: ACO Stormbrixx

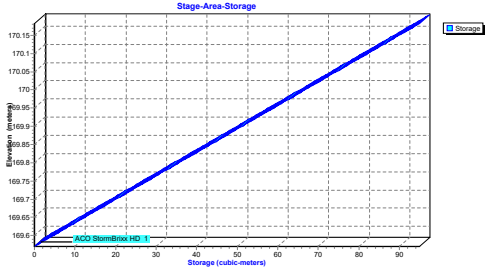





### Pond 2P: ACO Stormbrixx




### Pond 2P: ACO Stormbrixx






### Stage-Discharge for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) |
|---|---|---|---|---|---|
| 169.570 | 0.0000 | 169.835 | 0.0072 | 170.100 | 0.0096 |
| 169.575 | 0.0020 | 169.840 | 0.0072 | 170.105 | 0.0097 |
| 169.580 | 0.0023 | 169.845 | 0.0073 | 170.110 | 0.0097 |
| 169.585 | 0.0026 | 169.850 | 0.0073 | 170.115 | 0.0097 |
| 169.590 | 0.0029 | 169.855 | 0.0074 | 170.120 | 0.0098 |
| 169.595 | 0.0033 | 169.860 | 0.0074 | 170.125 | 0.0098 |
| 169.600 | 0.0036 | 169.865 | 0.0075 | 170.130 | 0.0099 |
| 169.605 | 0.0040 | 169.870 | 0.0075 | 170.135 | 0.0099 |
| 169.610 | 0.0041 | 169.875 | 0.0076 | 170.140 | 0.0099 |
| 169.615 | 0.0042 | 169.880 | 0.0076 | 170.145 | 0.0100 |
| 169.620 | 0.0042 | 169.885 | 0.0077 | 170.150 | 0.0100 |
| 169.625 | 0.0043 | 169.890 | 0.0077 | 170.155 | 0.0100 |
| 169.630 | 0.0044 | 169.895 | 0.0078 | 170.160 | 0.0101 |
| 169.635 | 0.0045 | 169.900 | 0.0078 | 170.165 | 0.0101 |
| 169.640 | 0.0046 | 169.905 | 0.0079 | 170.170 | 0.0102 |
| 169.645 | 0.0047 | 169.910 | 0.0079 | 170.175 | 0.0102 |
| 169.650 | 0.0048 | 169.915 | 0.0080 | 170.180 | **0.0102** |
| 169.655 | 0.0048 | 169.920 | 0.0080 | | |
| 169.660 | 0.0049 | 169.925 | 0.0081 | | |
| 169.665 | 0.0050 | 169.930 | 0.0081 | | |
| 169.670 | 0.0051 | 169.935 | 0.0082 | | |
| 169.675 | 0.0051 | 169.940 | 0.0082 | | |
| 169.680 | 0.0052 | 169.945 | 0.0083 | | |
| 169.685 | 0.0053 | 169.950 | 0.0083 | | |
| 169.690 | 0.0054 | 169.955 | 0.0084 | | |
| 169.695 | 0.0054 | 169.960 | 0.0084 | | |
| 169.700 | 0.0055 | 169.965 | 0.0084 | | |
| 169.705 | 0.0056 | 169.970 | 0.0085 | | |
| 169.710 | 0.0056 | 169.975 | 0.0085 | | |
| 169.715 | 0.0057 | 169.980 | 0.0086 | | |
| 169.720 | 0.0058 | 169.985 | 0.0086 | | |
| 169.725 | 0.0058 | 169.990 | 0.0087 | | |
| 169.730 | 0.0059 | 169.995 | 0.0087 | | |
| 169.735 | 0.0060 | 170.000 | 0.0088 | | |
| 169.740 | 0.0060 | 170.005 | 0.0088 | | |
| 169.745 | 0.0061 | 170.010 | 0.0089 | | |
| 169.750 | 0.0062 | 170.015 | 0.0089 | | |
| 169.755 | 0.0062 | 170.020 | 0.0089 | | |
| 169.760 | 0.0063 | 170.025 | 0.0090 | | |
| 169.765 | 0.0064 | 170.030 | 0.0090 | | |
| 169.770 | 0.0064 | 170.035 | 0.0091 | | |
| 169.775 | 0.0065 | 170.040 | 0.0091 | | |
| 169.780 | 0.0065 | 170.045 | 0.0092 | | |
| 169.785 | 0.0066 | 170.050 | 0.0092 | | |
| 169.790 | 0.0066 | 170.055 | 0.0092 | | |
| 169.795 | 0.0067 | 170.060 | 0.0093 | | |
| 169.800 | 0.0068 | 170.065 | 0.0093 | | |
| 169.805 | 0.0068 | 170.070 | 0.0094 | | |
| 169.810 | 0.0069 | 170.075 | 0.0094 | | |
| 169.815 | 0.0069 | 170.080 | 0.0094 | | |
| 169.820 | 0.0070 | 170.085 | 0.0095 | | |
| 169.825 | 0.0070 | 170.090 | 0.0095 | | |
| 169.830 | 0.0071 | 170.095 | 0.0096 | | |

### Stage-Area-Storage for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 169.570 | 0.0 | 169.835 | 41.1 | 170.100 | 82.2 |
| 169.575 | 0.8 | 169.840 | 41.9 | 170.105 | 83.0 |
| 169.580 | 1.6 | 169.845 | 42.7 | 170.110 | 83.8 |
| 169.585 | 2.3 | 169.850 | 43.5 | 170.115 | 84.6 |
| 169.590 | 3.1 | 169.855 | 44.2 | 170.120 | 85.4 |
| 169.595 | 3.9 | 169.860 | 45.0 | 170.125 | 86.1 |
| 169.600 | 4.7 | 169.865 | 45.8 | 170.130 | 86.9 |
| 169.605 | 5.4 | 169.870 | 46.6 | 170.135 | 87.7 |
| 169.610 | 6.2 | 169.875 | 47.3 | 170.140 | 88.5 |
| 169.615 | 7.0 | 169.880 | 48.1 | 170.145 | 89.2 |
| 169.620 | 7.8 | 169.885 | 48.9 | 170.150 | 90.0 |
| 169.625 | 8.5 | 169.890 | 49.7 | 170.155 | 90.8 |
| 169.630 | 9.3 | 169.895 | 50.4 | 170.160 | 91.6 |
| 169.635 | 10.1 | 169.900 | 51.2 | 170.165 | 92.3 |
| 169.640 | 10.9 | 169.905 | 52.0 | 170.170 | 93.1 |
| 169.645 | 11.6 | 169.910 | 52.8 | 170.175 | 93.9 |
| 169.650 | 12.4 | 169.915 | 53.5 | 170.180 | **94.7** |
| 169.655 | 13.2 | 169.920 | 54.3 | | |
| 169.660 | 14.0 | 169.925 | 55.1 | | |
| 169.665 | 14.7 | 169.930 | 55.9 | | |
| 169.670 | 15.5 | 169.935 | 56.6 | | |
| 169.675 | 16.3 | 169.940 | 57.4 | | |
| 169.680 | 17.1 | 169.945 | 58.2 | | |
| 169.685 | 17.8 | 169.950 | 59.0 | | |
| 169.690 | 18.6 | 169.955 | 59.7 | | |
| 169.695 | 19.4 | 169.960 | 60.5 | | |
| 169.700 | 20.2 | 169.965 | 61.3 | | |
| 169.705 | 20.9 | 169.970 | 62.1 | | |
| 169.710 | 21.7 | 169.975 | 62.8 | | |
| 169.715 | 22.5 | 169.980 | 63.6 | | |
| 169.720 | 23.3 | 169.985 | 64.4 | | |
| 169.725 | 24.1 | 169.990 | 65.2 | | |
| 169.730 | 24.8 | 169.995 | 66.0 | | |
| 169.735 | 25.6 | 170.000 | 66.7 | | |
| 169.740 | 26.4 | 170.005 | 67.5 | | |
| 169.745 | 27.2 | 170.010 | 68.3 | | |
| 169.750 | 27.9 | 170.015 | 69.1 | | |
| 169.755 | 28.7 | 170.020 | 69.8 | | |
| 169.760 | 29.5 | 170.025 | 70.6 | | |
| 169.765 | 30.3 | 170.030 | 71.4 | | |
| 169.770 | 31.0 | 170.035 | 72.2 | | |
| 169.775 | 31.8 | 170.040 | 72.9 | | |
| 169.780 | 32.6 | 170.045 | 73.7 | | |
| 169.785 | 33.4 | 170.050 | 74.5 | | |
| 169.790 | 34.1 | 170.055 | 75.3 | | |
| 169.795 | 34.9 | 170.060 | 76.0 | | |
| 169.800 | 35.7 | 170.065 | 76.8 | | |
| 169.805 | 36.5 | 170.070 | 77.6 | | |
| 169.810 | 37.2 | 170.075 | 78.4 | | |
| 169.815 | 38.0 | 170.080 | 79.1 | | |
| 169.820 | 38.8 | 170.085 | 79.9 | | |
| 169.825 | 39.6 | 170.090 | 80.7 | | |
| 169.830 | 40.3 | 170.095 | 81.5 | | |

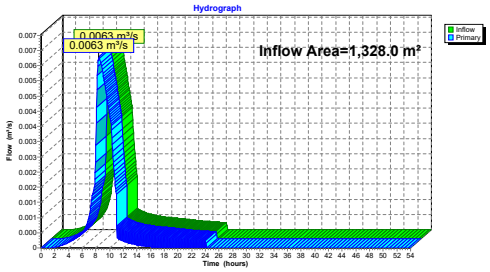


### Summary for Link 3L: Sixth Line Storm Sewer

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.0063 m³/s @ 8.45 hrs, Volume= 72.5 m³
Primary = 0.0063 m³/s @ 8.45 hrs, Volume= 72.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 3L: Sixth Line Storm Sewer






### Summary for Subcatchment 3S: Building A and B U/G Parking

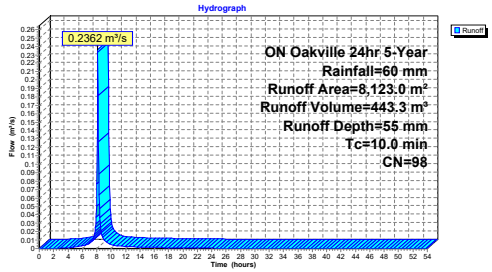
Runoff = 0.2362 m³/s @ 8.13 hrs, Volume= 443.3 m³, Depth= 55 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,123.0 | 98 | |
| | 8,123.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking






### Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,123.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.2362 m³/s @ 8.13 hrs, Volume= 443.3 m³
Outflow = 0.0650 m³/s @ 5.35 hrs, Volume= 432.9 m³, Atten= 72%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 5.35 hrs, Volume= 444.2 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 165.353 m @ 8.35 hrs Surf.Area= 37.5 m² Storage= 118.3 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.5 min ( 557.5 - 553.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

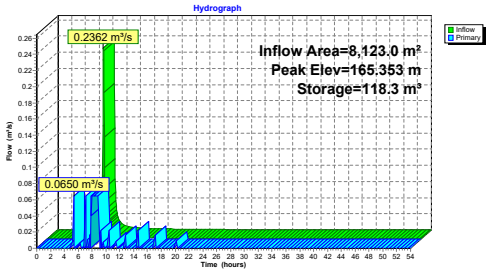
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 15 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m Flow (l/min)= 3,900.0 Head (meters)= 10.000 |

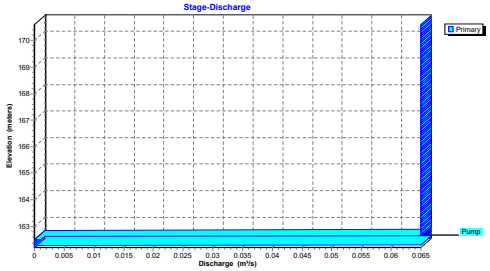
**Primary OutFlow** Max=0.0650 m³/s @ 5.35 hrs HW=162.352 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 4P: Phase 2 U/G Tank

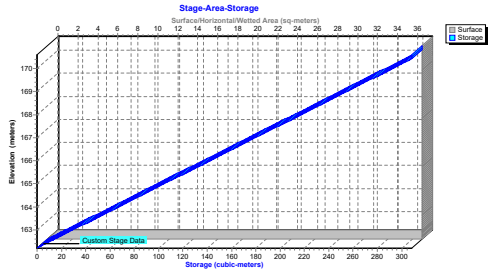



### Pond 4P: Phase 2 U/G Tank






### Pond 4P: Phase 2 U/G Tank



### Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



### Summary for Subcatchment 5S: Building C

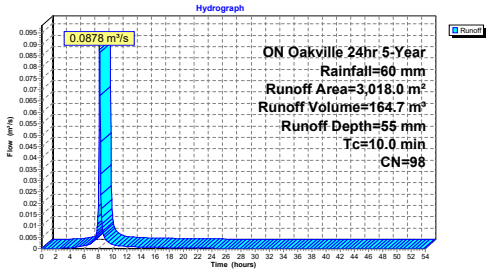
Runoff = 0.0878 m³/s @ 8.13 hrs, Volume= 164.7 m³, Depth= 55 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| Area (m²) | CN | Description |
|---|---|---|
| * 3,018.0 | 98 | |
| 3,018.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 5S: Building C**






### Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,018.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.0878 m³/s @ 8.13 hrs, Volume= 164.7 m³
Outflow = 0.0650 m³/s @ 7.50 hrs, Volume= 152.1 m³, Atten= 26%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 7.50 hrs, Volume= 171.4 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.677 m @ 8.21 hrs Surf.Area= 29.7 m² Storage= 20.1 m³

Plug-Flow detention time= 61.1 min calculated for 152.0 m³ (92% of inflow)
Center-of-Mass det. time= 13.1 min ( 566.1 - 553.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

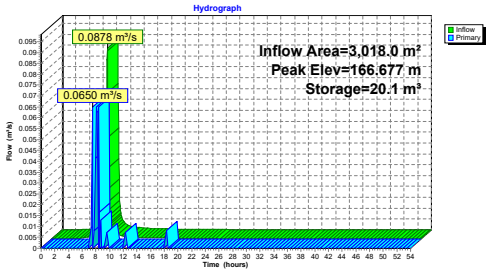
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 8 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m Flow (l/min)= 3,900.0 Head (meters)= 6.000 |

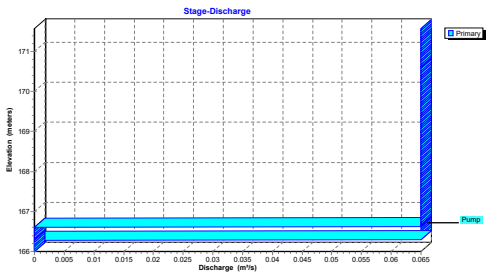
**Primary OutFlow** Max=0.0650 m³/s @ 7.50 hrs HW=166.409 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



**Pond 6P: Phase 3 U/G Tank**

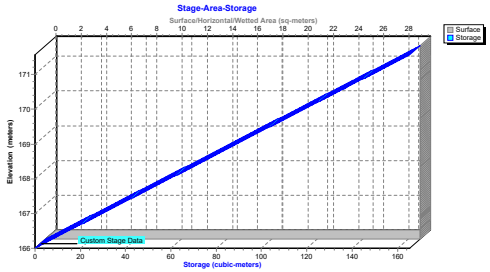



**Pond 6P: Phase 3 U/G Tank**






**Pond 6P: Phase 3 U/G Tank**



### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

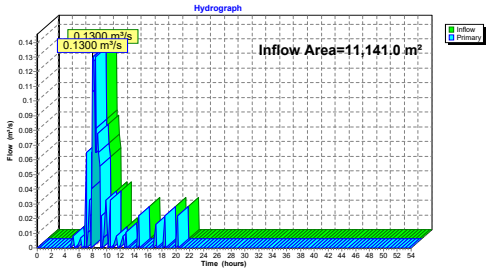


### Summary for Link 10L: West Pond Outlet

Inflow Area = 11,141.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.1300 m³/s @ 7.95 hrs, Volume= 615.7 m³
Primary = 0.1300 m³/s @ 7.95 hrs, Volume= 615.7 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 10L: West Pond Outlet






### Summary for Subcatchment 11S: Interim Shoppers area to Pond

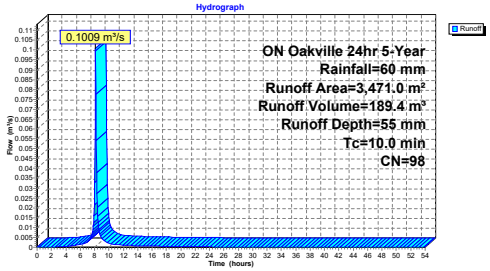
Runoff = 0.1009 m³/s @ 8.13 hrs, Volume= 189.4 m³, Depth= 55 mm
Routed to Link 12L : East Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,471.0 | 98 | |
| | 3,471.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Interim Shoppers area to Pond



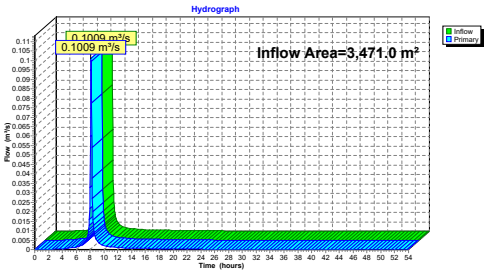



### Summary for Link 12L: East Pond Outlet

Inflow Area = 3,471.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.1009 m³/s @ 8.13 hrs, Volume= 189.4 m³
Primary = 0.1009 m³/s @ 8.13 hrs, Volume= 189.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 12L: East Pond Outlet






### Summary for Subcatchment 1S: Interim Shoppers area to Sixth Line

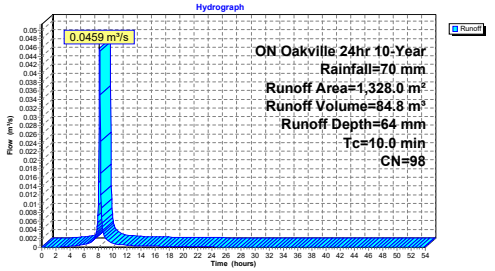
Runoff = 0.0459 m³/s @ 8.13 hrs, Volume= 84.8 m³, Depth= 64 mm
Routed to Pond 2P : ACO Stormbrixx

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 1,328.0 | 98 | |
| | 1,328.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 1S: Interim Shoppers area to Sixth Line



## Summary for Pond 2P: ACO Stormbrixx

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.0459 m³/s @ 8.13 hrs, Volume= 84.8 m³
Outflow = 0.0068 m³/s @ 8.46 hrs, Volume= 84.9 m³, Atten= 85%, Lag= 19.6 min
Primary = 0.0068 m³/s @ 8.46 hrs, Volume= 84.9 m³
Routed to Link 3L : Sixth Line Storm Sewer

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.803 m @ 8.46 hrs Surf.Area= 163.4 m² Storage= 36.1 m³

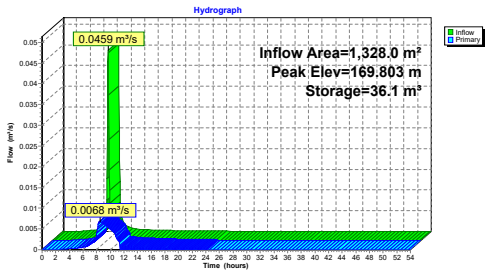
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 43.1 min ( 592.3 - 549.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 169.570 m | 95.0 m³ | **ACO StormBrixx HD 1** x 225<br>Inside= 603 mmW x 612 mmH => 0.350 m² x 1.21 mL = 0.42 m³<br>Outside= 603 mmW x 612 mmH => 0.369 m² x 1.21 mL = 0.44 m³<br>225 Chambers in 5 Rows |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 169.530 m | **Tube/Siphon/Float Valve** 75.00 mm Diameter, C= 0.700<br>1.50 m Long Tube, Hazen-Williams C= 130<br>Inlet / Outlet Elev. = 169.530 m / 169.500 m |

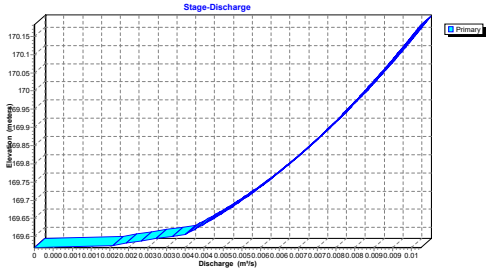
**Primary OutFlow** Max=0.0068 m³/s @ 8.46 hrs HW=169.803 m TW=0.000 m (Dynamic Tailwater)
↑**1=Tube/Siphon/Float Valve** (Tube Controls 0.0068 m³/s @ 1.54 m/s)

### Pond 2P: ACO Stormbrixx

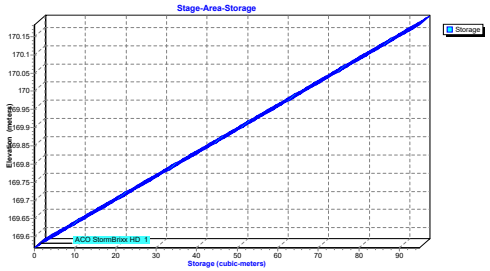





### Pond 2P: ACO Stormbrixx




### Pond 2P: ACO Stormbrixx






## Stage-Discharge for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) |
|---|---|---|---|---|---|
| 169.570 | 0.0000 | 169.835 | 0.0072 | 170.100 | 0.0096 |
| 169.575 | 0.0020 | 169.840 | 0.0072 | 170.105 | 0.0097 |
| 169.580 | 0.0023 | 169.845 | 0.0073 | 170.110 | 0.0097 |
| 169.585 | 0.0026 | 169.850 | 0.0073 | 170.115 | 0.0097 |
| 169.590 | 0.0029 | 169.855 | 0.0074 | 170.120 | 0.0098 |
| 169.595 | 0.0033 | 169.860 | 0.0074 | 170.125 | 0.0098 |
| 169.600 | 0.0036 | 169.865 | 0.0075 | 170.130 | 0.0099 |
| 169.605 | 0.0040 | 169.870 | 0.0075 | 170.135 | 0.0099 |
| 169.610 | 0.0041 | 169.875 | 0.0076 | 170.140 | 0.0099 |
| 169.615 | 0.0042 | 169.880 | 0.0076 | 170.145 | 0.0100 |
| 169.620 | 0.0042 | 169.885 | 0.0077 | 170.150 | 0.0100 |
| 169.625 | 0.0043 | 169.890 | 0.0077 | 170.155 | 0.0100 |
| 169.630 | 0.0044 | 169.895 | 0.0078 | 170.160 | 0.0101 |
| 169.635 | 0.0045 | 169.900 | 0.0078 | 170.165 | 0.0101 |
| 169.640 | 0.0046 | 169.905 | 0.0079 | 170.170 | 0.0102 |
| 169.645 | 0.0047 | 169.910 | 0.0079 | 170.175 | 0.0102 |
| 169.650 | 0.0048 | 169.915 | 0.0080 | 170.180 | **0.0102** |
| 169.655 | 0.0048 | 169.920 | 0.0080 | | |
| 169.660 | 0.0049 | 169.925 | 0.0081 | | |
| 169.665 | 0.0050 | 169.930 | 0.0081 | | |
| 169.670 | 0.0051 | 169.935 | 0.0082 | | |
| 169.675 | 0.0051 | 169.940 | 0.0082 | | |
| 169.680 | 0.0052 | 169.945 | 0.0083 | | |
| 169.685 | 0.0053 | 169.950 | 0.0083 | | |
| 169.690 | 0.0054 | 169.955 | 0.0084 | | |
| 169.695 | 0.0054 | 169.960 | 0.0084 | | |
| 169.700 | 0.0055 | 169.965 | 0.0084 | | |
| 169.705 | 0.0056 | 169.970 | 0.0085 | | |
| 169.710 | 0.0056 | 169.975 | 0.0085 | | |
| 169.715 | 0.0057 | 169.980 | 0.0086 | | |
| 169.720 | 0.0058 | 169.985 | 0.0086 | | |
| 169.725 | 0.0058 | 169.990 | 0.0087 | | |
| 169.730 | 0.0059 | 169.995 | 0.0087 | | |
| 169.735 | 0.0060 | 170.000 | 0.0088 | | |
| 169.740 | 0.0060 | 170.005 | 0.0088 | | |
| 169.745 | 0.0061 | 170.010 | 0.0089 | | |
| 169.750 | 0.0062 | 170.015 | 0.0089 | | |
| 169.755 | 0.0062 | 170.020 | 0.0089 | | |
| 169.760 | 0.0063 | 170.025 | 0.0090 | | |
| 169.765 | 0.0064 | 170.030 | 0.0090 | | |
| 169.770 | 0.0064 | 170.035 | 0.0091 | | |
| 169.775 | 0.0065 | 170.040 | 0.0091 | | |
| 169.780 | 0.0065 | 170.045 | 0.0092 | | |
| 169.785 | 0.0066 | 170.050 | 0.0092 | | |
| 169.790 | 0.0066 | 170.055 | 0.0092 | | |
| 169.795 | 0.0067 | 170.060 | 0.0093 | | |
| 169.800 | 0.0068 | 170.065 | 0.0093 | | |
| 169.805 | 0.0068 | 170.070 | 0.0094 | | |
| 169.810 | 0.0069 | 170.075 | 0.0094 | | |
| 169.815 | 0.0069 | 170.080 | 0.0094 | | |
| 169.820 | 0.0070 | 170.085 | 0.0095 | | |
| 169.825 | 0.0070 | 170.090 | 0.0095 | | |
| 169.830 | 0.0071 | 170.095 | 0.0096 | | |



## Stage-Area-Storage for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 169.570 | 0.0 | 169.835 | 41.1 | 170.100 | 82.2 |
| 169.575 | 0.8 | 169.840 | 41.9 | 170.105 | 83.0 |
| 169.580 | 1.6 | 169.845 | 42.7 | 170.110 | 83.8 |
| 169.585 | 2.3 | 169.850 | 43.5 | 170.115 | 84.6 |
| 169.590 | 3.1 | 169.855 | 44.2 | 170.120 | 85.4 |
| 169.595 | 3.9 | 169.860 | 45.0 | 170.125 | 86.1 |
| 169.600 | 4.7 | 169.865 | 45.8 | 170.130 | 86.9 |
| 169.605 | 5.4 | 169.870 | 46.6 | 170.135 | 87.7 |
| 169.610 | 6.2 | 169.875 | 47.3 | 170.140 | 88.5 |
| 169.615 | 7.0 | 169.880 | 48.1 | 170.145 | 89.2 |
| 169.620 | 7.8 | 169.885 | 48.9 | 170.150 | 90.0 |
| 169.625 | 8.5 | 169.890 | 49.7 | 170.155 | 90.8 |
| 169.630 | 9.3 | 169.895 | 50.4 | 170.160 | 91.6 |
| 169.635 | 10.1 | 169.900 | 51.2 | 170.165 | 92.3 |
| 169.640 | 10.9 | 169.905 | 52.0 | 170.170 | 93.1 |
| 169.645 | 11.6 | 169.910 | 52.8 | 170.175 | 93.9 |
| 169.650 | 12.4 | 169.915 | 53.5 | 170.180 | **94.7** |
| 169.655 | 13.2 | 169.920 | 54.3 | | |
| 169.660 | 14.0 | 169.925 | 55.1 | | |
| 169.665 | 14.7 | 169.930 | 55.9 | | |
| 169.670 | 15.5 | 169.935 | 56.6 | | |
| 169.675 | 16.3 | 169.940 | 57.4 | | |
| 169.680 | 17.1 | 169.945 | 58.2 | | |
| 169.685 | 17.8 | 169.950 | 59.0 | | |
| 169.690 | 18.6 | 169.955 | 59.7 | | |
| 169.695 | 19.4 | 169.960 | 60.5 | | |
| 169.700 | 20.2 | 169.965 | 61.3 | | |
| 169.705 | 20.9 | 169.970 | 62.1 | | |
| 169.710 | 21.7 | 169.975 | 62.8 | | |
| 169.715 | 22.5 | 169.980 | 63.6 | | |
| 169.720 | 23.3 | 169.985 | 64.4 | | |
| 169.725 | 24.1 | 169.990 | 65.2 | | |
| 169.730 | 24.8 | 169.995 | 66.0 | | |
| 169.735 | 25.6 | 170.000 | 66.7 | | |
| 169.740 | 26.4 | 170.005 | 67.5 | | |
| 169.745 | 27.2 | 170.010 | 68.3 | | |
| 169.750 | 27.9 | 170.015 | 69.1 | | |
| 169.755 | 28.7 | 170.020 | 69.8 | | |
| 169.760 | 29.5 | 170.025 | 70.6 | | |
| 169.765 | 30.3 | 170.030 | 71.4 | | |
| 169.770 | 31.0 | 170.035 | 72.2 | | |
| 169.775 | 31.8 | 170.040 | 72.9 | | |
| 169.780 | 32.6 | 170.045 | 73.7 | | |
| 169.785 | 33.4 | 170.050 | 74.5 | | |
| 169.790 | 34.1 | 170.055 | 75.3 | | |
| 169.795 | 34.9 | 170.060 | 76.0 | | |
| 169.800 | 35.7 | 170.065 | 76.8 | | |
| 169.805 | 36.5 | 170.070 | 77.6 | | |
| 169.810 | 37.2 | 170.075 | 78.4 | | |
| 169.815 | 38.0 | 170.080 | 79.1 | | |
| 169.820 | 38.8 | 170.085 | 79.9 | | |
| 169.825 | 39.6 | 170.090 | 80.7 | | |
| 169.830 | 40.3 | 170.095 | 81.5 | | |

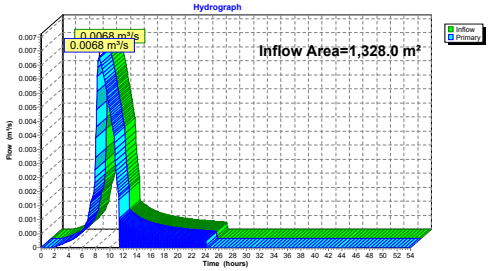


## Summary for Link 3L: Sixth Line Storm Sewer

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.0068 m³/s @ 8.46 hrs, Volume= 84.9 m³
Primary = 0.0068 m³/s @ 8.46 hrs, Volume= 84.9 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 3L: Sixth Line Storm Sewer






## Summary for Subcatchment 3S: Building A and B U/G Parking

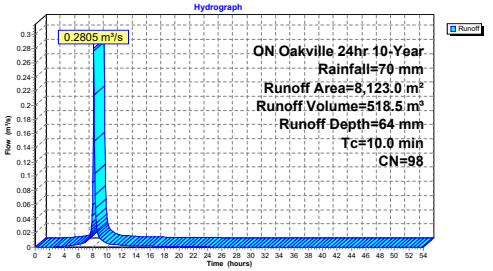
Runoff = 0.2805 m³/s @ 8.13 hrs, Volume= 518.5 m³, Depth= 64 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,123.0 | 98 | |
| | 8,123.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking



## Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,123.0 m², 100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.2805 m³/s @ 8.13 hrs, Volume= 518.5 m³
Outflow = 0.0650 m³/s @ 4.95 hrs, Volume= 514.8 m³, Atten= 77%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.95 hrs, Volume= 530.2 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.484 m @ 8.37 hrs Surf.Area= 37.5 m² Storage= 160.6 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 21.2 min ( 570.4 - 549.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

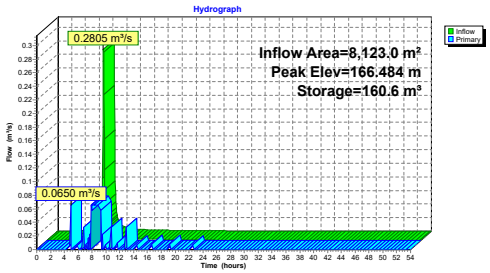
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 17 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 10.000 |

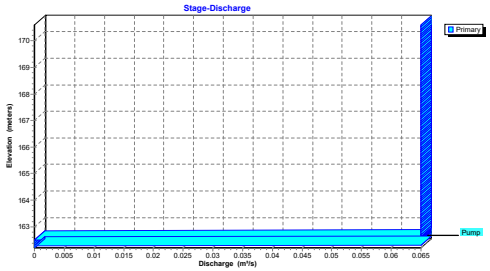
**Primary OutFlow** Max=0.0650 m³/s @ 4.95 hrs HW=162.344 m TW=0.000 m (Dynamic Tailwater)
↳**1=Pump** (Pump Controls 0.0650 m³/s)



## Pond 4P: Phase 2 U/G Tank

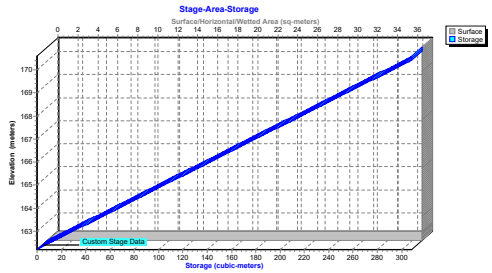



## Pond 4P: Phase 2 U/G Tank






## Pond 4P: Phase 2 U/G Tank






## Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



## Summary for Subcatchment 5S: Building C

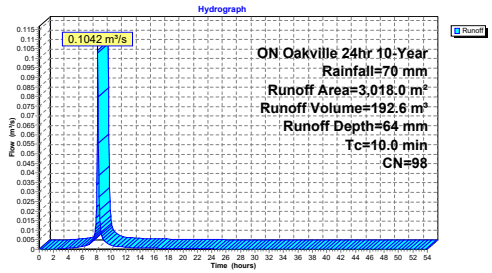
Runoff = 0.1042 m³/s @ 8.13 hrs, Volume= 192.6 m³, Depth= 64 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,018.0 | 98 | |
| | 3,018.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

## Subcatchment 5S: Building C



## Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,018.0 m², 100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.1042 m³/s @ 8.13 hrs, Volume= 192.6 m³
Outflow = 0.0650 m³/s @ 7.30 hrs, Volume= 175.5 m³, Atten= 38%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 7.30 hrs, Volume= 189.1 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.840 m @ 8.23 hrs Surf.Area= 29.7 m² Storage= 25.0 m³

Plug-Flow detention time= 46.0 min calculated for 175.3 m³ (91% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

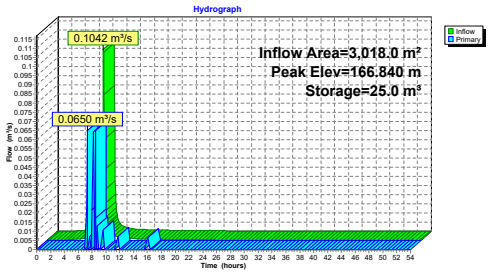
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 8 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

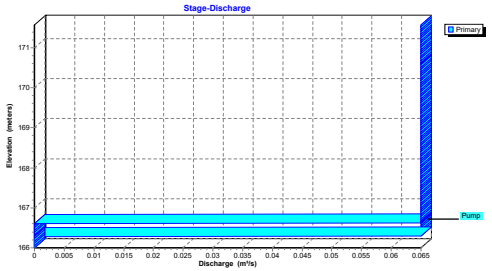
**Primary OutFlow** Max=0.0650 m³/s @ 7.30 hrs HW=166.422 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



## Pond 6P: Phase 3 U/G Tank

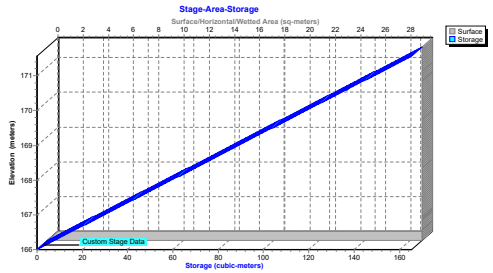



## Pond 6P: Phase 3 U/G Tank






## Pond 6P: Phase 3 U/G Tank






## Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

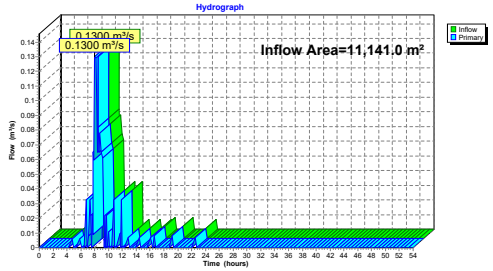


## Summary for Link 10L: West Pond Outlet

Inflow Area = 11,141.0 m², 100.00% Impervious, Inflow Depth = 65 mm for 10-Year event
Inflow = 0.1300 m³/s @ 8.00 hrs, Volume= 719.3 m³
Primary = 0.1300 m³/s @ 8.00 hrs, Volume= 719.3 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

## Link 10L: West Pond Outlet



### Summary for Subcatchment 11S: Interim Shoppers area to Pond

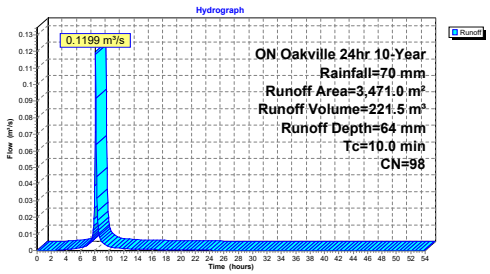
Runoff = 0.1199 m³/s @ 8.13 hrs, Volume= 221.5 m³, Depth= 64 mm
Routed to Link 12L : East Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,471.0 | 98 | |
| | 3,471.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Interim Shoppers area to Pond



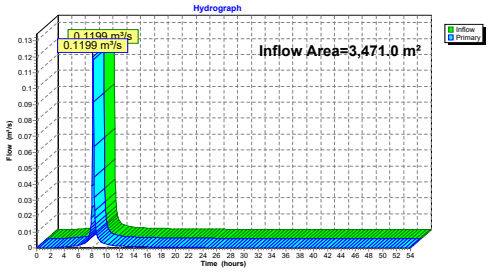



### Summary for Link 12L: East Pond Outlet

Inflow Area = 3,471.0 m², 100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.1199 m³/s @ 8.13 hrs, Volume= 221.5 m³
Primary = 0.1199 m³/s @ 8.13 hrs, Volume= 221.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 12L: East Pond Outlet






### Summary for Subcatchment 1S: Interim Shoppers area to Sixth Line

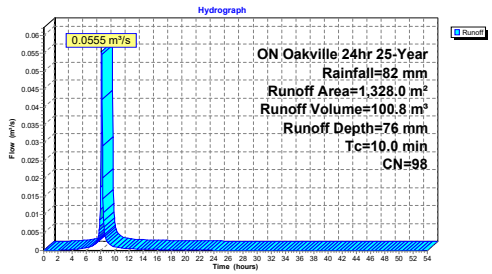
Runoff = 0.0555 m³/s @ 8.13 hrs, Volume= 100.8 m³, Depth= 76 mm
Routed to Pond 2P : ACO Stormbrixx

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 1,328.0 | 98 | |
| | 1,328.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 1S: Interim Shoppers area to Sixth Line






### Summary for Pond 2P: ACO Stormbrixx

Inflow Area = 1,328.0 m², 100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.0555 m³/s @ 8.13 hrs, Volume= 100.8 m³
Outflow = 0.0074 m³/s @ 8.47 hrs, Volume= 100.9 m³, Atten= 87%, Lag= 20.5 min
Primary = 0.0074 m³/s @ 8.47 hrs, Volume= 100.9 m³
Routed to Link 3L : Sixth Line Storm Sewer

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.860 m @ 8.47 hrs Surf.Area= 163.4 m² Storage= 45.0 m³

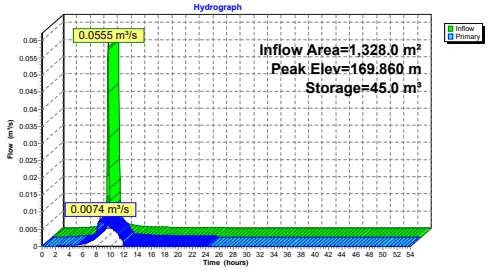
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 50.4 min ( 596.5 - 546.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 169.570 m | 95.0 m³ | **ACO StormBrixx HD 1** x 225<br>Inside= 603 mmW x 612 mmH => 0.350 m² x 1.21 mL = 0.42 m³<br>Outside= 603 mmW x 612 mmH => 0.369 m² x 1.21 mL = 0.44 m³<br>225 Chambers in 5 Rows |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 169.530 m | **Tube/Siphon/Float Valve** 75.00 mm Diameter, C= 0.700<br>1.50 m Long Tube, Hazen-Williams C= 130<br>Inlet / Outlet Elev. = 169.530 m / 169.500 m |

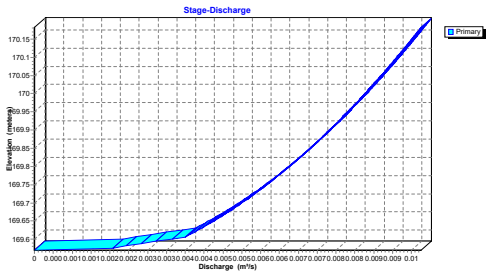
**Primary OutFlow** Max=0.0074 m³/s @ 8.47 hrs HW=169.860 m TW=0.000 m (Dynamic Tailwater)
↑**1=Tube/Siphon/Float Valve** (Tube Controls 0.0074 m³/s @ 1.68 m/s)

### Pond 2P: ACO Stormbrixx

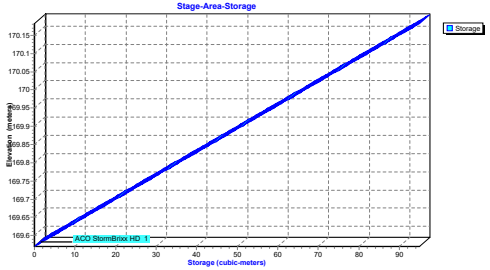





### Pond 2P: ACO Stormbrixx




### Pond 2P: ACO Stormbrixx






### Stage-Discharge for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) |
|---|---|---|---|---|---|
| 169.570 | 0.0000 | 169.835 | 0.0072 | 170.100 | 0.0096 |
| 169.575 | 0.0020 | 169.840 | 0.0072 | 170.105 | 0.0097 |
| 169.580 | 0.0023 | 169.845 | 0.0073 | 170.110 | 0.0097 |
| 169.585 | 0.0026 | 169.850 | 0.0073 | 170.115 | 0.0097 |
| 169.590 | 0.0029 | 169.855 | 0.0074 | 170.120 | 0.0098 |
| 169.595 | 0.0033 | 169.860 | 0.0074 | 170.125 | 0.0098 |
| 169.600 | 0.0036 | 169.865 | 0.0075 | 170.130 | 0.0099 |
| 169.605 | 0.0040 | 169.870 | 0.0075 | 170.135 | 0.0099 |
| 169.610 | 0.0041 | 169.875 | 0.0076 | 170.140 | 0.0099 |
| 169.615 | 0.0042 | 169.880 | 0.0076 | 170.145 | 0.0100 |
| 169.620 | 0.0042 | 169.885 | 0.0077 | 170.150 | 0.0100 |
| 169.625 | 0.0043 | 169.890 | 0.0077 | 170.155 | 0.0100 |
| 169.630 | 0.0044 | 169.895 | 0.0078 | 170.160 | 0.0101 |
| 169.635 | 0.0045 | 169.900 | 0.0078 | 170.165 | 0.0101 |
| 169.640 | 0.0046 | 169.905 | 0.0079 | 170.170 | 0.0102 |
| 169.645 | 0.0047 | 169.910 | 0.0079 | 170.175 | 0.0102 |
| 169.650 | 0.0048 | 169.915 | 0.0080 | 170.180 | **0.0102** |
| 169.655 | 0.0048 | 169.920 | 0.0080 | | |
| 169.660 | 0.0049 | 169.925 | 0.0081 | | |
| 169.665 | 0.0050 | 169.930 | 0.0081 | | |
| 169.670 | 0.0051 | 169.935 | 0.0082 | | |
| 169.675 | 0.0051 | 169.940 | 0.0082 | | |
| 169.680 | 0.0052 | 169.945 | 0.0083 | | |
| 169.685 | 0.0053 | 169.950 | 0.0083 | | |
| 169.690 | 0.0054 | 169.955 | 0.0084 | | |
| 169.695 | 0.0054 | 169.960 | 0.0084 | | |
| 169.700 | 0.0055 | 169.965 | 0.0084 | | |
| 169.705 | 0.0056 | 169.970 | 0.0085 | | |
| 169.710 | 0.0056 | 169.975 | 0.0085 | | |
| 169.715 | 0.0057 | 169.980 | 0.0086 | | |
| 169.720 | 0.0058 | 169.985 | 0.0086 | | |
| 169.725 | 0.0058 | 169.990 | 0.0087 | | |
| 169.730 | 0.0059 | 169.995 | 0.0087 | | |
| 169.735 | 0.0060 | 170.000 | 0.0088 | | |
| 169.740 | 0.0060 | 170.005 | 0.0088 | | |
| 169.745 | 0.0061 | 170.010 | 0.0089 | | |
| 169.750 | 0.0062 | 170.015 | 0.0089 | | |
| 169.755 | 0.0062 | 170.020 | 0.0089 | | |
| 169.760 | 0.0063 | 170.025 | 0.0090 | | |
| 169.765 | 0.0064 | 170.030 | 0.0090 | | |
| 169.770 | 0.0064 | 170.035 | 0.0091 | | |
| 169.775 | 0.0065 | 170.040 | 0.0091 | | |
| 169.780 | 0.0065 | 170.045 | 0.0092 | | |
| 169.785 | 0.0066 | 170.050 | 0.0092 | | |
| 169.790 | 0.0066 | 170.055 | 0.0092 | | |
| 169.795 | 0.0067 | 170.060 | 0.0093 | | |
| 169.800 | 0.0068 | 170.065 | 0.0093 | | |
| 169.805 | 0.0068 | 170.070 | 0.0094 | | |
| 169.810 | 0.0069 | 170.075 | 0.0094 | | |
| 169.815 | 0.0069 | 170.080 | 0.0094 | | |
| 169.820 | 0.0070 | 170.085 | 0.0095 | | |
| 169.825 | 0.0070 | 170.090 | 0.0095 | | |
| 169.830 | 0.0071 | 170.095 | 0.0096 | | |

### Stage-Area-Storage for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 169.570 | 0.0 | 169.835 | 41.1 | 170.100 | 82.2 |
| 169.575 | 0.8 | 169.840 | 41.9 | 170.105 | 83.0 |
| 169.580 | 1.6 | 169.845 | 42.7 | 170.110 | 83.8 |
| 169.585 | 2.3 | 169.850 | 43.5 | 170.115 | 84.6 |
| 169.590 | 3.1 | 169.855 | 44.2 | 170.120 | 85.4 |
| 169.595 | 3.9 | 169.860 | 45.0 | 170.125 | 86.1 |
| 169.600 | 4.7 | 169.865 | 45.8 | 170.130 | 86.9 |
| 169.605 | 5.4 | 169.870 | 46.6 | 170.135 | 87.7 |
| 169.610 | 6.2 | 169.875 | 47.3 | 170.140 | 88.5 |
| 169.615 | 7.0 | 169.880 | 48.1 | 170.145 | 89.2 |
| 169.620 | 7.8 | 169.885 | 48.9 | 170.150 | 90.0 |
| 169.625 | 8.5 | 169.890 | 49.7 | 170.155 | 90.8 |
| 169.630 | 9.3 | 169.895 | 50.4 | 170.160 | 91.6 |
| 169.635 | 10.1 | 169.900 | 51.2 | 170.165 | 92.3 |
| 169.640 | 10.9 | 169.905 | 52.0 | 170.170 | 93.1 |
| 169.645 | 11.6 | 169.910 | 52.8 | 170.175 | 93.9 |
| 169.650 | 12.4 | 169.915 | 53.5 | 170.180 | **94.7** |
| 169.655 | 13.2 | 169.920 | 54.3 | | |
| 169.660 | 14.0 | 169.925 | 55.1 | | |
| 169.665 | 14.7 | 169.930 | 55.9 | | |
| 169.670 | 15.5 | 169.935 | 56.6 | | |
| 169.675 | 16.3 | 169.940 | 57.4 | | |
| 169.680 | 17.1 | 169.945 | 58.2 | | |
| 169.685 | 17.8 | 169.950 | 59.0 | | |
| 169.690 | 18.6 | 169.955 | 59.7 | | |
| 169.695 | 19.4 | 169.960 | 60.5 | | |
| 169.700 | 20.2 | 169.965 | 61.3 | | |
| 169.705 | 20.9 | 169.970 | 62.1 | | |
| 169.710 | 21.7 | 169.975 | 62.8 | | |
| 169.715 | 22.5 | 169.980 | 63.6 | | |
| 169.720 | 23.3 | 169.985 | 64.4 | | |
| 169.725 | 24.1 | 169.990 | 65.2 | | |
| 169.730 | 24.8 | 169.995 | 66.0 | | |
| 169.735 | 25.6 | 170.000 | 66.7 | | |
| 169.740 | 26.4 | 170.005 | 67.5 | | |
| 169.745 | 27.2 | 170.010 | 68.3 | | |
| 169.750 | 27.9 | 170.015 | 69.1 | | |
| 169.755 | 28.7 | 170.020 | 69.8 | | |
| 169.760 | 29.5 | 170.025 | 70.6 | | |
| 169.765 | 30.3 | 170.030 | 71.4 | | |
| 169.770 | 31.0 | 170.035 | 72.2 | | |
| 169.775 | 31.8 | 170.040 | 72.9 | | |
| 169.780 | 32.6 | 170.045 | 73.7 | | |
| 169.785 | 33.4 | 170.050 | 74.5 | | |
| 169.790 | 34.1 | 170.055 | 75.3 | | |
| 169.795 | 34.9 | 170.060 | 76.0 | | |
| 169.800 | 35.7 | 170.065 | 76.8 | | |
| 169.805 | 36.5 | 170.070 | 77.6 | | |
| 169.810 | 37.2 | 170.075 | 78.4 | | |
| 169.815 | 38.0 | 170.080 | 79.1 | | |
| 169.820 | 38.8 | 170.085 | 79.9 | | |
| 169.825 | 39.6 | 170.090 | 80.7 | | |
| 169.830 | 40.3 | 170.095 | 81.5 | | |

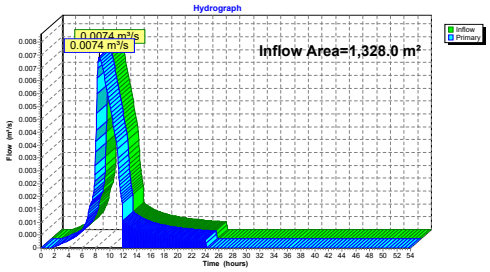


### Summary for Link 3L: Sixth Line Storm Sewer

Inflow Area = 1,328.0 m², 100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.0074 m³/s @ 8.47 hrs, Volume= 100.9 m³
Primary = 0.0074 m³/s @ 8.47 hrs, Volume= 100.9 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 3L: Sixth Line Storm Sewer






### Summary for Subcatchment 3S: Building A and B U/G Parking

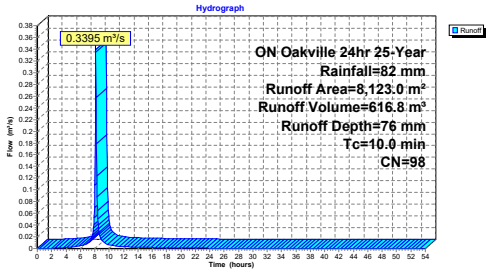
Runoff = 0.3395 m³/s @ 8.13 hrs, Volume= 616.8 m³, Depth= 76 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,123.0 | 98 | |
| | 8,123.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking






### Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,123.0 m², 100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.3395 m³/s @ 8.13 hrs, Volume= 616.8 m³
Outflow = 0.0650 m³/s @ 4.55 hrs, Volume= 608.4 m³, Atten= 81%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.55 hrs, Volume= 617.9 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.760 m @ 8.41 hrs Surf.Area= 37.5 m² Storage= 208.5 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 18.3 min ( 564.4 - 546.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

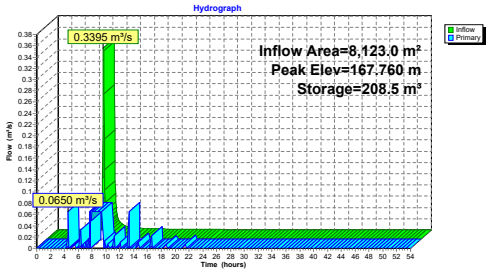
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 18 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m Flow (l/min)= 3,900.0 Head (meters)= 10.000 |

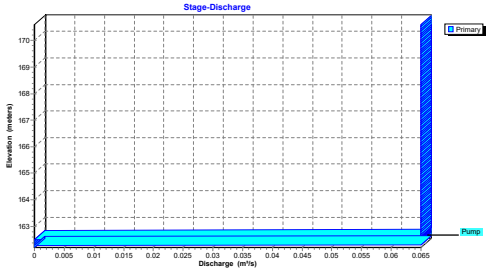
**Primary OutFlow** Max=0.0650 m³/s @ 4.55 hrs HW=162.351 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 4P: Phase 2 U/G Tank

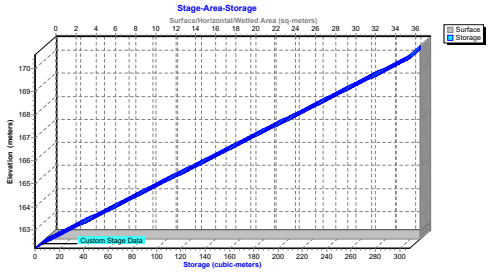



### Pond 4P: Phase 2 U/G Tank






### Pond 4P: Phase 2 U/G Tank



### Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



### Summary for Subcatchment 5S: Building C

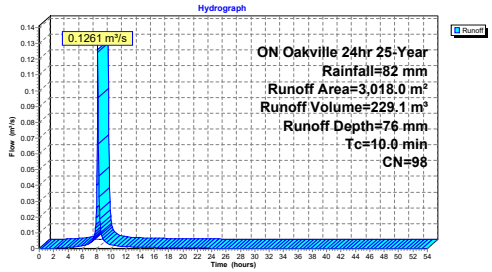
Runoff = 0.1261 m³/s @ 8.13 hrs, Volume= 229.1 m³, Depth= 76 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,018.0 | 98 | |
| | 3,018.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 5S: Building C**






### Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,018.0 m²,100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.1261 m³/s @ 8.13 hrs, Volume= 229.1 m³
Outflow = 0.0650 m³/s @ 6.95 hrs, Volume= 222.3 m³, Atten= 48%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.95 hrs, Volume= 225.9 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.614 m @ 8.26 hrs Surf.Area= 29.7 m² Storage= 47.9 m³

Plug-Flow detention time= 62.8 min calculated for 222.3 m³ (97% of inflow)
Center-of-Mass det. time= 40.0 min ( 586.1 - 546.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

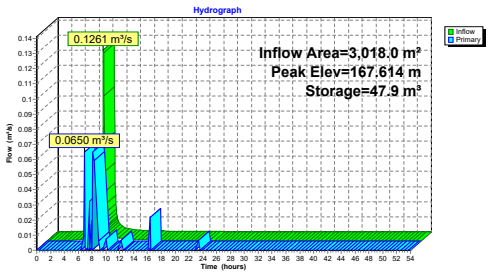
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 9 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@170.600 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

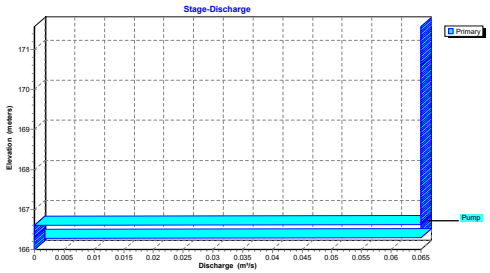
**Primary OutFlow** Max=0.0650 m³/s @ 6.95 hrs HW=166.409 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



**Pond 6P: Phase 3 U/G Tank**

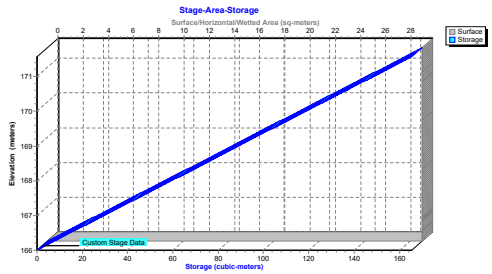



**Pond 6P: Phase 3 U/G Tank**






**Pond 6P: Phase 3 U/G Tank**



### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

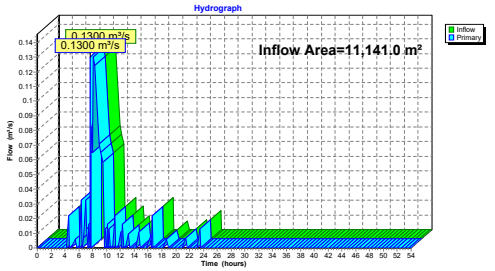


### Summary for Link 10L: West Pond Outlet

Inflow Area = 11,141.0 m²,100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.1300 m³/s @ 7.65 hrs, Volume= 843.8 m³
Primary = 0.1300 m³/s @ 7.65 hrs, Volume= 843.8 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 10L: West Pond Outlet






### Summary for Subcatchment 11S: Interim Shoppers area to Pond

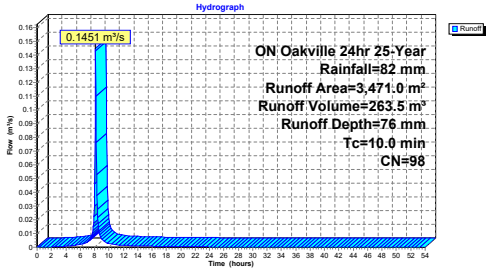
Runoff = 0.1451 m³/s @ 8.13 hrs, Volume= 263.5 m³, Depth= 76 mm
Routed to Link 12L : East Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,471.0 | 98 | |
| | 3,471.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Interim Shoppers area to Pond



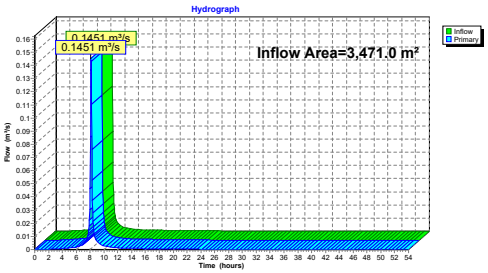



### Summary for Link 12L: East Pond Outlet

Inflow Area = 3,471.0 m²,100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.1451 m³/s @ 8.13 hrs, Volume= 263.5 m³
Primary = 0.1451 m³/s @ 8.13 hrs, Volume= 263.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 12L: East Pond Outlet






### Summary for Subcatchment 1S: Interim Shoppers area to Sixth Line

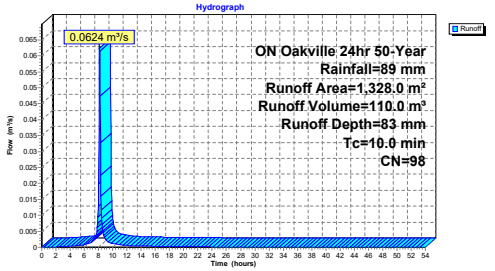
Runoff = 0.0624 m³/s @ 8.13 hrs, Volume= 110.0 m³, Depth= 83 mm
Routed to Pond 2P : ACO Stormbrixx

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 1,328.0 | 98 | |
| | 1,328.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 1S: Interim Shoppers area to Sixth Line



## Summary for Pond 2P: ACO Stormbrixx

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.0624 m³/s @ 8.13 hrs, Volume= 110.0 m³
Outflow = 0.0078 m³/s @ 8.49 hrs, Volume= 110.1 m³, Atten= 87%, Lag= 21.1 min
Primary = 0.0078 m³/s @ 8.49 hrs, Volume= 110.1 m³
Routed to Link 3L : Sixth Line Storm Sewer

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.902 m @ 8.49 hrs Surf.Area= 163.4 m² Storage= 51.5 m³

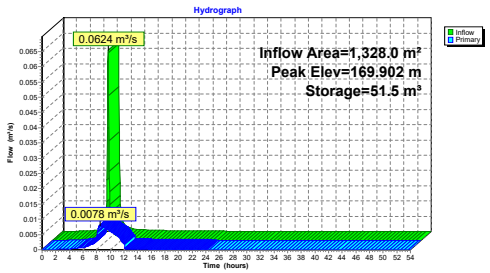
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 56.0 min ( 598.1 - 542.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 169.570 m | 95.0 m³ | **ACO StormBrixx HD 1** x 225<br>Inside= 603 mmW x 612 mmH => 0.350 m² x 1.21 mL = 0.42 m³<br>Outside= 603 mmW x 612 mmH => 0.369 m² x 1.21 mL = 0.44 m³<br>225 Chambers in 5 Rows |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 169.530 m | **Tube/Siphon/Float Valve** 75.00 mm Diameter, C= 0.700<br>1.50 m Long Tube, Hazen-Williams C= 130<br>Inlet / Outlet Elev. = 169.530 m / 169.500 m |

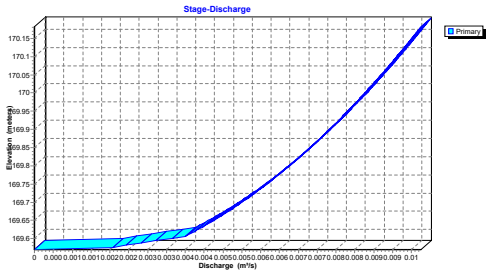
**Primary OutFlow** Max=0.0078 m³/s @ 8.49 hrs HW=169.902 m TW=0.000 m (Dynamic Tailwater)
↑**1=Tube/Siphon/Float Valve** (Tube Controls 0.0078 m³/s @ 1.77 m/s)

### Pond 2P: ACO Stormbrixx

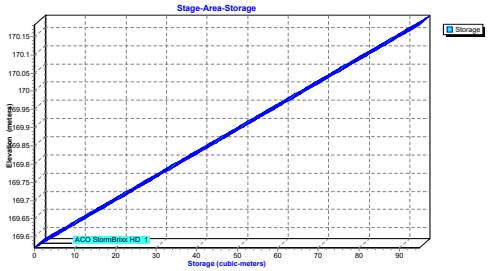





### Pond 2P: ACO Stormbrixx




### Pond 2P: ACO Stormbrixx






## Stage-Discharge for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) |
|---|---|---|---|---|---|
| 169.570 | 0.0000 | 169.835 | 0.0072 | 170.100 | 0.0096 |
| 169.575 | 0.0020 | 169.840 | 0.0072 | 170.105 | 0.0097 |
| 169.580 | 0.0023 | 169.845 | 0.0073 | 170.110 | 0.0097 |
| 169.585 | 0.0026 | 169.850 | 0.0073 | 170.115 | 0.0097 |
| 169.590 | 0.0029 | 169.855 | 0.0074 | 170.120 | 0.0098 |
| 169.595 | 0.0033 | 169.860 | 0.0074 | 170.125 | 0.0098 |
| 169.600 | 0.0036 | 169.865 | 0.0075 | 170.130 | 0.0099 |
| 169.605 | 0.0040 | 169.870 | 0.0075 | 170.135 | 0.0099 |
| 169.610 | 0.0041 | 169.875 | 0.0076 | 170.140 | 0.0099 |
| 169.615 | 0.0042 | 169.880 | 0.0076 | 170.145 | 0.0100 |
| 169.620 | 0.0042 | 169.885 | 0.0077 | 170.150 | 0.0100 |
| 169.625 | 0.0043 | 169.890 | 0.0077 | 170.155 | 0.0100 |
| 169.630 | 0.0044 | 169.895 | 0.0078 | 170.160 | 0.0101 |
| 169.635 | 0.0045 | 169.900 | 0.0078 | 170.165 | 0.0101 |
| 169.640 | 0.0046 | 169.905 | 0.0079 | 170.170 | 0.0102 |
| 169.645 | 0.0047 | 169.910 | 0.0079 | 170.175 | 0.0102 |
| 169.650 | 0.0048 | 169.915 | 0.0080 | 170.180 | **0.0102** |
| 169.655 | 0.0048 | 169.920 | 0.0080 | | |
| 169.660 | 0.0049 | 169.925 | 0.0081 | | |
| 169.665 | 0.0050 | 169.930 | 0.0081 | | |
| 169.670 | 0.0051 | 169.935 | 0.0082 | | |
| 169.675 | 0.0051 | 169.940 | 0.0082 | | |
| 169.680 | 0.0052 | 169.945 | 0.0083 | | |
| 169.685 | 0.0053 | 169.950 | 0.0083 | | |
| 169.690 | 0.0054 | 169.955 | 0.0084 | | |
| 169.695 | 0.0054 | 169.960 | 0.0084 | | |
| 169.700 | 0.0055 | 169.965 | 0.0084 | | |
| 169.705 | 0.0056 | 169.970 | 0.0085 | | |
| 169.710 | 0.0056 | 169.975 | 0.0085 | | |
| 169.715 | 0.0057 | 169.980 | 0.0086 | | |
| 169.720 | 0.0058 | 169.985 | 0.0086 | | |
| 169.725 | 0.0058 | 169.990 | 0.0087 | | |
| 169.730 | 0.0059 | 169.995 | 0.0087 | | |
| 169.735 | 0.0060 | 170.000 | 0.0088 | | |
| 169.740 | 0.0060 | 170.005 | 0.0088 | | |
| 169.745 | 0.0061 | 170.010 | 0.0089 | | |
| 169.750 | 0.0062 | 170.015 | 0.0089 | | |
| 169.755 | 0.0062 | 170.020 | 0.0089 | | |
| 169.760 | 0.0063 | 170.025 | 0.0090 | | |
| 169.765 | 0.0064 | 170.030 | 0.0090 | | |
| 169.770 | 0.0064 | 170.035 | 0.0091 | | |
| 169.775 | 0.0065 | 170.040 | 0.0091 | | |
| 169.780 | 0.0065 | 170.045 | 0.0092 | | |
| 169.785 | 0.0066 | 170.050 | 0.0092 | | |
| 169.790 | 0.0066 | 170.055 | 0.0092 | | |
| 169.795 | 0.0067 | 170.060 | 0.0093 | | |
| 169.800 | 0.0068 | 170.065 | 0.0093 | | |
| 169.805 | 0.0068 | 170.070 | 0.0094 | | |
| 169.810 | 0.0069 | 170.075 | 0.0094 | | |
| 169.815 | 0.0069 | 170.080 | 0.0094 | | |
| 169.820 | 0.0070 | 170.085 | 0.0095 | | |
| 169.825 | 0.0070 | 170.090 | 0.0095 | | |
| 169.830 | 0.0071 | 170.095 | 0.0096 | | |



## Stage-Area-Storage for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 169.570 | 0.0 | 169.835 | 41.1 | 170.100 | 82.2 |
| 169.575 | 0.8 | 169.840 | 41.9 | 170.105 | 83.0 |
| 169.580 | 1.6 | 169.845 | 42.7 | 170.110 | 83.8 |
| 169.585 | 2.3 | 169.850 | 43.5 | 170.115 | 84.6 |
| 169.590 | 3.1 | 169.855 | 44.2 | 170.120 | 85.4 |
| 169.595 | 3.9 | 169.860 | 45.0 | 170.125 | 86.1 |
| 169.600 | 4.7 | 169.865 | 45.8 | 170.130 | 86.9 |
| 169.605 | 5.4 | 169.870 | 46.6 | 170.135 | 87.7 |
| 169.610 | 6.2 | 169.875 | 47.3 | 170.140 | 88.5 |
| 169.615 | 7.0 | 169.880 | 48.1 | 170.145 | 89.2 |
| 169.620 | 7.8 | 169.885 | 48.9 | 170.150 | 90.0 |
| 169.625 | 8.5 | 169.890 | 49.7 | 170.155 | 90.8 |
| 169.630 | 9.3 | 169.895 | 50.4 | 170.160 | 91.6 |
| 169.635 | 10.1 | 169.900 | 51.2 | 170.165 | 92.3 |
| 169.640 | 10.9 | 169.905 | 52.0 | 170.170 | 93.1 |
| 169.645 | 11.6 | 169.910 | 52.8 | 170.175 | 93.9 |
| 169.650 | 12.4 | 169.915 | 53.5 | 170.180 | **94.7** |
| 169.655 | 13.2 | 169.920 | 54.3 | | |
| 169.660 | 14.0 | 169.925 | 55.1 | | |
| 169.665 | 14.7 | 169.930 | 55.9 | | |
| 169.670 | 15.5 | 169.935 | 56.6 | | |
| 169.675 | 16.3 | 169.940 | 57.4 | | |
| 169.680 | 17.1 | 169.945 | 58.2 | | |
| 169.685 | 17.8 | 169.950 | 59.0 | | |
| 169.690 | 18.6 | 169.955 | 59.7 | | |
| 169.695 | 19.4 | 169.960 | 60.5 | | |
| 169.700 | 20.2 | 169.965 | 61.3 | | |
| 169.705 | 20.9 | 169.970 | 62.1 | | |
| 169.710 | 21.7 | 169.975 | 62.8 | | |
| 169.715 | 22.5 | 169.980 | 63.6 | | |
| 169.720 | 23.3 | 169.985 | 64.4 | | |
| 169.725 | 24.1 | 169.990 | 65.2 | | |
| 169.730 | 24.8 | 169.995 | 66.0 | | |
| 169.735 | 25.6 | 170.000 | 66.7 | | |
| 169.740 | 26.4 | 170.005 | 67.5 | | |
| 169.745 | 27.2 | 170.010 | 68.3 | | |
| 169.750 | 27.9 | 170.015 | 69.1 | | |
| 169.755 | 28.7 | 170.020 | 69.8 | | |
| 169.760 | 29.5 | 170.025 | 70.6 | | |
| 169.765 | 30.3 | 170.030 | 71.4 | | |
| 169.770 | 31.0 | 170.035 | 72.2 | | |
| 169.775 | 31.8 | 170.040 | 72.9 | | |
| 169.780 | 32.6 | 170.045 | 73.7 | | |
| 169.785 | 33.4 | 170.050 | 74.5 | | |
| 169.790 | 34.1 | 170.055 | 75.3 | | |
| 169.795 | 34.9 | 170.060 | 76.0 | | |
| 169.800 | 35.7 | 170.065 | 76.8 | | |
| 169.805 | 36.5 | 170.070 | 77.6 | | |
| 169.810 | 37.2 | 170.075 | 78.4 | | |
| 169.815 | 38.0 | 170.080 | 79.1 | | |
| 169.820 | 38.8 | 170.085 | 79.9 | | |
| 169.825 | 39.6 | 170.090 | 80.7 | | |
| 169.830 | 40.3 | 170.095 | 81.5 | | |

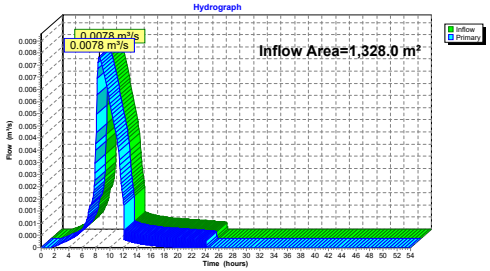


## Summary for Link 3L: Sixth Line Storm Sewer

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.0078 m³/s @ 8.49 hrs, Volume= 110.1 m³
Primary = 0.0078 m³/s @ 8.49 hrs, Volume= 110.1 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 3L: Sixth Line Storm Sewer






## Summary for Subcatchment 3S: Building A and B U/G Parking

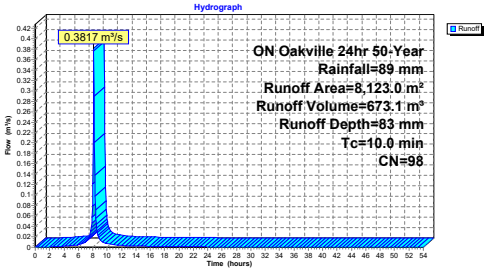
Runoff = 0.3817 m³/s @ 8.13 hrs, Volume= 673.1 m³, Depth= 83 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,123.0 | 98 | |
| | 8,123.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking



## Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,123.0 m², 100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.3817 m³/s @ 8.13 hrs, Volume= 673.1 m³
Outflow = 0.0650 m³/s @ 4.45 hrs, Volume= 666.9 m³, Atten= 83%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.45 hrs, Volume= 674.9 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 168.700 m @ 8.42 hrs Surf.Area= 37.5 m² Storage= 243.8 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 24.7 min ( 566.8 - 542.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

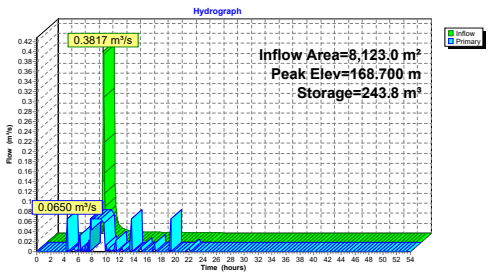
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 18 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 10.000 |

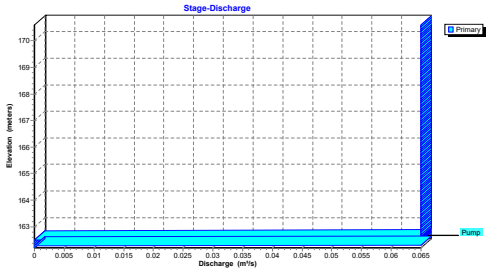
**Primary OutFlow** Max=0.0650 m³/s @ 4.45 hrs HW=162.346 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



## Pond 4P: Phase 2 U/G Tank

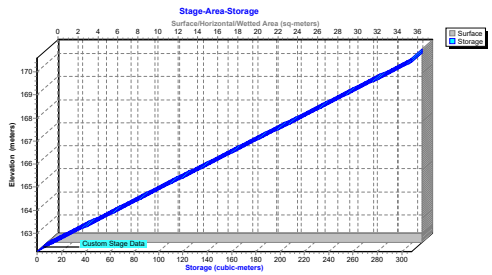



## Pond 4P: Phase 2 U/G Tank






## Pond 4P: Phase 2 U/G Tank






## Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



## Summary for Subcatchment 5S: Building C

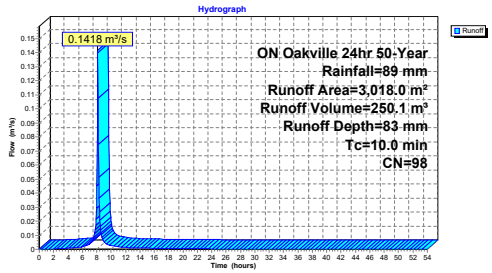
Runoff = 0.1418 m³/s @ 8.13 hrs, Volume= 250.1 m³, Depth= 83 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,018.0 | 98 | |
| | 3,018.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

## Subcatchment 5S: Building C



## Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,018.0 m², 100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.1418 m³/s @ 8.13 hrs, Volume= 250.1 m³
Outflow = 0.0650 m³/s @ 6.85 hrs, Volume= 234.0 m³, Atten= 54%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.85 hrs, Volume= 251.5 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.728 m @ 8.27 hrs Surf.Area= 29.7 m² Storage= 51.3 m³

Plug-Flow detention time= 43.2 min calculated for 234.0 m³ (94% of inflow)
Center-of-Mass det. time= 2.1 min ( 544.2 - 542.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

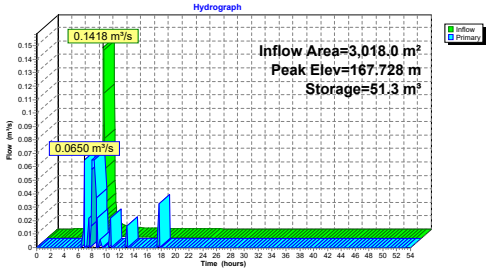
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 9 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

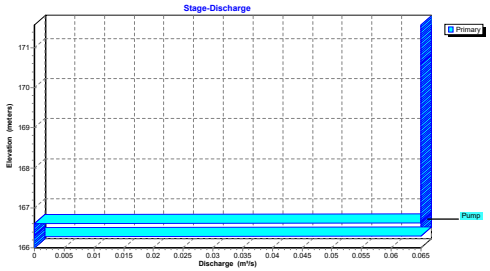
**Primary OutFlow** Max=0.0650 m³/s @ 6.85 hrs HW=166.403 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



## Pond 6P: Phase 3 U/G Tank

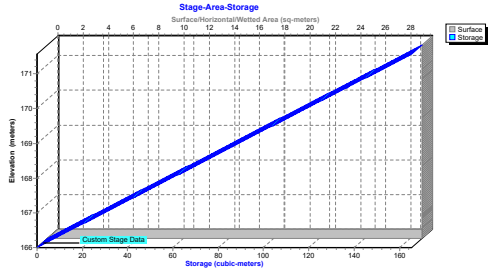



## Pond 6P: Phase 3 U/G Tank






## Pond 6P: Phase 3 U/G Tank






## Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

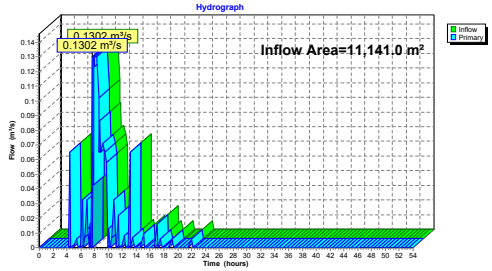


## Summary for Link 10L: West Pond Outlet

Inflow Area = 11,141.0 m², 100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.1302 m³/s @ 7.60 hrs, Volume= 926.4 m³
Primary = 0.1302 m³/s @ 7.60 hrs, Volume= 926.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

## Link 10L: West Pond Outlet



### Summary for Subcatchment 11S: Interim Shoppers area to Pond

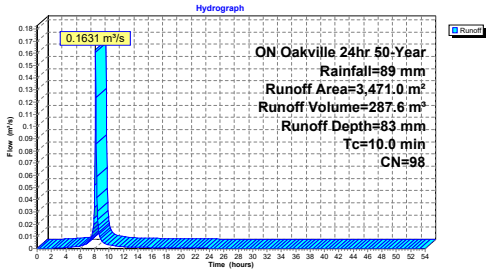
Runoff = 0.1631 m³/s @ 8.13 hrs, Volume= 287.6 m³, Depth= 83 mm
Routed to Link 12L : East Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,471.0 | 98 | |
| | 3,471.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Interim Shoppers area to Pond



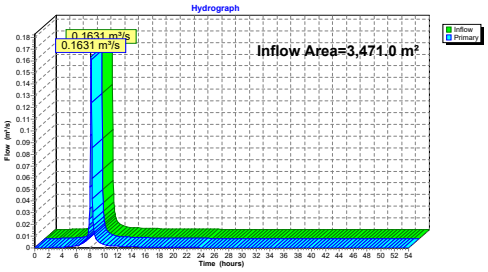



### Summary for Link 12L: East Pond Outlet

Inflow Area = 3,471.0 m²,100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.1631 m³/s @ 8.13 hrs, Volume= 287.6 m³
Primary = 0.1631 m³/s @ 8.13 hrs, Volume= 287.6 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 12L: East Pond Outlet






### Summary for Subcatchment 1S: Interim Shoppers area to Sixth Line

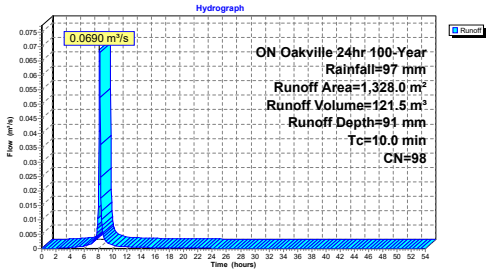
Runoff = 0.0690 m³/s @ 8.13 hrs, Volume= 121.5 m³, Depth= 91 mm
Routed to Pond 2P : ACO Stormbrixx

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 1,328.0 | 98 | |
| | 1,328.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 1S: Interim Shoppers area to Sixth Line






### Summary for Pond 2P: ACO Stormbrixx

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.0690 m³/s @ 8.13 hrs, Volume= 121.5 m³
Outflow = 0.0082 m³/s @ 8.50 hrs, Volume= 121.5 m³, Atten= 88%, Lag= 21.7 min
Primary = 0.0082 m³/s @ 8.50 hrs, Volume= 121.5 m³
Routed to Link 3L : Sixth Line Storm Sewer

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.942 m @ 8.50 hrs Surf.Area= 163.4 m² Storage= 57.8 m³

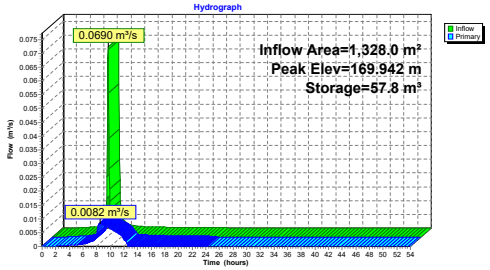
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 60.6 min ( 601.6 - 541.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 169.570 m | 95.0 m³ | **ACO StormBrixx HD 1** x 225<br>Inside= 603 mmW x 612 mmH => 0.350 m² x 1.21 mL = 0.42 m³<br>Outside= 603 mmW x 612 mmH => 0.369 m² x 1.21 mL = 0.44 m³<br>225 Chambers in 5 Rows |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 169.530 m | **Tube/Siphon/Float Valve** 75.00 mm Diameter, C= 0.700<br>1.50 m Long Tube, Hazen-Williams C= 130<br>Inlet / Outlet Elev. = 169.530 m / 169.500 m |

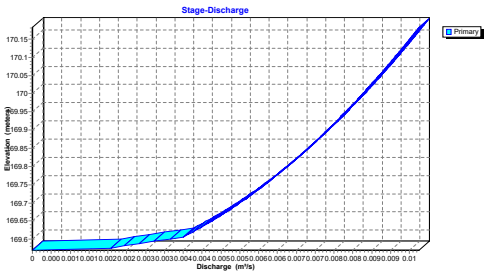
**Primary OutFlow** Max=0.0082 m³/s @ 8.50 hrs HW=169.942 m TW=0.000 m (Dynamic Tailwater)
↳**1=Tube/Siphon/Float Valve** (Tube Controls 0.0082 m³/s @ 1.86 m/s)

### Pond 2P: ACO Stormbrixx

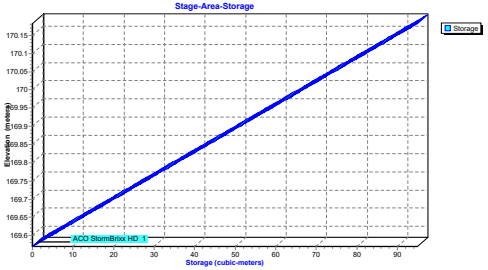





### Pond 2P: ACO Stormbrixx




### Pond 2P: ACO Stormbrixx






### Stage-Discharge for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) |
|---|---|---|---|---|---|
| 169.570 | 0.0000 | 169.835 | 0.0072 | 170.100 | 0.0096 |
| 169.575 | 0.0020 | 169.840 | 0.0072 | 170.105 | 0.0097 |
| 169.580 | 0.0023 | 169.845 | 0.0073 | 170.110 | 0.0097 |
| 169.585 | 0.0026 | 169.850 | 0.0073 | 170.115 | 0.0097 |
| 169.590 | 0.0029 | 169.855 | 0.0074 | 170.120 | 0.0098 |
| 169.595 | 0.0033 | 169.860 | 0.0074 | 170.125 | 0.0098 |
| 169.600 | 0.0036 | 169.865 | 0.0075 | 170.130 | 0.0099 |
| 169.605 | 0.0040 | 169.870 | 0.0075 | 170.135 | 0.0099 |
| 169.610 | 0.0041 | 169.875 | 0.0076 | 170.140 | 0.0099 |
| 169.615 | 0.0042 | 169.880 | 0.0076 | 170.145 | 0.0100 |
| 169.620 | 0.0042 | 169.885 | 0.0077 | 170.150 | 0.0100 |
| 169.625 | 0.0043 | 169.890 | 0.0077 | 170.155 | 0.0100 |
| 169.630 | 0.0044 | 169.895 | 0.0078 | 170.160 | 0.0101 |
| 169.635 | 0.0045 | 169.900 | 0.0078 | 170.165 | 0.0101 |
| 169.640 | 0.0046 | 169.905 | 0.0079 | 170.170 | 0.0102 |
| 169.645 | 0.0047 | 169.910 | 0.0079 | 170.175 | 0.0102 |
| 169.650 | 0.0048 | 169.915 | 0.0080 | 170.180 | **0.0102** |
| 169.655 | 0.0048 | 169.920 | 0.0080 | | |
| 169.660 | 0.0049 | 169.925 | 0.0081 | | |
| 169.665 | 0.0050 | 169.930 | 0.0081 | | |
| 169.670 | 0.0051 | 169.935 | 0.0082 | | |
| 169.675 | 0.0051 | 169.940 | 0.0082 | | |
| 169.680 | 0.0052 | 169.945 | 0.0083 | | |
| 169.685 | 0.0053 | 169.950 | 0.0083 | | |
| 169.690 | 0.0054 | 169.955 | 0.0084 | | |
| 169.695 | 0.0054 | 169.960 | 0.0084 | | |
| 169.700 | 0.0055 | 169.965 | 0.0084 | | |
| 169.705 | 0.0056 | 169.970 | 0.0085 | | |
| 169.710 | 0.0056 | 169.975 | 0.0085 | | |
| 169.715 | 0.0057 | 169.980 | 0.0086 | | |
| 169.720 | 0.0058 | 169.985 | 0.0086 | | |
| 169.725 | 0.0058 | 169.990 | 0.0087 | | |
| 169.730 | 0.0059 | 169.995 | 0.0087 | | |
| 169.735 | 0.0060 | 170.000 | 0.0088 | | |
| 169.740 | 0.0060 | 170.005 | 0.0088 | | |
| 169.745 | 0.0061 | 170.010 | 0.0089 | | |
| 169.750 | 0.0062 | 170.015 | 0.0089 | | |
| 169.755 | 0.0062 | 170.020 | 0.0089 | | |
| 169.760 | 0.0063 | 170.025 | 0.0090 | | |
| 169.765 | 0.0064 | 170.030 | 0.0090 | | |
| 169.770 | 0.0064 | 170.035 | 0.0091 | | |
| 169.775 | 0.0065 | 170.040 | 0.0091 | | |
| 169.780 | 0.0065 | 170.045 | 0.0092 | | |
| 169.785 | 0.0066 | 170.050 | 0.0092 | | |
| 169.790 | 0.0066 | 170.055 | 0.0092 | | |
| 169.795 | 0.0067 | 170.060 | 0.0093 | | |
| 169.800 | 0.0068 | 170.065 | 0.0093 | | |
| 169.805 | 0.0068 | 170.070 | 0.0094 | | |
| 169.810 | 0.0069 | 170.075 | 0.0094 | | |
| 169.815 | 0.0069 | 170.080 | 0.0094 | | |
| 169.820 | 0.0070 | 170.085 | 0.0095 | | |
| 169.825 | 0.0070 | 170.090 | 0.0095 | | |
| 169.830 | 0.0071 | 170.095 | 0.0096 | | |

### Stage-Area-Storage for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 169.570 | 0.0 | 169.835 | 41.1 | 170.100 | 82.2 |
| 169.575 | 0.8 | 169.840 | 41.9 | 170.105 | 83.0 |
| 169.580 | 1.6 | 169.845 | 42.7 | 170.110 | 83.8 |
| 169.585 | 2.3 | 169.850 | 43.5 | 170.115 | 84.6 |
| 169.590 | 3.1 | 169.855 | 44.2 | 170.120 | 85.4 |
| 169.595 | 3.9 | 169.860 | 45.0 | 170.125 | 86.1 |
| 169.600 | 4.7 | 169.865 | 45.8 | 170.130 | 86.9 |
| 169.605 | 5.4 | 169.870 | 46.6 | 170.135 | 87.7 |
| 169.610 | 6.2 | 169.875 | 47.3 | 170.140 | 88.5 |
| 169.615 | 7.0 | 169.880 | 48.1 | 170.145 | 89.2 |
| 169.620 | 7.8 | 169.885 | 48.9 | 170.150 | 90.0 |
| 169.625 | 8.5 | 169.890 | 49.7 | 170.155 | 90.8 |
| 169.630 | 9.3 | 169.895 | 50.4 | 170.160 | 91.6 |
| 169.635 | 10.1 | 169.900 | 51.2 | 170.165 | 92.3 |
| 169.640 | 10.9 | 169.905 | 52.0 | 170.170 | 93.1 |
| 169.645 | 11.6 | 169.910 | 52.8 | 170.175 | 93.9 |
| 169.650 | 12.4 | 169.915 | 53.5 | 170.180 | **94.7** |
| 169.655 | 13.2 | 169.920 | 54.3 | | |
| 169.660 | 14.0 | 169.925 | 55.1 | | |
| 169.665 | 14.7 | 169.930 | 55.9 | | |
| 169.670 | 15.5 | 169.935 | 56.6 | | |
| 169.675 | 16.3 | 169.940 | 57.4 | | |
| 169.680 | 17.1 | 169.945 | 58.2 | | |
| 169.685 | 17.8 | 169.950 | 59.0 | | |
| 169.690 | 18.6 | 169.955 | 59.7 | | |
| 169.695 | 19.4 | 169.960 | 60.5 | | |
| 169.700 | 20.2 | 169.965 | 61.3 | | |
| 169.705 | 20.9 | 169.970 | 62.1 | | |
| 169.710 | 21.7 | 169.975 | 62.8 | | |
| 169.715 | 22.5 | 169.980 | 63.6 | | |
| 169.720 | 23.3 | 169.985 | 64.4 | | |
| 169.725 | 24.1 | 169.990 | 65.2 | | |
| 169.730 | 24.8 | 169.995 | 66.0 | | |
| 169.735 | 25.6 | 170.000 | 66.7 | | |
| 169.740 | 26.4 | 170.005 | 67.5 | | |
| 169.745 | 27.2 | 170.010 | 68.3 | | |
| 169.750 | 27.9 | 170.015 | 69.1 | | |
| 169.755 | 28.7 | 170.020 | 69.8 | | |
| 169.760 | 29.5 | 170.025 | 70.6 | | |
| 169.765 | 30.3 | 170.030 | 71.4 | | |
| 169.770 | 31.0 | 170.035 | 72.2 | | |
| 169.775 | 31.8 | 170.040 | 72.9 | | |
| 169.780 | 32.6 | 170.045 | 73.7 | | |
| 169.785 | 33.4 | 170.050 | 74.5 | | |
| 169.790 | 34.1 | 170.055 | 75.3 | | |
| 169.795 | 34.9 | 170.060 | 76.0 | | |
| 169.800 | 35.7 | 170.065 | 76.8 | | |
| 169.805 | 36.5 | 170.070 | 77.6 | | |
| 169.810 | 37.2 | 170.075 | 78.4 | | |
| 169.815 | 38.0 | 170.080 | 79.1 | | |
| 169.820 | 38.8 | 170.085 | 79.9 | | |
| 169.825 | 39.6 | 170.090 | 80.7 | | |
| 169.830 | 40.3 | 170.095 | 81.5 | | |

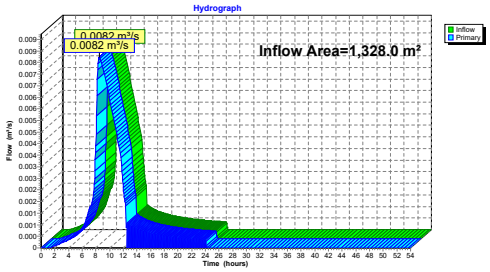


### Summary for Link 3L: Sixth Line Storm Sewer

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 92 mm for 100-Year event
Inflow = 0.0082 m³/s @ 8.50 hrs, Volume= 121.5 m³
Primary = 0.0082 m³/s @ 8.50 hrs, Volume= 121.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 3L: Sixth Line Storm Sewer






### Summary for Subcatchment 3S: Building A and B U/G Parking

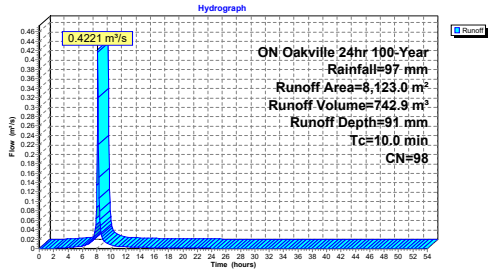
Runoff = 0.4221 m³/s @ 8.13 hrs, Volume= 742.9 m³, Depth= 91 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,123.0 | 98 | |
| | 8,123.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking






### Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,123.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.4221 m³/s @ 8.13 hrs, Volume= 742.9 m³
Outflow = 0.0650 m³/s @ 4.20 hrs, Volume= 737.1 m³, Atten= 85%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.20 hrs, Volume= 746.9 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.750 m @ 8.44 hrs Surf.Area= 37.5 m² Storage= 283.1 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 29.5 min ( 570.5 - 541.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

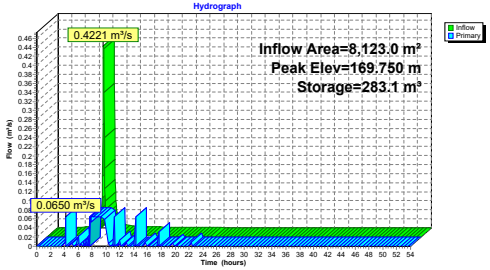
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 19 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m Flow (l/min)= 3,900.0 Head (meters)= 10.000 |

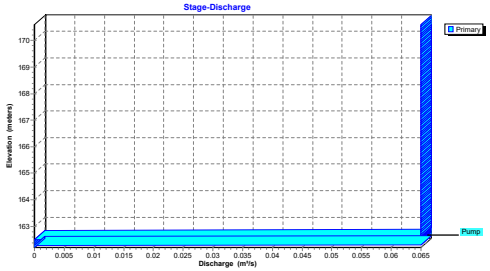
**Primary OutFlow** Max=0.0650 m³/s @ 4.20 hrs HW=162.350 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 4P: Phase 2 U/G Tank

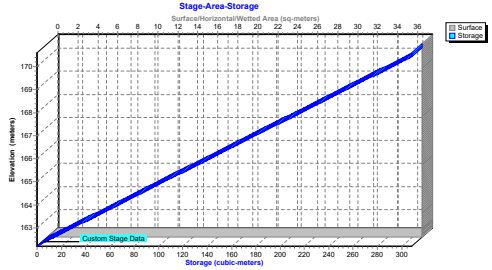



### Pond 4P: Phase 2 U/G Tank






### Pond 4P: Phase 2 U/G Tank



### Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



### Summary for Subcatchment 5S: Building C

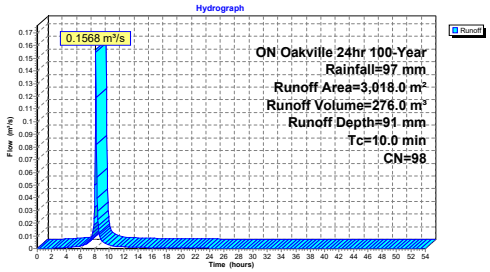
Runoff = 0.1568 m³/s @ 8.13 hrs, Volume= 276.0 m³, Depth= 91 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,018.0 | 98 | |
| | 3,018.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 5S: Building C**






### Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,018.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.1568 m³/s @ 8.13 hrs, Volume= 276.0 m³
Outflow = 0.0650 m³/s @ 6.65 hrs, Volume= 269.1 m³, Atten= 59%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.65 hrs, Volume= 277.7 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.900 m @ 8.28 hrs Surf.Area= 29.7 m² Storage= 56.4 m³

Plug-Flow detention time= 54.5 min calculated for 268.9 m³ (97% of inflow)
Center-of-Mass det. time= 34.6 min ( 575.6 - 541.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

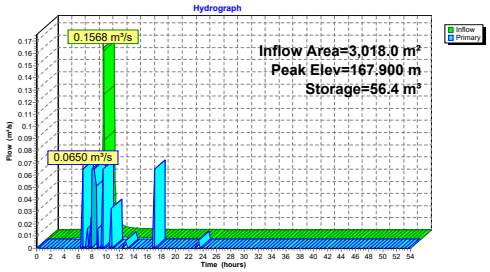
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 10 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m Flow (l/min)= 3,900.0 Head (meters)= 6.000 |

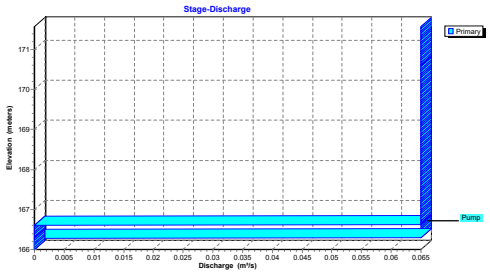
**Primary OutFlow** Max=0.0650 m³/s @ 6.65 hrs HW=166.415 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



**Pond 6P: Phase 3 U/G Tank**

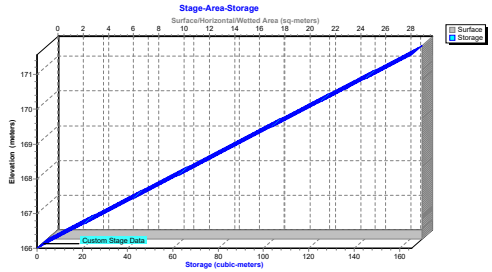



**Pond 6P: Phase 3 U/G Tank**






**Pond 6P: Phase 3 U/G Tank**



### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

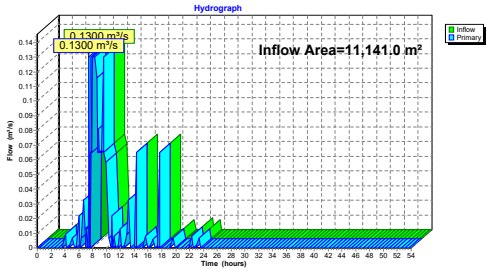


### Summary for Link 10L: West Pond Outlet

Inflow Area = 11,141.0 m²,100.00% Impervious, Inflow Depth = 92 mm for 100-Year event
Inflow = 0.1300 m³/s @ 7.45 hrs, Volume= 1,024.6 m³
Primary = 0.1300 m³/s @ 7.45 hrs, Volume= 1,024.6 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 10L: West Pond Outlet






### Summary for Subcatchment 11S: Interim Shoppers area to Pond

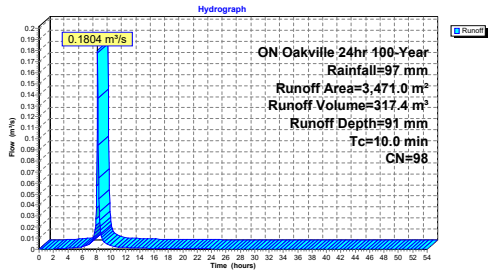
Runoff = 0.1804 m³/s @ 8.13 hrs, Volume= 317.4 m³, Depth= 91 mm
Routed to Link 12L : East Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,471.0 | 98 | |
| | 3,471.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Interim Shoppers area to Pond



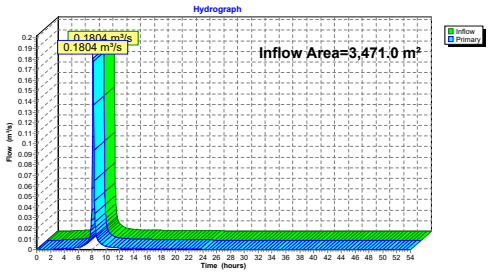



### Summary for Link 12L: East Pond Outlet

Inflow Area = 3,471.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.1804 m³/s @ 8.13 hrs, Volume= 317.4 m³
Primary = 0.1804 m³/s @ 8.13 hrs, Volume= 317.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 12L: East Pond Outlet






### Summary for Subcatchment 1S: Interim Shoppers area to Sixth Line

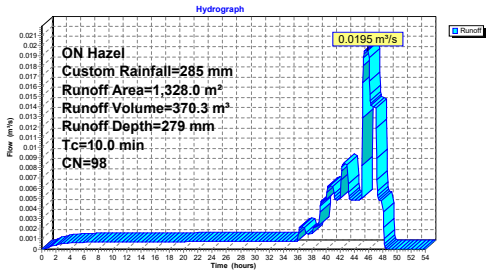
Runoff = 0.0195 m³/s @ 45.90 hrs, Volume= 370.3 m³, Depth= 279 mm
Routed to Pond 2P : ACO Stormbrixx

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 1,328.0 | 98 | |
| | 1,328.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 1S: Interim Shoppers area to Sixth Line



## Summary for Pond 2P: ACO Stormbrixx

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.0195 m³/s @ 45.90 hrs, Volume= 370.3 m³
Outflow = 0.0095 m³/s @ 47.14 hrs, Volume= 370.5 m³, Atten= 51%, Lag= 74.3 min
Primary = 0.0095 m³/s @ 47.14 hrs, Volume= 370.5 m³
Routed to Link 3L : Sixth Line Storm Sewer

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 170.084 m @ 47.14 hrs Surf.Area= 163.4 m² Storage= 79.8 m³

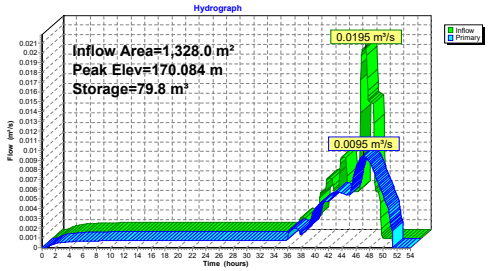
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 58.3 min ( 2,334.5 - 2,276.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 169.570 m | 95.0 m³ | **ACO StormBrixx HD 1** x 225<br>Inside= 603 mmW x 612 mmH => 0.350 m² x 1.21 mL = 0.42 m³<br>Outside= 603 mmW x 612 mmH => 0.369 m² x 1.21 mL = 0.44 m³<br>225 Chambers in 5 Rows |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 169.530 m | **Tube/Siphon/Float Valve** 75.00 mm Diameter, C= 0.700<br>1.50 m Long Tube, Hazen-Williams C= 130<br>Inlet / Outlet Elev. = 169.530 m / 169.500 m |

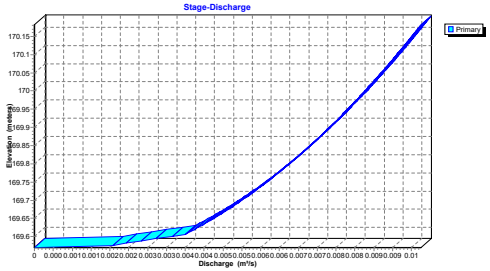
**Primary OutFlow** Max=0.0095 m³/s @ 47.14 hrs HW=170.084 m TW=0.000 m (Dynamic Tailwater)
↑**1=Tube/Siphon/Float Valve** (Tube Controls 0.0095 m³/s @ 2.15 m/s)

### Pond 2P: ACO Stormbrixx

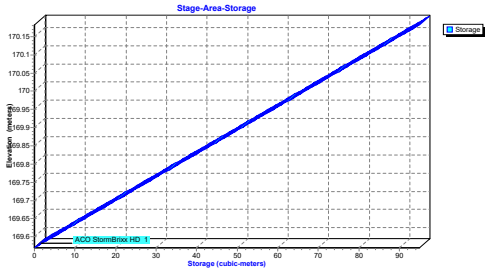





### Pond 2P: ACO Stormbrixx




### Pond 2P: ACO Stormbrixx






## Stage-Discharge for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) | Elevation (meters) | Primary (m³/s) |
|---|---|---|---|---|---|
| 169.570 | 0.0000 | 169.835 | 0.0072 | 170.100 | 0.0096 |
| 169.575 | 0.0020 | 169.840 | 0.0072 | 170.105 | 0.0097 |
| 169.580 | 0.0023 | 169.845 | 0.0073 | 170.110 | 0.0097 |
| 169.585 | 0.0026 | 169.850 | 0.0073 | 170.115 | 0.0097 |
| 169.590 | 0.0029 | 169.855 | 0.0074 | 170.120 | 0.0098 |
| 169.595 | 0.0033 | 169.860 | 0.0074 | 170.125 | 0.0098 |
| 169.600 | 0.0036 | 169.865 | 0.0075 | 170.130 | 0.0099 |
| 169.605 | 0.0040 | 169.870 | 0.0075 | 170.135 | 0.0099 |
| 169.610 | 0.0041 | 169.875 | 0.0076 | 170.140 | 0.0099 |
| 169.615 | 0.0042 | 169.880 | 0.0076 | 170.145 | 0.0100 |
| 169.620 | 0.0042 | 169.885 | 0.0077 | 170.150 | 0.0100 |
| 169.625 | 0.0043 | 169.890 | 0.0077 | 170.155 | 0.0100 |
| 169.630 | 0.0044 | 169.895 | 0.0078 | 170.160 | 0.0101 |
| 169.635 | 0.0045 | 169.900 | 0.0078 | 170.165 | 0.0101 |
| 169.640 | 0.0046 | 169.905 | 0.0079 | 170.170 | 0.0102 |
| 169.645 | 0.0047 | 169.910 | 0.0079 | 170.175 | 0.0102 |
| 169.650 | 0.0048 | 169.915 | 0.0080 | 170.180 | **0.0102** |
| 169.655 | 0.0048 | 169.920 | 0.0080 | | |
| 169.660 | 0.0049 | 169.925 | 0.0081 | | |
| 169.665 | 0.0050 | 169.930 | 0.0081 | | |
| 169.670 | 0.0051 | 169.935 | 0.0082 | | |
| 169.675 | 0.0051 | 169.940 | 0.0082 | | |
| 169.680 | 0.0052 | 169.945 | 0.0083 | | |
| 169.685 | 0.0053 | 169.950 | 0.0083 | | |
| 169.690 | 0.0054 | 169.955 | 0.0084 | | |
| 169.695 | 0.0054 | 169.960 | 0.0084 | | |
| 169.700 | 0.0055 | 169.965 | 0.0084 | | |
| 169.705 | 0.0056 | 169.970 | 0.0085 | | |
| 169.710 | 0.0056 | 169.975 | 0.0085 | | |
| 169.715 | 0.0057 | 169.980 | 0.0086 | | |
| 169.720 | 0.0058 | 169.985 | 0.0086 | | |
| 169.725 | 0.0058 | 169.990 | 0.0087 | | |
| 169.730 | 0.0059 | 169.995 | 0.0087 | | |
| 169.735 | 0.0060 | 170.000 | 0.0088 | | |
| 169.740 | 0.0060 | 170.005 | 0.0088 | | |
| 169.745 | 0.0061 | 170.010 | 0.0089 | | |
| 169.750 | 0.0062 | 170.015 | 0.0089 | | |
| 169.755 | 0.0062 | 170.020 | 0.0089 | | |
| 169.760 | 0.0063 | 170.025 | 0.0090 | | |
| 169.765 | 0.0064 | 170.030 | 0.0090 | | |
| 169.770 | 0.0064 | 170.035 | 0.0091 | | |
| 169.775 | 0.0065 | 170.040 | 0.0091 | | |
| 169.780 | 0.0065 | 170.045 | 0.0092 | | |
| 169.785 | 0.0066 | 170.050 | 0.0092 | | |
| 169.790 | 0.0066 | 170.055 | 0.0092 | | |
| 169.795 | 0.0067 | 170.060 | 0.0093 | | |
| 169.800 | 0.0068 | 170.065 | 0.0093 | | |
| 169.805 | 0.0068 | 170.070 | 0.0094 | | |
| 169.810 | 0.0069 | 170.075 | 0.0094 | | |
| 169.815 | 0.0069 | 170.080 | 0.0094 | | |
| 169.820 | 0.0070 | 170.085 | 0.0095 | | |
| 169.825 | 0.0070 | 170.090 | 0.0095 | | |
| 169.830 | 0.0071 | 170.095 | 0.0096 | | |



## Stage-Area-Storage for Pond 2P: ACO Stormbrixx

| Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 169.570 | 0.0 | 169.835 | 41.1 | 170.100 | 82.2 |
| 169.575 | 0.8 | 169.840 | 41.9 | 170.105 | 83.0 |
| 169.580 | 1.6 | 169.845 | 42.7 | 170.110 | 83.8 |
| 169.585 | 2.3 | 169.850 | 43.5 | 170.115 | 84.6 |
| 169.590 | 3.1 | 169.855 | 44.2 | 170.120 | 85.4 |
| 169.595 | 3.9 | 169.860 | 45.0 | 170.125 | 86.1 |
| 169.600 | 4.7 | 169.865 | 45.8 | 170.130 | 86.9 |
| 169.605 | 5.4 | 169.870 | 46.6 | 170.135 | 87.7 |
| 169.610 | 6.2 | 169.875 | 47.3 | 170.140 | 88.5 |
| 169.615 | 7.0 | 169.880 | 48.1 | 170.145 | 89.2 |
| 169.620 | 7.8 | 169.885 | 48.9 | 170.150 | 90.0 |
| 169.625 | 8.5 | 169.890 | 49.7 | 170.155 | 90.8 |
| 169.630 | 9.3 | 169.895 | 50.4 | 170.160 | 91.6 |
| 169.635 | 10.1 | 169.900 | 51.2 | 170.165 | 92.3 |
| 169.640 | 10.9 | 169.905 | 52.0 | 170.170 | 93.1 |
| 169.645 | 11.6 | 169.910 | 52.8 | 170.175 | 93.9 |
| 169.650 | 12.4 | 169.915 | 53.5 | 170.180 | **94.7** |
| 169.655 | 13.2 | 169.920 | 54.3 | | |
| 169.660 | 14.0 | 169.925 | 55.1 | | |
| 169.665 | 14.7 | 169.930 | 55.9 | | |
| 169.670 | 15.5 | 169.935 | 56.6 | | |
| 169.675 | 16.3 | 169.940 | 57.4 | | |
| 169.680 | 17.1 | 169.945 | 58.2 | | |
| 169.685 | 17.8 | 169.950 | 59.0 | | |
| 169.690 | 18.6 | 169.955 | 59.7 | | |
| 169.695 | 19.4 | 169.960 | 60.5 | | |
| 169.700 | 20.2 | 169.965 | 61.3 | | |
| 169.705 | 20.9 | 169.970 | 62.1 | | |
| 169.710 | 21.7 | 169.975 | 62.8 | | |
| 169.715 | 22.5 | 169.980 | 63.6 | | |
| 169.720 | 23.3 | 169.985 | 64.4 | | |
| 169.725 | 24.1 | 169.990 | 65.2 | | |
| 169.730 | 24.8 | 169.995 | 66.0 | | |
| 169.735 | 25.6 | 170.000 | 66.7 | | |
| 169.740 | 26.4 | 170.005 | 67.5 | | |
| 169.745 | 27.2 | 170.010 | 68.3 | | |
| 169.750 | 27.9 | 170.015 | 69.1 | | |
| 169.755 | 28.7 | 170.020 | 69.8 | | |
| 169.760 | 29.5 | 170.025 | 70.6 | | |
| 169.765 | 30.3 | 170.030 | 71.4 | | |
| 169.770 | 31.0 | 170.035 | 72.2 | | |
| 169.775 | 31.8 | 170.040 | 72.9 | | |
| 169.780 | 32.6 | 170.045 | 73.7 | | |
| 169.785 | 33.4 | 170.050 | 74.5 | | |
| 169.790 | 34.1 | 170.055 | 75.3 | | |
| 169.795 | 34.9 | 170.060 | 76.0 | | |
| 169.800 | 35.7 | 170.065 | 76.8 | | |
| 169.805 | 36.5 | 170.070 | 77.6 | | |
| 169.810 | 37.2 | 170.075 | 78.4 | | |
| 169.815 | 38.0 | 170.080 | 79.1 | | |
| 169.820 | 38.8 | 170.085 | 79.9 | | |
| 169.825 | 39.6 | 170.090 | 80.7 | | |
| 169.830 | 40.3 | 170.095 | 81.5 | | |

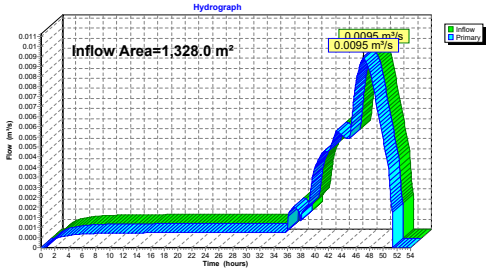


## Summary for Link 3L: Sixth Line Storm Sewer

Inflow Area = 1,328.0 m²,100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.0095 m³/s @ 47.14 hrs, Volume= 370.5 m³
Primary = 0.0095 m³/s @ 47.14 hrs, Volume= 370.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 3L: Sixth Line Storm Sewer






## Summary for Subcatchment 3S: Building A and B U/G Parking

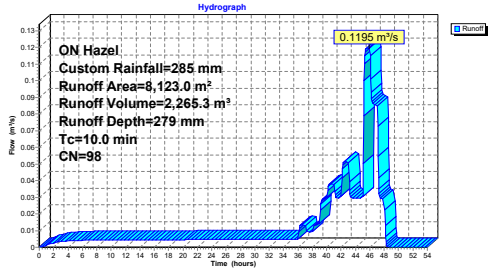
Runoff = 0.1195 m³/s @ 45.90 hrs, Volume= 2,265.3 m³, Depth= 279 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,123.0 | 98 | |
| | 8,123.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking



## Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,123.0 m², 100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.1195 m³/s @ 45.90 hrs, Volume= 2,265.3 m³
Outflow = 0.0650 m³/s @ 2.40 hrs, Volume= 2,258.1 m³, Atten= 46%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 2.40 hrs, Volume= 2,584.8 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.234 m @ 47.12 hrs Surf.Area= 37.5 m² Storage= 263.8 m³

Plug-Flow detention time= 22.1 min calculated for 2,258.1 m³ (100% of inflow)
Center-of-Mass det. time= 20.3 min ( 2,296.5 - 2,276.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

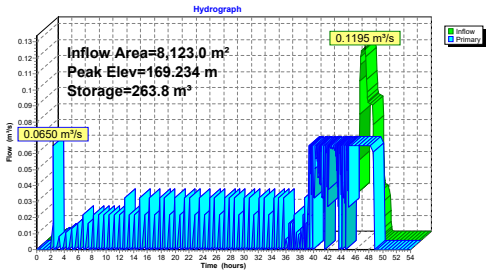
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 104 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 10.000 |

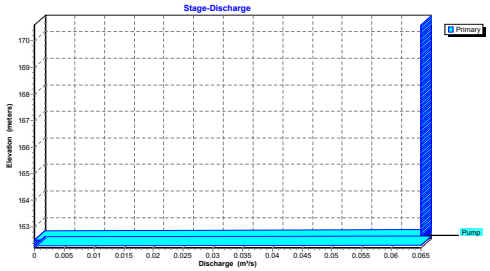
**Primary OutFlow** Max=0.0650 m³/s @ 2.40 hrs HW=162.352 m TW=0.000 m (Dynamic Tailwater)
↳**1=Pump** (Pump Controls 0.0650 m³/s)



## Pond 4P: Phase 2 U/G Tank

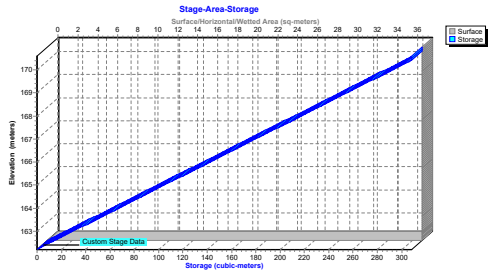



## Pond 4P: Phase 2 U/G Tank






## Pond 4P: Phase 2 U/G Tank






## Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



## Summary for Subcatchment 5S: Building C

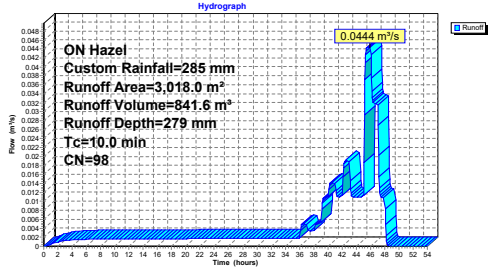
Runoff = 0.0444 m³/s @ 45.90 hrs, Volume= 841.6 m³, Depth= 279 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,018.0 | 98 | |
| | 3,018.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

## Subcatchment 5S: Building C



## Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,018.0 m², 100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.0444 m³/s @ 45.90 hrs, Volume= 841.6 m³
Outflow = 0.0650 m³/s @ 5.25 hrs, Volume= 830.7 m³, Atten= 0%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 5.25 hrs, Volume= 1,011.8 m³
Routed to Link 10L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.620 m @ 13.33 hrs Surf.Area= 29.7 m² Storage= 18.4 m³

Plug-Flow detention time= 40.3 min calculated for 829.9 m³ (99% of inflow)
Center-of-Mass det. time= 32.5 min ( 2,308.6 - 2,276.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

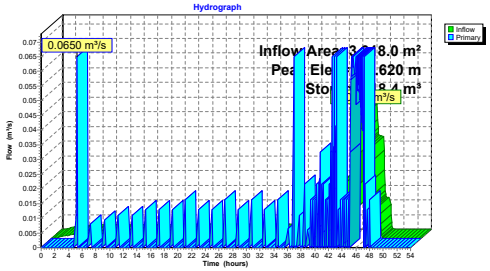
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 64 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

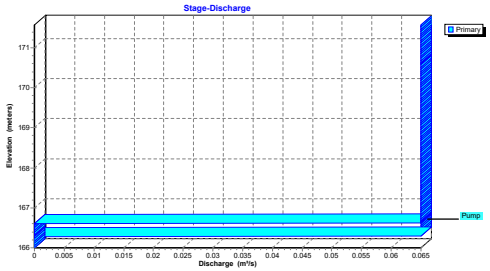
**Primary OutFlow** Max=0.0650 m³/s @ 5.25 hrs HW=166.410 m TW=0.000 m (Dynamic Tailwater)
↳**1=Pump** (Pump Controls 0.0650 m³/s)



## Pond 6P: Phase 3 U/G Tank

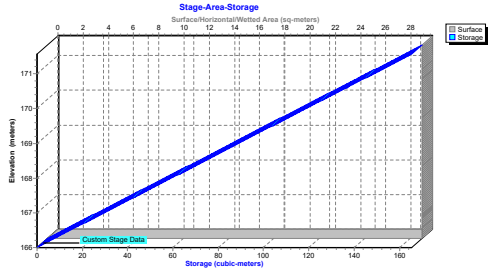



## Pond 6P: Phase 3 U/G Tank






## Pond 6P: Phase 3 U/G Tank






## Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

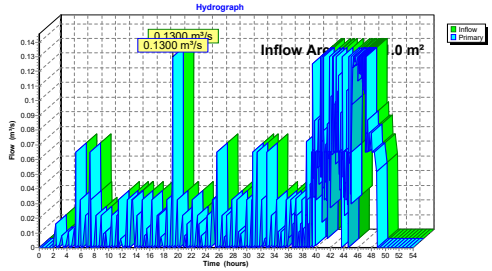


## Summary for Link 10L: West Pond Outlet

Inflow Area = 11,141.0 m², 100.00% Impervious, Inflow Depth = 323 mm for Custom event
Inflow = 0.1300 m³/s @ 19.25 hrs, Volume= 3,596.6 m³
Primary = 0.1300 m³/s @ 19.25 hrs, Volume= 3,596.6 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

## Link 10L: West Pond Outlet



### Summary for Subcatchment 11S: Interim Shoppers area to Pond

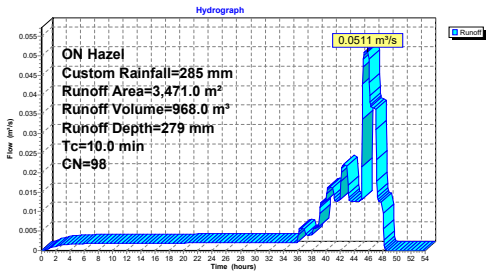
Runoff = 0.0511 m³/s @ 45.90 hrs, Volume= 968.0 m³, Depth= 279 mm
Routed to Link 12L : East Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,471.0 | 98 | |
| | 3,471.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Interim Shoppers area to Pond



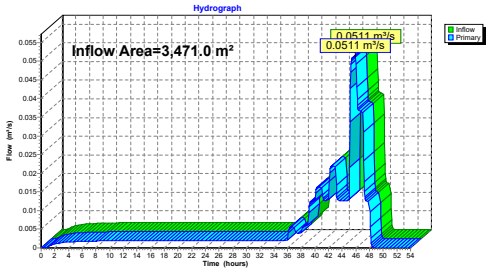



### Summary for Link 12L: East Pond Outlet

Inflow Area = 3,471.0 m², 100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.0511 m³/s @ 45.90 hrs, Volume= 968.0 m³
Primary = 0.0511 m³/s @ 45.90 hrs, Volume= 968.0 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 12L: East Pond Outlet






### Events for Subcatchment 1S: Interim Shoppers area to Sixth Line

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (cubic-meters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0386 | 72.5 | 55 |
| 10-Year | 70 | 0.0459 | 84.8 | 64 |
| 25-Year | 82 | 0.0555 | 100.8 | 76 |
| 50-Year | 89 | 0.0624 | 110.0 | 83 |
| 100-Year | 97 | **0.0690** | 121.5 | 91 |
| Custom | **285** | 0.0195 | **370.3** | **279** |



### Events for Pond 2P: ACO Stormbrixx

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|
| 5-Year | 0.0386 | 0.0063 | 169.759 | 29.4 |
| 10-Year | 0.0459 | 0.0068 | 169.803 | 36.1 |
| 25-Year | 0.0555 | 0.0074 | 169.860 | 45.0 |
| 50-Year | 0.0624 | 0.0078 | 169.902 | 51.5 |
| 100-Year | **0.0690** | 0.0082 | 169.942 | 57.8 |
| Custom | 0.0195 | **0.0095** | **170.084** | **79.8** |



### Events for Link 3L: Sixth Line Storm Sewer

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) |
|---|---|---|---|
| 5-Year | 0.0063 | 0.0063 | **0.000** |
| 10-Year | 0.0068 | 0.0068 | 0.000 |
| 25-Year | 0.0074 | 0.0074 | 0.000 |
| 50-Year | 0.0078 | 0.0078 | 0.000 |
| 100-Year | 0.0082 | 0.0082 | 0.000 |
| Custom | **0.0095** | **0.0095** | 0.000 |



### Events for Subcatchment 3S: Building A and B U/G Parking

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (cubic-meters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.2362 | 443.3 | 55 |
| 10-Year | 70 | 0.2805 | 518.5 | 64 |
| 25-Year | 82 | 0.3395 | 616.8 | 76 |
| 50-Year | 89 | 0.3817 | 673.1 | 83 |
| 100-Year | 97 | **0.4221** | 742.9 | 91 |
| Custom | **285** | 0.1195 | **2,265.3** | **279** |

### Events for Pond 4P: Phase 2 U/G Tank

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|
| 5-Year | 0.2362 | 0.0650 | 165.353 | 118.3 |
| 10-Year | 0.2805 | **0.0650** | 166.484 | 160.6 |
| 25-Year | 0.3395 | 0.0650 | 167.760 | 208.5 |
| 50-Year | 0.3817 | 0.0650 | 168.700 | 243.8 |
| 100-Year | **0.4221** | 0.0650 | **169.750** | **283.1** |
| Custom | 0.1195 | 0.0650 | 169.234 | 263.8 |



### Events for Subcatchment 5S: Building C

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (cubic-meters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0878 | 164.7 | 55 |
| 10-Year | 70 | 0.1042 | 192.6 | 64 |
| 25-Year | 82 | 0.1261 | 229.1 | 76 |
| 50-Year | 89 | 0.1418 | 250.1 | 83 |
| 100-Year | 97 | **0.1568** | 276.0 | 91 |
| Custom | **285** | 0.0444 | **841.6** | **279** |



### Events for Pond 6P: Phase 3 U/G Tank

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|
| 5-Year | 0.0878 | **0.0650** | 166.677 | 20.1 |
| 10-Year | 0.1042 | 0.0650 | 166.840 | 25.0 |
| 25-Year | 0.1261 | 0.0650 | 167.614 | 47.9 |
| 50-Year | 0.1418 | 0.0650 | 167.728 | 51.3 |
| 100-Year | **0.1568** | 0.0650 | **167.900** | **56.4** |
| Custom | 0.0444 | 0.0650 | 166.620 | 18.4 |



### Events for Link 10L: West Pond Outlet

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) |
|---|---|---|---|
| 5-Year | 0.1300 | 0.1300 | **0.000** |
| 10-Year | 0.1300 | 0.1300 | 0.000 |
| 25-Year | 0.1300 | 0.1300 | 0.000 |
| 50-Year | **0.1302** | **0.1302** | 0.000 |
| 100-Year | 0.1300 | 0.1300 | 0.000 |
| Custom | 0.1300 | 0.1300 | 0.000 |



### Events for Subcatchment 11S: Interim Shoppers area to Pond

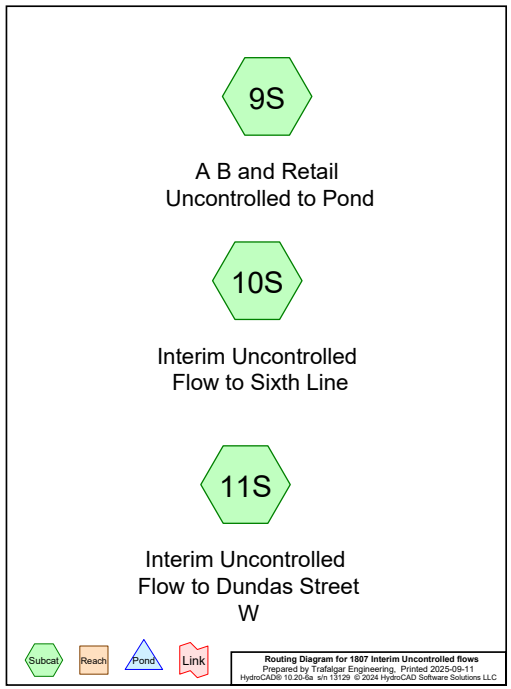
| Event | Rainfall (mm) | Runoff (m³/s) | Volume (cubic-meters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.1009 | 189.4 | 55 |
| 10-Year | 70 | 0.1199 | 221.5 | 64 |
| 25-Year | 82 | 0.1451 | 263.5 | 76 |
| 50-Year | 89 | 0.1631 | 287.6 | 83 |
| 100-Year | 97 | **0.1804** | 317.4 | 91 |
| Custom | **285** | 0.0511 | **968.0** | **279** |



### Events for Link 12L: East Pond Outlet

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) |
|---|---|---|---|
| 5-Year | 0.1009 | 0.1009 | **0.000** |
| 10-Year | 0.1199 | 0.1199 | 0.000 |
| 25-Year | 0.1451 | 0.1451 | 0.000 |
| 50-Year | 0.1631 | 0.1631 | 0.000 |
| 100-Year | **0.1804** | **0.1804** | 0.000 |
| Custom | 0.0511 | 0.0511 | 0.000 |

INTERIM UNCONTROLLED HYDROCAD OUTPUT






**Area Listing (all nodes)**

| Area (hectares) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 0.0053 | 86 | <50% Grass cover, Poor, HSG C (10S) |
| 0.1623 | 74 | >75% Grass cover, Good, HSG C (9S, 10S, 11S) |



**Summary for Subcatchment 9S: A B and Retail Uncontrolled to Pond**

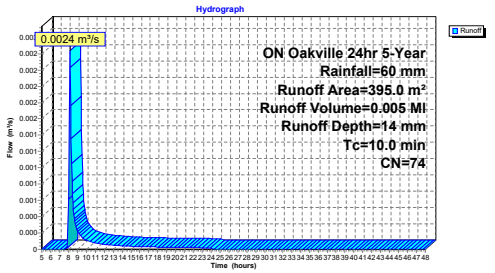
Runoff = 0.0024 m³/s @ 8.16 hrs, Volume= 0.005 Ml, Depth= 14 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| | 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * | 78.0 | 74 | >75% Grass cover, Good, HSG C |
| | 395.0 | 74 | Weighted Average |
| | 395.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 9S: A B and Retail Uncontrolled to Pond**






**Summary for Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line**

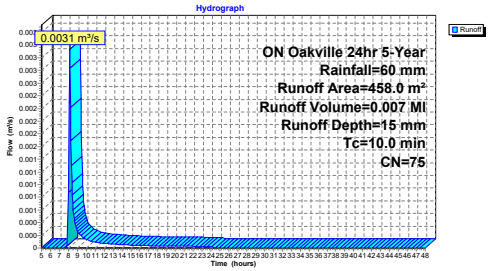
Runoff = 0.0031 m³/s @ 8.16 hrs, Volume= 0.007 Ml, Depth= 15 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| Area (m²) | CN | Description |
|---|---|---|
| 405.0 | 74 | >75% Grass cover, Good, HSG C |
| 53.0 | 86 | <50% Grass cover, Poor, HSG C |
| 458.0 | 75 | Weighted Average |
| 458.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line**






**Summary for Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W**

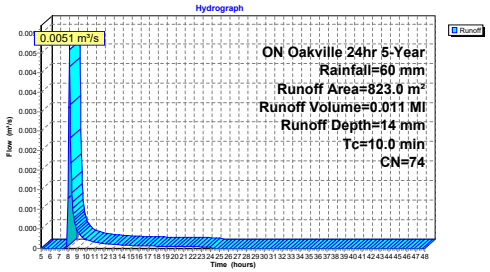
Runoff = 0.0051 m³/s @ 8.16 hrs, Volume= 0.011 Ml, Depth= 14 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W**






**Summary for Subcatchment 9S: A B and Retail Uncontrolled to Pond**

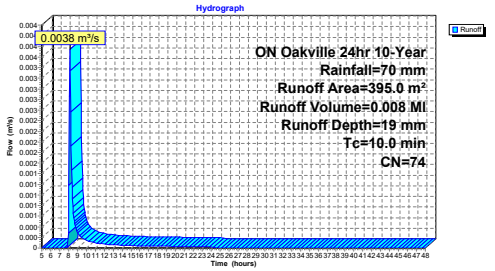
Runoff = 0.0038 m³/s @ 8.16 hrs, Volume= 0.008 Ml, Depth= 19 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| | 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * | 78.0 | 74 | >75% Grass cover, Good, HSG C |
| | 395.0 | 74 | Weighted Average |
| | 395.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 9S: A B and Retail Uncontrolled to Pond**



### Summary for Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line

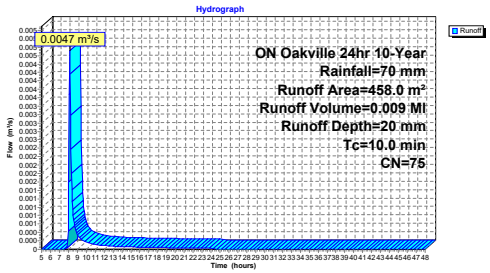
Runoff = 0.0047 m³/s @ 8.16 hrs, Volume= 0.009 Ml, Depth= 20 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| Area (m²) | CN | Description |
|---|---|---|
| 405.0 | 74 | >75% Grass cover, Good, HSG C |
| 53.0 | 86 | <50% Grass cover, Poor, HSG C |
| 458.0 | 75 | Weighted Average |
| 458.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W

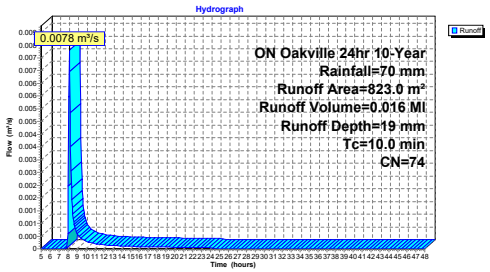
Runoff = 0.0078 m³/s @ 8.16 hrs, Volume= 0.016 Ml, Depth= 19 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: A B and Retail Uncontrolled to Pond

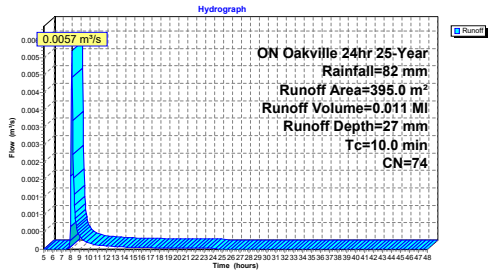
Runoff = 0.0057 m³/s @ 8.15 hrs, Volume= 0.011 Ml, Depth= 27 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * 78.0 | 74 | >75% Grass cover, Good, HSG C |
| 395.0 | 74 | Weighted Average |
| 395.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: A B and Retail Uncontrolled to Pond






### Summary for Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line

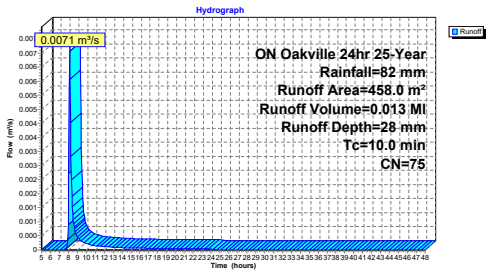
Runoff = 0.0071 m³/s @ 8.15 hrs, Volume= 0.013 Ml, Depth= 28 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| 405.0 | 74 | >75% Grass cover, Good, HSG C |
| 53.0 | 86 | <50% Grass cover, Poor, HSG C |
| 458.0 | 75 | Weighted Average |
| 458.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W

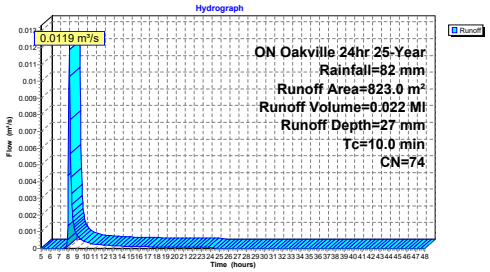
Runoff = 0.0119 m³/s @ 8.15 hrs, Volume= 0.022 Ml, Depth= 27 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: A B and Retail Uncontrolled to Pond

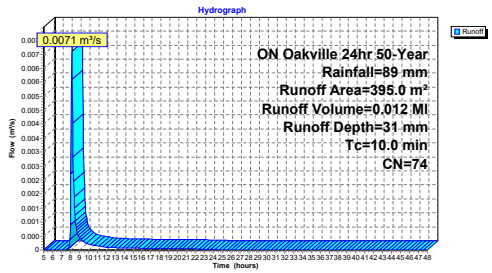
Runoff = 0.0071 m³/s @ 8.15 hrs, Volume= 0.012 Ml, Depth= 31 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| Area (m²) | CN | Description |
|---|---|---|
| 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * 78.0 | 74 | >75% Grass cover, Good, HSG C |
| 395.0 | 74 | Weighted Average |
| 395.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: A B and Retail Uncontrolled to Pond



### Summary for Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line

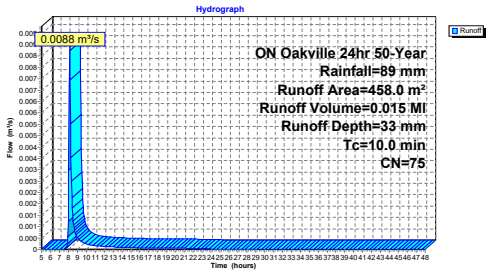
Runoff = 0.0088 m³/s @ 8.15 hrs, Volume= 0.015 Ml, Depth= 33 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| Area (m²) | CN | Description |
|---|---|---|
| 405.0 | 74 | >75% Grass cover, Good, HSG C |
| 53.0 | 86 | <50% Grass cover, Poor, HSG C |
| 458.0 | 75 | Weighted Average |
| 458.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W

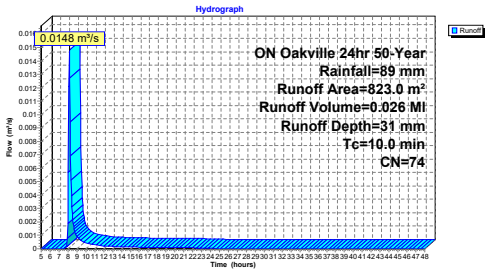
Runoff = 0.0148 m³/s @ 8.15 hrs, Volume= 0.026 Ml, Depth= 31 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: A B and Retail Uncontrolled to Pond

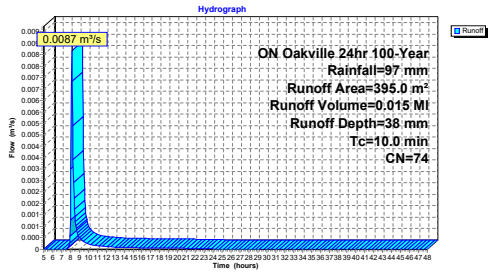
Runoff = 0.0087 m³/s @ 8.15 hrs, Volume= 0.015 Ml, Depth= 38 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| Area (m²) | CN | Description |
|---|---|---|
| 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * 78.0 | 74 | >75% Grass cover, Good, HSG C |
| 395.0 | 74 | Weighted Average |
| 395.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: A B and Retail Uncontrolled to Pond






### Summary for Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line

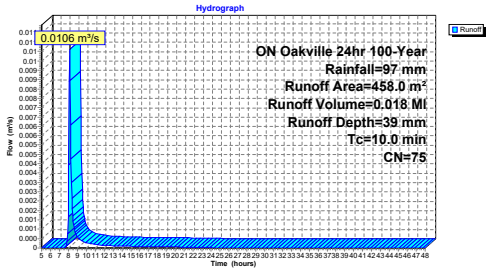
Runoff = 0.0106 m³/s @ 8.15 hrs, Volume= 0.018 Ml, Depth= 39 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| Area (m²) | CN | Description |
|---|---|---|
| 405.0 | 74 | >75% Grass cover, Good, HSG C |
| 53.0 | 86 | <50% Grass cover, Poor, HSG C |
| 458.0 | 75 | Weighted Average |
| 458.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W

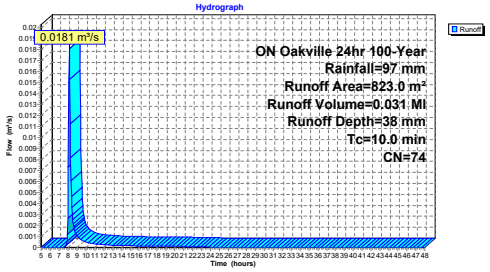
Runoff = 0.0181 m³/s @ 8.15 hrs, Volume= 0.031 Ml, Depth= 38 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: A B and Retail Uncontrolled to Pond

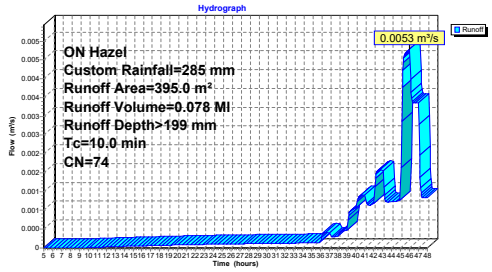
Runoff = 0.0053 m³/s @ 45.98 hrs, Volume= 0.078 Ml, Depth> 199 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| Area (m²) | CN | Description |
|---|---|---|
| 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * 78.0 | 74 | >75% Grass cover, Good, HSG C |
| 395.0 | 74 | Weighted Average |
| 395.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: A B and Retail Uncontrolled to Pond



### Summary for Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line

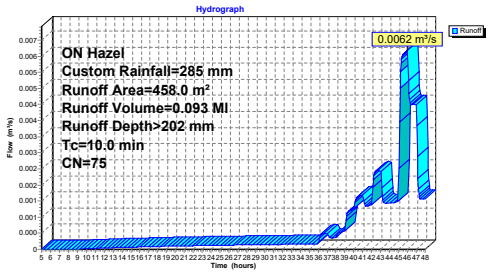
Runoff = 0.0062 m³/s @ 45.98 hrs, Volume= 0.093 Ml, Depth> 202 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| Area (m²) | CN | Description |
|---|---|---|
| 405.0 | 74 | >75% Grass cover, Good, HSG C |
| 53.0 | 86 | <50% Grass cover, Poor, HSG C |
| 458.0 | 75 | Weighted Average |
| 458.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W

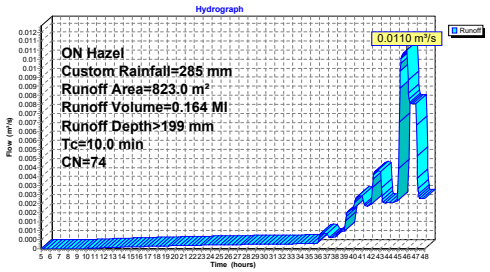
Runoff = 0.0110 m³/s @ 45.98 hrs, Volume= 0.164 Ml, Depth> 199 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W






### Events for Subcatchment 9S: A B and Retail Uncontrolled to Pond

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (Mega-liters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0024 | 0.005 | 14 |
| 10-Year | 70 | 0.0038 | 0.008 | 19 |
| 25-Year | 82 | 0.0057 | 0.011 | 27 |
| 50-Year | 89 | 0.0071 | 0.012 | 31 |
| 100-Year | 97 | **0.0087** | 0.015 | 38 |
| Custom | **285** | 0.0053 | **0.078** | **199** |



### Events for Subcatchment 10S: Interim Uncontrolled Flow to Sixth Line

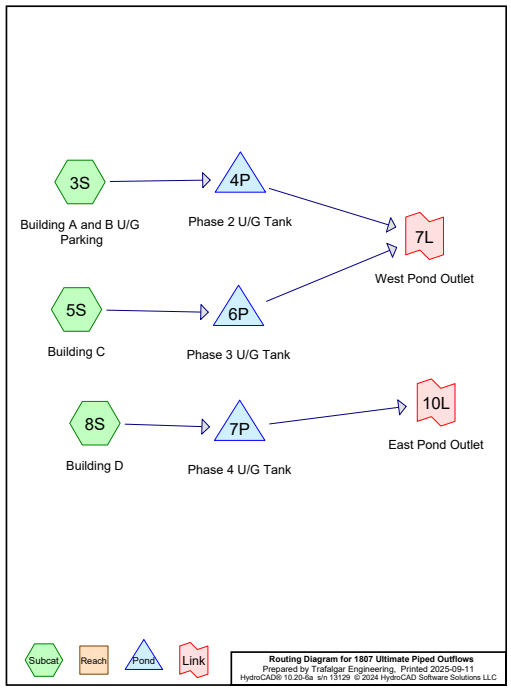
| Event | Rainfall (mm) | Runoff (m³/s) | Volume (Mega-liters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0031 | 0.007 | 15 |
| 10-Year | 70 | 0.0047 | 0.009 | 20 |
| 25-Year | 82 | 0.0071 | 0.013 | 28 |
| 50-Year | 89 | 0.0088 | 0.015 | 33 |
| 100-Year | 97 | **0.0106** | 0.018 | 39 |
| Custom | **285** | 0.0062 | **0.093** | **202** |



### Events for Subcatchment 11S: Interim Uncontrolled Flow to Dundas Street W

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (Mega-liters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0051 | 0.011 | 14 |
| 10-Year | 70 | 0.0078 | 0.016 | 19 |
| 25-Year | 82 | 0.0119 | 0.022 | 27 |
| 50-Year | 89 | 0.0148 | 0.026 | 31 |
| 100-Year | 97 | **0.0181** | 0.031 | 38 |
| Custom | **285** | 0.0110 | **0.164** | **199** |

ULTIMATE CONTROLLED HYDROCAD OUTPUT






**Area Listing (all nodes)**

| Area (sq-meters) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 16,001.0 | 98 | (3S, 5S, 8S) |



**Summary for Subcatchment 3S: Building A and B U/G Parking**

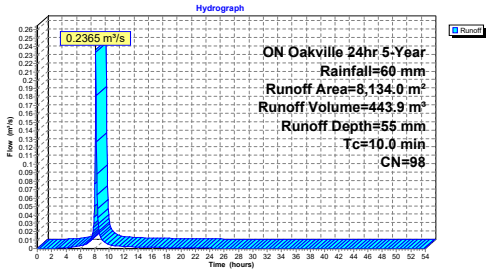
Runoff = 0.2365 m³/s @ 8.13 hrs, Volume= 443.9 m³, Depth= 55 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,134.0 | 98 | |
| | 8,134.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 3S: Building A and B U/G Parking**






**Summary for Pond 4P: Phase 2 U/G Tank**

Inflow Area = 8,134.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.2365 m³/s @ 8.13 hrs, Volume= 443.9 m³
Outflow = 0.0650 m³/s @ 5.35 hrs, Volume= 444.6 m³, Atten= 73%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 5.35 hrs, Volume= 457.2 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 165.364 m @ 8.35 hrs Surf.Area= 37.5 m² Storage= 118.6 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 27.0 min ( 579.9 - 553.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

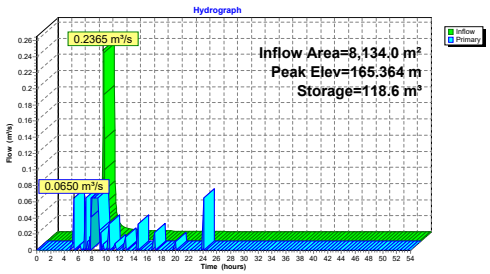
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 16 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m Flow (l/min)= 3,900.0 Head (meters)= 10.000 |

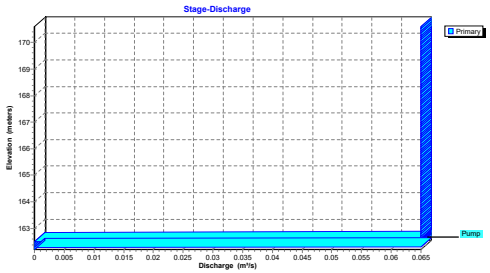
**Primary OutFlow** Max=0.0650 m³/s @ 5.35 hrs HW=162.352 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



**Pond 4P: Phase 2 U/G Tank**

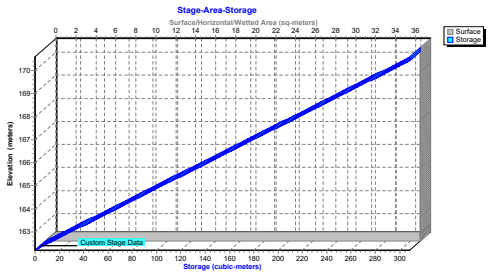



**Pond 4P: Phase 2 U/G Tank**






**Pond 4P: Phase 2 U/G Tank**



### Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



### Summary for Subcatchment 5S: Building C

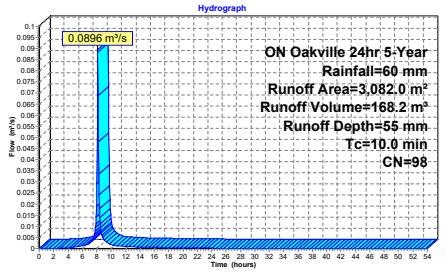
Runoff = 0.0896 m³/s @ 8.13 hrs, Volume= 168.2 m³, Depth= 55 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| Area (m²) | CN | Description |
|---|---|---|
| * 3,082.0 | 98 | |
| 3,082.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 5S: Building C**






### Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,082.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.0896 m³/s @ 8.13 hrs, Volume= 168.2 m³
Outflow = 0.0650 m³/s @ 7.50 hrs, Volume= 152.1 m³, Atten= 27%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 7.50 hrs, Volume= 161.1 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.739 m @ 8.21 hrs Surf.Area= 29.7 m² Storage= 21.9 m³

Plug-Flow detention time= 51.4 min calculated for 152.0 m³ (90% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

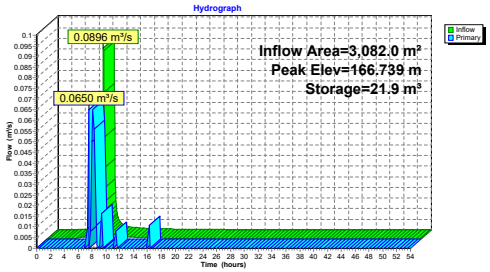
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 7 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@170.600 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

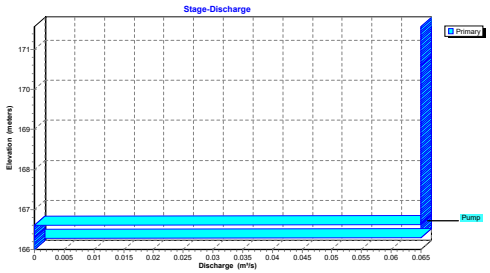
**Primary OutFlow** Max=0.0650 m³/s @ 7.50 hrs HW=166.422 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



**Pond 6P: Phase 3 U/G Tank**

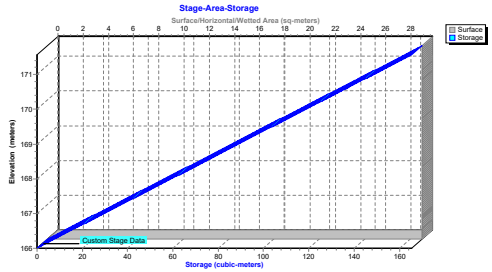



**Pond 6P: Phase 3 U/G Tank**






**Pond 6P: Phase 3 U/G Tank**



### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

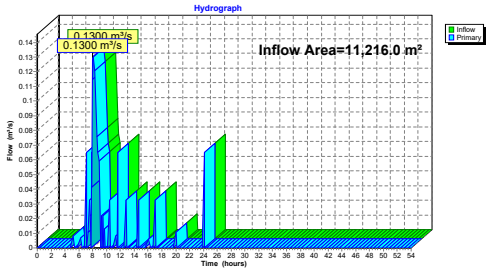


### Summary for Link 7L: West Pond Outlet

Inflow Area = 11,216.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.1300 m³/s @ 7.95 hrs, Volume= 618.3 m³
Primary = 0.1300 m³/s @ 7.95 hrs, Volume= 618.3 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 7L: West Pond Outlet






### Summary for Pond 7P: Phase 4 U/G Tank

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 55 mm for 5-Year event
Inflow = 0.1391 m³/s @ 8.13 hrs, Volume= 261.2 m³
Outflow = 0.0650 m³/s @ 6.85 hrs, Volume= 245.7 m³, Atten= 53%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.85 hrs, Volume= 259.2 m³
Routed to Link 10L : East Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.797 m @ 8.27 hrs Surf.Area= 28.5 m² Storage= 51.2 m³

Plug-Flow detention time= 41.5 min calculated for 245.7 m³ (94% of inflow)
Center-of-Mass det. time= 1.5 min ( 554.4 - 553.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 171.0 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

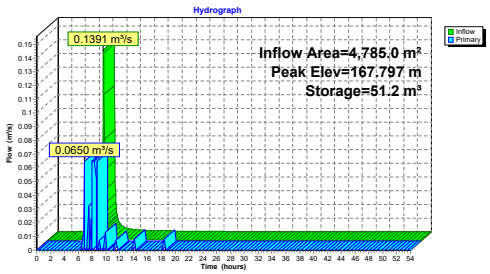
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 28.5 | 0.0 | 0.0 |
| 172.000 | 28.5 | 171.0 | 171.0 |

| Device | Routing | Invert | Outlet Devices (Turned on 10 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@169.500 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

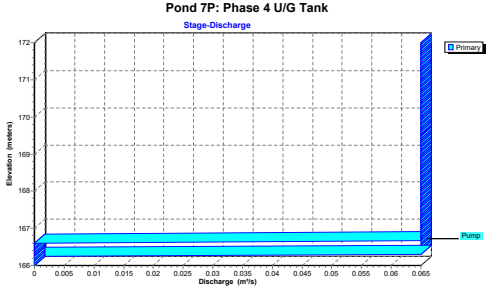
**Primary OutFlow** Max=0.0650 m³/s @ 6.85 hrs HW=166.412 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 7P: Phase 4 U/G Tank

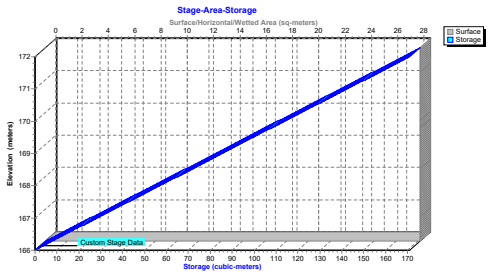



### Pond 7P: Phase 4 U/G Tank






### Pond 7P: Phase 4 U/G Tank



### Stage-Discharge for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | 171.600 | 0.0650 | 0.0650 |
| 166.400 | 0.0000 | 0.0650 | 171.700 | 0.0650 | 0.0650 |
| 166.500 | 0.0000 | 0.0650 | 171.800 | 0.0650 | 0.0650 |
| 166.600 | **0.0000** | 0.0650 | 171.900 | 0.0650 | 0.0650 |
| 166.700 | **0.0650** | 0.0650 | 172.000 | 0.0650 | 0.0650 |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **28.5** | 0.0 | 171.300 | 28.5 | 151.1 |
| 166.100 | 28.5 | 2.8 | 171.400 | 28.5 | 153.9 |
| 166.200 | 28.5 | 5.7 | 171.500 | 28.5 | 156.8 |
| 166.300 | 28.5 | 8.6 | 171.600 | 28.5 | 159.6 |
| 166.400 | 28.5 | 11.4 | 171.700 | 28.5 | 162.4 |
| 166.500 | 28.5 | 14.3 | 171.800 | 28.5 | 165.3 |
| 166.600 | 28.5 | 17.1 | 171.900 | 28.5 | 168.2 |
| 166.700 | 28.5 | 19.9 | 172.000 | 28.5 | **171.0** |
| 166.800 | 28.5 | 22.8 | | | |
| 166.900 | 28.5 | 25.7 | | | |
| 167.000 | 28.5 | 28.5 | | | |
| 167.100 | 28.5 | 31.3 | | | |
| 167.200 | 28.5 | 34.2 | | | |
| 167.300 | 28.5 | 37.1 | | | |
| 167.400 | 28.5 | 39.9 | | | |
| 167.500 | 28.5 | 42.8 | | | |
| 167.600 | 28.5 | 45.6 | | | |
| 167.700 | 28.5 | 48.4 | | | |
| 167.800 | 28.5 | 51.3 | | | |
| 167.900 | 28.5 | 54.2 | | | |
| 168.000 | 28.5 | 57.0 | | | |
| 168.100 | 28.5 | 59.8 | | | |
| 168.200 | 28.5 | 62.7 | | | |
| 168.300 | 28.5 | 65.6 | | | |
| 168.400 | 28.5 | 68.4 | | | |
| 168.500 | 28.5 | 71.3 | | | |
| 168.600 | 28.5 | 74.1 | | | |
| 168.700 | 28.5 | 76.9 | | | |
| 168.800 | 28.5 | 79.8 | | | |
| 168.900 | 28.5 | 82.7 | | | |
| 169.000 | 28.5 | 85.5 | | | |
| 169.100 | 28.5 | 88.3 | | | |
| 169.200 | 28.5 | 91.2 | | | |
| 169.300 | 28.5 | 94.1 | | | |
| 169.400 | 28.5 | 96.9 | | | |
| 169.500 | 28.5 | 99.8 | | | |
| 169.600 | 28.5 | 102.6 | | | |
| 169.700 | 28.5 | 105.4 | | | |
| 169.800 | 28.5 | 108.3 | | | |
| 169.900 | 28.5 | 111.2 | | | |
| 170.000 | 28.5 | 114.0 | | | |
| 170.100 | 28.5 | 116.8 | | | |
| 170.200 | 28.5 | 119.7 | | | |
| 170.300 | 28.5 | 122.6 | | | |
| 170.400 | 28.5 | 125.4 | | | |
| 170.500 | 28.5 | 128.3 | | | |
| 170.600 | 28.5 | 131.1 | | | |
| 170.700 | 28.5 | 133.9 | | | |
| 170.800 | 28.5 | 136.8 | | | |
| 170.900 | 28.5 | 139.7 | | | |
| 171.000 | 28.5 | 142.5 | | | |
| 171.100 | 28.5 | 145.3 | | | |
| 171.200 | 28.5 | 148.2 | | | |



### Summary for Subcatchment 8S: Building D

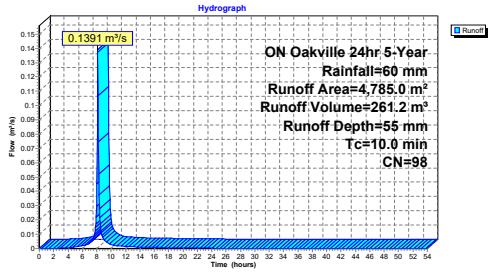
Runoff = 0.1391 m³/s @ 8.13 hrs, Volume= 261.2 m³, Depth= 55 mm
Routed to Pond 7P : Phase 4 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 4,785.0 | 98 | |
| | 4,785.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 8S: Building D**



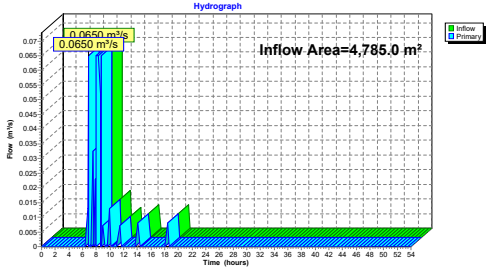



### Summary for Link 10L: East Pond Outlet

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 54 mm for 5-Year event
Inflow = 0.0650 m³/s @ 6.85 hrs, Volume= 259.2 m³
Primary = 0.0650 m³/s @ 6.85 hrs, Volume= 259.2 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

**Link 10L: East Pond Outlet**






### Summary for Subcatchment 3S: Building A and B U/G Parking

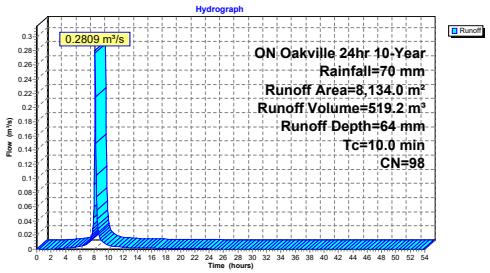
Runoff = 0.2809 m³/s @ 8.13 hrs, Volume= 519.2 m³, Depth= 64 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,134.0 | 98 | |
| | 8,134.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 3S: Building A and B U/G Parking**






### Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,134.0 m²,100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.2809 m³/s @ 8.13 hrs, Volume= 519.2 m³
Outflow = 0.0650 m³/s @ 4.95 hrs, Volume= 514.8 m³, Atten= 77%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.95 hrs, Volume= 531.7 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.496 m @ 8.37 hrs Surf.Area= 37.5 m² Storage= 161.1 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 19.9 min ( 569.1 - 549.2 )

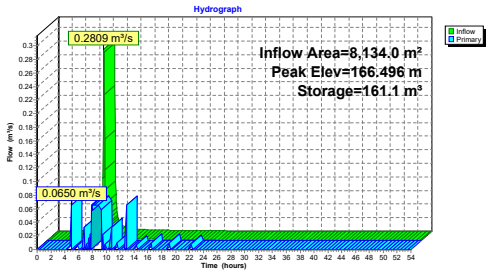
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

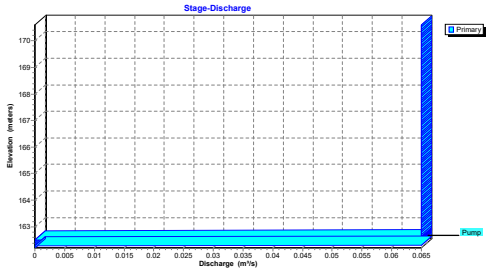
| Device | Routing | Invert | Outlet Devices (Turned on 17 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump**<br>Discharges@170.600 m Turns Off<162.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 10.000 |

**Primary OutFlow** Max=0.0650 m³/s @ 4.95 hrs HW=162.345 m TW=0.000 m (Dynamic Tailwater)
↳**1=Pump** (Pump Controls 0.0650 m³/s)

## Pond 4P: Phase 2 U/G Tank

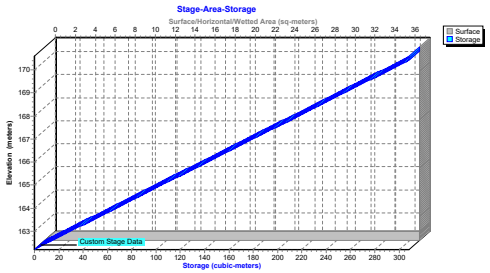



## Pond 4P: Phase 2 U/G Tank






## Pond 4P: Phase 2 U/G Tank






## Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



## Summary for Subcatchment 5S: Building C

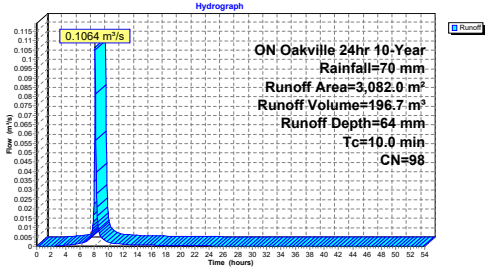
Runoff = 0.1064 m³/s @ 8.13 hrs, Volume= 196.7 m³, Depth= 64 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,082.0 | 98 | |
| | 3,082.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

## Subcatchment 5S: Building C






## Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,082.0 m²,100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.1064 m³/s @ 8.13 hrs, Volume= 196.7 m³
Outflow = 0.0650 m³/s @ 7.25 hrs, Volume= 187.2 m³, Atten= 39%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 7.25 hrs, Volume= 187.6 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.918 m @ 8.23 hrs Surf.Area= 29.7 m² Storage= 27.3 m³

Plug-Flow detention time= 61.7 min calculated for 187.0 m³ (95% of inflow)
Center-of-Mass det. time= 27.7 min ( 576.9 - 549.2 )

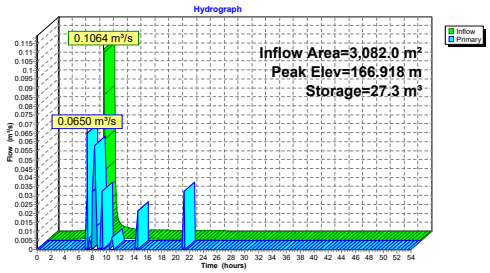
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

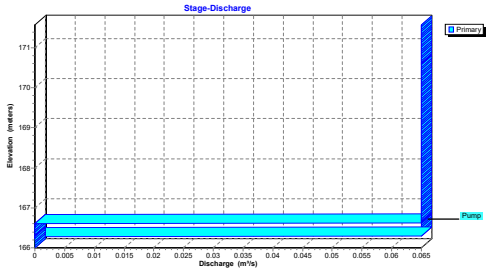
| Device | Routing | Invert | Outlet Devices (Turned on 8 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m Flow (l/min)= 3,900.0 Head (meters)= 6.000 |

**Primary OutFlow** Max=0.0650 m³/s @ 7.25 hrs HW=166.412 m TW=0.000 m (Dynamic Tailwater)
**1=Pump** (Pump Controls 0.0650 m³/s)

### Pond 6P: Phase 3 U/G Tank

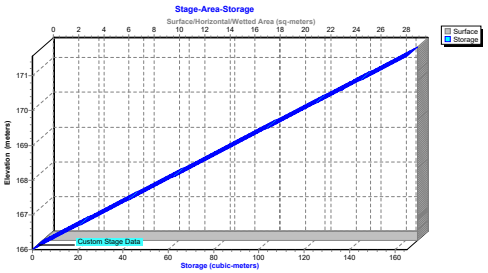



### Pond 6P: Phase 3 U/G Tank






### Pond 6P: Phase 3 U/G Tank






### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

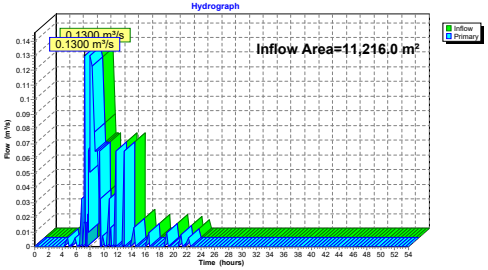


### Summary for Link 7L: West Pond Outlet

Inflow Area = 11,216.0 m²,100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.1300 m³/s @ 7.25 hrs, Volume= 719.3 m³
Primary = 0.1300 m³/s @ 7.25 hrs, Volume= 719.3 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 7L: West Pond Outlet






### Summary for Pond 7P: Phase 4 U/G Tank

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 64 mm for 10-Year event
Inflow = 0.1652 m³/s @ 8.13 hrs, Volume= 305.4 m³
Outflow = 0.0650 m³/s @ 6.50 hrs, Volume= 292.5 m³, Atten= 61%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.50 hrs, Volume= 302.5 m³
Routed to Link 10L : East Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 168.416 m @ 8.30 hrs Surf.Area= 28.5 m² Storage= 68.9 m³

Plug-Flow detention time= 41.4 min calculated for 292.2 m³ (96% of inflow)
Center-of-Mass det. time= 10.7 min ( 559.9 - 549.2 )

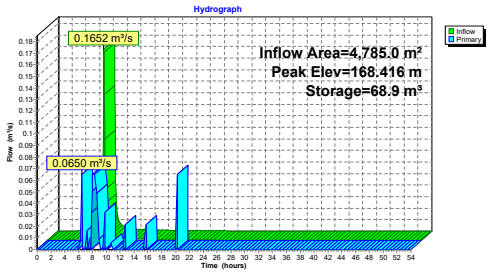
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 171.0 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 28.5 | 0.0 | 0.0 |
| 172.000 | 28.5 | 171.0 | 171.0 |

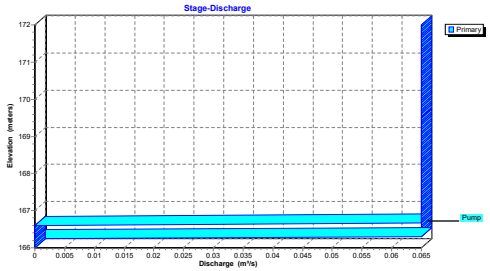
| Device | Routing | Invert | Outlet Devices (Turned on 11 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@169.500 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

**Primary OutFlow** Max=0.0650 m³/s @ 6.50 hrs HW=166.400 m TW=0.000 m (Dynamic Tailwater)
↳**1=Pump** (Pump Controls 0.0650 m³/s)

## Pond 7P: Phase 4 U/G Tank

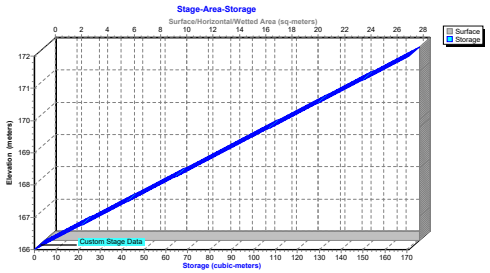



## Pond 7P: Phase 4 U/G Tank






## Pond 7P: Phase 4 U/G Tank






## Stage-Discharge for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | 171.600 | 0.0650 | 0.0650 |
| 166.400 | 0.0000 | 0.0650 | 171.700 | 0.0650 | 0.0650 |
| 166.500 | 0.0000 | 0.0650 | 171.800 | 0.0650 | 0.0650 |
| 166.600 | **0.0000** | 0.0650 | 171.900 | 0.0650 | 0.0650 |
| 166.700 | **0.0650** | 0.0650 | 172.000 | 0.0650 | 0.0650 |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **28.5** | 0.0 | 171.300 | 28.5 | 151.1 |
| 166.100 | 28.5 | 2.8 | 171.400 | 28.5 | 153.9 |
| 166.200 | 28.5 | 5.7 | 171.500 | 28.5 | 156.8 |
| 166.300 | 28.5 | 8.6 | 171.600 | 28.5 | 159.6 |
| 166.400 | 28.5 | 11.4 | 171.700 | 28.5 | 162.4 |
| 166.500 | 28.5 | 14.3 | 171.800 | 28.5 | 165.3 |
| 166.600 | 28.5 | 17.1 | 171.900 | 28.5 | 168.2 |
| 166.700 | 28.5 | 19.9 | 172.000 | 28.5 | **171.0** |
| 166.800 | 28.5 | 22.8 | | | |
| 166.900 | 28.5 | 25.7 | | | |
| 167.000 | 28.5 | 28.5 | | | |
| 167.100 | 28.5 | 31.3 | | | |
| 167.200 | 28.5 | 34.2 | | | |
| 167.300 | 28.5 | 37.1 | | | |
| 167.400 | 28.5 | 39.9 | | | |
| 167.500 | 28.5 | 42.8 | | | |
| 167.600 | 28.5 | 45.6 | | | |
| 167.700 | 28.5 | 48.4 | | | |
| 167.800 | 28.5 | 51.3 | | | |
| 167.900 | 28.5 | 54.2 | | | |
| 168.000 | 28.5 | 57.0 | | | |
| 168.100 | 28.5 | 59.8 | | | |
| 168.200 | 28.5 | 62.7 | | | |
| 168.300 | 28.5 | 65.6 | | | |
| 168.400 | 28.5 | 68.4 | | | |
| 168.500 | 28.5 | 71.3 | | | |
| 168.600 | 28.5 | 74.1 | | | |
| 168.700 | 28.5 | 76.9 | | | |
| 168.800 | 28.5 | 79.8 | | | |
| 168.900 | 28.5 | 82.7 | | | |
| 169.000 | 28.5 | 85.5 | | | |
| 169.100 | 28.5 | 88.3 | | | |
| 169.200 | 28.5 | 91.2 | | | |
| 169.300 | 28.5 | 94.1 | | | |
| 169.400 | 28.5 | 96.9 | | | |
| 169.500 | 28.5 | 99.8 | | | |
| 169.600 | 28.5 | 102.6 | | | |
| 169.700 | 28.5 | 105.4 | | | |
| 169.800 | 28.5 | 108.3 | | | |
| 169.900 | 28.5 | 111.2 | | | |
| 170.000 | 28.5 | 114.0 | | | |
| 170.100 | 28.5 | 116.8 | | | |
| 170.200 | 28.5 | 119.7 | | | |
| 170.300 | 28.5 | 122.6 | | | |
| 170.400 | 28.5 | 125.4 | | | |
| 170.500 | 28.5 | 128.3 | | | |
| 170.600 | 28.5 | 131.1 | | | |
| 170.700 | 28.5 | 133.9 | | | |
| 170.800 | 28.5 | 136.8 | | | |
| 170.900 | 28.5 | 139.7 | | | |
| 171.000 | 28.5 | 142.5 | | | |
| 171.100 | 28.5 | 145.3 | | | |
| 171.200 | 28.5 | 148.2 | | | |



## Summary for Subcatchment 8S: Building D

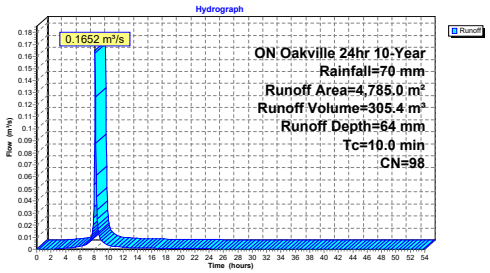
Runoff = 0.1652 m³/s @ 8.13 hrs, Volume= 305.4 m³, Depth= 64 mm
Routed to Pond 7P : Phase 4 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 4,785.0 | 98 | |
| | 4,785.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

## Subcatchment 8S: Building D



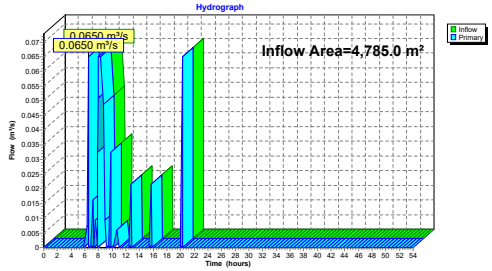



## Summary for Link 10L: East Pond Outlet

Inflow Area = 4,785.0 m², 100.00% Impervious, Inflow Depth = 63 mm for 10-Year event
Inflow = 0.0650 m³/s @ 6.50 hrs, Volume= 302.5 m³
Primary = 0.0650 m³/s @ 6.50 hrs, Volume= 302.5 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

## Link 10L: East Pond Outlet



## Summary for Subcatchment 3S: Building A and B U/G Parking

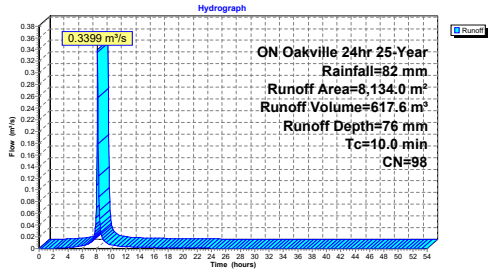
Runoff = 0.3399 m³/s @ 8.13 hrs, Volume= 617.6 m³, Depth= 76 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| * 8,134.0 | 98 | |
| 8,134.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking






## Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,134.0 m², 100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.3399 m³/s @ 8.13 hrs, Volume= 617.6 m³
Outflow = 0.0650 m³/s @ 4.55 hrs, Volume= 608.4 m³, Atten= 81%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.55 hrs, Volume= 619.9 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.776 m @ 8.41 hrs Surf.Area= 37.5 m² Storage= 209.1 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 17.3 min ( 563.4 - 546.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

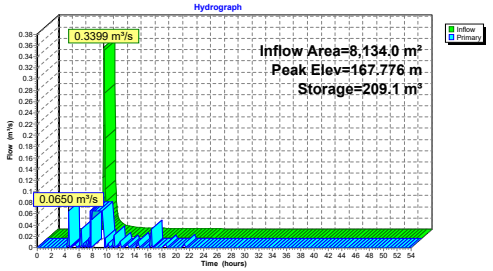
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 18 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump**<br>Discharges@170.600 m Turns Off<162.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 10.000 |

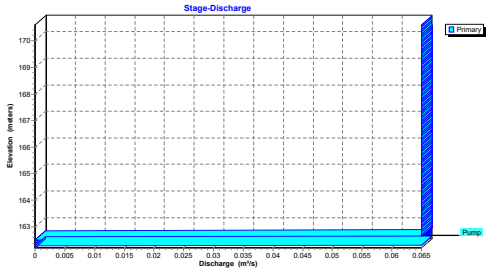
**Primary OutFlow** Max=0.0650 m³/s @ 4.55 hrs HW=162.352 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 4P: Phase 2 U/G Tank

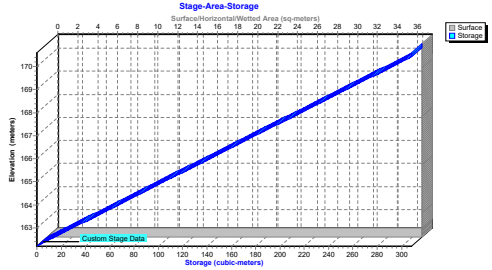



### Pond 4P: Phase 2 U/G Tank






### Pond 4P: Phase 2 U/G Tank






### Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |

### Summary for Subcatchment 5S: Building C

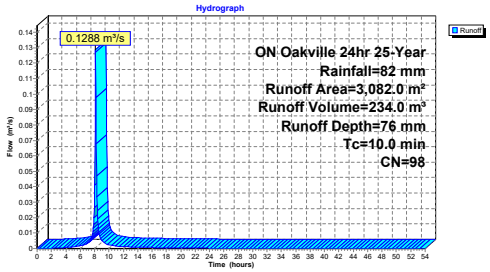
Runoff = 0.1288 m³/s @ 8.13 hrs, Volume= 234.0 m³, Depth= 76 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,082.0 | 98 | |
| | 3,082.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 5S: Building C






### Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,082.0 m², 100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.1288 m³/s @ 8.13 hrs, Volume= 234.0 m³
Outflow = 0.0650 m³/s @ 6.95 hrs, Volume= 222.3 m³, Atten= 50%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.95 hrs, Volume= 228.2 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.713 m @ 8.26 hrs Surf.Area= 29.7 m² Storage= 50.9 m³

Plug-Flow detention time= 52.8 min calculated for 222.3 m³ (95% of inflow)
Center-of-Mass det. time= 18.1 min ( 564.2 - 546.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

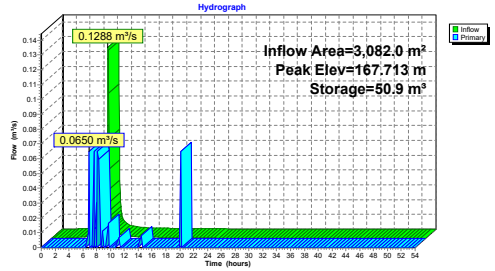
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 9 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@170.600 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

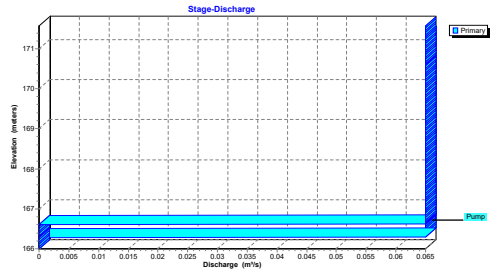
**Primary OutFlow** Max=0.0650 m³/s @ 6.95 hrs HW=166.422 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 6P: Phase 3 U/G Tank

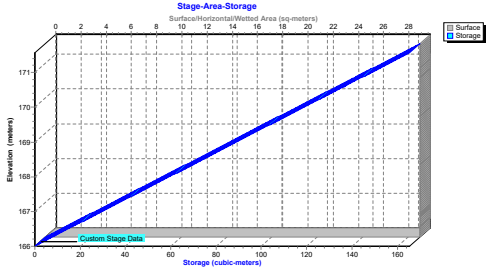



### Pond 6P: Phase 3 U/G Tank






### Pond 6P: Phase 3 U/G Tank






### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

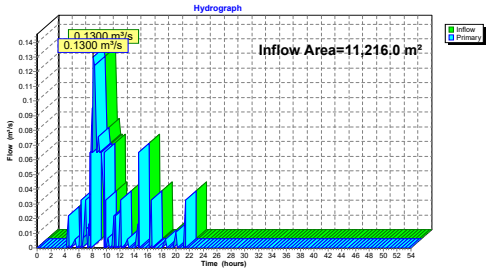
| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

## Summary for Link 7L: West Pond Outlet

Inflow Area = 11,216.0 m², 100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.1300 m³/s @ 8.05 hrs, Volume= 848.2 m³
Primary = 0.1300 m³/s @ 8.05 hrs, Volume= 848.2 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 7L: West Pond Outlet






## Summary for Pond 7P: Phase 4 U/G Tank

Inflow Area = 4,785.0 m², 100.00% Impervious, Inflow Depth = 76 mm for 25-Year event
Inflow = 0.2000 m³/s @ 8.13 hrs, Volume= 363.3 m³
Outflow = 0.0650 m³/s @ 6.10 hrs, Volume= 351.0 m³, Atten= 67%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.10 hrs, Volume= 374.1 m³
Routed to Link 10L : East Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.399 m @ 8.32 hrs Surf.Area= 28.5 m² Storage= 96.9 m³

Plug-Flow detention time= 40.5 min calculated for 350.7 m³ (97% of inflow)
Center-of-Mass det. time= 14.7 min ( 560.8 - 546.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 171.0 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

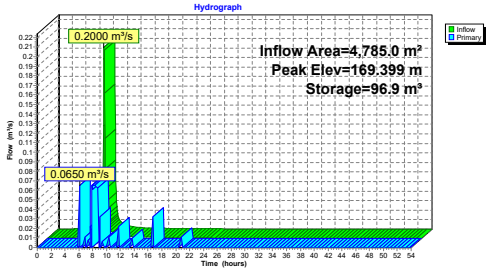
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 28.5 | 0.0 | 0.0 |
| 172.000 | 28.5 | 171.0 | 171.0 |

| Device | Routing | Invert | Outlet Devices (Turned on 13 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@169.500 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

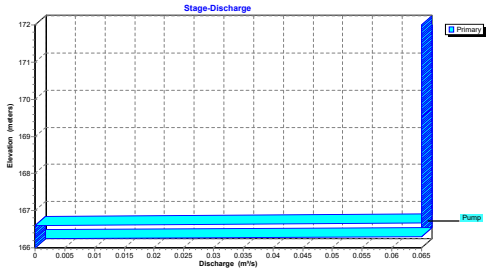
**Primary OutFlow** Max=0.0650 m³/s @ 6.10 hrs HW=166.404 m TW=0.000 m (Dynamic Tailwater)
**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 7P: Phase 4 U/G Tank

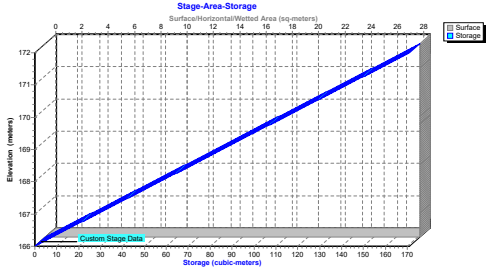



### Pond 7P: Phase 4 U/G Tank






### Pond 7P: Phase 4 U/G Tank






### Stage-Discharge for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | 171.600 | 0.0650 | 0.0650 |
| 166.400 | 0.0000 | 0.0650 | 171.700 | 0.0650 | 0.0650 |
| 166.500 | 0.0000 | 0.0650 | 171.800 | 0.0650 | 0.0650 |
| 166.600 | **0.0000** | 0.0650 | 171.900 | 0.0650 | 0.0650 |
| 166.700 | **0.0650** | 0.0650 | 172.000 | 0.0650 | 0.0650 |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **28.5** | 0.0 | 171.300 | 28.5 | 151.1 |
| 166.100 | 28.5 | 2.8 | 171.400 | 28.5 | 153.9 |
| 166.200 | 28.5 | 5.7 | 171.500 | 28.5 | 156.8 |
| 166.300 | 28.5 | 8.6 | 171.600 | 28.5 | 159.6 |
| 166.400 | 28.5 | 11.4 | 171.700 | 28.5 | 162.4 |
| 166.500 | 28.5 | 14.3 | 171.800 | 28.5 | 165.3 |
| 166.600 | 28.5 | 17.1 | 171.900 | 28.5 | 168.2 |
| 166.700 | 28.5 | 19.9 | 172.000 | 28.5 | **171.0** |
| 166.800 | 28.5 | 22.8 | | | |
| 166.900 | 28.5 | 25.7 | | | |
| 167.000 | 28.5 | 28.5 | | | |
| 167.100 | 28.5 | 31.3 | | | |
| 167.200 | 28.5 | 34.2 | | | |
| 167.300 | 28.5 | 37.1 | | | |
| 167.400 | 28.5 | 39.9 | | | |
| 167.500 | 28.5 | 42.8 | | | |
| 167.600 | 28.5 | 45.6 | | | |
| 167.700 | 28.5 | 48.4 | | | |
| 167.800 | 28.5 | 51.3 | | | |
| 167.900 | 28.5 | 54.2 | | | |
| 168.000 | 28.5 | 57.0 | | | |
| 168.100 | 28.5 | 59.8 | | | |
| 168.200 | 28.5 | 62.7 | | | |
| 168.300 | 28.5 | 65.6 | | | |
| 168.400 | 28.5 | 68.4 | | | |
| 168.500 | 28.5 | 71.3 | | | |
| 168.600 | 28.5 | 74.1 | | | |
| 168.700 | 28.5 | 76.9 | | | |
| 168.800 | 28.5 | 79.8 | | | |
| 168.900 | 28.5 | 82.7 | | | |
| 169.000 | 28.5 | 85.5 | | | |
| 169.100 | 28.5 | 88.3 | | | |
| 169.200 | 28.5 | 91.2 | | | |
| 169.300 | 28.5 | 94.1 | | | |
| 169.400 | 28.5 | 96.9 | | | |
| 169.500 | 28.5 | 99.8 | | | |
| 169.600 | 28.5 | 102.6 | | | |
| 169.700 | 28.5 | 105.4 | | | |
| 169.800 | 28.5 | 108.3 | | | |
| 169.900 | 28.5 | 111.2 | | | |
| 170.000 | 28.5 | 114.0 | | | |
| 170.100 | 28.5 | 116.8 | | | |
| 170.200 | 28.5 | 119.7 | | | |
| 170.300 | 28.5 | 122.6 | | | |
| 170.400 | 28.5 | 125.4 | | | |
| 170.500 | 28.5 | 128.3 | | | |
| 170.600 | 28.5 | 131.1 | | | |
| 170.700 | 28.5 | 133.9 | | | |
| 170.800 | 28.5 | 136.8 | | | |
| 170.900 | 28.5 | 139.7 | | | |
| 171.000 | 28.5 | 142.5 | | | |
| 171.100 | 28.5 | 145.3 | | | |
| 171.200 | 28.5 | 148.2 | | | |

### Summary for Subcatchment 8S: Building D

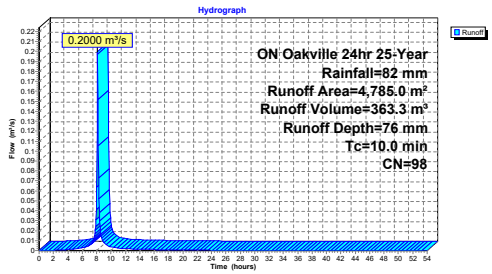
Runoff = 0.2000 m³/s @ 8.13 hrs, Volume= 363.3 m³, Depth= 76 mm
Routed to Pond 7P : Phase 4 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| * 4,785.0 | 98 | |
| 4,785.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 8S: Building D



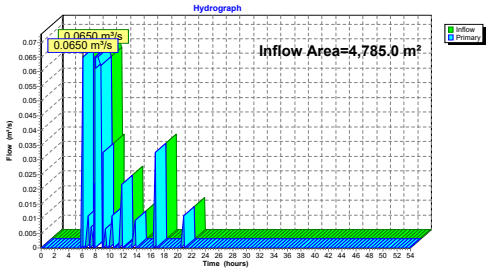



### Summary for Link 10L: East Pond Outlet

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 78 mm for 25-Year event
Inflow = 0.0650 m³/s @ 6.10 hrs, Volume= 374.1 m³
Primary = 0.0650 m³/s @ 6.10 hrs, Volume= 374.1 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 10L: East Pond Outlet






### Summary for Subcatchment 3S: Building A and B U/G Parking

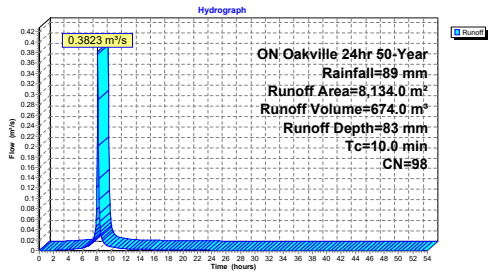
Runoff = 0.3823 m³/s @ 8.13 hrs, Volume= 674.0 m³, Depth= 83 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| Area (m²) | CN | Description |
|---|---|---|
| * 8,134.0 | 98 | |
| 8,134.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking






### Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,134.0 m²,100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.3823 m³/s @ 8.13 hrs, Volume= 674.0 m³
Outflow = 0.0650 m³/s @ 4.45 hrs, Volume= 666.9 m³, Atten= 83%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.45 hrs, Volume= 677.0 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 168.718 m @ 8.42 hrs Surf.Area= 37.5 m² Storage= 244.4 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 23.7 min ( 565.8 - 542.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

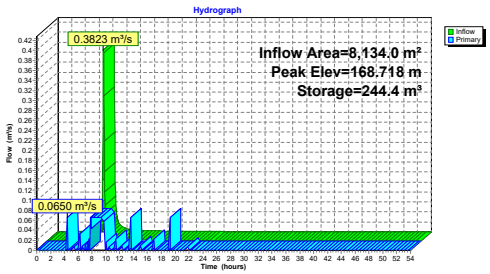
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 18 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump** Discharges@170.600 m Turns Off<162.300 m Flow (l/min)= 3,900.0 Head (meters)= 10.000 |

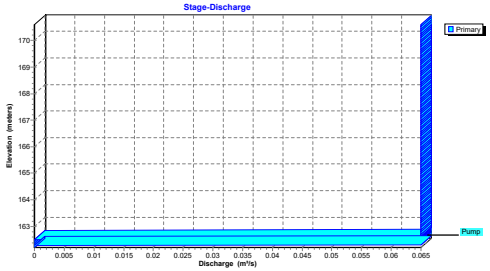
**Primary OutFlow** Max=0.0650 m³/s @ 4.45 hrs HW=162.346 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 4P: Phase 2 U/G Tank

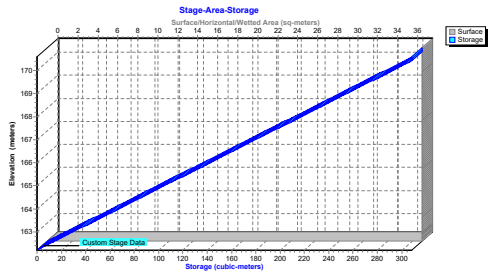



### Pond 4P: Phase 2 U/G Tank






### Pond 4P: Phase 2 U/G Tank



### Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



### Summary for Subcatchment 5S: Building C

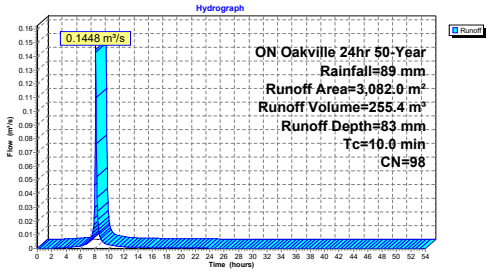
Runoff = 0.1448 m³/s @ 8.13 hrs, Volume= 255.4 m³, Depth= 83 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,082.0 | 98 | |
| | 3,082.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 5S: Building C**






### Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,082.0 m²,100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.1448 m³/s @ 8.13 hrs, Volume= 255.4 m³
Outflow = 0.0650 m³/s @ 6.85 hrs, Volume= 245.7 m³, Atten= 55%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.85 hrs, Volume= 248.9 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.840 m @ 8.27 hrs Surf.Area= 29.7 m² Storage= 54.6 m³

Plug-Flow detention time= 52.3 min calculated for 245.7 m³ (96% of inflow)
Center-of-Mass det. time= 24.6 min ( 566.7 - 542.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

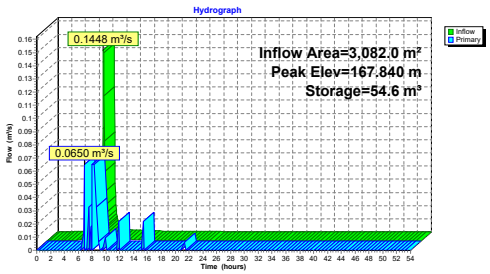
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 9 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m Flow (l/min)= 3,900.0 Head (meters)= 6.000 |

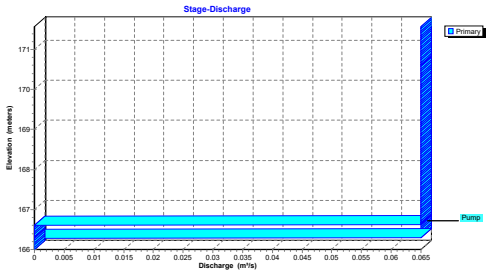
**Primary OutFlow** Max=0.0650 m³/s @ 6.85 hrs HW=166.416 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



**Pond 6P: Phase 3 U/G Tank**

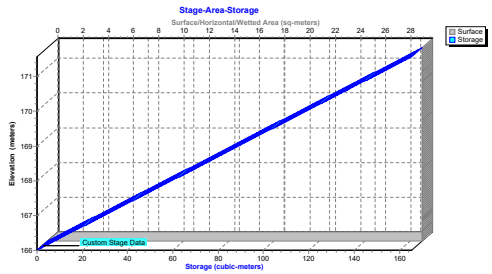



**Pond 6P: Phase 3 U/G Tank**






**Pond 6P: Phase 3 U/G Tank**



### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

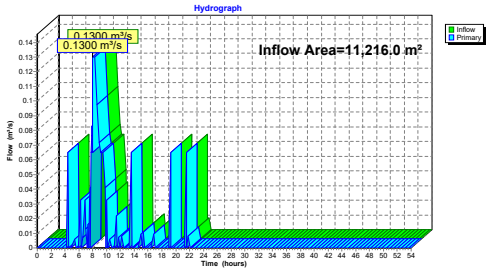


### Summary for Link 7L: West Pond Outlet

Inflow Area = 11,216.0 m²,100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.1300 m³/s @ 8.00 hrs, Volume= 925.9 m³
Primary = 0.1300 m³/s @ 8.00 hrs, Volume= 925.9 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 7L: West Pond Outlet






### Summary for Pond 7P: Phase 4 U/G Tank

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 83 mm for 50-Year event
Inflow = 0.2249 m³/s @ 8.13 hrs, Volume= 396.5 m³
Outflow = 0.0650 m³/s @ 6.00 hrs, Volume= 386.1 m³, Atten= 71%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.00 hrs, Volume= 402.6 m³
Routed to Link 10L : East Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.893 m @ 8.34 hrs Surf.Area= 28.5 m² Storage= 110.9 m³

Plug-Flow detention time= 40.1 min calculated for 386.1 m³ (97% of inflow)
Center-of-Mass det. time= 19.6 min ( 561.7 - 542.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 171.0 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

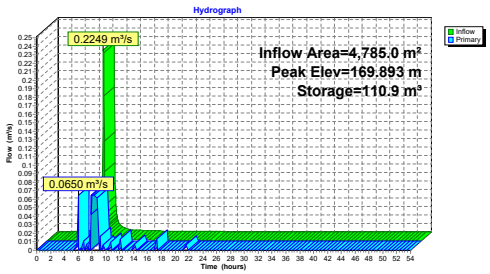
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 28.5 | 0.0 | 0.0 |
| 172.000 | 28.5 | 171.0 | 171.0 |

| Device | Routing | Invert | Outlet Devices (Turned on 13 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@169.500 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

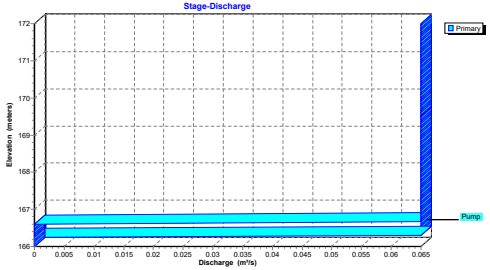
**Primary OutFlow** Max=0.0650 m³/s @ 6.00 hrs HW=166.400 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 7P: Phase 4 U/G Tank

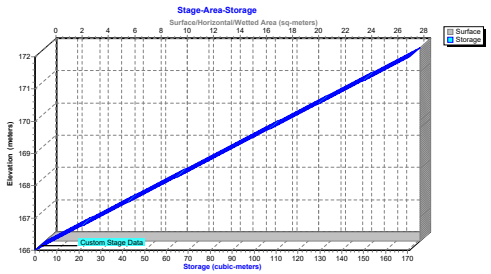



### Pond 7P: Phase 4 U/G Tank






### Pond 7P: Phase 4 U/G Tank



### Stage-Discharge for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | 171.600 | 0.0650 | 0.0650 |
| 166.400 | 0.0000 | 0.0650 | 171.700 | 0.0650 | 0.0650 |
| 166.500 | 0.0000 | 0.0650 | 171.800 | 0.0650 | 0.0650 |
| 166.600 | **0.0000** | 0.0650 | 171.900 | 0.0650 | 0.0650 |
| 166.700 | **0.0650** | 0.0650 | 172.000 | 0.0650 | 0.0650 |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **28.5** | 0.0 | 171.300 | 28.5 | 151.1 |
| 166.100 | 28.5 | 2.8 | 171.400 | 28.5 | 153.9 |
| 166.200 | 28.5 | 5.7 | 171.500 | 28.5 | 156.8 |
| 166.300 | 28.5 | 8.6 | 171.600 | 28.5 | 159.6 |
| 166.400 | 28.5 | 11.4 | 171.700 | 28.5 | 162.4 |
| 166.500 | 28.5 | 14.3 | 171.800 | 28.5 | 165.3 |
| 166.600 | 28.5 | 17.1 | 171.900 | 28.5 | 168.2 |
| 166.700 | 28.5 | 19.9 | 172.000 | 28.5 | **171.0** |
| 166.800 | 28.5 | 22.8 | | | |
| 166.900 | 28.5 | 25.7 | | | |
| 167.000 | 28.5 | 28.5 | | | |
| 167.100 | 28.5 | 31.3 | | | |
| 167.200 | 28.5 | 34.2 | | | |
| 167.300 | 28.5 | 37.1 | | | |
| 167.400 | 28.5 | 39.9 | | | |
| 167.500 | 28.5 | 42.8 | | | |
| 167.600 | 28.5 | 45.6 | | | |
| 167.700 | 28.5 | 48.4 | | | |
| 167.800 | 28.5 | 51.3 | | | |
| 167.900 | 28.5 | 54.2 | | | |
| 168.000 | 28.5 | 57.0 | | | |
| 168.100 | 28.5 | 59.8 | | | |
| 168.200 | 28.5 | 62.7 | | | |
| 168.300 | 28.5 | 65.6 | | | |
| 168.400 | 28.5 | 68.4 | | | |
| 168.500 | 28.5 | 71.3 | | | |
| 168.600 | 28.5 | 74.1 | | | |
| 168.700 | 28.5 | 76.9 | | | |
| 168.800 | 28.5 | 79.8 | | | |
| 168.900 | 28.5 | 82.7 | | | |
| 169.000 | 28.5 | 85.5 | | | |
| 169.100 | 28.5 | 88.3 | | | |
| 169.200 | 28.5 | 91.2 | | | |
| 169.300 | 28.5 | 94.1 | | | |
| 169.400 | 28.5 | 96.9 | | | |
| 169.500 | 28.5 | 99.8 | | | |
| 169.600 | 28.5 | 102.6 | | | |
| 169.700 | 28.5 | 105.4 | | | |
| 169.800 | 28.5 | 108.3 | | | |
| 169.900 | 28.5 | 111.2 | | | |
| 170.000 | 28.5 | 114.0 | | | |
| 170.100 | 28.5 | 116.8 | | | |
| 170.200 | 28.5 | 119.7 | | | |
| 170.300 | 28.5 | 122.6 | | | |
| 170.400 | 28.5 | 125.4 | | | |
| 170.500 | 28.5 | 128.3 | | | |
| 170.600 | 28.5 | 131.1 | | | |
| 170.700 | 28.5 | 133.9 | | | |
| 170.800 | 28.5 | 136.8 | | | |
| 170.900 | 28.5 | 139.7 | | | |
| 171.000 | 28.5 | 142.5 | | | |
| 171.100 | 28.5 | 145.3 | | | |
| 171.200 | 28.5 | 148.2 | | | |



### Summary for Subcatchment 8S: Building D

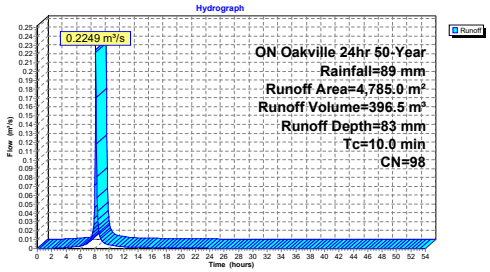
Runoff = 0.2249 m³/s @ 8.13 hrs, Volume= 396.5 m³, Depth= 83 mm
Routed to Pond 7P : Phase 4 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 4,785.0 | 98 | |
| | 4,785.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 8S: Building D**



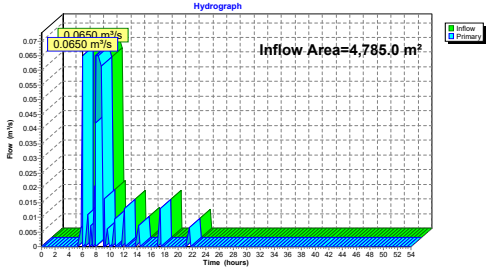



### Summary for Link 10L: East Pond Outlet

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 84 mm for 50-Year event
Inflow = 0.0650 m³/s @ 6.00 hrs, Volume= 402.6 m³
Primary = 0.0650 m³/s @ 6.00 hrs, Volume= 402.6 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

**Link 10L: East Pond Outlet**






### Summary for Subcatchment 3S: Building A and B U/G Parking

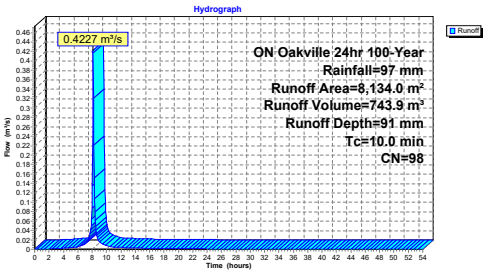
Runoff = 0.4227 m³/s @ 8.13 hrs, Volume= 743.9 m³, Depth= 91 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,134.0 | 98 | |
| | 8,134.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

**Subcatchment 3S: Building A and B U/G Parking**






### Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,134.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.4227 m³/s @ 8.13 hrs, Volume= 743.9 m³
Outflow = 0.0650 m³/s @ 4.20 hrs, Volume= 737.1 m³, Atten= 85%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 4.20 hrs, Volume= 747.7 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.770 m @ 8.44 hrs Surf.Area= 37.5 m² Storage= 283.9 m³

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 28.5 min ( 569.5 - 541.0 )

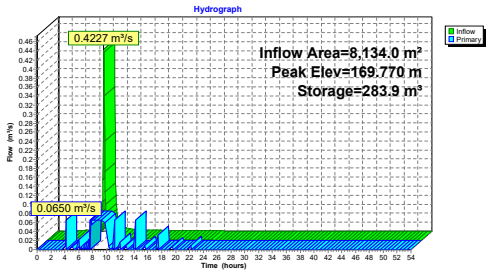
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

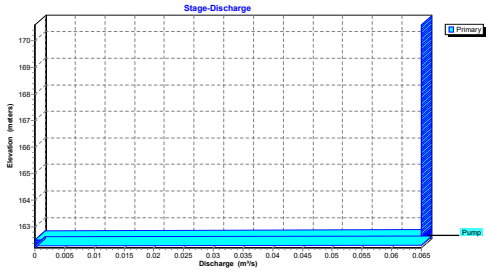
| Device | Routing | Invert | Outlet Devices (Turned on 19 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump**<br>Discharges@170.600 m Turns Off<162.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 10.000 |

**Primary OutFlow** Max=0.0650 m³/s @ 4.20 hrs HW=162.350 m TW=0.000 m (Dynamic Tailwater)
↳**1=Pump** (Pump Controls 0.0650 m³/s)

## Pond 4P: Phase 2 U/G Tank

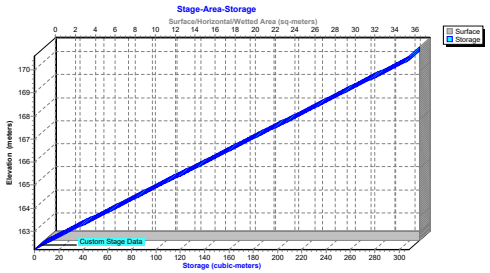



## Pond 4P: Phase 2 U/G Tank






## Pond 4P: Phase 2 U/G Tank






## Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |



## Summary for Subcatchment 5S: Building C

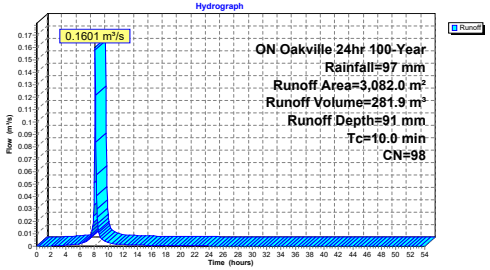
Runoff = 0.1601 m³/s @ 8.13 hrs, Volume= 281.9 m³, Depth= 91 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,082.0 | 98 | |
| | 3,082.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

## Subcatchment 5S: Building C






## Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,082.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.1601 m³/s @ 8.13 hrs, Volume= 281.9 m³
Outflow = 0.0650 m³/s @ 6.60 hrs, Volume= 269.1 m³, Atten= 59%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 6.60 hrs, Volume= 269.5 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 168.026 m @ 8.29 hrs Surf.Area= 29.7 m² Storage= 60.2 m³

Plug-Flow detention time= 45.0 min calculated for 268.9 m³ (95% of inflow)
Center-of-Mass det. time= 13.0 min ( 554.0 - 541.0 )

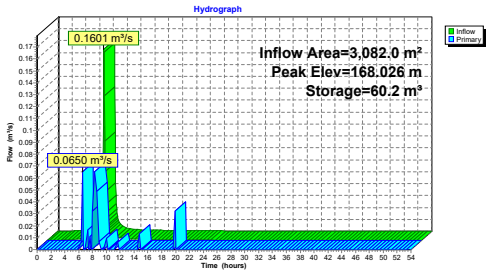
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

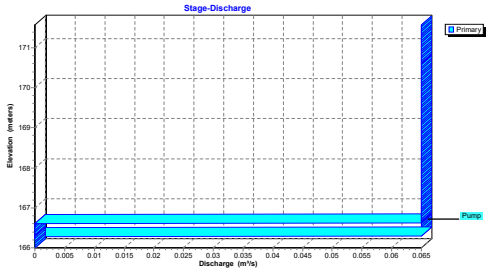
| Device | Routing | Invert | Outlet Devices (Turned on 9 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m Flow (l/min)= 3,900.0 Head (meters)= 6.000 |

**Primary OutFlow** Max=0.0650 m³/s @ 6.60 hrs HW=166.410 m TW=0.000 m (Dynamic Tailwater)
**1=Pump** (Pump Controls 0.0650 m³/s)

### Pond 6P: Phase 3 U/G Tank

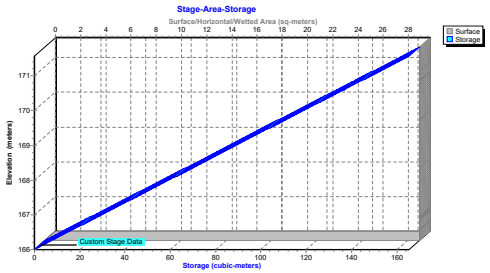



### Pond 6P: Phase 3 U/G Tank






### Pond 6P: Phase 3 U/G Tank






### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

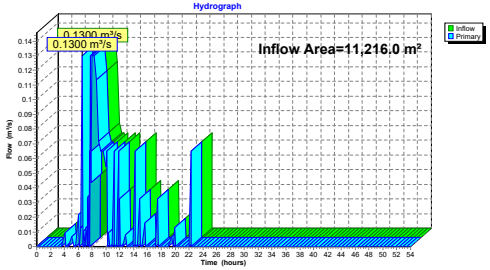


### Summary for Link 7L: West Pond Outlet

Inflow Area = 11,216.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.1300 m³/s @ 6.60 hrs, Volume= 1,017.2 m³
Primary = 0.1300 m³/s @ 6.60 hrs, Volume= 1,017.2 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 7L: West Pond Outlet






### Summary for Pond 7P: Phase 4 U/G Tank

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 91 mm for 100-Year event
Inflow = 0.2486 m³/s @ 8.13 hrs, Volume= 437.6 m³
Outflow = 0.0650 m³/s @ 5.75 hrs, Volume= 421.2 m³, Atten= 74%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 5.75 hrs, Volume= 432.4 m³
Routed to Link 10L : East Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 170.492 m @ 8.35 hrs Surf.Area= 28.5 m² Storage= 128.0 m³

Plug-Flow detention time= 36.5 min calculated for 421.2 m³ (96% of inflow)
Center-of-Mass det. time= 8.8 min ( 549.8 - 541.0 )

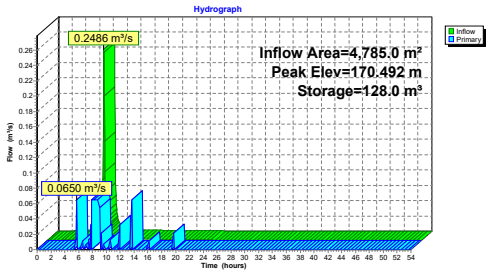
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 171.0 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 28.5 | 0.0 | 0.0 |
| 172.000 | 28.5 | 171.0 | 171.0 |

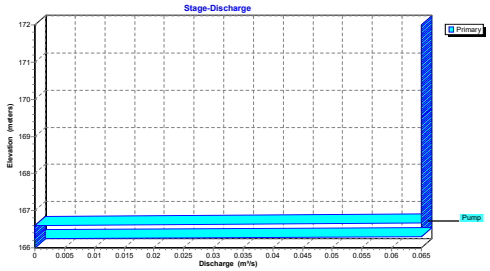
| Device | Routing | Invert | Outlet Devices (Turned on 13 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@169.500 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

**Primary OutFlow** Max=0.0650 m³/s @ 5.75 hrs HW=166.408 m TW=0.000 m (Dynamic Tailwater)
↳**1=Pump** (Pump Controls 0.0650 m³/s)

## Pond 7P: Phase 4 U/G Tank

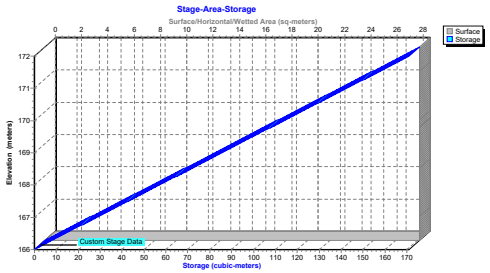



## Pond 7P: Phase 4 U/G Tank






## Pond 7P: Phase 4 U/G Tank






## Stage-Discharge for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | 171.600 | 0.0650 | 0.0650 |
| 166.400 | 0.0000 | 0.0650 | 171.700 | 0.0650 | 0.0650 |
| 166.500 | 0.0000 | 0.0650 | 171.800 | 0.0650 | 0.0650 |
| 166.600 | **0.0000** | 0.0650 | 171.900 | 0.0650 | 0.0650 |
| 166.700 | **0.0650** | 0.0650 | 172.000 | 0.0650 | 0.0650 |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **28.5** | 0.0 | 171.300 | 28.5 | 151.1 |
| 166.100 | 28.5 | 2.8 | 171.400 | 28.5 | 153.9 |
| 166.200 | 28.5 | 5.7 | 171.500 | 28.5 | 156.8 |
| 166.300 | 28.5 | 8.6 | 171.600 | 28.5 | 159.6 |
| 166.400 | 28.5 | 11.4 | 171.700 | 28.5 | 162.4 |
| 166.500 | 28.5 | 14.3 | 171.800 | 28.5 | 165.3 |
| 166.600 | 28.5 | 17.1 | 171.900 | 28.5 | 168.2 |
| 166.700 | 28.5 | 19.9 | 172.000 | 28.5 | **171.0** |
| 166.800 | 28.5 | 22.8 | | | |
| 166.900 | 28.5 | 25.7 | | | |
| 167.000 | 28.5 | 28.5 | | | |
| 167.100 | 28.5 | 31.3 | | | |
| 167.200 | 28.5 | 34.2 | | | |
| 167.300 | 28.5 | 37.1 | | | |
| 167.400 | 28.5 | 39.9 | | | |
| 167.500 | 28.5 | 42.8 | | | |
| 167.600 | 28.5 | 45.6 | | | |
| 167.700 | 28.5 | 48.4 | | | |
| 167.800 | 28.5 | 51.3 | | | |
| 167.900 | 28.5 | 54.2 | | | |
| 168.000 | 28.5 | 57.0 | | | |
| 168.100 | 28.5 | 59.8 | | | |
| 168.200 | 28.5 | 62.7 | | | |
| 168.300 | 28.5 | 65.6 | | | |
| 168.400 | 28.5 | 68.4 | | | |
| 168.500 | 28.5 | 71.3 | | | |
| 168.600 | 28.5 | 74.1 | | | |
| 168.700 | 28.5 | 76.9 | | | |
| 168.800 | 28.5 | 79.8 | | | |
| 168.900 | 28.5 | 82.7 | | | |
| 169.000 | 28.5 | 85.5 | | | |
| 169.100 | 28.5 | 88.3 | | | |
| 169.200 | 28.5 | 91.2 | | | |
| 169.300 | 28.5 | 94.1 | | | |
| 169.400 | 28.5 | 96.9 | | | |
| 169.500 | 28.5 | 99.8 | | | |
| 169.600 | 28.5 | 102.6 | | | |
| 169.700 | 28.5 | 105.4 | | | |
| 169.800 | 28.5 | 108.3 | | | |
| 169.900 | 28.5 | 111.2 | | | |
| 170.000 | 28.5 | 114.0 | | | |
| 170.100 | 28.5 | 116.8 | | | |
| 170.200 | 28.5 | 119.7 | | | |
| 170.300 | 28.5 | 122.6 | | | |
| 170.400 | 28.5 | 125.4 | | | |
| 170.500 | 28.5 | 128.3 | | | |
| 170.600 | 28.5 | 131.1 | | | |
| 170.700 | 28.5 | 133.9 | | | |
| 170.800 | 28.5 | 136.8 | | | |
| 170.900 | 28.5 | 139.7 | | | |
| 171.000 | 28.5 | 142.5 | | | |
| 171.100 | 28.5 | 145.3 | | | |
| 171.200 | 28.5 | 148.2 | | | |



## Summary for Subcatchment 8S: Building D

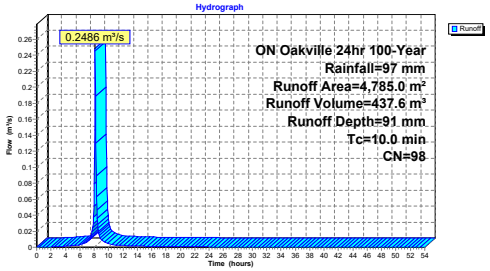
Runoff = 0.2486 m³/s @ 8.13 hrs, Volume= 437.6 m³, Depth= 91 mm
Routed to Pond 7P : Phase 4 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 4,785.0 | 98 | |
| | 4,785.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 8S: Building D



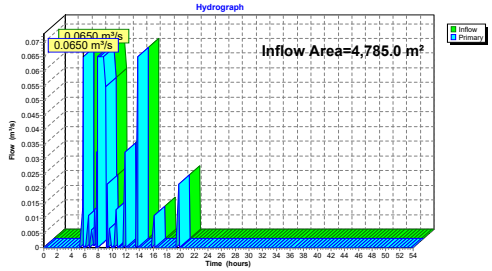



## Summary for Link 10L: East Pond Outlet

Inflow Area = 4,785.0 m², 100.00% Impervious, Inflow Depth = 90 mm for 100-Year event
Inflow = 0.0650 m³/s @ 5.75 hrs, Volume= 432.4 m³
Primary = 0.0650 m³/s @ 5.75 hrs, Volume= 432.4 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 10L: East Pond Outlet



## Summary for Subcatchment 3S: Building A and B U/G Parking

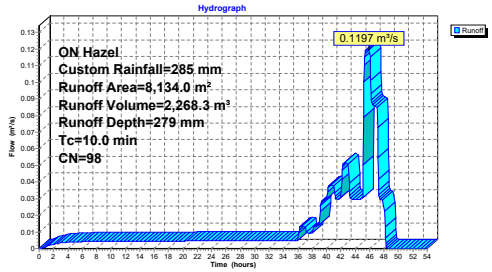
Runoff = 0.1197 m³/s @ 45.90 hrs, Volume= 2,268.3 m³, Depth= 279 mm
Routed to Pond 4P : Phase 2 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 8,134.0 | 98 | |
| | 8,134.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 3S: Building A and B U/G Parking






## Summary for Pond 4P: Phase 2 U/G Tank

Inflow Area = 8,134.0 m², 100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.1197 m³/s @ 45.90 hrs, Volume= 2,268.3 m³
Outflow = 0.0650 m³/s @ 2.40 hrs, Volume= 2,269.8 m³, Atten= 46%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 2.40 hrs, Volume= 2,518.5 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 169.311 m @ 47.12 hrs Surf.Area= 37.5 m² Storage= 266.7 m³

Plug-Flow detention time= 22.4 min calculated for 2,267.7 m³ (100% of inflow)
Center-of-Mass det. time= 22.9 min ( 2,299.1 - 2,276.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 162.200 m | 308.2 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

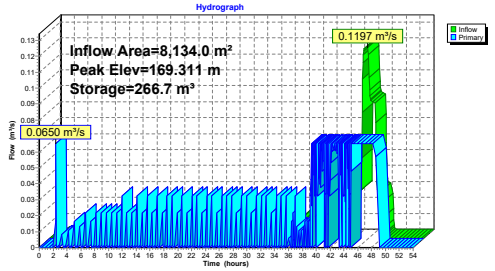
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 162.200 | 37.5 | 0.0 | 0.0 |
| 170.420 | 37.5 | 308.2 | 308.2 |

| Device | Routing | Invert | Outlet Devices (Turned on 100 times) |
|---|---|---|---|
| #1 | Primary | 162.500 m | **Pump**<br>Discharges@170.600 m Turns Off<162.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 10.000 |

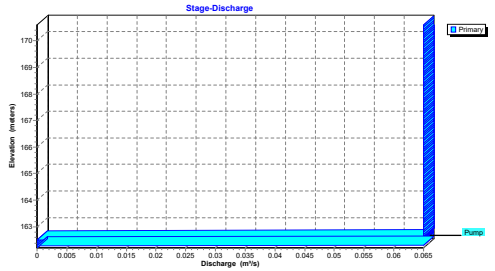
**Primary OutFlow** Max=0.0650 m³/s @ 2.40 hrs HW=162.353 m TW=0.000 m (Dynamic Tailwater)
↑**1=Pump** (Pump Controls 0.0650 m³/s)



## Pond 4P: Phase 2 U/G Tank

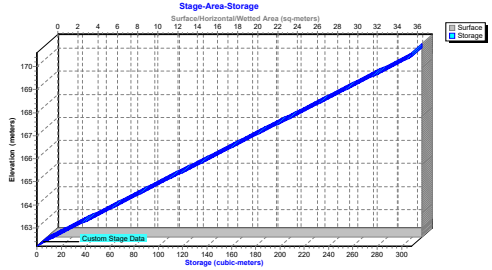



## Pond 4P: Phase 2 U/G Tank






## Pond 4P: Phase 2 U/G Tank






## Stage-Discharge for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 162.200 | 0.0000 | 0.0000 | 167.500 | 0.0650 | 0.0650 |
| 162.300 | 0.0000 | **0.0000** | 167.600 | 0.0650 | 0.0650 |
| 162.400 | 0.0000 | **0.0650** | 167.700 | 0.0650 | 0.0650 |
| 162.500 | **0.0000** | 0.0650 | 167.800 | 0.0650 | 0.0650 |
| 162.600 | **0.0650** | 0.0650 | 167.900 | 0.0650 | 0.0650 |
| 162.700 | 0.0650 | 0.0650 | 168.000 | 0.0650 | 0.0650 |
| 162.800 | 0.0650 | 0.0650 | 168.100 | 0.0650 | 0.0650 |
| 162.900 | 0.0650 | 0.0650 | 168.200 | 0.0650 | 0.0650 |
| 163.000 | 0.0650 | 0.0650 | 168.300 | 0.0650 | 0.0650 |
| 163.100 | 0.0650 | 0.0650 | 168.400 | 0.0650 | 0.0650 |
| 163.200 | 0.0650 | 0.0650 | 168.500 | 0.0650 | 0.0650 |
| 163.300 | 0.0650 | 0.0650 | 168.600 | 0.0650 | 0.0650 |
| 163.400 | 0.0650 | 0.0650 | 168.700 | 0.0650 | 0.0650 |
| 163.500 | 0.0650 | 0.0650 | 168.800 | 0.0650 | 0.0650 |
| 163.600 | 0.0650 | 0.0650 | 168.900 | 0.0650 | 0.0650 |
| 163.700 | 0.0650 | 0.0650 | 169.000 | 0.0650 | 0.0650 |
| 163.800 | 0.0650 | 0.0650 | 169.100 | 0.0650 | 0.0650 |
| 163.900 | 0.0650 | 0.0650 | 169.200 | 0.0650 | 0.0650 |
| 164.000 | 0.0650 | 0.0650 | 169.300 | 0.0650 | 0.0650 |
| 164.100 | 0.0650 | 0.0650 | 169.400 | 0.0650 | 0.0650 |
| 164.200 | 0.0650 | 0.0650 | 169.500 | 0.0650 | 0.0650 |
| 164.300 | 0.0650 | 0.0650 | 169.600 | 0.0650 | 0.0650 |
| 164.400 | 0.0650 | 0.0650 | 169.700 | 0.0650 | 0.0650 |
| 164.500 | 0.0650 | 0.0650 | 169.800 | 0.0650 | 0.0650 |
| 164.600 | 0.0650 | 0.0650 | 169.900 | 0.0650 | 0.0650 |
| 164.700 | 0.0650 | 0.0650 | 170.000 | 0.0650 | 0.0650 |
| 164.800 | 0.0650 | 0.0650 | 170.100 | 0.0650 | 0.0650 |
| 164.900 | 0.0650 | 0.0650 | 170.200 | 0.0650 | 0.0650 |
| 165.000 | 0.0650 | 0.0650 | 170.300 | 0.0650 | 0.0650 |
| 165.100 | 0.0650 | 0.0650 | 170.400 | 0.0650 | 0.0650 |
| 165.200 | 0.0650 | 0.0650 | 170.500 | 0.0650 | 0.0650 |
| 165.300 | 0.0650 | 0.0650 | 170.600 | 0.0650 | 0.0650 |
| 165.400 | 0.0650 | 0.0650 | | | |
| 165.500 | 0.0650 | 0.0650 | | | |
| 165.600 | 0.0650 | 0.0650 | | | |
| 165.700 | 0.0650 | 0.0650 | | | |
| 165.800 | 0.0650 | 0.0650 | | | |
| 165.900 | 0.0650 | 0.0650 | | | |
| 166.000 | 0.0650 | 0.0650 | | | |
| 166.100 | 0.0650 | 0.0650 | | | |
| 166.200 | 0.0650 | 0.0650 | | | |
| 166.300 | 0.0650 | 0.0650 | | | |
| 166.400 | 0.0650 | 0.0650 | | | |
| 166.500 | 0.0650 | 0.0650 | | | |
| 166.600 | 0.0650 | 0.0650 | | | |
| 166.700 | 0.0650 | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |



## Stage-Area-Storage for Pond 4P: Phase 2 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 162.200 | **37.5** | 0.0 | 167.500 | 37.5 | 198.8 |
| 162.300 | 37.5 | 3.7 | 167.600 | 37.5 | 202.5 |
| 162.400 | 37.5 | 7.5 | 167.700 | 37.5 | 206.3 |
| 162.500 | 37.5 | 11.3 | 167.800 | 37.5 | 210.0 |
| 162.600 | 37.5 | 15.0 | 167.900 | 37.5 | 213.7 |
| 162.700 | 37.5 | 18.8 | 168.000 | 37.5 | 217.5 |
| 162.800 | 37.5 | 22.5 | 168.100 | 37.5 | 221.3 |
| 162.900 | 37.5 | 26.2 | 168.200 | 37.5 | 225.0 |
| 163.000 | 37.5 | 30.0 | 168.300 | 37.5 | 228.7 |
| 163.100 | 37.5 | 33.8 | 168.400 | 37.5 | 232.5 |
| 163.200 | 37.5 | 37.5 | 168.500 | 37.5 | 236.3 |
| 163.300 | 37.5 | 41.2 | 168.600 | 37.5 | 240.0 |
| 163.400 | 37.5 | 45.0 | 168.700 | 37.5 | 243.8 |
| 163.500 | 37.5 | 48.8 | 168.800 | 37.5 | 247.5 |
| 163.600 | 37.5 | 52.5 | 168.900 | 37.5 | 251.2 |
| 163.700 | 37.5 | 56.3 | 169.000 | 37.5 | 255.0 |
| 163.800 | 37.5 | 60.0 | 169.100 | 37.5 | 258.8 |
| 163.900 | 37.5 | 63.7 | 169.200 | 37.5 | 262.5 |
| 164.000 | 37.5 | 67.5 | 169.300 | 37.5 | 266.2 |
| 164.100 | 37.5 | 71.3 | 169.400 | 37.5 | 270.0 |
| 164.200 | 37.5 | 75.0 | 169.500 | 37.5 | 273.8 |
| 164.300 | 37.5 | 78.7 | 169.600 | 37.5 | 277.5 |
| 164.400 | 37.5 | 82.5 | 169.700 | 37.5 | 281.3 |
| 164.500 | 37.5 | 86.3 | 169.800 | 37.5 | 285.0 |
| 164.600 | 37.5 | 90.0 | 169.900 | 37.5 | 288.7 |
| 164.700 | 37.5 | 93.8 | 170.000 | 37.5 | 292.5 |
| 164.800 | 37.5 | 97.5 | 170.100 | 37.5 | 296.3 |
| 164.900 | 37.5 | 101.2 | 170.200 | 37.5 | 300.0 |
| 165.000 | 37.5 | 105.0 | 170.300 | 37.5 | 303.7 |
| 165.100 | 37.5 | 108.8 | 170.400 | 37.5 | **307.5** |
| 165.200 | 37.5 | 112.5 | 170.500 | 37.5 | **308.2** |
| 165.300 | 37.5 | 116.2 | 170.600 | 37.5 | 308.2 |
| 165.400 | 37.5 | 120.0 | | | |
| 165.500 | 37.5 | 123.8 | | | |
| 165.600 | 37.5 | 127.5 | | | |
| 165.700 | 37.5 | 131.3 | | | |
| 165.800 | 37.5 | 135.0 | | | |
| 165.900 | 37.5 | 138.7 | | | |
| 166.000 | 37.5 | 142.5 | | | |
| 166.100 | 37.5 | 146.3 | | | |
| 166.200 | 37.5 | 150.0 | | | |
| 166.300 | 37.5 | 153.7 | | | |
| 166.400 | 37.5 | 157.5 | | | |
| 166.500 | 37.5 | 161.3 | | | |
| 166.600 | 37.5 | 165.0 | | | |
| 166.700 | 37.5 | 168.8 | | | |
| 166.800 | 37.5 | 172.5 | | | |
| 166.900 | 37.5 | 176.2 | | | |
| 167.000 | 37.5 | 180.0 | | | |
| 167.100 | 37.5 | 183.8 | | | |
| 167.200 | 37.5 | 187.5 | | | |
| 167.300 | 37.5 | 191.2 | | | |
| 167.400 | 37.5 | 195.0 | | | |

### Summary for Subcatchment 5S: Building C

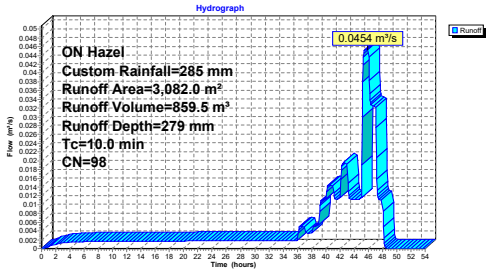
Runoff = 0.0454 m³/s @ 45.90 hrs, Volume= 859.5 m³, Depth= 279 mm
Routed to Pond 6P : Phase 3 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 3,082.0 | 98 | |
| | 3,082.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 5S: Building C






### Summary for Pond 6P: Phase 3 U/G Tank

Inflow Area = 3,082.0 m², 100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.0454 m³/s @ 45.90 hrs, Volume= 859.5 m³
Outflow = 0.0650 m³/s @ 5.15 hrs, Volume= 842.4 m³, Atten= 0%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 5.15 hrs, Volume= 987.5 m³
Routed to Link 7L : West Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 166.619 m @ 35.83 hrs Surf.Area= 29.7 m² Storage= 18.4 m³

Plug-Flow detention time= 39.1 min calculated for 842.4 m³ (98% of inflow)
Center-of-Mass det. time= 27.7 min ( 2,303.9 - 2,276.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 165.4 m³ | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

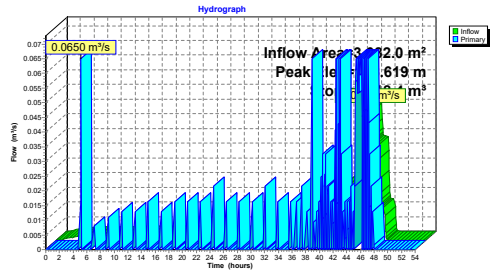
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 29.7 | 0.0 | 0.0 |
| 171.570 | 29.7 | 165.4 | 165.4 |

| Device | Routing | Invert | Outlet Devices (Turned on 60 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump** Discharges@170.600 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

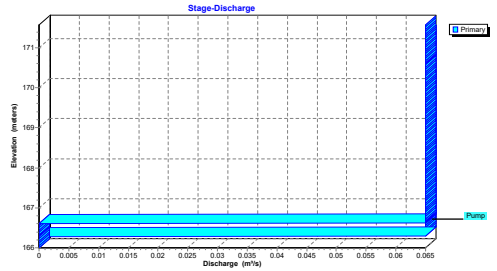
**Primary OutFlow** Max=0.0650 m³/s @ 5.15 hrs HW=166.404 m TW=0.000 m (Dynamic Tailwater)
**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 6P: Phase 3 U/G Tank

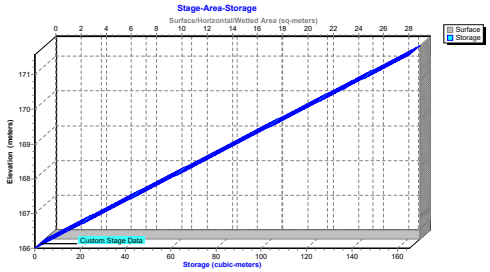



### Pond 6P: Phase 3 U/G Tank






### Pond 6P: Phase 3 U/G Tank






### Stage-Discharge for Pond 6P: Phase 3 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | | | |
| 166.400 | 0.0000 | 0.0650 | | | |
| 166.500 | 0.0000 | 0.0650 | | | |
| 166.600 | **0.0000** | 0.0650 | | | |
| 166.700 | **0.0650** | 0.0650 | | | |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 6P: Phase 3 U/G Tank

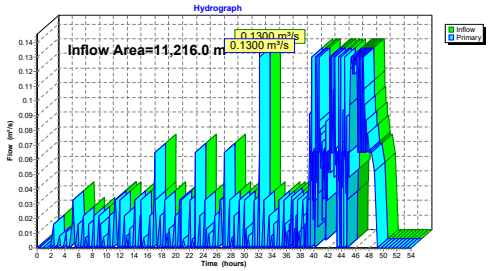
| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **29.7** | 0.0 | 171.300 | 29.7 | 157.4 |
| 166.100 | 29.7 | 3.0 | 171.400 | 29.7 | 160.4 |
| 166.200 | 29.7 | 5.9 | 171.500 | 29.7 | **163.3** |
| 166.300 | 29.7 | 8.9 | | | |
| 166.400 | 29.7 | 11.9 | | | |
| 166.500 | 29.7 | 14.8 | | | |
| 166.600 | 29.7 | 17.8 | | | |
| 166.700 | 29.7 | 20.8 | | | |
| 166.800 | 29.7 | 23.8 | | | |
| 166.900 | 29.7 | 26.7 | | | |
| 167.000 | 29.7 | 29.7 | | | |
| 167.100 | 29.7 | 32.7 | | | |
| 167.200 | 29.7 | 35.6 | | | |
| 167.300 | 29.7 | 38.6 | | | |
| 167.400 | 29.7 | 41.6 | | | |
| 167.500 | 29.7 | 44.5 | | | |
| 167.600 | 29.7 | 47.5 | | | |
| 167.700 | 29.7 | 50.5 | | | |
| 167.800 | 29.7 | 53.5 | | | |
| 167.900 | 29.7 | 56.4 | | | |
| 168.000 | 29.7 | 59.4 | | | |
| 168.100 | 29.7 | 62.4 | | | |
| 168.200 | 29.7 | 65.3 | | | |
| 168.300 | 29.7 | 68.3 | | | |
| 168.400 | 29.7 | 71.3 | | | |
| 168.500 | 29.7 | 74.3 | | | |
| 168.600 | 29.7 | 77.2 | | | |
| 168.700 | 29.7 | 80.2 | | | |
| 168.800 | 29.7 | 83.2 | | | |
| 168.900 | 29.7 | 86.1 | | | |
| 169.000 | 29.7 | 89.1 | | | |
| 169.100 | 29.7 | 92.1 | | | |
| 169.200 | 29.7 | 95.0 | | | |
| 169.300 | 29.7 | 98.0 | | | |
| 169.400 | 29.7 | 101.0 | | | |
| 169.500 | 29.7 | 104.0 | | | |
| 169.600 | 29.7 | 106.9 | | | |
| 169.700 | 29.7 | 109.9 | | | |
| 169.800 | 29.7 | 112.9 | | | |
| 169.900 | 29.7 | 115.8 | | | |
| 170.000 | 29.7 | 118.8 | | | |
| 170.100 | 29.7 | 121.8 | | | |
| 170.200 | 29.7 | 124.7 | | | |
| 170.300 | 29.7 | 127.7 | | | |
| 170.400 | 29.7 | 130.7 | | | |
| 170.500 | 29.7 | 133.7 | | | |
| 170.600 | 29.7 | 136.6 | | | |
| 170.700 | 29.7 | 139.6 | | | |
| 170.800 | 29.7 | 142.6 | | | |
| 170.900 | 29.7 | 145.5 | | | |
| 171.000 | 29.7 | 148.5 | | | |
| 171.100 | 29.7 | 151.5 | | | |
| 171.200 | 29.7 | 154.4 | | | |

## Summary for Link 7L: West Pond Outlet

Inflow Area = 11,216.0 m²,100.00% Impervious, Inflow Depth = 313 mm for Custom event
Inflow = 0.1300 m³/s @ 32.10 hrs, Volume= 3,506.0 m³
Primary = 0.1300 m³/s @ 32.10 hrs, Volume= 3,506.0 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 7L: West Pond Outlet






## Summary for Pond 7P: Phase 4 U/G Tank

Inflow Area = 4,785.0 m²,100.00% Impervious, Inflow Depth = 279 mm for Custom event
Inflow = 0.0704 m³/s @ 45.90 hrs, Volume= 1,334.4 m³
Outflow = 0.0650 m³/s @ 3.85 hrs, Volume= 1,322.1 m³, Atten= 8%, Lag= 0.0 min
Primary = 0.0650 m³/s @ 3.85 hrs, Volume= 1,526.0 m³
Routed to Link 10L : East Pond Outlet

Routing by Dyn-Stor-Ind method, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 167.016 m @ 46.10 hrs Surf.Area= 28.5 m² Storage= 29.0 m³

Plug-Flow detention time= 25.0 min calculated for 1,322.1 m³ (99% of inflow)
Center-of-Mass det. time= 19.4 min ( 2,295.6 - 2,276.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 166.000 m | 171.0 m³ | **Custom Stage Data (Prismatic)**Listed below (Recalc) |

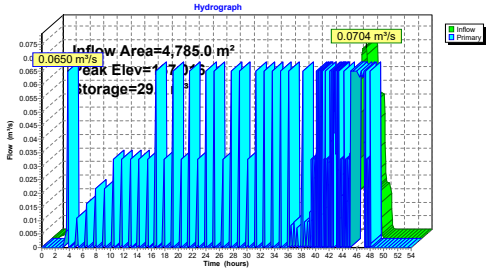
| Elevation (meters) | Surf.Area (sq-meters) | Inc.Store (cubic-meters) | Cum.Store (cubic-meters) |
|---|---|---|---|
| 166.000 | 28.5 | 0.0 | 0.0 |
| 172.000 | 28.5 | 171.0 | 171.0 |

| Device | Routing | Invert | Outlet Devices (Turned on 77 times) |
|---|---|---|---|
| #1 | Primary | 166.600 m | **Pump**<br>Discharges@169.500 m Turns Off<166.300 m<br>Flow (l/min)= 3,900.0<br>Head (meters)= 6.000 |

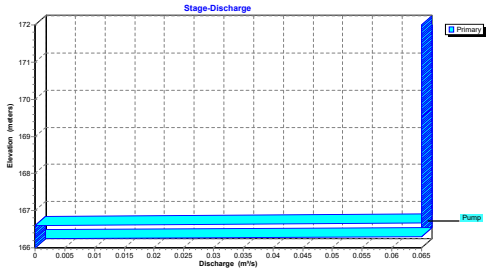
**Primary OutFlow** Max=0.0650 m³/s @ 3.85 hrs HW=166.396 m TW=0.000 m (Dynamic Tailwater)
**1=Pump** (Pump Controls 0.0650 m³/s)



### Pond 7P: Phase 4 U/G Tank

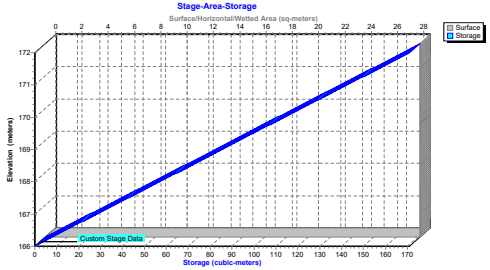



### Pond 7P: Phase 4 U/G Tank






### Pond 7P: Phase 4 U/G Tank






### Stage-Discharge for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) | Elevation (meters) | Primary (m³/s) | Primary+ (m³/s) |
|---|---|---|---|---|---|
| 166.000 | 0.0000 | 0.0000 | 171.300 | 0.0650 | 0.0650 |
| 166.100 | 0.0000 | 0.0000 | 171.400 | 0.0650 | 0.0650 |
| 166.200 | 0.0000 | 0.0000 | 171.500 | 0.0650 | 0.0650 |
| 166.300 | 0.0000 | **0.0650** | 171.600 | 0.0650 | 0.0650 |
| 166.400 | 0.0000 | 0.0650 | 171.700 | 0.0650 | 0.0650 |
| 166.500 | 0.0000 | 0.0650 | 171.800 | 0.0650 | 0.0650 |
| 166.600 | **0.0000** | 0.0650 | 171.900 | 0.0650 | 0.0650 |
| 166.700 | **0.0650** | 0.0650 | 172.000 | 0.0650 | 0.0650 |
| 166.800 | 0.0650 | 0.0650 | | | |
| 166.900 | 0.0650 | 0.0650 | | | |
| 167.000 | 0.0650 | 0.0650 | | | |
| 167.100 | 0.0650 | 0.0650 | | | |
| 167.200 | 0.0650 | 0.0650 | | | |
| 167.300 | 0.0650 | 0.0650 | | | |
| 167.400 | 0.0650 | 0.0650 | | | |
| 167.500 | 0.0650 | 0.0650 | | | |
| 167.600 | 0.0650 | 0.0650 | | | |
| 167.700 | 0.0650 | 0.0650 | | | |
| 167.800 | 0.0650 | 0.0650 | | | |
| 167.900 | 0.0650 | 0.0650 | | | |
| 168.000 | 0.0650 | 0.0650 | | | |
| 168.100 | 0.0650 | 0.0650 | | | |
| 168.200 | 0.0650 | 0.0650 | | | |
| 168.300 | 0.0650 | 0.0650 | | | |
| 168.400 | 0.0650 | 0.0650 | | | |
| 168.500 | 0.0650 | 0.0650 | | | |
| 168.600 | 0.0650 | 0.0650 | | | |
| 168.700 | 0.0650 | 0.0650 | | | |
| 168.800 | 0.0650 | 0.0650 | | | |
| 168.900 | 0.0650 | 0.0650 | | | |
| 169.000 | 0.0650 | 0.0650 | | | |
| 169.100 | 0.0650 | 0.0650 | | | |
| 169.200 | 0.0650 | 0.0650 | | | |
| 169.300 | 0.0650 | 0.0650 | | | |
| 169.400 | 0.0650 | 0.0650 | | | |
| 169.500 | 0.0650 | 0.0650 | | | |
| 169.600 | 0.0650 | 0.0650 | | | |
| 169.700 | 0.0650 | 0.0650 | | | |
| 169.800 | 0.0650 | 0.0650 | | | |
| 169.900 | 0.0650 | 0.0650 | | | |
| 170.000 | 0.0650 | 0.0650 | | | |
| 170.100 | 0.0650 | 0.0650 | | | |
| 170.200 | 0.0650 | 0.0650 | | | |
| 170.300 | 0.0650 | 0.0650 | | | |
| 170.400 | 0.0650 | 0.0650 | | | |
| 170.500 | 0.0650 | 0.0650 | | | |
| 170.600 | 0.0650 | 0.0650 | | | |
| 170.700 | 0.0650 | 0.0650 | | | |
| 170.800 | 0.0650 | 0.0650 | | | |
| 170.900 | 0.0650 | 0.0650 | | | |
| 171.000 | 0.0650 | 0.0650 | | | |
| 171.100 | 0.0650 | 0.0650 | | | |
| 171.200 | 0.0650 | 0.0650 | | | |



### Stage-Area-Storage for Pond 7P: Phase 4 U/G Tank

| Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) | Elevation (meters) | Surface (sq-meters) | Storage (cubic-meters) |
|---|---|---|---|---|---|
| 166.000 | **28.5** | 0.0 | 171.300 | 28.5 | 151.1 |
| 166.100 | 28.5 | 2.8 | 171.400 | 28.5 | 153.9 |
| 166.200 | 28.5 | 5.7 | 171.500 | 28.5 | 156.8 |
| 166.300 | 28.5 | 8.6 | 171.600 | 28.5 | 159.6 |
| 166.400 | 28.5 | 11.4 | 171.700 | 28.5 | 162.4 |
| 166.500 | 28.5 | 14.3 | 171.800 | 28.5 | 165.3 |
| 166.600 | 28.5 | 17.1 | 171.900 | 28.5 | 168.2 |
| 166.700 | 28.5 | 19.9 | 172.000 | 28.5 | **171.0** |
| 166.800 | 28.5 | 22.8 | | | |
| 166.900 | 28.5 | 25.7 | | | |
| 167.000 | 28.5 | 28.5 | | | |
| 167.100 | 28.5 | 31.3 | | | |
| 167.200 | 28.5 | 34.2 | | | |
| 167.300 | 28.5 | 37.1 | | | |
| 167.400 | 28.5 | 39.9 | | | |
| 167.500 | 28.5 | 42.8 | | | |
| 167.600 | 28.5 | 45.6 | | | |
| 167.700 | 28.5 | 48.4 | | | |
| 167.800 | 28.5 | 51.3 | | | |
| 167.900 | 28.5 | 54.2 | | | |
| 168.000 | 28.5 | 57.0 | | | |
| 168.100 | 28.5 | 59.8 | | | |
| 168.200 | 28.5 | 62.7 | | | |
| 168.300 | 28.5 | 65.6 | | | |
| 168.400 | 28.5 | 68.4 | | | |
| 168.500 | 28.5 | 71.3 | | | |
| 168.600 | 28.5 | 74.1 | | | |
| 168.700 | 28.5 | 76.9 | | | |
| 168.800 | 28.5 | 79.8 | | | |
| 168.900 | 28.5 | 82.7 | | | |
| 169.000 | 28.5 | 85.5 | | | |
| 169.100 | 28.5 | 88.3 | | | |
| 169.200 | 28.5 | 91.2 | | | |
| 169.300 | 28.5 | 94.1 | | | |
| 169.400 | 28.5 | 96.9 | | | |
| 169.500 | 28.5 | 99.8 | | | |
| 169.600 | 28.5 | 102.6 | | | |
| 169.700 | 28.5 | 105.4 | | | |
| 169.800 | 28.5 | 108.3 | | | |
| 169.900 | 28.5 | 111.2 | | | |
| 170.000 | 28.5 | 114.0 | | | |
| 170.100 | 28.5 | 116.8 | | | |
| 170.200 | 28.5 | 119.7 | | | |
| 170.300 | 28.5 | 122.6 | | | |
| 170.400 | 28.5 | 125.4 | | | |
| 170.500 | 28.5 | 128.3 | | | |
| 170.600 | 28.5 | 131.1 | | | |
| 170.700 | 28.5 | 133.9 | | | |
| 170.800 | 28.5 | 136.8 | | | |
| 170.900 | 28.5 | 139.7 | | | |
| 171.000 | 28.5 | 142.5 | | | |
| 171.100 | 28.5 | 145.3 | | | |
| 171.200 | 28.5 | 148.2 | | | |

### Summary for Subcatchment 8S: Building D

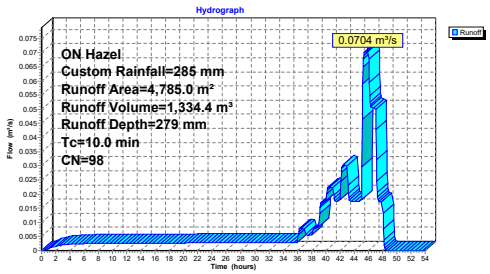
Runoff = 0.0704 m³/s @ 45.90 hrs, Volume= 1,334.4 m³, Depth= 279 mm
Routed to Pond 7P : Phase 4 U/G Tank

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| * | 4,785.0 | 98 | |
| | 4,785.0 | | 100.00% Impervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 8S: Building D



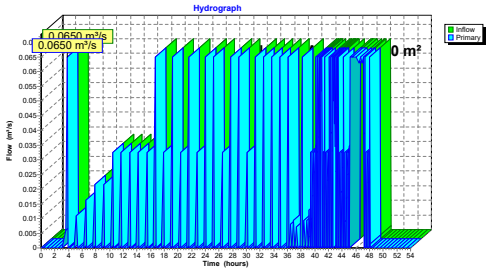



### Summary for Link 10L: East Pond Outlet

Inflow Area = 4,785.0 m², 100.00% Impervious, Inflow Depth = 319 mm for Custom event
Inflow = 0.0650 m³/s @ 3.85 hrs, Volume= 1,526.0 m³
Primary = 0.0650 m³/s @ 3.85 hrs, Volume= 1,526.0 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-54.00 hrs, dt= 0.05 hrs

### Link 10L: East Pond Outlet






### Events for Subcatchment 3S: Building A and B U/G Parking

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (cubic-meters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.2365 | 443.9 | 55 |
| 10-Year | 70 | 0.2809 | 519.2 | 64 |
| 25-Year | 82 | 0.3399 | 617.6 | 76 |
| 50-Year | 89 | 0.3823 | 674.0 | 83 |
| 100-Year | 97 | **0.4227** | 743.9 | 91 |
| Custom | **285** | 0.1197 | **2,268.3** | **279** |



### Events for Pond 4P: Phase 2 U/G Tank

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|
| 5-Year | 0.2365 | 0.0650 | 165.364 | 118.6 |
| 10-Year | 0.2809 | **0.0650** | 166.496 | 161.1 |
| 25-Year | 0.3399 | 0.0650 | 167.776 | 209.1 |
| 50-Year | 0.3823 | 0.0650 | 168.718 | 244.4 |
| 100-Year | **0.4227** | 0.0650 | **169.770** | **283.9** |
| Custom | 0.1197 | 0.0650 | 169.311 | 266.7 |



### Events for Subcatchment 5S: Building C

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (cubic-meters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0896 | 168.2 | 55 |
| 10-Year | 70 | 0.1064 | 196.7 | 64 |
| 25-Year | 82 | 0.1288 | 234.0 | 76 |
| 50-Year | 89 | 0.1448 | 255.4 | 83 |
| 100-Year | 97 | **0.1601** | 281.9 | 91 |
| Custom | **285** | 0.0454 | **859.5** | **279** |



### Events for Pond 6P: Phase 3 U/G Tank

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|
| 5-Year | 0.0896 | **0.0650** | 166.739 | 21.9 |
| 10-Year | 0.1064 | 0.0650 | 166.918 | 27.3 |
| 25-Year | 0.1288 | 0.0650 | 167.713 | 50.9 |
| 50-Year | 0.1448 | 0.0650 | 167.840 | 54.6 |
| 100-Year | **0.1601** | 0.0650 | **168.026** | **60.2** |
| Custom | 0.0454 | 0.0650 | 166.619 | 18.4 |

### Events for Link 7L: West Pond Outlet

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) |
|---|---|---|---|
| 5-Year | 0.1300 | 0.1300 | **0.000** |
| 10-Year | **0.1300** | **0.1300** | 0.000 |
| 25-Year | 0.1300 | 0.1300 | 0.000 |
| 50-Year | 0.1300 | 0.1300 | 0.000 |
| 100-Year | 0.1300 | 0.1300 | 0.000 |
| Custom | 0.1300 | 0.1300 | 0.000 |



### Events for Pond 7P: Phase 4 U/G Tank

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) | Storage (cubic-meters) |
|---|---|---|---|---|
| 5-Year | 0.1391 | 0.0650 | 167.797 | 51.2 |
| 10-Year | 0.1652 | 0.0650 | 168.416 | 68.9 |
| 25-Year | 0.2000 | **0.0650** | 169.399 | 96.9 |
| 50-Year | 0.2249 | 0.0650 | 169.893 | 110.9 |
| 100-Year | **0.2486** | 0.0650 | **170.492** | **128.0** |
| Custom | 0.0704 | 0.0650 | 167.016 | 29.0 |



### Events for Subcatchment 8S: Building D

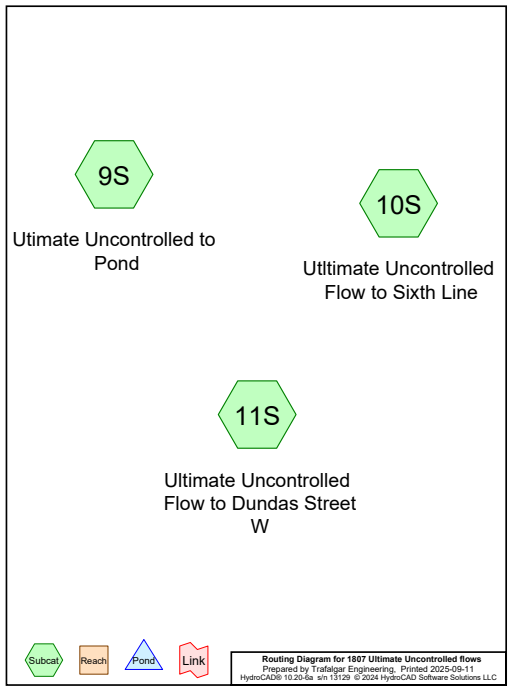
| Event | Rainfall (mm) | Runoff (m³/s) | Volume (cubic-meters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.1391 | 261.2 | 55 |
| 10-Year | 70 | 0.1652 | 305.4 | 64 |
| 25-Year | 82 | 0.2000 | 363.3 | 76 |
| 50-Year | 89 | 0.2249 | 396.5 | 83 |
| 100-Year | 97 | **0.2486** | 437.6 | 91 |
| Custom | **285** | 0.0704 | **1,334.4** | **279** |



### Events for Link 10L: East Pond Outlet

| Event | Inflow (m³/s) | Primary (m³/s) | Elevation (meters) |
|---|---|---|---|
| 5-Year | 0.0650 | 0.0650 | **0.000** |
| 10-Year | 0.0650 | 0.0650 | 0.000 |
| 25-Year | **0.0650** | **0.0650** | 0.000 |
| 50-Year | 0.0650 | 0.0650 | 0.000 |
| 100-Year | 0.0650 | 0.0650 | 0.000 |
| Custom | 0.0650 | 0.0650 | 0.000 |

ULTIMATE UNCONTROLLED HYDROCAD OUTPUT






**Area Listing (all nodes)**

| Area (hectares) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 0.1622 | 74 | >75% Grass cover, Good, HSG C (9S, 10S, 11S) |



**Summary for Subcatchment 9S: Utimate Uncontrolled to Pond**

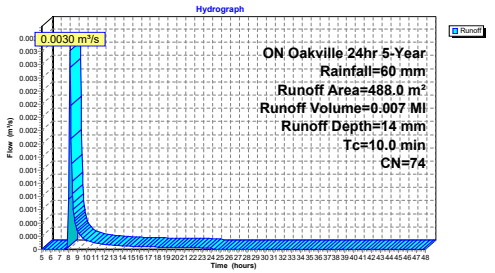
Runoff = 0.0030 m³/s @ 8.16 hrs, Volume= 0.007 Ml, Depth= 14 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| | 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * | 171.0 | 74 | >75% Grass cover, Good, HSG C |
| | 488.0 | 74 | Weighted Average |
| | 488.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 9S: Utimate Uncontrolled to Pond**






**Summary for Subcatchment 10S: Utltimate Uncontrolled Flow to Sixth Line**

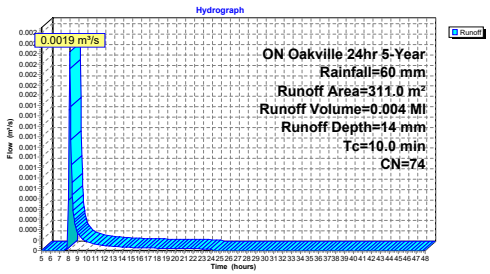
Runoff = 0.0019 m³/s @ 8.16 hrs, Volume= 0.004 Ml, Depth= 14 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| Area (m²) | CN | Description |
|---|---|---|
| 311.0 | 74 | >75% Grass cover, Good, HSG C |
| 311.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 10S: Utltimate Uncontrolled Flow to Sixth Line**






**Summary for Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W**

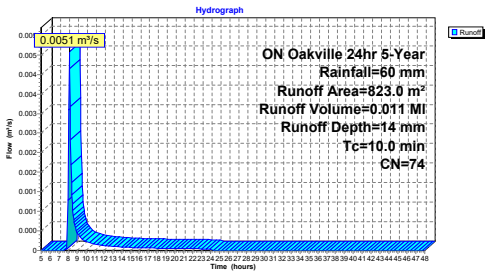
Runoff = 0.0051 m³/s @ 8.16 hrs, Volume= 0.011 Ml, Depth= 14 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 5-Year Rainfall=60 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W**






**Summary for Subcatchment 9S: Utimate Uncontrolled to Pond**

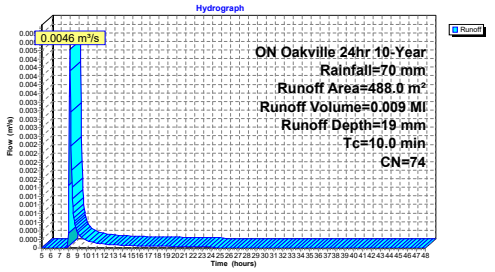
Runoff = 0.0046 m³/s @ 8.16 hrs, Volume= 0.009 Ml, Depth= 19 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| | 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * | 171.0 | 74 | >75% Grass cover, Good, HSG C |
| | 488.0 | 74 | Weighted Average |
| | 488.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

**Subcatchment 9S: Utimate Uncontrolled to Pond**



### Summary for Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line

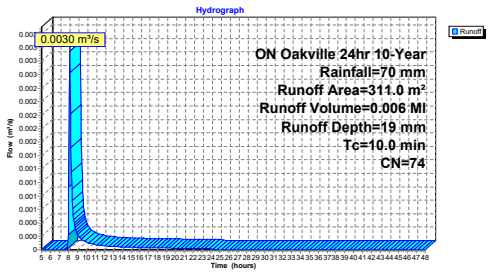
Runoff = 0.0030 m³/s @ 8.16 hrs, Volume= 0.006 Ml, Depth= 19 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| Area (m²) | CN | Description |
|---|---|---|
| 311.0 | 74 | >75% Grass cover, Good, HSG C |
| 311.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W

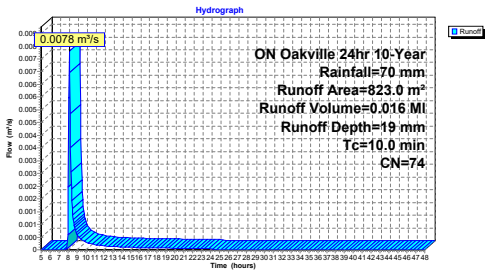
Runoff = 0.0078 m³/s @ 8.16 hrs, Volume= 0.016 Ml, Depth= 19 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 10-Year Rainfall=70 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: Utimate Uncontrolled to Pond

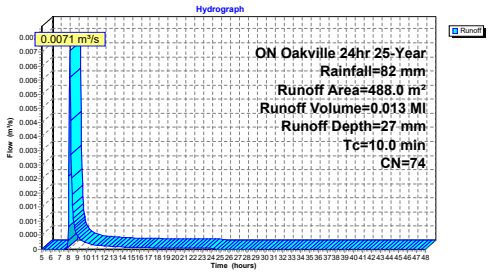
Runoff = 0.0071 m³/s @ 8.15 hrs, Volume= 0.013 Ml, Depth= 27 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * 171.0 | 74 | >75% Grass cover, Good, HSG C |
| 488.0 | 74 | Weighted Average |
| 488.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: Utimate Uncontrolled to Pond






### Summary for Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line

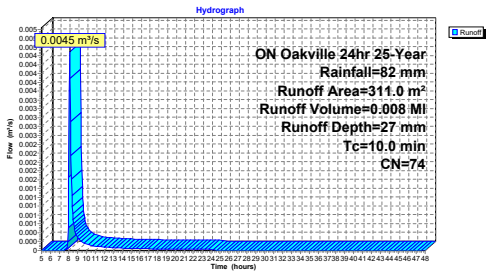
Runoff = 0.0045 m³/s @ 8.15 hrs, Volume= 0.008 Ml, Depth= 27 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| 311.0 | 74 | >75% Grass cover, Good, HSG C |
| 311.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W

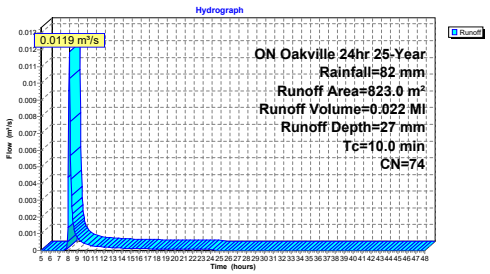
Runoff = 0.0119 m³/s @ 8.15 hrs, Volume= 0.022 Ml, Depth= 27 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 25-Year Rainfall=82 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: Utimate Uncontrolled to Pond

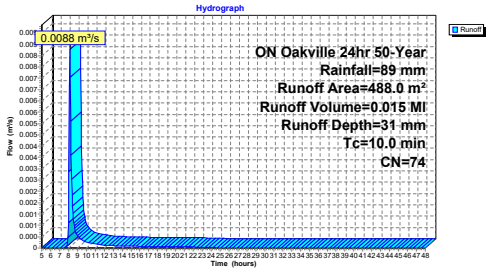
Runoff = 0.0088 m³/s @ 8.15 hrs, Volume= 0.015 Ml, Depth= 31 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| Area (m²) | CN | Description |
|---|---|---|
| 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * 171.0 | 74 | >75% Grass cover, Good, HSG C |
| 488.0 | 74 | Weighted Average |
| 488.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: Utimate Uncontrolled to Pond



### Summary for Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line

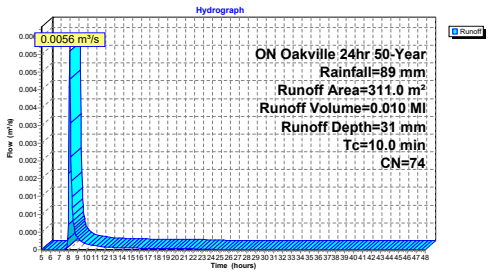
Runoff = 0.0056 m³/s @ 8.15 hrs, Volume= 0.010 Ml, Depth= 31 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| Area (m²) | CN | Description |
|---|---|---|
| 311.0 | 74 | >75% Grass cover, Good, HSG C |
| 311.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W

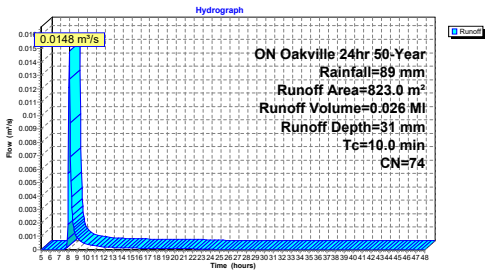
Runoff = 0.0148 m³/s @ 8.15 hrs, Volume= 0.026 Ml, Depth= 31 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 50-Year Rainfall=89 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: Utimate Uncontrolled to Pond

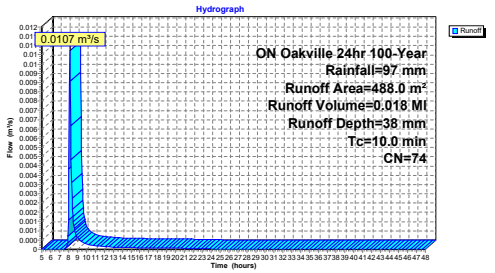
Runoff = 0.0107 m³/s @ 8.15 hrs, Volume= 0.018 Ml, Depth= 38 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| | 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * | 171.0 | 74 | >75% Grass cover, Good, HSG C |
| | 488.0 | 74 | Weighted Average |
| | 488.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: Utimate Uncontrolled to Pond






### Summary for Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line

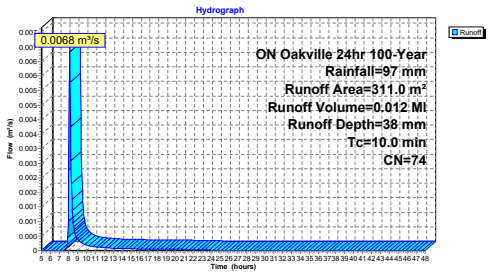
Runoff = 0.0068 m³/s @ 8.15 hrs, Volume= 0.012 Ml, Depth= 38 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| Area (m²) | CN | Description |
|---|---|---|
| 311.0 | 74 | >75% Grass cover, Good, HSG C |
| 311.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W

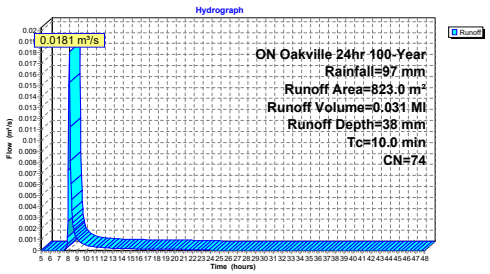
Runoff = 0.0181 m³/s @ 8.15 hrs, Volume= 0.031 Ml, Depth= 38 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Oakville 24hr 100-Year Rainfall=97 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W






### Summary for Subcatchment 9S: Utimate Uncontrolled to Pond

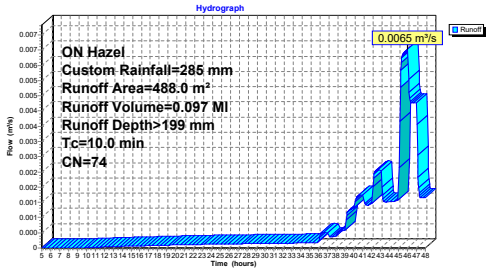
Runoff = 0.0065 m³/s @ 45.98 hrs, Volume= 0.097 Ml, Depth> 199 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| | Area (m²) | CN | Description |
|---|---|---|---|
| | 317.0 | 74 | >75% Grass cover, Good, HSG C |
| * | 171.0 | 74 | >75% Grass cover, Good, HSG C |
| | 488.0 | 74 | Weighted Average |
| | 488.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, |

### Subcatchment 9S: Utimate Uncontrolled to Pond



### Summary for Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line

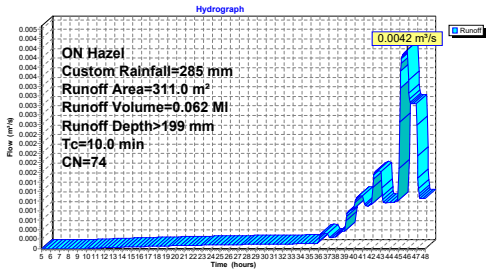
Runoff = 0.0042 m³/s @ 45.98 hrs, Volume= 0.062 Ml, Depth> 199 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| Area (m²) | CN | Description |
|---|---|---|
| 311.0 | 74 | >75% Grass cover, Good, HSG C |
| 311.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line






### Summary for Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W

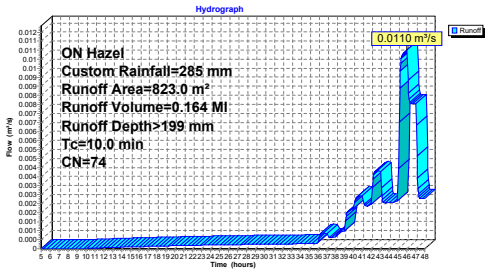
Runoff = 0.0110 m³/s @ 45.98 hrs, Volume= 0.164 Ml, Depth> 199 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs
ON Hazel Custom Rainfall=285 mm

| Area (m²) | CN | Description |
|---|---|---|
| 823.0 | 74 | >75% Grass cover, Good, HSG C |
| 823.0 | | 100.00% Pervious Area |

| Tc (min) | Length (meters) | Slope (m/m) | Velocity (m/sec) | Capacity (m³/s) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry,** |

### Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W






### Events for Subcatchment 9S: Utimate Uncontrolled to Pond

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (Mega-liters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0030 | 0.007 | 14 |
| 10-Year | 70 | 0.0046 | 0.009 | 19 |
| 25-Year | 82 | 0.0071 | 0.013 | 27 |
| 50-Year | 89 | 0.0088 | 0.015 | 31 |
| 100-Year | 97 | **0.0107** | 0.018 | 38 |
| Custom | **285** | 0.0065 | **0.097** | **199** |



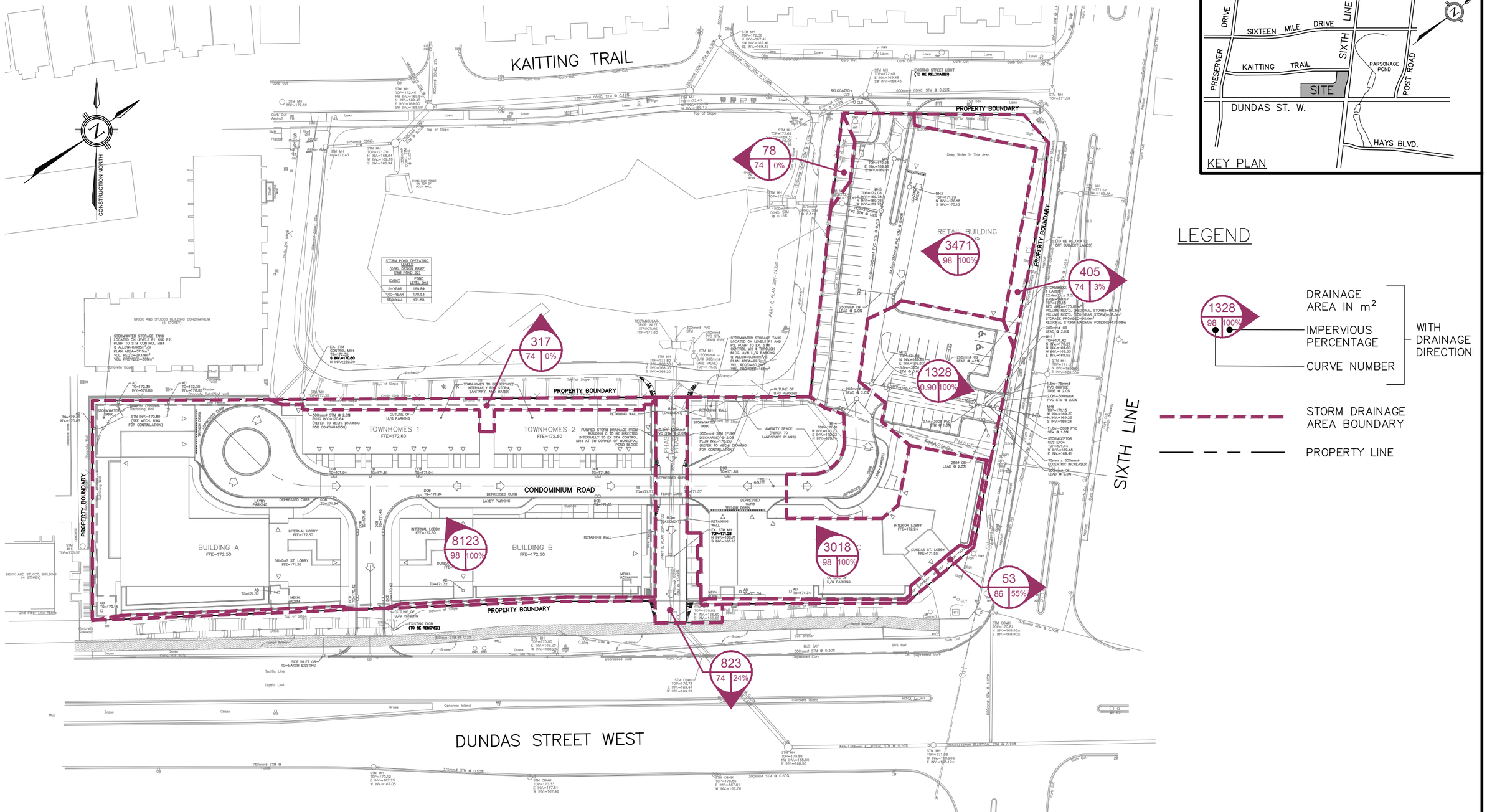
### Events for Subcatchment 10S: UtIltimate Uncontrolled Flow to Sixth Line

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (Mega-liters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0019 | 0.004 | 14 |
| 10-Year | 70 | 0.0030 | 0.006 | 19 |
| 25-Year | 82 | 0.0045 | 0.008 | 27 |
| 50-Year | 89 | 0.0056 | 0.010 | 31 |
| 100-Year | 97 | **0.0068** | 0.012 | 38 |
| Custom | **285** | 0.0042 | **0.062** | **199** |



### Events for Subcatchment 11S: Ultimate Uncontrolled Flow to Dundas Street W

| Event | Rainfall (mm) | Runoff (m³/s) | Volume (Mega-liters) | Depth (mm) |
|---|---|---|---|---|
| 5-Year | 60 | 0.0051 | 0.011 | 14 |
| 10-Year | 70 | 0.0078 | 0.016 | 19 |
| 25-Year | 82 | 0.0119 | 0.022 | 27 |
| 50-Year | 89 | 0.0148 | 0.026 | 31 |
| 100-Year | 97 | **0.0181** | 0.031 | 38 |
| Custom | **285** | 0.0110 | **0.164** | **199** |




PROJECT TITLE

# SHOPPERS REALTY INC.

21 DUNDAS STREET WEST AND
3000 SIXTH LINE, OAKVILLE, ON

DRAWING TITLE

## STORM DRAINAGE AREA PLAN (INTERIM CONDITION)


TRAFALGAR ENGINEERING
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com


| | | | | | |
|---|---|---|---|---|---|
| DESIGN BY | MW | SCALE | 1:1000 | DRAWING No. | FIG.1 |
| DRAWN BY | GL | DATE | 2025/09/04 | | |


FILENAME: P:\1807 Dundas and Sixth Line\04-CAD\03-Site Plan\1807GS-INT.dwg
PLOTDATE: Feb 25, 2026 - 4:32pm

KAITTING TRAIL

DUNDAS STREET WEST

SIXTH LINE

CONSTRUCTION NORTH

PROPERTY BOUNDARY

CONDOMINIUM ROAD

TOWNHOMES 1
FFE=172.60

TOWNHOMES 2
FFE=172.60

TOWNHOMES 3
FFE=172.65

TOWNHOMES 4
FFE=172.80

BUILDING A
FFE=172.50

BUILDING B
FFE=172.50

BUILDING D
FFE=172.50

RETAIL
FFE=171.70

LOADING
FFE=172.00

PHASE 1

PHASE 2

317
74 | 0%

171
74 | 0%

4785
198 | 100%

4785
98 | 100%

311
74 | 10%

8123
98 | 100%

3082
98 | 100%

823
74 | 24%

STORM POND OPERATING LEVELS
(OSEL DESIGN BRIEF DWM, POND 22)

| EVENT | POND LEVEL (m) |
|---|---|
| 5-YEAR | 169.89 |
| 100-YEAR | 170.53 |
| REGIONAL | 171.58 |

STORMWATER STORAGE TANK LOCATED ON LEVELS P1 AND P2, PUMP TO STM CONTROL MH4
G ALLOW=0.060m³/s
PLAN AREA=37.0m²
VOL. REQ'D=283.9m³
VOL. PROVIDED=308m³

STORMWATER STORAGE TANK LOCATED ON LEVELS P1 AND P2, PUMP TO EX. STM CONTROL MH 4 THROUGH BLDG. A/B U/G PARKING
G ALLOW=0.060m³/s
PLAN AREA=29.7m²
VOL. REQ'D=240.2m³
VOL. PROVIDED=180m³

STORMWATER STORAGE TANK LOCATED ON LEVELS P1 AND P2
G ALLOW=0.588m³/s
PLAN AREA=285m²
VOL. REQ'D=128.0m³
VOL. PROVIDED=170m³

PUMPED STORM DRAINAGE FROM BUILDING C TO BE DIRECTED INTERNALLY TO EX STM CONTROL MH4 AT SW CORNER OF MUNICIPAL POND BLOCK

TOWNHOMES TO BE SERVICED INTERNALLY FOR STORM, SANITARY, AND WATER

EXISTING STREET LIGHT (TO BE RELOCATED)

RELOCATED OLS

(TO BE REMOVED)

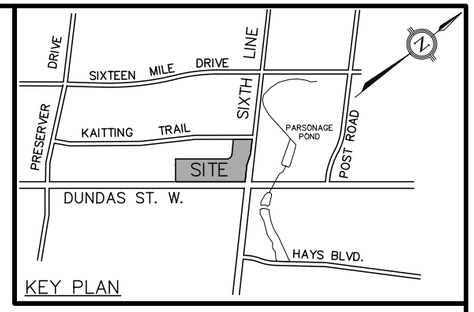
(TO BE RELOCATED OFF SUBJECT LANDS)

EXISTING DICB (TO BE REMOVED)

BRICK AND STUCCO BUILDING CONDOMINIUM (6 STOREY)

BRICK AND STUCCO BUILDING (4 STOREY)

KEY PLAN




## LEGEND

4785
98 | 100%

- DRAINAGE AREA IN $m^2$
- IMPERVIOUS PERCENTAGE
- CURVE NUMBER

WITH DRAINAGE DIRECTION

STORM DRAINAGE AREA BOUNDARY

PROPERTY LINE

PROJECT TITLE

# SHOPPERS REALTY INC.

21 DUNDAS STREET WEST AND
3000 SIXTH LINE, OAKVILLE, ON

DRAWING TITLE

## STORM DRAINAGE AREA PLAN (ULTIMATE CONDITION)


TRAFALGAR ENGINEERING
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com


| | | | |
|---|---|---|---|
| DESIGN BY | MW | SCALE | 1:1000 |
| DRAWN BY | GL | DATE | 2025/09/04 |

DRAWING No. FIG.2


FILENAME: P:\1807 Dundas and Sixth Line\04-CAD\03-Site Plan\1807GS-ULT.dwg
PLOTDATE: Feb 25, 2026 - 4:53pm

KAITTING TRAIL

RETAIL BUILDING
FFE=171.75

BUILDING C
FFE=172.24

INTERIOR LOBBY
FFE=172.24

DUNDAS ST. LOBBY
FFE=171.55

PHASE 1

PHASE 3

PROPERTY BOUNDARY

CONSTRUCTION NORTH

SIXTH LINE

DUNDAS STREET WEST

Deep Water in This Area

STORMWATER STORAGE TANK LOCATED ON LEVELS P1 AND P2. PUMP TO EX. STM CONTROL MH 4 THROUGH BLDG. A/B U/G PARKING
Q ALLOW=0.065m³/s
PLAN AREA=29.7m²
VOL. REQ'D=60.2m³
VOL. PROVIDED=165m³

STORMBOXX 600HD
1 LAYER
22.4m(L) x 7.3m(W) x 0.61m(H)
BASE=169.57
TOP=170.18
BED AREA=170.81m²
VOLUME REQ'D. (REGIONAL STORM)=80.3m³
VOLUME REQ'D. (100 YEAR STORM)=58.3m³
STORAGE PROVIDED=95.0m³
REGIONAL STORM MAXIMUM PONDING=170.18m

EX. STM MH1
EX. STM MH2
PROP. STM MH6
EX. STM CBMH 332B
EX. STM CBMH 332A

585 (0.9 | 100%)
1274 (0.9 | 100%)
1328 (0.9 | 100%)
507 (0.9 | 100%)
1109 (0.9 | 100%)
2957 (0.9 | 100%)

LEGEND

- DRAINAGE AREA IN m² (2957)
- IMPERVIOUS PERCENTAGE (0.9 | 100%)
- COMPOSITE RUNOFF COEFFICENT
- WITH DRAINAGE DIRECTION
- STORM DRAINAGE AREA BOUNDARY
- PROPERTY LINE

PROJECT TITLE

# SHOPPERS REALTY INC.

21 DUNDAS STREET WEST AND
3000 SIXTH LINE, OAKVILLE, ON

DRAWING TITLE

## STORM DRAINAGE AREA PLAN – SIXTH LINE (INTERIM CONDITION)

TRAFALGAR ENGINEERING
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

| DESIGN BY | MW | SCALE | 1:500 |
|---|---|---|---|
| DRAWN BY | GL | DATE | 2025/09/04 |

DRAWING No. FIG.3

FILENAME: P:\1807 Dundas and Sixth Line\04-CAD\03-Site Plan\18075S-INT.dwg
PLOTDATE: Feb 25, 2026 - 4:32pm

TRAFALGAR ENGINEERING

**Prepared By:** MW
**Checked By:** PC
**Project No. :** 1807

# STORM SEWER DESIGN SHEET

**Town of Oakville**
**5-Year Storm**

**Project Name :** Dundas & Sixth Line
**Municipal Number:**
**Date:** 2025-09-03
**Sheet:** 1 of 2

| | | | DRAINAGE AREA | | | | FLOW | | | SEWER DESIGN | | | | PIPE HYDRAULICS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOCATION | FROM MH | TO MH | Area, A (ha) | Runoff Coeff., C | A x C (ha) | Accum. A x C (ha) | Time of Conc., $T_c$ (min) | Intensity, I (mm/h) | Expected Flow, Q (L/s) | Length, L (m) | Gradient, s (%) | Pipe Dia., D (mm) | Manning's Coeff., n | Full Flow Capacity, $Q_F$ (L/s) | Full Flow Velocity, $V_F$ (m/s) | d/D | Actual Velocity, V (m/s) | Time of Flow (min) | $Q/Q_F$ |
| **Sixth Line S of Kaiting Trail** | | | | | | | | | | | | | | | | | | | |
| | EX MH1 | EX MH2 | 0.06 | 0.90 | 0.053 | 0.053 | 10.00 | 114.2 | **17** | 49.3 | 0.5 | 375 | 0.013 | **130.63** | 1.15 | 0.24 | 0.79 | 1.03 | 0.13 |
| | EX MH2 | PR MH6 | 0.13 | 0.90 | 0.115 | 0.167 | 11.03 | 108.3 | **50** | 11.5 | 0.5 | 450 | 0.013 | **210** | 1.28 | 0.33 | 1.07 | 0.18 | 0.24 |
| **Shoppers Parking Lot** | | | | | | | | | | | | | | | | | | | |
| | PR MH1 | PR MH6 | 0.13 | 0.90 | 0.120 | 0.120 | 10.00 | 114.2 | **6** | 14.7 | 1.0 | 300 | 0.013 | **101** | 1.38 | 0.16 | 0.84 | 0.29 | 0.06 |
| **Sixth Line S of Shoppers** | | | | | | | | | | | | | | | | | | | |
| | PR MH6 | CB332B | 0.05 | 0.90 | 0.046 | 0.333 | 11.21 | 107.3 | **70** | 46.7 | 0.5 | 450 | 0.013 | **212** | 1.29 | 0.39 | 1.18 | 0.66 | 0.33 |
| | CB332B | CBMH332A | 0.11 | 0.90 | 0.100 | 0.433 | 11.87 | 103.9 | **97** | 7.5 | 0.5 | 450 | 0.013 | **210** | 1.28 | 0.47 | 1.27 | 0.10 | 0.46 |
| | CBMH332A | DUNDAS STM | 0.30 | 0.90 | 0.266 | 0.699 | 11.97 | 103.4 | **173** | 34.9 | 1.2 | 600 | 0.013 | **687** | 2.35 | 0.34 | 1.97 | 0.29 | 0.25 |

Notes:
1) Pipe diameter is nominal
2) Capacity and velocity are based on Imperial I.D. (Nom. Dia x 25.4/25)
3) Time of Flow is based on Actual Velocity

Flow from the subject lands are controlled using an orifice tube sized to control the 100-year storm to the 5-year pre-predevelopment release rate.

Intensity, $I = A / (T_c + B)^C$ where:

A= 1170
B= 5.8
C= 0.843
$t_c$= Time of Concentration in minutes

Expected Flow, $Q = 2.778 \times C \times I \times A / 1000$

Full Flow Capacity (Manning's Equation), $Q_F$

$Q_F = (1/n) \times A \times R^{2/3} \times s^{1/2}$

$= (1/n) \times 311.7 \times D^{8/3} \times s^{1/2}$

TRAFALGAR ENGINEERING

**Prepared By:** MW
**Checked By:** PC
**Project No. :** 1807

# STORM SEWER DESIGN SHEET

**Town of Oakville**
**100-Year Storm**

**Project Name :** Dundas & Sixth Line
**Municipal Number:**
**Date:** 2025-09-03
**Sheet:** 2 of 2

| | | | DRAINAGE AREA | | | | FLOW | | | SEWER DESIGN | | | | PIPE HYDRAULICS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOCATION | FROM MH | TO MH | Area, A (ha) | Runoff Coeff., C | A x C (ha) | Accum. A x C (ha) | Time of Conc., $T_c$ (min) | Intensity, I (mm/h) | Expected Flow, Q (L/s) | Length, L (m) | Gradient, s (%) | Pipe Dia., D (mm) | Manning's Coeff., n | Full Flow Capacity, $Q_F$ (L/s) | Full Flow Velocity, $V_F$ (m/s) | d/D | Actual Velocity, V (m/s) | Time of Flow (min) | $Q/Q_F$ |
| **Sixth Line S of Kaiting Trail** | | | | | | | | | | | | | | | | | | | |
| | EX MH1 | EX MH2 | 0.06 | 0.90 | 0.053 | 0.053 | 10.00 | 200.8 | **29** | 49.3 | 0.5 | 375 | 0.013 | **130.63** | 1.15 | 0.32 | 0.93 | 0.88 | 0.22 |
| | EX MH2 | PR MH6 | 0.13 | 0.90 | 0.115 | 0.167 | 10.88 | 191.6 | **89** | 11.5 | 0.5 | 450 | 0.013 | **210** | 1.28 | 0.45 | 1.24 | 0.15 | 0.42 |
| **Shoppers Parking Lot** | | | | | | | | | | | | | | | | | | | |
| | PR MH1 | PR MH6 | 0.13 | 0.90 | 0.120 | 0.120 | 10.00 | 200.8 | **8** | 14.7 | 1.0 | 300 | 0.013 | **101** | 1.38 | 0.19 | 0.86 | 0.28 | 0.08 |
| **Sixth Line S of Shoppers** | | | | | | | | | | | | | | | | | | | |
| | PR MH6 | CB332B | 0.05 | 0.90 | 0.046 | 0.333 | 11.03 | 190.1 | **121** | 46.7 | 0.5 | 450 | 0.013 | **212** | 1.29 | 0.54 | 1.34 | 0.58 | 0.57 |
| | CB332B | CBMH332A | 0.11 | 0.90 | 0.100 | 0.433 | 11.62 | 184.6 | **169** | 7.5 | 0.5 | 450 | 0.013 | **210** | 1.28 | 0.67 | 1.44 | 0.09 | 0.80 |
| | CBMH332A | DUNDAS STM | 0.30 | 0.90 | 0.266 | 0.699 | 11.70 | 183.8 | **304** | 34.9 | 1.2 | 600 | 0.013 | **687** | 2.35 | 0.46 | 2.32 | 0.25 | 0.44 |

Notes:
1) Pipe diameter is nominal
2) Capacity and velocity are based on Imperial I.D. (Nom. Dia x 25.4/25)
3) Time of Flow is based on Actual Velocity

Flow from the subject lands are controlled using an orifice tube sized to control the 100-year storm to the 5-year pre-predevelopment release rate.

Intensity, $I = A / (T_c + B)^C$ where:

A= 2150
B= 5.7
C= 0.861
$t_c$= Time of Concentration in minutes

Expected Flow, $Q = 2.778 \times C \times I \times A / 1000$

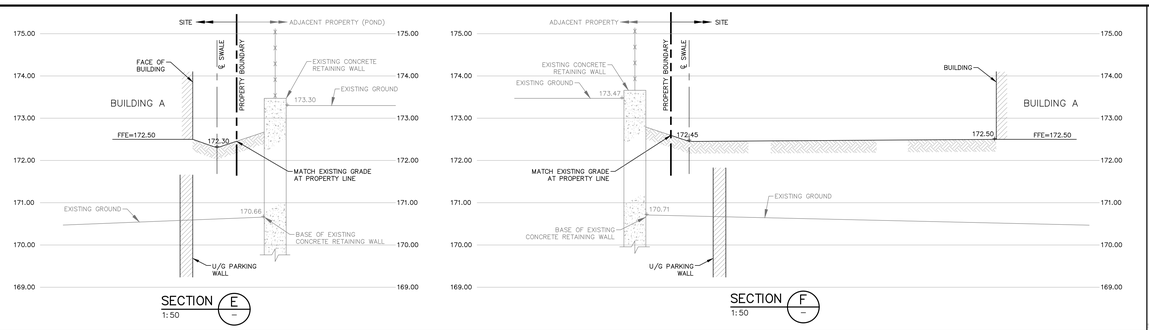
Full Flow Capacity (Manning's Equation), $Q_F$

$Q_F = (1/n) \times A \times R^{2/3} \times s^{1/2}$

$= (1/n) \times 311.7 \times D^{8/3} \times s^{1/2}$

## Appendix 'D'

Engineering Drawings




SECTION E
1:50




SECTION F
1:50

KAITTING TRAIL

SIXTH LINE

DUNDAS STREET WEST

RETAIL BUILDING
FFE=171.75

BUILDING A
FFE=172.50

BUILDING B
FFE=172.50

BUILDING C
FFE=172.24

TOWNHOMES 1
FFE=172.60

TOWNHOMES 2
FFE=172.60

CONDOMINIUM ROAD

PHASE 1

PHASE 2

BRICK AND STUCCO BUILDING CONDOMINIUM (6 STOREY)

POND

| STORM POND OPERATING LEVELS (DSEL DESIGN BRIEF SWM POND 22) | |
|---|---|
| EVENT | POND LEVEL (m) |
| 5-YEAR | 169.89 |
| 100-YEAR | 170.53 |
| REGIONAL | 171.58 |

REMOVE AND REPLACE EXISTING CURB AND MATCH EXISTING EDGE OF PAVEMENT

RELOCATED CLS

EXISTING STREET LIGHT (TO BE RELOCATED)

PROPERTY BOUNDARY

REVERSE VENEER

MH7 TOP=172.25

TRENCH DRAIN TG=171.70

MH3 TG=171.73

MH5 TOP=172.03

3:1 MAX. SLOPE

4:1 MAX. SLOPE

5:1 MAX. SLOPE

LOADING AREA

H&V (TO BE RELOCATED TO MUNICIPAL BOULEVARD)

MATCH EXISTING ELEVATIONS AT PROPERTY LINE

LIMIT OF GRADING MODIFICATIONS WITHIN POND BLOCK

FILL AS REQUIRED TO ACHIEVE POSITIVE DRAINAGE TOWARDS POND AS PER SUBDIVISION (20M-1114) DESIGN FOR BLOCK

ADJUST MH TOP TO 171.95

RAMP TO U/G PARKING

SERVICE/RAMP ENTRANCE (LOADING)

STAIRCASE FFE=172.45

RETAINING WALL TW=VARIES BW=VARIES H=0.6m

STAIRCASE FFE=172.60

AMENITY SPACE (REFER TO LANDSCAPE PLANS)

CURB AND GUTTER PER OPSD 600.010

DEPRESSED CURB

LAYBY PARKING

SIAMESE CONNECTION

INTERNAL LOBBY FFE=172.50

EXIT STAIR

DUNDAS ST. LOBBY FFE=171.35

DUNDAS ST. LOBBY FFE=171.55

INTERIOR LOBBY FFE=172.24

RAMP TO U/G PARKING

SEE ENLARGEMENT DETAIL DWG. D1

ADJUST TOP TO 171.28

ADJUST TOP TO 171.30

ADJUST TOP TO 171.20

PATIO (REFER TO ARCHITECTURAL PLANS)

PLANTER (REFER TO LANDSCAPE PLANS)

REMOVE AND REPLACE EXISTING CURB AND MATCH EXISTING EDGE OF PAVEMENT

REMOVE AND REPLACE EXISTING CURB AND MATCH EXISTING EDGE OF PAVEMENT

REGRADE BOULEVARD TO SUIT

MATCH EXISTING ASPHALT WALKWAY

SAWCUT AND MATCH EXISTING CURB AND GUTTER

SIDE INLET CB TG=MATCH EXISTING

REMOVE EXISTING CB AND INSTALL NEW SIDE-INLET CATCHBASIN

EXISTING KILL-STRIP TO BE REMOVED

SAWCUT AND MATCH EXISTING CURB AND GUTTER

EXISTING CATCHBASIN (TO BE REMOVED)

SAN MH1A TOP=171.25

100mmø V&B

200mmø V&B

300mmø V&B

RAMP @ 5.0%

PROPERTY BOUNDARY

[170.18]

[170.09]

[170.20]

[170.22]

[170.41]

[170.43]

[170.44]

[170.45]

[170.46]

[170.47]

[170.48]

[170.49]

[170.50]

[170.51]

[170.52]

[170.53]

[170.54]

[170.55]

[170.56]

[170.57]

[170.58]

[170.59]

[170.60]

[170.61]

[170.62]

[170.63]

[170.64]

[170.65]

[170.66]

[170.67]

[170.68]

[170.69]

[170.70]

[170.71]

[170.72]

[170.73]

[170.74]

[170.75]

[170.76]

[170.77]

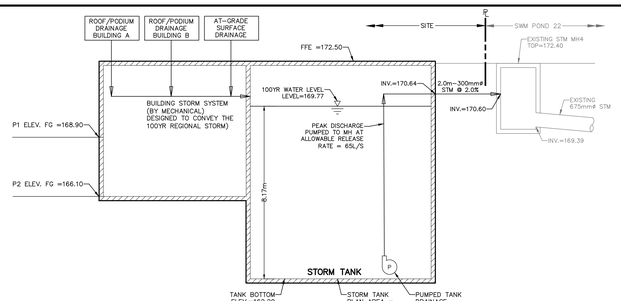
[170.78]

[170.79]

[170.80]

[170.81]

[170.82]




STORMWATER MANAGEMENT SCHEMATIC BUILDING A AND B (PHASE 1)

N.T.S.

CONSTRUCTION NORTH

KAITTING TRAIL

| STORM POND OPERATING LEVELS (DSEL DESIGN BRIEF SWM POND 22) | |
|---|---|
| EVENT | POND LEVEL (m) |
| 5-YEAR | 169.89 |
| 100-YEAR | 170.53 |
| REGIONAL | 171.58 |

RETAIL BUILDING
FFE=171.75

BUILDING A
FFE=172.50

BUILDING B
FFE=172.50

BUILDING C
FFE=172.24

TOWNHOMES 1
FFE=172.60

TOWNHOMES 2
FFE=172.60

CONDOMINIUM ROAD

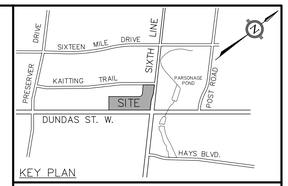
PROPERTY BOUNDARY

PHASE 1
PHASE 2
PHASE 3

SIXTH LINE

DUNDAS STREET WEST

KEY PLAN




LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED DOUBLE CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED DOUBLE CATCHBASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED CAST-IN-PLACE SANITARY MANHOLE
- PROPOSED VALVE AND BOX
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED PIPE INSULATION

EXISTING SERVICES LEGEND

- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING DOUBLE CATCHBASIN MANHOLE
- EXISTING CATCHBASIN MANHOLE
- EXISTING CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- EXISTING VALVE AND BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN

| NO. | DATE | BY/DRAWN | REVISIONS |
|---|---|---|---|
| 4 | 25/02/26 | MW/GL | RE-ISSUED FOR ZONING |
| 3 | 09/09/25 | MW/GL | RE-ISSUED FOR ZONING |
| 2 | 12/12/24 | MW/GL | ISSUED FOR ZONING |
| 1 | 20/09/24 | MW/GL | ISSUED FOR PRE-APPLICATION CONSULTATION |

CAD FILE: 1807GS-INT.dwg PLOT SCALE: 1:1 PLOT DATE: Feb 25, 2026

BENCHMARK

ELEVATIONS ARE BASED ON THE TOWN OF OAKVILLE BENCHMARK No. 174, WITH PUBLISHED ELEVATION 171.841 metres. BEARINGS SHOWN HEREON ARE GRID AND ARE REFERRED TO THE SOUTHEASTERLY LIMIT OF HALTON STANDARD CONDOMINIUM PLAN No. HC749 HAVING A BEARING OF N51°55'00"W.

NOTE

SURVEY INFORMATION CONTAINED IN THIS DRAWING ARE FROM PLAN 2-20M-1114 BY SPEIGHT, VAN NOSTRAND & GIBSON LIMITED, ONTARIO LAND SURVEYORS, SEPTEMBER 7, 2023.

LICENSED PROFESSIONAL ENGINEER P. CARDIN FEB 25 '26 PROVINCE OF ONTARIO

DESIGNED BY | APPROVED BY

CONSULTANT

TRAFALGAR ENGINEERING
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

PROJECT TITLE

SHOPPERS REALTY INC

LOCATION

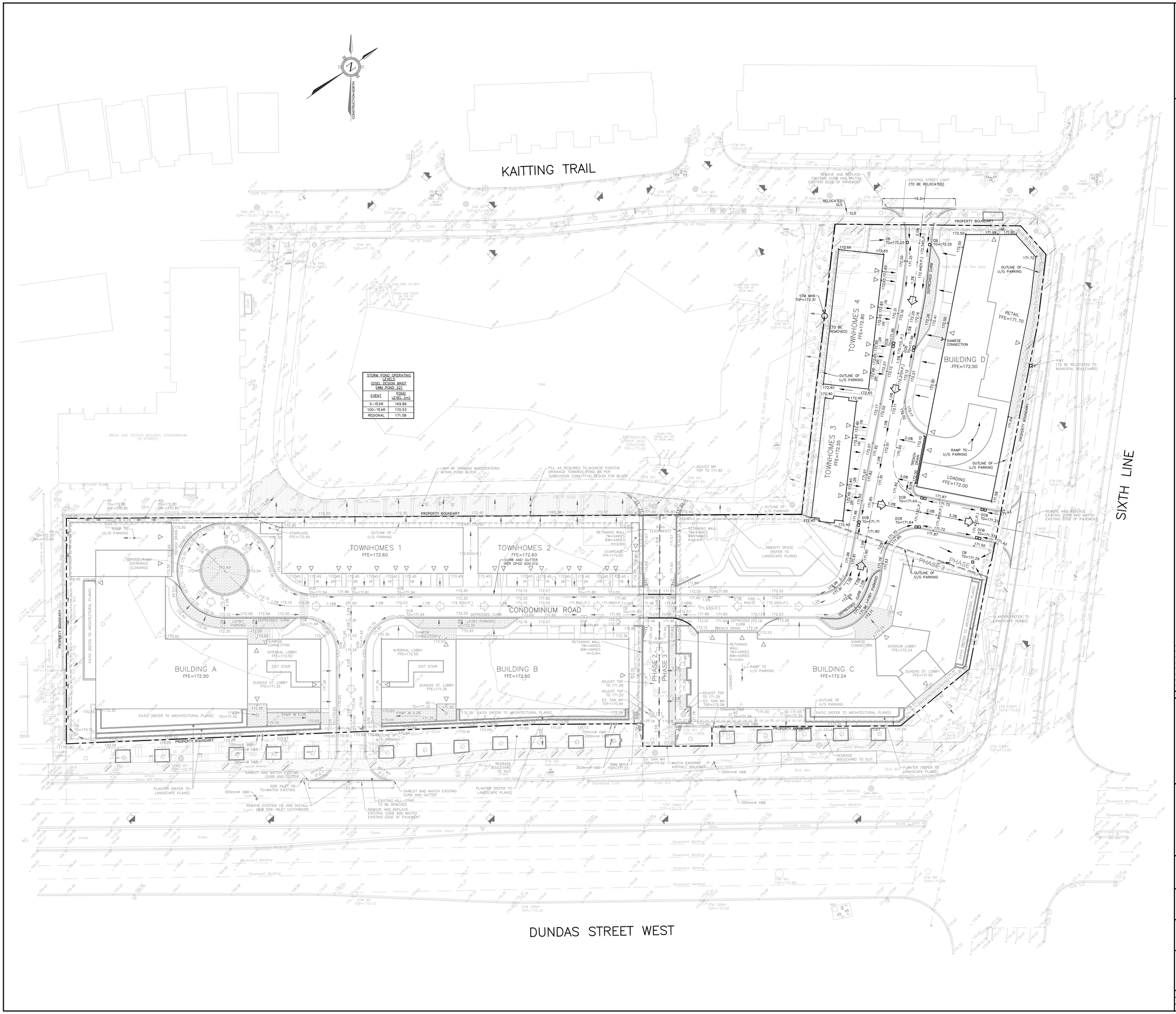
21 DUNDAS STREET WEST AND 3000 SIXTH LINE
OAKVILLE, ONTARIO

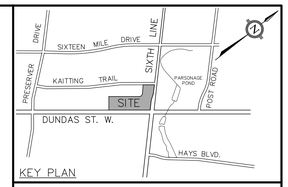
DRAWING TITLE

PRELIMINARY SITE SERVICING PLAN (INTERIM CONDITION)

| SCALE | 1:300 | DESIGN BY | MW | PROJECT No. | 1807 |
|---|---|---|---|---|---|
| DRAWN BY | GRL | CHECKED BY | PC | PLAN No. | S1 |
| DATE | 2025-08-19 | SHEET | OF | | |

FILENAME: P:\1807 Dundas and Sixth Line\04-CAD\03-Site Plan\1807GS-INT.dwg
PLOTDATE: Feb 25, 2026 - 4:29pm




KEY PLAN

LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED DOUBLE CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED DOUBLE CATCHBASIN
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE AND BOX
- 171.57 EXISTING ELEVATION
- 172.70 EXISTING ELEVATION TO REMAIN
- + 171.49 PROPOSED FINISHED ELEVATION
- 2.0% PROPOSED DRAINAGE DIRECTION
- PROPOSED OVERLAND FLOW DIRECTION
- EXISTING OVERLAND FLOW DIRECTION
- PROPOSED SLOPE
- PROPOSED TOE WALL
- 100-YEAR EMERGENCY MAX. SURFACE WATER ELEV.

EXISTING SERVICES LEGEND

- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING DOUBLE CATCHBASIN MANHOLE
- EXISTING CATCHBASIN MANHOLE
- EXISTING CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- EXISTING VALVE AND BOX

| NO. | DATE | BY/CHKD | REVISIONS |
|---|---|---|---|
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CAD FILE: 1807GS-ULT.dwg | PLOT SCALE: 1:1 | PLOT DATE: Feb 25, 2026

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NOTE

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LICENSED PROFESSIONAL ENGINEER P. CARDIN Feb 25 '26 PROVINCE OF ONTARIO

DESIGNED BY | APPROVED BY

CONSULTANT
TRAFALGAR ENGINEERING
#1-481 SHERIDEN ROAD, OAKVILLE, ON, L6K 3W9
www.trafalgareng.com

PROJECT TITLE
SHOPPERS REALTY INC

LOCATION
21 DUNDAS STREET WEST AND 3000 SIXTH LINE
OAKVILLE, ONTARIO

DRAWING TITLE
PRELIMINARY SITE GRADING PLAN (ULTIMATE CONDITION)

| | | | |
|---|---|---|---|
| SCALE | 1:300 | DESIGN BY | MW |
| DRAWN BY | GRL | CHECKED BY | PC |
| DATE | 2025-08-19 | SHEET | OF |
| PROJECT No. | 1807 | PLAN No. | G2 |

FILENAME: P:\1807 Dundas and Sixth Line\04-CAD\03-Site Plan\1807GS-ULT.dwg
PLOTTED: Feb 25, 2026 - 4:09pm

KAITTING TRAIL

SIXTH LINE

DUNDAS STREET WEST

CONDOMINIUM ROAD

PROPERTY BOUNDARY

TOWNHOMES 1
FFE=172.60

TOWNHOMES 2
FFE=172.60

TOWNHOMES 3
FFE=172.55

TOWNHOMES 4
FFE=172.80

BUILDING A
FFE=172.50

BUILDING B
FFE=172.50

BUILDING C
FFE=172.24

BUILDING D
FFE=172.50

RETAIL
FFE=171.70

LOADING
FFE=172.00

PHASE 1

PHASE 2

PHASE 3

PHASE 4

STORMWATER STORAGE TANK LOCATED ON LEVELS P1 AND P2, PUMP TO STM CONTROL MH4
Q ALLOW=0.065m³/S
PLAN AREA=37.5m²
VOL. REQ'D=283.9m³
VOL. PROVIDED=308m³

STORMWATER STORAGE TANK LOCATED ON LEVELS P1 AND P2, PUMP TO STM MH6
Q ALLOW=0.065m³/S
PLAN AREA=28.5m²
VOL. REQ'D=128.0m³
VOL. PROVIDED=171.0m³

STORMWATER STORAGE TANK LOCATED ON LEVELS P1 AND P2, PUMP TO EX. STM CONTROL MH 4 THROUGH BLDG. A/B U/G PARKING
Q ALLOW=0.065m³/S
PLAN AREA=29.7m²
VOL. REQ'D=60.2m³
VOL. PROVIDED=165m³

STORMWATER TANK

EXISTING STREET LIGHT (TO BE RELOCATED)

RELOCATED CLS

CONNECT 200mmø FIRELINE AND 150mmø DOMESTIC TO EXISTING V&B

200mmø FIRELINE
100mmø DOMESTIC
100mmø WATER METER

OUTLINE OF U/G PARKING

SIAMESE CONNECTION

(TO BE REMOVED)

STM MH6 (1500mmø) TOP=172.35 E INV.=169.50 W INV.=169.45

300mmø PVC STM @ 2.0%

STM INV.=169.52 (REFER TO MECH. FOR CONTINUATION)

(TO BE RELOCATED OFF SUBJECT LANDS)

RAMP TO U/G PARKING

TRENCH DRAIN

DEPRESSED CURB

LAYBY PARKING

FLUSH CURB

TRENCH DRAIN

SANITARY DRAINAGE FROM BUILDING D TO BE DIRECTED INTERNALLY THROUGH BUILDING C TO EXISTING SAN MH (REFER TO MECH FOR CONTINUATION)

SAN INV.=169.00 (REFER TO MECH. FOR CONTINUATION)

200mmø PVC SAN @ 2.0%

(TO BE REMOVED)

PLANTER (REFER TO LANDSCAPE PLANS)

INTERIOR LOBBY FFE=172.24

MECH. ROOM

DUNDAS ST. LOBBY FFE=171.55

INTERNAL LOBBY FFE=172.50

DUNDAS ST. LOBBY FFE=171.35

PATIO (REFER TO ARCHITECTURAL PLANS)

RETAINING WALL 3.5m—200mmø PVC SAN @ 1.0% (EASEMENT)

RETAINING WALL 3.5m—200mmø PVC STM @ 2.0% (EASEMENT)

SAN MH1A (CAST-IN-PLACE 1.8m Ø1.2m) TOP=171.23 W INV.=166.33 E INV.=166.27

EX. SAN MH TOP=170.84 N INV.=166.19 E INV.=166.20 W INV.=166.20 S INV.=166.16

EX. SAN MH TOP=172.08 E INV.=166.13 W INV.=166.28

100mmø DOMESTIC WATER SUPPLY FOR BLDG. 'B' AND TOWNHOMES 2&3

100mmø DOMESTIC WATER SUPPLY FOR BLDG. 'C'

100mmø WATER METER

200mmø FIRELINE

200mmø V&B

200x100mmø TEE

90° BEND

100mmø WATERMAIN

45° BEND

300mmø WATERMAIN

CONNECT TO 300mmø WATERMAIN WITH TAPPING SLEEVE AND VALVE

10.2m—300mmø PVC SAN TO REPLACE EX. 200mmø SAN (MATCH INVERTS)
NOTE: 300mmø SAN TO USE EX. 200mmø DROP PIPE

CONNECT TO 750mmø WATERMAIN WITH TAPPING SLEEVE AND VALVE

EXISTING DCB (TO BE REMOVED)

SIDE INLET CB TG=MATCH EXISTING

CONNECT TO 750mmø WATERMAIN WITH TAPPING SLEEVE AND VALVE

300mmø STM @ 2.0% PLUG INV.=170.64 (REFER TO MECH. DRAWING FOR CONTINUATION)

300mmø STM (PUMP DISCHARGE) @ 2.0% PLUG INV.=170.27 (REFER TO MECH. DRAWING FOR CONTINUATION)

AMENITY SPACE (REFER TO LANDSCAPE PLANS)

PUMPED STORM DRAINAGE FROM BUILDING C TO BE DIRECTED INTERNALLY TO EX STM CONTROL MH4 AT SW CORNER OF MUNICIPAL POND BLOCK

TOWNHOMES TO BE SERVICED INTERNALLY FOR STORM, SANITARY, AND WATER

STORMWATER STORAGE TANK

SERVICE/RAMP ENTRANCE (LOADING)

STM INV.=170.80 (SEE MECH. DWG FOR CONTINUATION)

PATIO (REFER TO ARCHITECTURAL PLANS)

EX. STM CONTROL MH4 TG=172.35 S INV.=170.60 N INV.=169.39

BRICK AND STUCCO BUILDING CONDOMINIUM (6 STOREY)

PLANTER (REFER TO LANDSCAPE PLANS)

RETAINING WALL

CHAIN LINK FENCE ON TOP OF ROCK WALL

OVERHEAD HYDRO

UNDERGROUND HYDRO

BELL

GAS

CABLE TV

TELEPHONE

WATERMAIN

SANITARY SEWER

STORM SEWER

CURB CUT

CURB

DEPRESSED CURB

TOP OF SLOPE

BOTTOM OF SLOPE

PATHWAY

CONCRETE ISLAND

GRASS

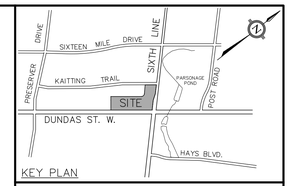
ASPHALT

CONCRETE

LANDSCAPED AREA

MLS

KEY PLAN




LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED DOUBLE CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED DOUBLE CATCHBASIN
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE AND BOX
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN

EXISTING SERVICES LEGEND

- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING DOUBLE CATCHBASIN MANHOLE
- EXISTING CATCHBASIN MANHOLE
- EXISTING CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- EXISTING VALVE AND BOX
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN

| NO. | DATE | BY/CHKD | REVISIONS |
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BENCHMARK

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NOTE

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P. CIRCOSTA — LICENSED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO — Feb 25, 26

DESIGNED BY

APPROVED BY


CONSULTANT
TRAFALGAR ENGINEERING
#1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com


PROJECT TITLE
SHOPPERS REALTY INC

LOCATION
21 DUNDAS STREET WEST AND 3000 SIXTH LINE
OAKVILLE, ONTARIO

DRAWING TITLE
PRELIMINARY SITE SERVICING PLAN (ULTIMATE CONDITION)

| | | | |
|---|---|---|---|
| SCALE | 1:300 | DESIGN BY | MW |
| DRAWN BY | GBL | CHECKED BY | PC |
| DATE | 2025-08-19 | SHEET | OF |
| PROJECT No. | 1807 | | |
| PLAN No. | S2 | | |

FILENAME: P:\1807 Dundas and Sixth Line\04-CAD\03-Site Plan\1807GS-ULT.dwg
PLOTTED: Feb 25, 2026 - 4:29pm

# STORM POND 22
## (BLOCK 116 – 20M–1114)

| STORM POND OPERATING LEVELS (DSEL DESIGN BRIEF SWM POND 22) | |
|---|---|
| EVENT | POND LEVEL (m) |
| 5–YEAR | 169.89 |
| 100–YEAR | 170.53 |
| REGIONAL | 171.58 |

CONSTRUCTION NORTH

EX. STM MH (1500mmø – C/W 300mmø GATE VALVE) TOP=171.60

EX. STM MH TOP=171.81 N INV.=168.50 E INV.=168.50 S INV.=168.20

FILL AS REQUIRED TO ACHIEVE SUBDIVISION (20M–1114) DESIGN ELEVATION FOR BLOCK

ADJUST MH TOP TO 171.95

EX. 200mmø PVC SAN @ 0.66%

PROPERTY BOUNDARY

TOWNHOMES 2
FFE=172.60

8.5m EMERGENCY OVERFLOW AND SERVICING EASEMENT PART 1 – 20R–19320

RETAINING WALL (OPSD 3120.100 TOE WALL – TYPE 1) TW=VARIES BW=VARIES H=0.6m

LIMIT OF 100–YEAR EMERGENCY OVERLAND FLOW

OUTLINE OF U/G PARKING

PUMPED STORM DRAINAGE FROM BLDG. 'C' TO BE DIRECTED INTERNALLY TO EX. STM CONTROL MH4 AT SW CORNER OF MUNICIPAL POND BLOCK

300mmø STM (PUMP DISCHARGE) @ 2.0% PLUG INV.=170.27 (REFER TO MECH. DRAWING FOR CONTINUATION)

AMENITY SPACE (REFER TO LANDSCAPE PLANS)

BLOCK 114, 20M–1114

AMENITY SIDEWALK

TRANSITION TO FULL CURB

TACTILE WALKING SURFACE INDICATOR PER OPSD 310.039 (TYP.)

SIDEWALK

CURB AND GUTTER

DEPRESSED CURB

CONDOMINIUM ROAD

DCB TG=171.80

DCB TG=171.85

LIMIT OF DESIGN OVERFLOW

LIMIT OF 100–YEAR EMERGENCY WATER SURFACE

CB (C/W INLET CONTROL DEVICE) TG=171.57

FLUSH CURB

DEPRESSED CURB

VEHICLE ENTRANCE

TRENCH DRAIN

RAMP INTERNALLY TO UNDERGROUND PARKING

BUILDING B
FFE=172.50

BUILDING C
FFE=172.24

PART 5, PLAN 20R–21122

RETAINING WALL (OPSD 3120.100 TOE WALL – TYPE 1) TW=VARIES BW=VARIES H=0.6m

3.5m – 200mmø PVC SAN @ 1.0%

2.5m – 200mmø PVC SAN @ 1.0% (SEE MECH. DWG. FOR CONTINUATION)

SAN MH1A CAST–IN–PLACE 1.8m x 1.2m TG=172.00

10.2m–300mmø PVC SAN TO REPLACE EX. 200mmø SAN (MATCH EX. INVERTS)

EXISTING ASPHALT PATH

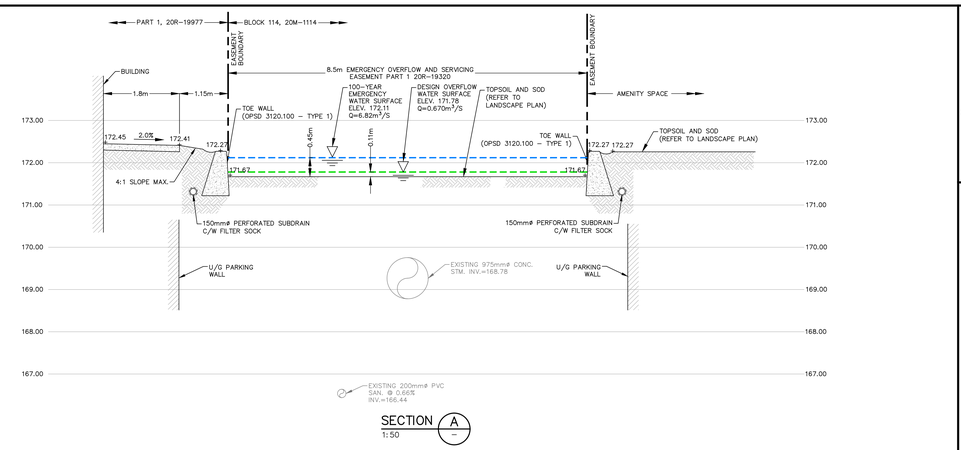
PROPERTY BOUNDARY

100mmø V&B

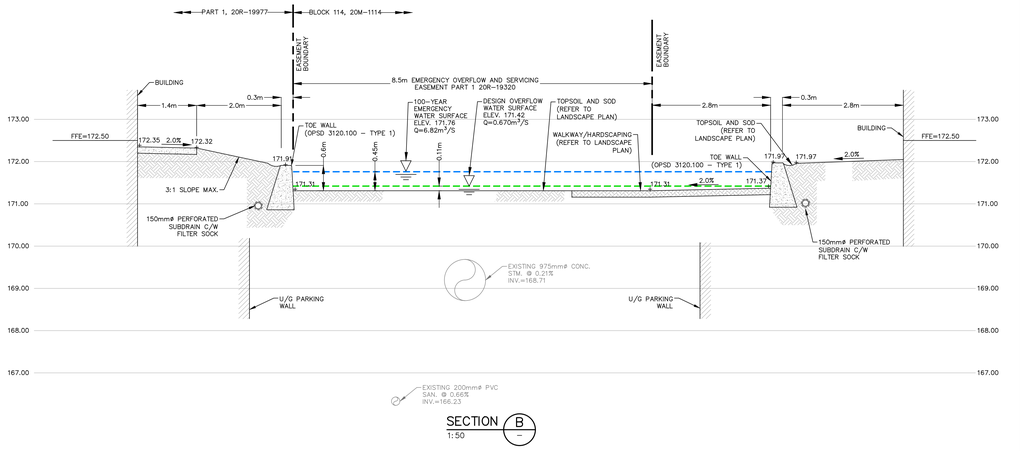
200mmø V&B

3:1 SLOPE (MAX.)

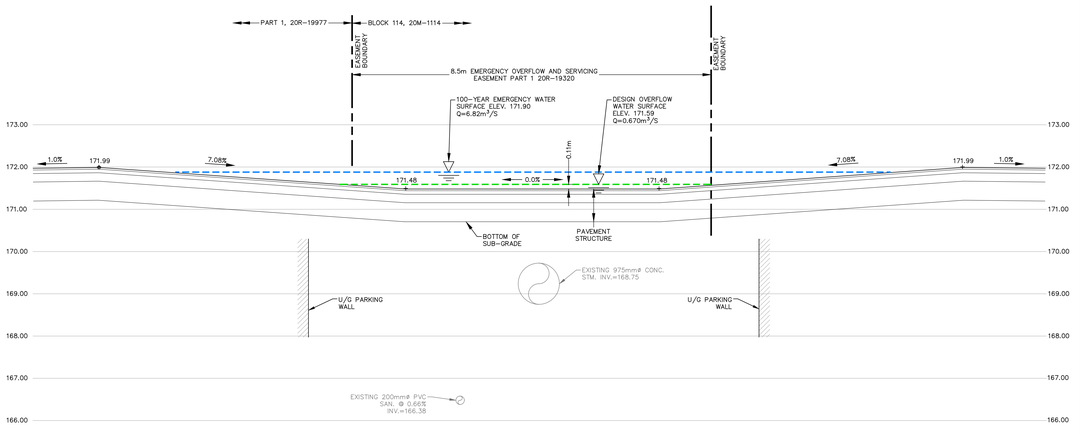
DUNDAS STREET WEST
ROADWAY INTERSECTION DETAIL
SCALE 1:100



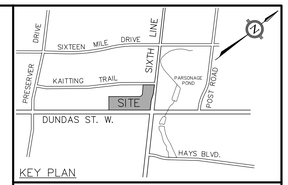

SECTION A
1:50




SECTION B
1:50




SECTION C
1:50




KEY PLAN

## LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED DOUBLE CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED DOUBLE CATCHBASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED CAST–IN–PLACE SANITARY MANHOLE
- PROPOSED VALVE AND BOX
- 171.96 EXISTING ELEVATION
- 171.96 EXISTING ELEVATION TO REMAIN
- +171.49 PROPOSED FINISHED ELEVATION
- 2.0% PROPOSED DRAINAGE DIRECTION
- PROPOSED EMERGENCY OVERLAND FLOW DIRECTION
- EXISTING OVERLAND FLOW DIRECTION
- PROPOSED SLOPE
- PROPOSED TOE WALL
- LIMIT OF 100–YEAR EMERGENCY SURFACE WATER ELEVATION
- LIMIT OF DESIGN OVERFLOW

## EXISTING SERVICES LEGEND

- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING DOUBLE CATCHBASIN MANHOLE
- EXISTING CATCHBASIN MANHOLE
- EXISTING CATCHBASIN
- EXISTING DOUBLE CATCHBASIN
- EXISTING VALVE AND BOX

| NO. | DATE | BY/DRAWN | REVISIONS |
|---|---|---|---|
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## NOTE

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P. CECCON — Feb 25, 2026 — PROVINCE OF ONTARIO

DESIGNED BY

APPROVED BY

CONSULTANT

TRAFALGAR ENGINEERING
#1–481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
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PROJECT TITLE

SHOPPERS REALTY INC

LOCATION

21 DUNDAS STREET WEST AND 3000 SIXTH LINE
OAKVILLE, ONTARIO

DRAWING TITLE

DETAILS AND SECTIONS

| | | | |
|---|---|---|---|
| SCALE | 1:100 | DESIGN BY | MW |
| DRAWN BY | GRL | CHECKED BY | PC |
| DATE | 2025–08–19 | SHEET | OF |
| PROJECT No. | 1807 | PLAN No. | D1 |

FILENAME: P:\1807 Dundas and Sixth Line\04–CAD\03–Site Plan\1807DS–INT.dwg
PLOTDATE: Feb 25, 2026 – 4:40pm