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4149 STRANDHERD DRIVE (Phase 3) Servicing and Stormwater Management Report

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SERVICING AND STORMWATER MANAGEMENT REPORT

**4149 STRANDHERD DRIVE
OTTAWA, ONTARIO**

Prepared By:

NOVATECH

Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
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August 2026

Novatech File: 125132
Ref: R-2026-072

August 13, 2026

PlanningCirculations@ottawa.ca

City of Ottawa
Development Review South
Planning, Development and Building Services Department
110 Laurier Avenue West
Ottawa, Ontario, K1P 1J1

Attention: Chloe Bullen, Planner I Development Review - South

**Reference: 4149 Strandherd Drive, Ottawa
Phase 3 – Car Storage Expansion
Servicing and Stormwater Management Report
City File No.: PC2026-0037
Novatech File No.: 125132**

Please find enclosed the 'Servicing and Stormwater Management Report' for the above noted project. This report is prepared to support the Site Plan Control revision and is hereby submitted for review and approval.

The report addresses how the proposed development will be serviced storm sewers, and the stormwater management approach.

Should you have any questions or comments, please contact us.

Yours truly,

NOVATECH



Cara Ruddle, P.Eng.
Senior Project Manager
Land Development Engineering

cc: Dave Johnston, Myers Automotive Group

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	Post-Development Drainage Area Plan (125132-POST)

LIST OF DRAWINGS

Grading Plan & Erosion Sediment Control Plan	125132-GR	Revision 3
General Plan of Services	125132-GP	Revision 1

LIST OF REFERENCES

- [1] Citi Gate Highway 416 Corporate Campus, Detailed Servicing Study and Stormwater Management Report (Phase 1), prepared by Novatech, dated January 9, 2015
- [2] Servicing and Stormwater Management Report – 4149 Strandherd Drive, prepared by Novatech, dated October 28, 2020 (Phase 1 Development)
- [3] Servicing and Stormwater Management Report – Myers Barrhaven – 4149 Strandherd Drive, prepared by McIntosh Perry, dated March 2, 2022 (Phase 2 Development)
- [4] Geotechnical Investigation Proposed Commercial Development – 4149 Strandherd Drive, prepared by Paterson Group, dated August 30, 2022 (Phase 2 Development)
- [5] Sewer Design Guidelines, City of Ottawa – Infrastructure Services Department (December 2025)

MODELING FILES

The PCSWMM modeling files have been included with the digital submission.

1.0 INTRODUCTION

Novatech has been retained to prepare a Servicing and Stormwater Management Report for Phase 3 of the proposed development located at 4149 Strandherd Drive, Ottawa, Ontario. This report will support a Site Plan Control revision for the subject development. **Figure 1** Key Plan shows the site location.

2.0 BACKGROUND

The total site area is approximately 3.41 hectares in size and is located within the Citi Gate Development. The site is registered as Block 4 on Plan 4M-1538 within the Citi Gate Development and has a municipal address of 4149 Strandherd Drive. The site is bounded by a ditch and vacant land to the north, Strandherd Drive to the east, Dealership Drive to the south, and the O'Keefe Drain to the west. The topography of the site slopes westerly towards the O'Keefe Drain.

The majority of the site is currently developed with two automobile dealerships. These dealerships were designed and constructed in two separate phases as described in previous studies prepared by Novatech [2] and McIntosh Perry [3]. The reports are listed in the Table of Contents with relevant excerpts provided in **Appendix C**. The Existing Condition Plan is depicted as **Figure 2**.

Phase 3 of the development was contemplated with the previous development proposals as both a hotel and an additional automotive dealership. Therefore, servicing infrastructure was designed and constructed on the Phase 3 lands in anticipation for the development to proceed. The existing, amended Environmental Compliance Approval (ECA: 4328-CYFP3C, issued December 19, 2023), will need to be amended to update the stormwater management works in Phase 3 a copy of the ECA is included in **Appendix A**.

3.0 CITY OF OTTAWA SITE PLAN APPLICATION REQUIREMENTS

The development proposal was discussed with City staff at a pre-consultation meeting held on March 9, 2026. Notes of the meeting are included in **Appendix A**.

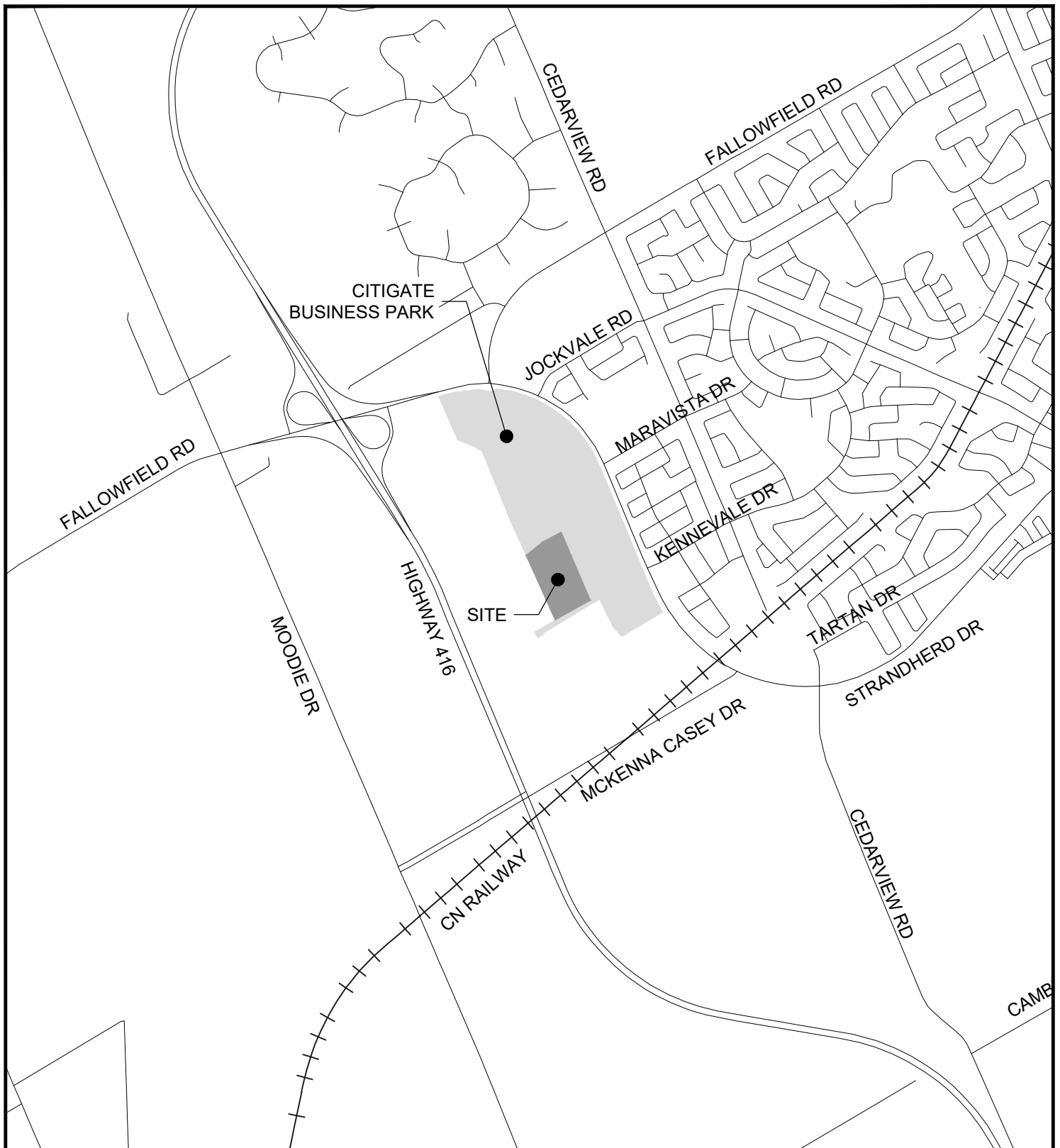
The City of Ottawa Servicing Study Guidelines for Development Applications require that a Development Servicing Study Checklist be completed to confirm that each applicable item is deemed complete and ready for review by the City of Ottawa's Planning, Infrastructure and Economic Development Department. A completed checklist is included in **Appendix B**.

4.0 PROPOSED DEVELOPMENT

It is proposed to develop Phase 3 of the site with an expansion for car storage area for the two existing automobile dealerships located on the property. This portion of the site can be accessed through the existing developments and with two proposed accesses on Dealership Drive. **Figure 3** shows the proposed Site Plan.

5.0 SITE DESIGN AND CONSTRAINTS

The subject site is part of the Citi Gate Development and design criteria and information for the development is provided in a report entitled *Citi Gate 416 Corporate Campus [1]*. The Citi Gate Phase 1 Report provides design criteria for the interior sites and designed the overall servicing systems including sanitary sewers, watermain and stormwater management systems. Each system is discussed in more detail in the appropriate sections of this report.



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4149 STRANDHERD DRIVE

KEYPLAN

SCALE

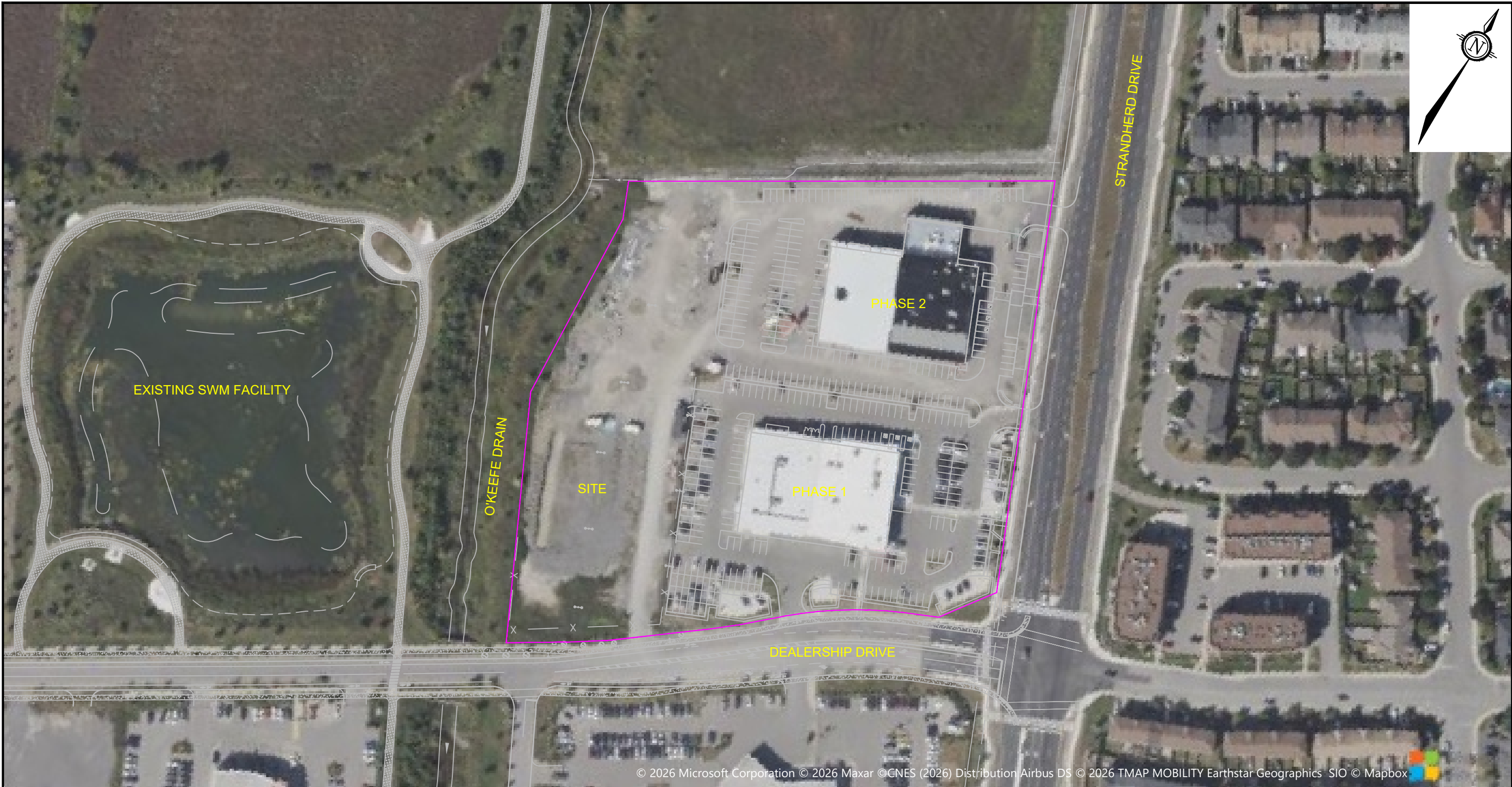
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DATE JUNE 2026

JOB 125132

FIGURE FIGURE 1

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LEGEND

 PROPERTY LINE

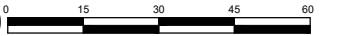
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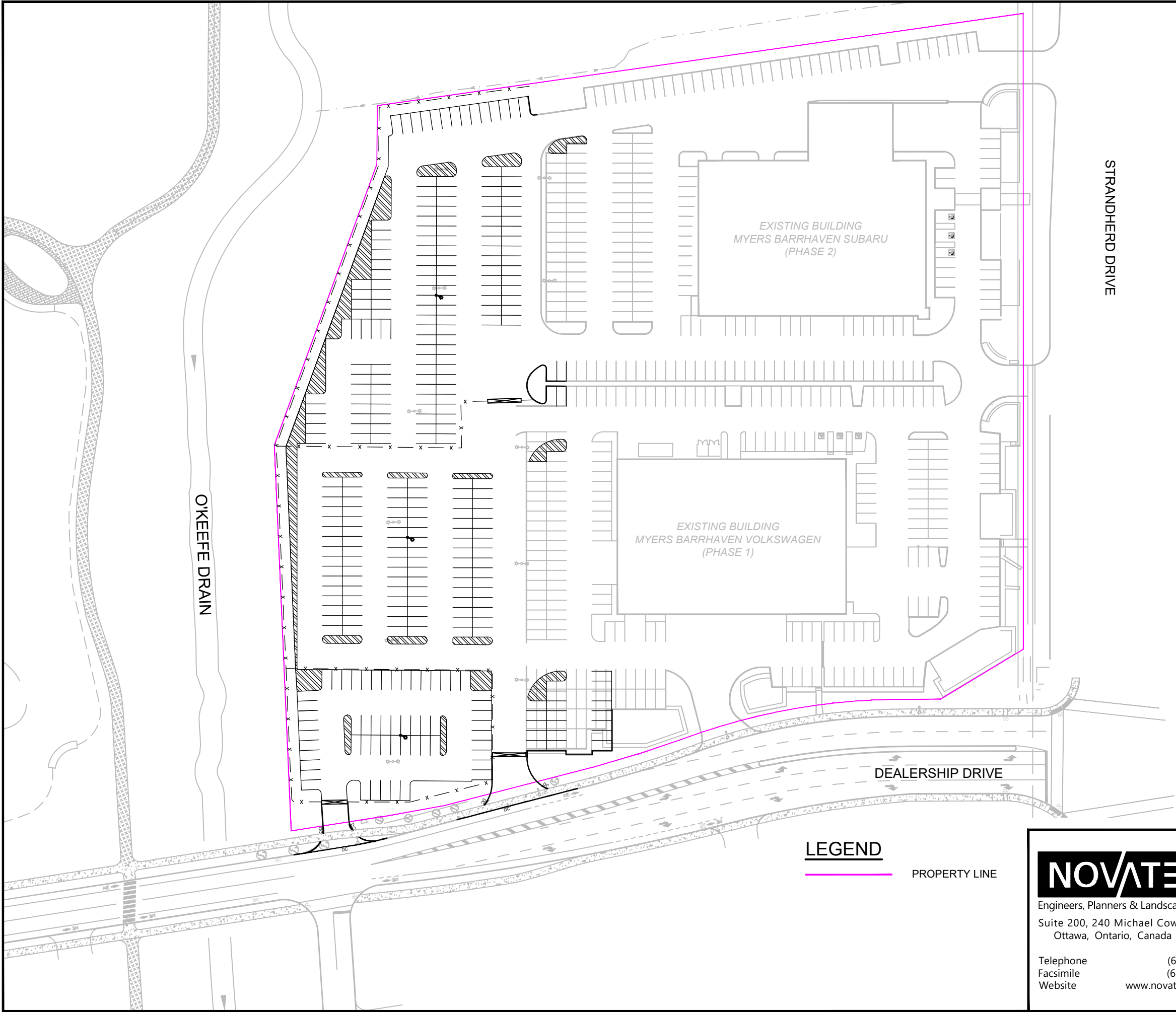
4149 STRANDHERD DRIVE

EXISTING CONDITIONS PLAN

SCALE 1 : 1500 

DATE	JUNE 2026	JOB	125132	FIGURE	FIGURE 2
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LEGEND

PROPERTY LINE

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4149 STRANDHERD DRIVE

PROPOSED SITE PLAN

SCALE 1 : 1000

DATE JULY 2026 JOB 125132 FIGURE FIGURE 3



The Citi Gate development included a water quality oil grit separator unit (Stormceptor STC-4000) and a storm outlet structure to the O'Keefe Drain in the northwest corner of the site to service Block 4. The elevations of this structure will govern the servicing inverts.

A geotechnical investigation was completed for the subject development and a report provided entitled 'Geotechnical Investigation Proposed Commercial Development' [4]. There is a grade raise restriction for this site. A more detailed sketch was provided by Paterson Group subsequent to the issuance of their report. The Permissible Grade Raise Plan (dwg PG5045-2) is included in **Appendix A** for reference. The report provides construction guidance for the grading and servicing design. The report includes recommendations for seepage barriers along sewer trenches to prevent potential groundwater lowering and subdrains at catchbasins to provide adequate drainage of the car storage areas.

It should be noted that an Environmental Activity and Sector Registry (EASR) may be required depending on groundwater levels at the time of construction.

An Environmental Impact Statement was not required as part of this car storage expansion as the protected, natural features already have protections established under the O'Keefe Drain Environmental Management Plan.

6.0 WATER SERVICING

Phases 1 and 2 are serviced by a 200mm diameter private watermain which connects to an existing 250mm diameter watermain along Dealership Drive. There are fire hydrants surrounding the existing buildings. Two 150mm diameter watermain services were constructed and capped for the future development in Phase 3.

The proposed car storage expansion will not require a water service therefore, these connections will remain capped. The existing services are shown on the General Plan of Services (125132-GP).

7.0 SANITARY SERVICING

Phases 1 and 2 are serviced by a private 200mm diameter sanitary sewer connecting to the existing 450mm diameter sanitary sewer along Dealership Drive. A 200mm diameter sanitary service was constructed and capped for the future development in Phase 3.

The proposed car storage expansion will not require a sanitary service. This capped service will remain as shown on the General Plan of Services (125132-GP).

8.0 STORM SERVICING

A private storm sewer system (ranging in size from 250mm diameter to 900mm diameter) will be constructed to service the proposed development. The storm sewers are part of a stormwater management system where orifice controls are used to control the release of stormwater prior to outletting from the site. The underground storm sewer system will detain as well as convey stormwater. As indicated in the Citi Gate Phase 1 Report, the private storm sewer system will outlet to the existing Stormceptor unit at the northwest corner of the site which outlets to the existing O'Keefe Drain. Refer to the General Plan of Services (125132-GP) for details.

The storm sewers (conveying the minor system) have been design based on the criteria outlined in the Sewer Design Guidelines [5] using the principles of dual drainage. The design criteria used in sizing the storm sewers are summarized in **Table 8.1**. The corresponding Post-Development Drainage Area Plan (125132-POST) is provided in **Appendix C**.

Table 8.1: Storm Sewer Design Parameters

Parameter	Design Criteria
Private Roads	2 Year Return Period
Storm Sewer Design	Rational Method
IDF Rainfall Data	Ottawa Sewer Design Guidelines
Initial Time of Concentration (Tc)	10 min
Minimum Velocity	0.8 m/s
Maximum Velocity	3.0 m/s
Minimum Diameter	250 mm

9.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

9.1 Stormwater Management Criteria and Objectives

The stormwater management criteria and objectives for the site are as follows, per the City of Ottawa's requirements:

- Provide a dual drainage system (i.e. minor and major system flows);
- Ensure that no surface ponding will occur on the paved surfaces (i.e., private drive aisles or car storage areas) during the 2-year storm event;
- Ensure that ponding is confined within the car storage areas at a maximum depth of 0.35 m for both static ponding and dynamic flow;
- Control the runoff to the O'Keefe Drain to the allowable release rates specified in the overall Citi Gate Development design and is shown in **Section 9.1.1**;
- Provide on-site water quality control equivalent to an 'Enhanced' Level of Protection (80% long-term TSS removal), as required by the Conservation Authority; and,
- Provide guidelines to ensure that site preparation and construction is in accordance with the current Best Management Practices for Erosion and Sediment Control.

9.1.1 Allowable Release Rate

As outlined in the Citi Gate Phase 1 Report [1], the private sites to the east of the O’Keefe Drain are to be designed to provide sufficient on-site storage to ensure that peak flows are maintained to below pre-development levels at all stages of development. The per-hectare release rates and on-site storage requirements were estimated based on an average imperviousness of 85%. For the proposed site (Block 4) the allocated drainage area was 3.41 ha. Refer to allowable release rates provided in **Table 9.1**; excerpts provided in **Appendix C**.

Table 9.1: Allowable Release Rate

Design Event	Allowable Release Rate (Block 4 – 3.41 ha)	
	(L/s/ha)	(L/s)
2-yr Event	20	68
5-yr Event	35	119
10-yr Event	45	153
25-yr Event	64	218
50-yr Event	75	256
100-yr Event	126	430

9.2 Proposed Conditions

Storm servicing for the site will be provided using a dual drainage system, similar to the system used in Phases 1 and 2. Runoff will be stored and conveyed by underground storage chamber systems (minor system), while flows from large storm events which exceed the capacity of the minor system will be conveyed overland along defined overland flow routes (major system).

A small and predominantly grassed uncontrolled area will drain to Dealership Drive. This area will have negligible impact on the existing storm infrastructure within the Dealership Drive right-of-way. These storm sewers outlet to the Gregory Casey SWM Facility (Foster Ditch).

Additionally, a small strip around the perimeter of the Phase 3 development will drain uncontrolled to the O’Keefe Drain. It is assumed to have a runoff coefficient of 0.25 in the modeling, per City of Sewer Design Guidelines [5] and will continue to sheet drain directly to the O’Keefe Drain. This area (POST-DR) has been included in the model for calculating the overall allowable release rate for the site.

Water quality treatment will be provided by the existing water quality unit (Stormceptor) located in the northwest corner of the site. Runoff from the site will be controlled before discharging to the O’Keefe Drain.

9.2.1 Quantity Control

Peak flows to the O’Keefe Drain will be controlled using inlet control devices (ICDs) sized to restrict the flows from the site to the allowable release rates, specified in **Section 9.1.1**, for each

storm event. The ICDs are sized to control peak flows for the 2-year storm event and will overcontrol release rates during larger storm events. A Tideflex checkmate in-line check valve was installed immediately upstream the outlet pipe as part of the Phase 1 works to prevent backflow from the O'Keefe Drain into the storm network. The quantity control provided for this site is discussed below based on model results. The model details and parameters are discussed with detail in **Section 9.3**.

Underground Storage

Underground storage will be required to adhere to the allowable release rates. The underground storage for the Phase 3 design will be provided using SC-800 arch-type Stormtech Chambers at two locations.

They are proposed to be installed upstream of each ICD and will provide 100% of the required storage for the 2-year event. The proposed layout of underground storage chambers is shown on the General Plan of Services (Drawing 125132-GP). **Table 9.2** displays a summary of the proposed Stormtech Chambers for the Phase 3 design.

Table 9.2: Phase 3 Stormtech Chambers Summary

Location	Chamber Model	No. of Chambers	Available Storage (m ³)*
CBMH2003	SC-800	11	31
CBMH2004		24	63
	Total	35 Chambers	Underground storage 94 m³

*Includes 152mm of stone above and below the chambers assuming a void ratio of 40%

Surface Storage

The stage-storage curves for each inlet in Phases 1 and 3 (**Appendix C**) were calculated based on the proposed Grading Plan (125132-GR) while the Phase 2 storage calculations are based on McIntosh Perry Report [3]. The total available surface storage within the parking area low-points is approximately 914 m³. The total provided and required storage is shown in **Table 9.3**.

Table 9.3: Provided and Required On-Site Storage

Scenario / Area	Provided Storage Volume (m ³)			Required Storage Volume (m ³)		
	Ponding	Underground	Total	Ponding	Underground	Total
Phase 1	321	140	461	258	140	398
Phase 2	280	126	406	270	126	396
Phase 3	408	94	502	348	136	484
Total	1009	360	1369	876	402	1278

*From PCSWMM model (3-hour Chicago Storm).

The car storage areas have been designed to store runoff from storms that exceed the capacity of the underground storage chambers at each inlet. The site has been graded to ensure that ponding is confined within the car storage areas at a maximum depth of 0.35 m (static ponding + dynamic flow). Overland flow paths have been provided to ensure that runoff from extreme storm events that exceed the available storage can be safely directed towards the O'Keefe Drain.

9.2.2 Quality Control

As previously discussed, a water quality unit was designed and constructed at the northwest corner of the site to achieve the Quality Control requirements. The installed treatment unit is a Stormceptor (STC-4000). This unit was sized assuming a drainage area of 3.67 ha and an imperviousness of 85%. The proposed site has a drainage area of 3.21 ha and an imperviousness of 95% to the Stormceptor. The proposed site has a smaller drainage area, but higher imperviousness. When comparing the impervious areas, the proposed site is less than what was previously allocated, as shown below:

<u>Parameter</u>	<u>Initial Design:</u>	<u>Phase 3 Design:</u>
Drainage Area	3.41 ha	3.21 ha
Percent Impervious	85%	95%
Impervious Area	3.12 ha	3.08 ha

This reduced impervious area means that the Stormceptor STC-4000 would continue to provide an enhanced level of treatment corresponding to 80% long-term TSS removal. The previous design calculations for the Stormceptor have been included in **Appendix C**.

9.3 Hydrologic and Hydraulic Modelling

The Sewer Design Guidelines [5] requires hydrologic modeling for all dual drainage systems. The performance of the proposed storm drainage system for the site was evaluated using the PCSWMM hydrologic/ hydraulic model.

The PCSWMM model schematics and the 2-year, 5-year and 100-year model output data are provided in **Appendix C**. The packaged modeling files have been included with the submission.

9.3.1 Design Storms

The hydrologic analysis was completed using the following synthetic design storms: the 3-hour Chicago and the 12-hour SCS Type II storms for return periods of 2-year, 5-year, 10-year, 25-year, 50-year, 100-year and 100-year (+20%). The IDF parameters used to generate the design storms were taken from the Sewer Design Guidelines [5].

The 3-hour Chicago distribution generates the highest peak flows for both the minor and major systems and was determined to be the critical storm distribution for the design of the storm drainage system.

The proposed drainage system has also been stress tested using a 3-hour Chicago design storm that has a 20% higher intensity and total volume compared to the 100-year event.

9.3.2 Model Development

The PCSWMM model has been developed to account for both minor and major system flows from the site, adhere to the allowable release rates and ensure no adverse impacts on the O'Keefe Drain. The results of the analysis were used to:

- Determine the total major and minor system runoff from the site;
- Determine the required underground storage volume;
- Calculate the storm sewer hydraulic grade line for the 100-year storm event; and,
- Evaluate overland flow depths and ponding volumes during the 100-year event.

This site has been developed in three separate phases. The original model was created by Novatech and submitted with the Servicing and Stormwater Management Report [2]. It was modeled assuming ultimate buildout to properly size the required underground storage chambers and ICDs, as they are used to attenuate and control runoff from all phases of development.

The model has been updated to incorporate Phase 2 design changes by McIntosh Perry outlined in the Servicing and Stormwater Management Report [3].

Additionally, the Phase 3 design has been modified, and the modeling has been updated to reflect the current design.

Outfall Boundary Conditions

The PCSWMM model was run using a 'fixed' outfall boundary condition for the minor system outfall. The downstream boundary conditions are based on the estimated water levels in the O'Keefe Drain from the Citi Gate Phase 1 Report [1] (HEC-RAS STA: 615.6). Refer to excerpts provided in **Appendix C**. A 'normal' outfall condition was used for major system outfalls.

Infiltration

Infiltration losses for all catchment areas were modeled using Horton's infiltration equation, which defines the infiltration capacity of soil over the duration of a precipitation event using a decay function that ranges from an initial maximum infiltration rate to a minimum rate as the storm progresses. The default values as specified in the Sewer Design Guidelines were used for all catchments.

Horton's Equation:
$$f(t) = f_c + (f_o - f_c)e^{-k(t)}$$

Initial infiltration rate: $f_o = 76.2$ mm/hr
Final infiltration rate: $f_c = 13.2$ mm/hr
Decay Coefficient: $k = 4.14$ /hr

Depression Storage

The default values for depression storage in the City of Ottawa were used for all catchments.

- Depression Storage (pervious areas): 4.67 mm
- Depression Storage (impervious areas): 1.57 mm

The rooftops assumed to provide no depression storage (zero-impervious parameter).

Equivalent Width

'Equivalent Width' refers to the width of the sub-catchment flow path. This parameter is calculated as described in *Section 5.4.5.6* of the Sewer Design Guidelines [5]. The flow path lengths are shown on the PCSWMM model schematics provided in **Appendix C**.

Impervious Values

Runoff coefficients for each subcatchment area were determined based on the proposed site plan. Refer to the Post-Development Drainage Area Plan (125132-POST) for details. Percent impervious values were calculated using the following formula:

$$\%imp = \frac{c - 0.2}{0.7}$$

Storm Drainage Areas

For modeling purposes, the site has been divided into subcatchments based on the drainage areas tributary to each inlet of the proposed storm sewer system. It should be noted that catchment areas have changed from previous submissions due to changes in the design and grading. The Phase 3 subcatchment areas are shown on the Post-Development Drainage Area Plan (125132-POST) in **Appendix C**.

The hydrologic modeling parameters for each subcatchment were developed based on the Proposed Site Plan (**Figure 3**) and the Post-Development Drainage Area Plan (125132-POST) specified above. Subcatchment parameters are displayed in **Table 9.4**.

Table 9.4: Subcatchment Parameters

Area ID	Catchment Area (ha)	Runoff Coefficient (C)	Percent Impervious (%)	No Depression (%)	Flow Length (m)	Equivalent Width (m)	Average Slope (%)
Phase 1 Catchment Areas							
A01	0.06	0.85	93%	0%	15	40	2
A02	0.07	0.82	89%	0%	15	47	2
A03	0.07	0.78	83%	0%	20	35	2
A04	0.10	0.87	96%	0%	15	67	2
A05	0.10	0.89	99%	0%	20	50	2
A06	0.04	0.81	87%	0%	10	40	2
A07	0.05	0.90	100%	0%	15	33	2
A08	0.07	0.80	86%	0%	15	47	2
A09	0.12	0.85	93%	0%	10	120	2
A10	0.05	0.86	94%	0%	10	50	2
A11	0.07	0.86	94%	0%	15	47	2
A12	0.06	0.78	83%	0%	10	60	2
A13	0.08	0.90	100%	100%	30	27	2
A14	0.04	0.90	100%	100%	30	13	2
A15	0.13	0.90	100%	100%	40	33	2

Area ID	Catchment Area (ha)	Runoff Coefficient (C)	Percent Impervious (%)	No Depression (%)	Flow Length (m)	Equivalent Width (m)	Average Slope (%)
Phase 2 Catchment Areas							
B2-MP	0.28	0.90	100%	100%	35	80.0	2
B5-MP	0.61	0.82	89%	0%	15	393	2
B6-MP	0.27	0.88	97%	0%	15	167	2
Phase 3 Catchment Areas							
POST-A1	0.08	0.90	100%	0%	20	40	3
POST-A2	0.08	0.90	100%	0%	21	39	3
POST-A3	0.09	0.90	100%	0%	23	39	2.5
POST-A4	0.1	0.90	100%	0%	22	45	2.5
POST-A5	0.09	0.90	100%	0%	19	48	3
POST-B1	0.11	0.27	100%	0%	28	40	3
POST-B2	0.09	0.90	100%	0%	26	35	2.5
POST-B3	0.09	0.90	100%	0%	21	44	2.5
POST-B4	0.06	0.90	100%	0%	12	51	2.5
POST-B5	0.07	0.90	100%	0%	13	53	2.5
POST-B6	0.1	0.90	100%	0%	24	42	2.5
POST-DR	0.1	0.25	7%	0%	3	333	5

Minor System Conduits (Bend / Exit Losses)

- The minor system network was created in Civil3D and imported into PCSWMM.
- The following exit losses have been inputted into the model. They represent the loss coefficient based on the bend angle, as per the Appendix 6-B in the Sewer Design Guidelines [5].

<u>Bend Angle</u>	<u>Loss Coefficient</u>
0	0.00
15	0.09
30	0.21
45	0.39
60	0.64
75	0.96
90	1.32

9.3.3 Minor System Design and Analysis

The following sections outline the model parameters and results of the PCSWMM model, pertaining to the minor system (storm sewers).

Inlet Controls

Inflows to the storm sewer were modeled based on the characteristics of each inlet. All the catchbasins in the car storage area are located at low points. Inflows to the storm sewer are based on the ICD specified for the inlet and the maximum depth of ponding. Phase 3 ICDs have

been sized based on the remaining 2-year allowable release rate to the O'Keefe Drain after subtracting what is being released from Phases 1, 2 and direct runoff from Phase 3. The ICD details are outlined in **Table 9.5**. The table is split into two (2) sections; previously installed ICDs (Phase 1 and 2), and proposed Phase 3 ICDs.

ICD information is indicated on the General Plan of Services (125132-GP).

Table 9.5: Orifice Parameters

Structure	ICD Size & Release Rate*						
	Orifice Size	Orifice Invert (m)	T/G (m)	100-year Head (m)	2-year Peak Flow (L/s)	5-year Peak Flow (L/s)	100-year Peak Flow (L/s)
Phase 1 & 2 ICDs (Previously Installed)							
CBMH103	78mm Plug	93.58	95.50	95.68	11.6	12.6	17.3
CBMH108	Tempest Vortex 78	93.76	95.50	95.75	7.2	7.2	7.2
CBMH113	Tempest Vortex 93	93.78	95.50	95.72	7.5	10.2	10.4
CBMH119	Tempest Vortex 93	93.93	95.43	95.72	7.3	9.6	10.1
Proposed Phase 3 ICDs							
CBMH2003	Tempest Vortex 93	93.91	95.25	95.47	8.7	9.0	9.6
CBMH2004	Tempest Vortex 93	93.70	95.05	95.24	8.6	9.1	9.1

*From PCSWMM model (3-hour Chicago Storm).

Roof Drains

Roof controls were provided in the previous design phase reports Novatech [2] and McIntosh Perry [3] and incorporated into the updated PCSWMM model based on previous modeling and calculations. **Table 9.6** summarizes the performance of the roofs in the PCSWMM model.

Table 9.6: Rooftop Storage and Release Rates

Area ID (Roof Drain ID)	Drainage Area (ha)	Controlled Peak Flow (L/s)		Ponding Depth (m)		Required Storage Volume (m ³)*		Provided Storage Volume (m ³)^
		1:5 Year	1:100 Year	1:5 Year	1:100 Year	1:5 Year	1:100 Year	
Phase 1	0.130	7.7	11.4	0.11	0.15	27	49	48.8
Phase 2	0.280	7.0	11.9	0.04	0.07	83	140	166.9
TOTAL	0.410	14.7	23.3	-	-	110	189	215.7

* Required storage volumes based on PCSWMM model results

^ Based on calculations from previous reports using varying methods to calculate total volume

Peak Flows

The overall release rates from the minor and major system outfalls were summed to determine the overall release rate from the developed portion of the site. The results of this analysis indicate that the allowable release rates will be met for the 2-year storm event and will overcontrol larger events. Refer to **Table 9.7** for the modelled peak flows for each storm event.

Table 9.7: Comparison of Peak Flows

Table 5.17: Comparison of Peak Flows								
Area	Drainage Area (ha)	Peak Flows (L/s)						
		2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	100-yr (+20%)
Allowable Release Rate								
Allocated – Block 4 (L/s/ha)	-	20.0	35.0	45.0	64.0	75.0	126.0	-
TOTAL (Allowable)	3.41	68.0	119.0	153.0	217.6	255.0	428.4	-
Proposed Conditions*								
TOTAL (Controlled)	3.21	62.0	72.2	78.1	83.3	85.3	86.7	91.2
POST-DR (Uncontrolled Area)	0.10	3.49	18.56	24.95	32.25	37.52	42.8	225.8
TOTAL (Overall)	3.31	65.5	90.8	103.0	115.6	122.8	129.5	317.0
Difference (post - allowable)	-	2.5	28.2	50.0	102.0	132.2	298.9	-

*From PCSWMM model (3-hour Chicago Storm).

The results of the PCSWMM analysis indicate that outflows from the proposed development will not exceed the allowable release rate for all storm events. The ICDs at each control structure were sized to control peak flows to the 2-year allowable release rates. As such, storm events exceeding the 2-year storm are overcontrolled.

Hydraulic Grade Line

The results of the HGL analysis were used to determine if the Phase 3 design would cause any negative impacts to the sewers or any surcharging to the surface during the 100-year event. **Table 9.8** provides a summary of the 100-year and stress test (100yr + 20%) HGL elevations at each storm maintenance hole within the site broken down into the existing and proposed maintenance holes. The results of the HGL analysis for both events indicate that the Phase 3 design does not cause any negative impacts to the sewers or any surcharging to the surface to the existing maintenance holes in Phase 1 and 2. During the 100-year event MH1003 will surcharge by 0.14 m above the top of grate. This can be attributed to the maintenance hole being in the ponding vicinity of CBMH2003. Ponding will occur in the area as designed building to an HGL of 95.50 m, resulting in 0.14 m of ponding over the maintenance hole. This should not result in any negative impacts to the storm sewers. A watertight maintenance hole cover is recommended for MH1003.

Table 9.8: Maintenance Hole HGLs

MH ID	Obvert Elevation (m)	T/G Elevation (m)	HGL Elevation ¹ (m)	Surcharge (m)	Clearance from T/G (m)	HGL in Stress Test ¹ (m)
Phase 1 and 2						
MH01	94.03	95.68	93.88	0.00	1.80	93.88
MH02	94.10	95.66	93.88	0.00	1.78	93.88
MH03	94.20	95.94	94.08	0.00	1.86	94.08
MH04	94.19	95.60	93.89	0.00	1.71	93.89
MH05	94.22	95.59	93.89	0.00	1.70	93.89
MH06	94.29	95.79	93.89	0.00	1.90	93.89
MH07	94.38	95.52	94.23	0.00	1.29	94.23
MH08	94.37	95.68	93.89	0.00	1.79	93.89
Phase 3						
MH1000	94.53	95.42	95.31	0.78	0.11	95.36
MH1001	94.35	95.51	95.31	0.96	0.20	95.36
MH1002	94.33	95.36	95.50	1.18	-0.14 ²	95.51

¹Based on 3-hour Chicago Storm² above surface, within ponding area

9.3.4 Major System Design and Analysis

The major system network was evaluated using the PCSWMM model to ensure that the ponding depths conform to City standards. A summary of ponding depths within Phase 3 for the 100-year event is provided in **Table 9.9**. Results for other design storms are provided in **Appendix C**. No ponding occurs during the 2-year storm event in Phase 3, and the maximum static and dynamic ponding depths are less than 0.35m during all events, thereby meeting the major system criteria.

Table 9.9: 100-Year Phase 3 Ponding Summary

Structure	T/G (m)	Max. Static Ponding (Spill Depth)		100-yr Event (4hr)	
		Elev. (m)	Depth (m)	Elev. (m)	Depth (m)
CBMH2000	95.25	95.50	0.25	95.50	0.25
CBMH2001	95.25	95.50	0.25	95.50	0.25
CBMH2002	95.25	95.50	0.25	95.50	0.25
CBMH2003	95.25	95.50	0.25	95.50	0.25
CBMH2004	95.05	95.35	0.30	95.30	0.25
CB3000	95.25	95.50	0.25	95.50	0.25
CB3001	95.05	95.35	0.30	95.31	0.26
CB3002	95.05	95.35	0.30	95.31	0.26
CB3003	95.05	95.35	0.30	95.31	0.26
CB3004	95.05	95.35	0.30	95.31	0.26
CB3005	95.05	95.35	0.30	95.31	0.26

The major system contains all storms up to and including the 100-year storm event. For storm events exceeding the 100-year storm event, stormwater will follow the overland flow route to the O'Keefe Drain to ensure buildings are not impacted. The overland flow route is shown on the Grading Plan (125132-GR). The storm sewer system is also protected by the existing Tideflex checkmate in-line check valve installed as part of Phase 1 works to prevent backflow from the O'Keefe Drain.

10.0 EROSION AND SEDIMENT CONTROL

Temporary erosion and sediment control measures will be implemented during construction.

Silt fence, mud mats and filter bags in catchbasins will be used as erosion and sediment control measures. The inlets to the storm sewer system and underground storage system should be protected.

Erosion and sediment control measures should be inspected daily and after every rain event to determine maintenance, repair or replacement requirements. Sediments or granulars that enter site sewers shall be removed immediately by the Contractor. These measures will be implemented prior to the commencement of construction and maintained in good order until vegetation has been established. Refer to the Grading Plan & Erosion Sediment Control Plan (125132-GR) for details and locations.

11.0 CONCLUSIONS AND RECOMMENDATIONS

- It is proposed to develop Phase 3 of the site with car storage area for the two existing automobile dealerships located at the property. This portion of the site can be accessed through the exiting developments and Dealership Drive.
- Runoff from the car storage expansion area will be controlled by inlet control devices installed in a maintenance hole structure. Underground storage (Stormtech Chambers) will be provided upstream the control structure to ensure no surface ponding in the 2-year design event in the Phase 3 design.
- The controlled post-development peak flows from the developed portion of the site will not exceed the allowable release rates for all return periods analyzed.
- Quality control of stormwater is provided from the existing Stormceptor STC-4000 located in the northwest corner of the site prior to outletting stormwater to the O'Keefe Drain. This unit was designed to provide an enhanced level of water quality treatment for the site.
- An overland flow route is provided to the O'Keefe Drain.
- Erosion and sediment control measures will be implemented prior to and during construction.

NOVATECH

Prepared by:



Lindsey Corry, C.E.T.
Project Coordinator
Land Development Engineering

Reviewed by:



Lisa Bowley, P.Eng.
Senior Project Manager
Land Development Engineering

Stormwater Design prepared by:



Aiden Mallany-Stanley, MASc., EIT
Engineering Intern, Water Resources

Stormwater Design reviewed by:



Melanie Schroeder, P.Eng.
Project Engineer, Water Resources

**Appendix A:
Correspondence and Background Information**

March 12, 2026

Adam Thompson
Novatech
Via email: a.thompson@novatech-eng.com

**Subject: Pre-Consultation: Meeting Feedback
Proposed Site Plan Control Revision Application – 4147-4149
Strandherd Drive**

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on March 9, 2026.

Pre-Consultation Preliminary Assessment

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. For your next submission, please submit the required Application Form, together with the necessary studies and/or plans to planningcirculations@ottawa.ca, copy (cc:) to the file lead and planning support.
2. In your application submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed is requested with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.
3. Please note, if your development proposal changes significantly in scope, design, or density it is recommended that a subsequent pre-consultation application be submitted.

Supporting Information and Material Requirements

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.
 - a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

Consultation with Technical Agencies



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

Planning Comments:

Zoning

1. City Council approved the City of Ottawa's new Zoning By-law (2026-50) on January 28, 2026, and enacted the new Zoning By-law on March 11, 2026. Complete applications submitted **after enactment but before the OLT declares the unappealed sections to be in effect** (anticipated for Fall 2026) will be reviewed under both Zoning By-law 2008-250 and Zoning By-law 2026-050. Where there are conflicts, the most restrictive provisions will apply.
 - When all appeals are resolved, the new Zoning By-law will be in full force and effect, as amended by the Tribunal and retroactive to the date of enactment. This means that complete applications received after enactment will only be subject to the provisions of the new by-law.
2. Provide a soft landscaped buffer between the perimeter of the parking lot and any lot line, in accordance with Section 607(7) of the new Zoning By-law (2026-50). For parking lots containing 100 or more spaces, a 5-metre buffer is required.
3. The following provisions must be met for a principal or accessory use parking lot as per Section 607(8) of the new Zoning By-law (2026-50):
 - a. For more than 100 parking spaces, 20 per cent of the parking lot area must be landscaped.
 - b. A minimum of one soft landscaped median or peninsula of at least 3.5 metres wide must be provided within the parking lot for parking lots with 50 spaces or more.
4. Ensure that all motor vehicle parking spaces comply with the minimum size requirements and all queueing and loading spaces, and aisles and driveways leading to those spaces are finished with a surface that is paved with asphalt, cement, permeable pavement, honeycomb block, turf block, cobblestones or similar stable dust-preventative material as per Section 100(3) of the existing Zoning By-law and Section 601(5) of the new Zoning By-law.

Official Plan

5. The subject site is designated Mixed-Industrial in the Official Plan. In accordance with Section 4.1.4, parking lots in Mixed-Industrial areas should provide regular spacing of tree islands to support the growth of mature shade trees and reduce the heat island effect.

It is acknowledged that the primary intent of the parking lot extension is for vehicle inventory associated with the existing dealerships, and that the nature of this use may limit opportunities for tree plantings due to potential damage to vehicles. However, tree plantings should be incorporated where feasible to help mitigate the heat island effect associated with the proposed parking lot.

Opportunities to do so could include areas where plantings would not impact the vehicles, such as medians not directly adjacent to vehicle inventory and areas near staff parking. The exploration of additional alternatives is encouraged.

General Comments

6. The site plan must clearly identify whether parking stalls will be used for vehicle storage or staff parking, as accessibility standards may apply for staff parking.
7. Identify the snow storage areas on the site plan.

Feel free to contact Chloe Bullen, Planner, for follow-up questions.

Urban Design Comments:

8. Provide landscape islands that can accommodate tree planting which will increase permeability and minimize the heat island impact of the proposal.
9. Provide trees and landscaping around the perimeter of the site.

Feel free to contact Sahara Shrestha, Urban Design, for follow-up questions.

Engineering Comments:

10. This parcel is part of Citi Gate 416 Corporate Campus Phase 1.
11. The Stormwater Management Criteria, for the subject site, is to be based on the following:
 - a. Application of the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.
 - b. In separated areas, the pre-development runoff shall be the lower of the existing coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).
 - c. A calculated time of concentration (cannot be less than 10 minutes).
 - d. Storm servicing criteria shall meet the Citi Gate 416 Corporate Campus – Detailed Servicing and Stormwater Management Report (Phase 1), prepared by Novatech, project #109203, dated October 1, 2014.
 - e. An existing outlet and OGS unit are installed from the previous Site Plan Application and shall be discussed in the SWM report.

- f. Quality control is required as per the Citi Gate 416 Corporate Campus – Detailed Servicing and Stormwater Management Report (Phase 1), prepared by Novatech, project #109203, dated October 1, 2014.
- 12. An MECP Environmental Compliance Approval amendment [**Municipal/Private Sewage Works**] may be required for the proposed development. An EASR may be applicable. A Ministry contact has been provided below but please work with City staff on the need (or not) of an application.
 - a. Shannon Hamilton-Browne at (613) 521-3450 or Shannon.Hamilton-Browne@ontario.ca
 - b. Please include correspondence with the MECP in the SWM report.

Feel free to contact Bruce Bramah, Project Manager, for follow-up questions

Transportation Comments:

- 13. A TIA is not required.
- 14. As the proposed site is commercial, Accessibility for Ontarians with Disabilities Act (AODA) legislation applies.
- 15. Ensure site access meets the City's [Private Approach Bylaw](#).
- 16. As discussed at the pre-consultation meeting, a third access onto Dealership Drive exceeds the maximum number of accesses permitted under the bylaw.

The City's preference is maintaining the two accesses to Dealership Drive and removing third southernmost access as the City discourages private approaches opposite public roads (Philsar St).
- 17. As required, include turning movement diagrams for all accesses showing the largest vehicle to access/egress the site.
- 18. Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc.)
- 19. Sidewalk is to be continuous across accesses as per City Specification

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

Environmental Planning Comments

- 20. An Environmental Impact Statement is not required as part of this application. The only protected natural feature present on or near the site is the O'Keefe Drain (immediately to the west), but that feature already has protections established under the O'Keefe Drain Environmental Management Plan. As this

application appears to conform to the requirements of that document, no further environmental review is required.

21. The applicant is strongly encouraged to find space for additional tree plantings on site. The degree of impermeable surface present on site presents a strong risk of exacerbating the urban heat island effect, which places the community at a higher risk of extreme heat events.

Staff recognize that there may be complications with regard to tree plantings in a car lot (sap, birds, etc.). However, the City's policies do require mitigation of some sort. As suggested in the pre-consultation meeting, integrating the plantings with staff parking, instead of the general inventory, may be one solution.

Feel free to contact Mark Elliott, Environmental Planner, for follow-up questions.

Forestry Comments

22. An updated landscape plan (LP), scoped to the area of the proposed parking lot, will be required. If all LP elements (as per the Terms of Reference) can be accommodated, the LP & site plan can be combined.
23. A Tree Conservation Report is required for any protected trees on site, including all trees within the right-of-way and any trees 10 cm DBH or larger, within the proposed parking lot area.
24. Please provide landscape buffers along the edges of the parking lot, along with new tree plantings to enhance the site, provide screening, and mitigate the heat island effect.
25. Please explore options for including landscape islands and infrastructure to support tree planting within the expanded parking lot.

Feel free to contact Julian Alvarez-Barkham, Forester, for follow-up questions.

Parks Comments

26. Parkland dedication, in accordance with Parkland Dedication [By-law No. 2022-280](#), was previously satisfied through the related plan of subdivision approval.

Feel free to contact Lorraine Stevens, Parks Planner, for follow-up questions.

Submission Requirements and Fees

1. Application Type: Revision - Standard
 - a. Additional information regarding fees related to planning applications can be found [here](#).



2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
 - a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.
3. All of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.

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

Thank you,

Chloe Bullen

Encl. List of Technical Agencies
Study and Plan Identification List
Supplementary Development Information

c.c. Siobhan Kelly, Planner II
Sahara Shrestha, Urban Design
Bruce Bramah, Infrastructure Project Manager
Josiane Gervais, Transportation Project Manager
Mark Elliott, Environmental Planner
Julian Alvarez-Barkham, Forester
Lorraine Steves, Parks Planner

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 4328-CYFP3C

Issue Date: December 19, 2023

Zena Investment Corporation
1200 Baseline Rd
Ottawa, ON K2C 0A6

Site Location: 4149 Strandherd Drive
City of Ottawa, ON K2K 3K2

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act , R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

modification of previously approved stormwater management Works to service a proposed commercial development located at 4149 Strandherd Drive in the City of Ottawa, for the collection, transmission and disposal of stormwater runoff from a total catchment area of 3.38 hectares, to attenuate post-development peak flows to allowable release rates for all storm events up to and including the 100 year storm event, discharging to O'Keefe Drain via an existing off-site stormwater management facility for quality control, consisting of the following Works:

Proposed Works and existing Works to be modified:

- **rooftop storage (catchment area 0.083 hectares):** provided on building "B", having a minimum available storage volume of approximately 34.2 cubic metres during the 100 year storm event, discharging via five (5) Watts Accutrol roof drains (or Equivalent Equipment), allowing a maximum combined discharge of approximately 3.45 litres per second during the 100-year storm event, discharging to the private on-site storm sewer system;
- **rooftop storage (catchment area 0.162 hectares):** provided on building "C", having a minimum available storage volume of approximately 91.1 cubic metres during the 100 year storm event, discharging via eight (8) Watts Accutrol roof drains (or Equivalent Equipment), allowing a maximum combined discharge of approximately 7.60 litres per second during the 100-year storm event, discharging to the private on-site storm sewer system;
- **surface and subsurface storage (catchment area 2.87 hectares):** provided within parking lot ponding areas, within the on-site private storm sewer system as well as within the existing Stormtech STC-740 chamber system and two (2) proposed Triton S-29 chamber systems, having a maximum available combined storage volume of approximately 1,125 cubic metres, discharging up to approximately 111 litres per second to the private on-site storm sewer system

controlled by five (5) plug style inlet control devices 75mm, 77mm, 78mm, 90mm and 94mm in diameter (or Equivalent Equipment) as well as one (1) Tempest LMF90 ICD (or Equivalent Equipment);

Existing Works:

- **rooftop storage (catchment area 0.13 hectares):** provided on building "A", having a minimum available storage volume of approximately 48.8 cubic metres during the 100 year storm event, discharging via six (6) Watts Accutrol roof drains, allowing a maximum combined discharge of approximately 11.4 litres per second during the 100-year storm event, discharging to the private on-site storm sewer system;
-

including erosion/sedimentation control measures during construction and all other controls and appurtenances essential for the proper operation of the aforementioned Works;

all in accordance with the submitted application and supporting documents listed in Schedule A forming part of this Approval.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this entire Environmental Compliance Approval and any Schedules attached to it;
2. "Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;
3. "District Manager" means the District Manager of the appropriate local District Office of the Ministry, where the Works are geographically located;
4. "EPA" means the *Environmental Protection Act*, R.S.O. 1990, c.E.19, as amended;
5. "Existing Works" means those portions of the Works included in the Approval that have been constructed previously;
6. "Equivalent Equipment" means alternate piece(s) of equipment that meets the design requirements and performance specifications of the piece(s) of equipment to be substituted;
7. "Licensed Engineering Practitioner" means a person who holds a licence, limited licence or temporary licence under the *Professional Engineers Act*, R.S.O. 1990,

c. P.28;

8. "Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;
9. "Owner" means Zena Investment Corporation and its successors and assignees;
10. "OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, as amended;
11. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;
12. "Works" means the approved sewage works, and includes Proposed Works and Existing Works.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
2. The Owner shall design, construct, operate and maintain the Works in accordance with the conditions of this Approval.
3. Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence.
4. The issuance of, and compliance with the conditions of, this Approval does not:
 - a. relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approval from the local conservation authority necessary to construct or operate the Works; or
 - b. limit in any way the authority of the Ministry to require

certain steps be taken to require the Owner to furnish any further information related to compliance with this Approval.

2. EXPIRY OF APPROVAL

1. This Approval will cease to apply to those parts of the Works which have not been constructed within **five (5) years** of the date of this Approval.
2. In the event that completion and commissioning of any portion of the Works is anticipated to be more than five (5) years, the Owner shall submit an application for extension at least **twelve (12) months** prior to the end of the five (5) years from the day of issuance of this Approval. The application shall include the reason(s) for the delay, whether there is any design change(s) and a review of whether the standards applicable at the time of Approval of the Works are still applicable at the time of request for extension, to ensure the ongoing protection of the environment.

3. CHANGE OF OWNER

1. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within **thirty (30) days** of the change occurring:
 - a. change of address of Owner;
 - b. change of Owner, including address of new owner;
 - c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act, R.S.O. 1990, c. B.17* shall be included in the notification; or
 - d. change of name of the corporation, and a copy of the most current information filed under the *Corporations Information Act, R.S.O. 1990, c. C39* shall be included in the notification.
2. In the event of any change in ownership of the Works, the Owner shall notify in writing the succeeding owner of the existence of this Approval, and a copy of such notice shall be forwarded to the District Manager and the Director.
3. The Owner shall ensure that all communications made pursuant to this condition refer to the number of this Approval.

4. CONSTRUCTION OF PROPOSED WORKS

1. Upon the construction of the Works, the Owner shall prepare a statement, certified by a Licensed Engineering Practitioner, that the Works are constructed in accordance with this Approval, and upon request, shall make

the written statement available for inspection by Ministry personnel.

2. Within **one (1) year** of the construction of the Proposed Works, a set of as-built drawings showing the Works “as constructed” shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the Works for the operational life of the Works.

5. OPERATION AND MAINTENANCE

1. The Owner shall make all necessary investigations, take all necessary steps and obtain all necessary approvals so as to ensure that the physical structure, siting and operations of the Works do not constitute a safety, health or flooding hazard to the general public.
2. The Owner shall undertake an inspection of the condition of the Works, at least once a year, and undertake any necessary cleaning and maintenance to ensure that sediment, debris and excessive decaying vegetation are removed from the Works to prevent the excessive build-up of sediment, oil/grit, debris and/or decaying vegetation, to avoid reduction of the capacity and/or permeability of the Works, as applicable. The Owner shall also regularly inspect and clean out the inlet to and outlet from the Works to ensure that these are not obstructed.
3. The Owner shall construct, operate and maintain the Works with the objective that the effluent from the Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen, foam or discoloration on the receiving waters.
4. The Owner shall carry out and maintain an inspection and maintenance program on the operation of the subsurface storage units in accordance with the manufacturer's recommendation.
5. The Owner shall ensure that the maintenance ports for the subsurface storage units remains accessible year-round to facilitate maintenance access and spill response measures.
6. The Owner shall ensure the immediate clean-out of the Works after a fuel or oil spill capture.
7. The Owner shall ensure that equipment and material for the containment, clean-up and disposal of fuel and oil and materials contaminated with such, is on hand and in good repair for immediate use in the event of:
 - a. loss of fuel or oil to the Works; or
 - b. a spill within the meaning of Part X of the EPA.

8. The Owner shall prepare an operations manual prior to the commencement of operation of the Works that includes, but is not necessarily limited to, the following information:
 - a. operating and maintenance procedures for routine operation of the Works;
 - b. inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;
 - c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;
 - d. contingency plans and procedures for dealing with potential abnormal situations and for notifying the District Manager; and
 - e. procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken.
9. The Owner shall maintain an up to date operations manual and make the manual readily accessible for reference at the Works for the operational life of the Works. Upon request, the Owner shall make the manual available to Ministry staff.
10. The Owner shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the Works for inspection by the Ministry. The logbook shall include the following:
 - a. the name of the Works;
 - b. the date and results of each inspection, maintenance and cleaning, including an estimate of the quantity of any materials removed and method of clean-out of the Works; and
 - c. the date of each spill within the catchment area, including follow-up actions and remedial measures undertaken.
11. The Owner shall retain for a minimum of **five (5) years** from the date of their creation, all records and information related to or resulting from the operation and maintenance activities required by this Approval.

6. TEMPORARY EROSION AND SEDIMENT CONTROL

1. The Owner shall install and maintain temporary sediment and erosion control measures during construction and conduct inspections **once every two (2) weeks** and after each significant storm event (a significant storm event is defined as a minimum of 25 millimetres of rain in any 24 hours period). The inspections and maintenance of the temporary sediment and erosion control measures shall continue until they are no longer required and at which time they shall be removed and all disturbed areas reinstated properly.
2. The Owner shall maintain records of inspections and maintenance which shall be made available for inspection by the Ministry, upon request. The record shall include the name of the inspector, date of inspection, and the remedial measures, if any, undertaken to maintain the temporary sediment and erosion control measures.

7. REPORTING

1. **One (1) week** prior to the start-up of the operation of the Works, the Owner shall notify the District Manager (in writing) of the pending start-up date.
2. The Owner shall, upon request, make all reports, manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.
3. In addition to the obligations under Part X of the EPA and O. Reg. 675/98 (Classification and Exemption of Spills and Reporting of Discharges) made under the EPA, the Owner shall, within **fifteen (15) days** of the occurrence of any reportable spill as provided in Part X of the EPA and O. Reg. 675/98, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and a schedule of implementation.
4. The Owner shall prepare performance reports on a calendar year basis by March 31 of the calendar year following the period being reported upon and submit to the District Manager upon request. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:
 - a. a description of any operating problems encountered and corrective actions taken;
 - b. a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works, including an estimate of the quantity of any materials removed from the Works;
 - c. a description of efforts made and results achieved in

meeting the Effluent Objectives of Condition 5.3.

- d. a summary of any complaints received during the reporting period and any steps taken to address the complaints;
- e. a summary of all spill or abnormal discharge events; and
- f. any other information the District Manager requires from time to time.

8. SPILL CONTINGENCY PLAN

1. Within **six (6) months** from the issuance of this Approval, the Owner shall implement a spill contingency plan - that is a set of procedures describing how to mitigate the impacts of a spill within the area serviced by the Works. The Owner shall, upon request, make this plan available to Ministry staff. This plan shall include as a minimum:

- a. the name, job title and location (address) of the Owner, person in charge, management or person(s) in control of the facility;
- b. the name, job title and 24-hour telephone number of the person(s) responsible for activating the spill contingency plan;
- c. a site plan drawn to scale showing the facility, nearby buildings, streets, catch-basins and manholes, drainage patterns (including direction(s) of flow in storm sewers), any receiving body(ies) of water that could potentially be significantly impacted by a spill and any features which need to be taken into account in terms of potential impacts on access and response (including physical obstructions and location of response and clean-up equipment);
- d. steps to be taken to report, contain, clean up and dispose of contaminants following a spill;
- e. a listing of telephone numbers for: local clean-up company(ies) who may be called upon to assist in responding to spills; local emergency responders including health institution(s); and Ministry Spills Action Centre 1-800-268-6060;
- f. Safety Data Sheets (SDS) for each hazardous material which may be transported or stored within the area serviced by the Works;
- g. the means (internal corporate procedures) by which the spill contingency plan is activated;
- h. a description of the spill response training provided to employees assigned to work in the area serviced by the Works, the date(s) on which the training was provided and by whom;

- i. an inventory of response and clean-up equipment available to implement the spill contingency plan, location and, date of maintenance/replacement if warranted; and
 - j. the date on which the contingency plan was prepared and subsequently, amended.
2. The spill contingency plan shall be kept in a conspicuous, readily accessible location on-site.
3. The spill contingency plan shall be amended from time to time as required by changes in the operation of the facility.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted. This condition is also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. Condition 1.4 is included to emphasize that the issuance of this Approval does not diminish any other statutory and regulatory obligations to which the Owner is subject in the construction, maintenance and operation of the Works. The Condition specifically highlights the need to obtain any necessary conservation authority approvals. The Condition also emphasizes the fact that this Approval doesn't limit the authority of the Ministry to require further information.
2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.
3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to the approved Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.
4. Condition 4 is included to ensure that the Works are constructed in accordance with the approval and that record drawings of the Works "as constructed" are maintained for future references.
5. Condition 5 is included as regular inspection and necessary removal of sediment and excessive decaying vegetation from the Works are required to mitigate the impact of sediment, debris and/or decaying vegetation on the treatment capacity

of the Works. The Condition also ensures that adequate storage is maintained in the Works at all times as required by the design. Furthermore, this Condition is included to ensure that the Works are operated and maintained to function as designed.

6. Condition 6 is included as installation, regular inspection and maintenance of the temporary sediment and erosion control measures is required to mitigate the impact on the downstream receiving watercourse during construction until they are no longer required.
7. Condition 7 is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this Approval, so that the Ministry can work with the Owner in resolving any problems in a timely manner.
8. Condition 8 is included to ensure that the Owner will implement the Spill Contingency Plan, such that the environment is protected and deterioration, loss, injury or damage to any person(s) or property is prevented.

Schedule A

1. Environmental Compliance Approval Application for a Municipal and Private Sewage Works submitted and signed by Geoff Publow, Vice President of Construction of Zena Investment Corporation, dated March 31, 2021 and received on April 13, 2021, and all supporting documentation and information.
2. 4149 Strandherd Drive Servicing and Stormwater Management Report, dated October 28, 2021, including calculations and engineering drawings, prepared by Novatech Engineering Consultants Ltd.
3. Environmental Compliance Approval Application for Industrial and Private Sewage Works submitted by Zena Investment Corporation, dated September 21, 2023 and revised on November 6, 2023, and all supporting documentation and information.
4. Servicing and Stormwater Management Report "MYERS BARRHAVEN – 4149 STRANDHERD DRIVE", dated November 4, 2022, including calculations and engineering drawings, prepared by McIntosh Perry Consulting Engineers Ltd.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 7347-C5XHCZ issued on August 31, 2021

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act*, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

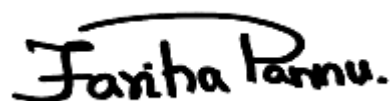
and

The Director appointed for the purposes of Part II.1 of the *Environmental Protection Act*
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

DATED AT TORONTO this 19th day of
December, 2023

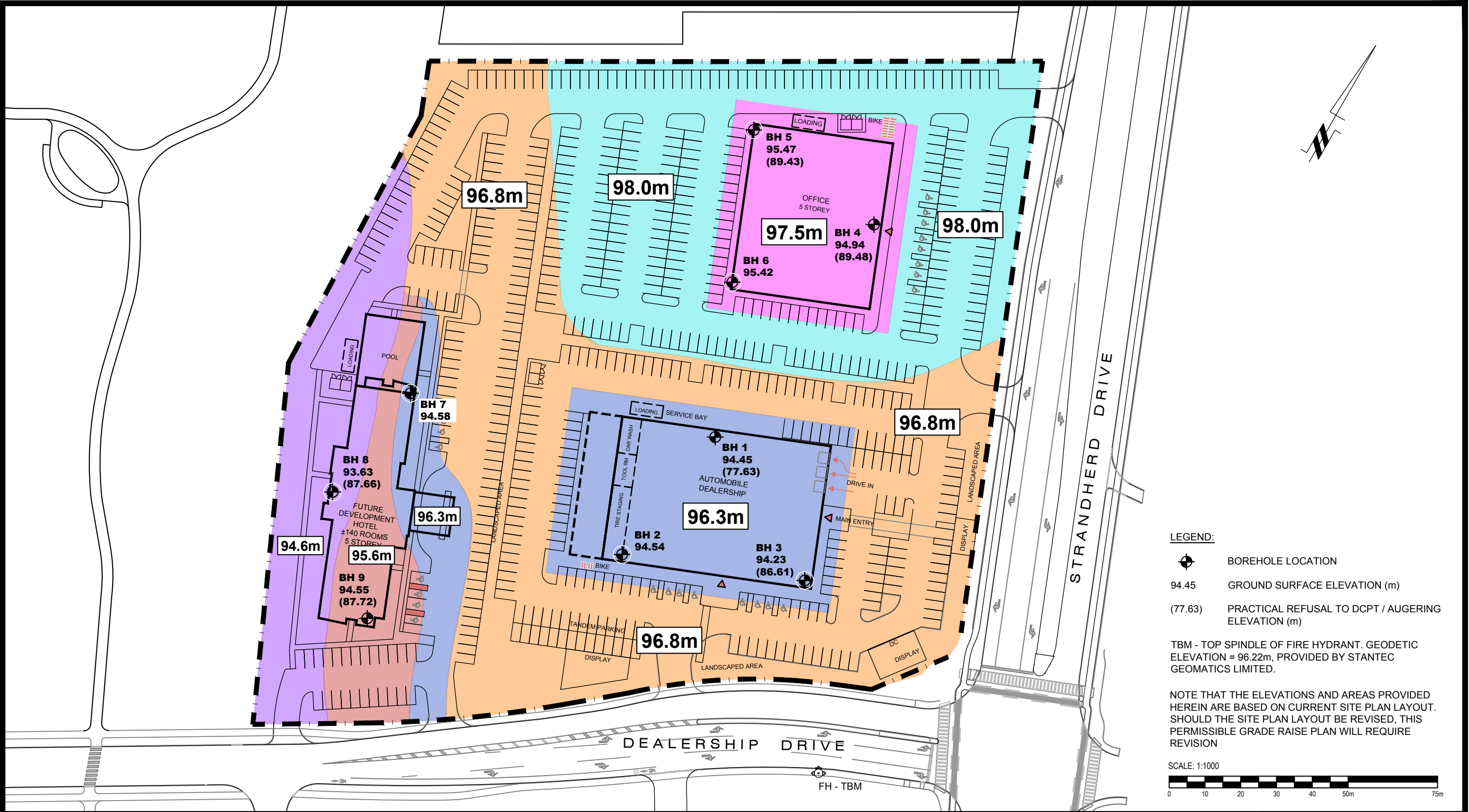


Fariha Pannu, P.Eng.
Director
appointed for the purposes of Part

II.1 of the *Environmental Protection Act*

MS/

c: District Manager, MECP Ottawa
Curtis Melanson, McIntosh Perry



LEGEND:

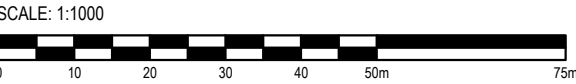
BOREHOLE LOCATION

94.45 GROUND SURFACE ELEVATION (m)

(77.63) PRACTICAL REFUSAL TO DCPT / AUGERING ELEVATION (m)

TBM - TOP SPINDLE OF FIRE HYDRANT. GEODETIC ELEVATION = 96.22m, PROVIDED BY STANTEC GEOMATICS LIMITED.

NOTE THAT THE ELEVATIONS AND AREAS PROVIDED HEREIN ARE BASED ON CURRENT SITE PLAN LAYOUT. SHOULD THE SITE PLAN LAYOUT BE REVISED, THIS PERMISSIBLE GRADE RAISE PLAN WILL REQUIRE REVISION



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

0			
NO.	REVISIONS	DATE	INITIAL

MYERS AUTOMOTIVE GROUP
GEOTECHNICAL INVESTIGATION
PROP. COMMERCIAL DEVELOPMENT - 4149 STRANDHERD DRIVE
OTTAWA, ONTARIO
Title: **PERMISSIBLE GRADE RAISE PLAN**

Scale: 1:1000
Drawn by: RCG
Checked by: NC
Approved by: DJG

Date: 09/2019
Report No.: PG5045-1
PG5045-2
Revision No.:

**Appendix B:
Development Servicing Study Checklist**

4149 Strandherd Drive, Ottawa
Phase 3 - Parking Lot Expansion
DEVELOPMENT SERVICING STUDY CHECKLIST

4.1 General Content	Addressed (Y/N/NA)	Comments
Executive Summary (for larger reports only).	N/A	
Date and revision number of the report.	Y	
Location map and plan showing municipal address, boundary, and layout of proposed development.	Y	Refer to Report Figures
Plan showing the site and location of all existing services.	Y	Refer to General Plan of Services
Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	Y	Refer to Site Plan
Summary of Pre-consultation Meetings with City and other approval agencies.	Y	Refer to Appendix A
Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defensible design criteria.	Y	
Statement of objectives and servicing criteria.	Y	Report Sections: 6.0 Water Servicing , 7.0 Sanitary Servicing, 8.0 Storm Servicing and Stormwater Management
Identification of existing and proposed infrastructure available in the immediate area.	Y	
Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	N/A	
Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighboring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	Y	Refer to Grading Plan

4149 Strandherd Drive, Ottawa
Phase 3 - Parking Lot Expansion
DEVELOPMENT SERVICING STUDY CHECKLIST

4.1 General Content	Addressed (Y/N/NA)	Comments
Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	N/A	
Proposed phasing of the development, if applicable.	N/A	
Reference to geotechnical studies and recommendations concerning servicing.	Y	Report Section 5.0 Site Design and Constraints
All preliminary and formal site plan submissions should have the following information:		
Metric scale	Y	
North arrow (including construction North)	Y	
Key plan	Y	
Name and contact information of applicant and property owner	Y	
Property limits including bearings and dimensions	Y	
Existing and proposed structures and parking areas	Y	
Easements, road widening and rights-of-way	Y	
Adjacent street names	Y	

4149 Strandherd Drive, Ottawa
Phase 3 - Parking Lot Expansion
DEVELOPMENT SERVICING STUDY CHECKLIST

4.2 Water	Addressed (Y/N/NA)	Comments
Confirm consistency with Master Servicing Study, if available.	N/A	
Availability of public infrastructure to service proposed development.	N/A	
Identification of system constraints.	N/A	
Identify boundary conditions.	N/A	
Confirmation of adequate domestic supply and pressure.	N/A	
Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.	N/A	
Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	N/A	
Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design.	N/A	
Address reliability requirements such as appropriate location of shut-off valves.	N/A	
Check on the necessity of a pressure zone boundary modification.	N/A	
Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range.	N/A	
Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	N/A	
Description of off-site required feeder mains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.	N/A	
Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	N/A	
Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	N/A	

4149 Strandherd Drive, Ottawa
Phase 3 - Parking Lot Expansion
DEVELOPMENT SERVICING STUDY CHECKLIST

4.3 Wastewater	Addressed (Y/N/NA)	Comments
Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	N/A	
Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A	
Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	N/A	
Description of existing sanitary sewer available for discharge of wastewater from proposed development.	N/A	
Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	N/A	
Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	N/A	
Description of proposed sewer network including sewers, pumping stations, and forcemains.	N/A	
Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A	
Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A	
Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A	
Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A	
Special considerations such as contamination, corrosive environment etc.	N/A	

4149 Strandherd Drive, Ottawa
Phase 3 - Parking Lot Expansion
DEVELOPMENT SERVICING STUDY CHECKLIST

4.4 Stormwater	Addressed (Y/N/NA)	Comments
Description of drainage outlets and downstream constraints including legality of outlet (i.e. municipal drain, right-of-way, watercourse, or private property).	Y	Report Section 8.0 Storm Servicing
Analysis of the available capacity in existing public infrastructure.	N/A	
A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns and proposed drainage patterns.	Y	
Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Y	Report Section 9.0 Storm Drainage and Stormwater Management
Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Y	Report Section 9.0 Storm Drainage and Stormwater Management
Description of stormwater management concept with facility locations and descriptions with references and supporting information.	Y	Report Section 9.0 Storm Drainage and Stormwater Management
Set-back from private sewage disposal systems.	N/A	
Watercourse and hazard lands setbacks.	N/A	
Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	N/A	
Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	Y	Refer to Appendix A
Storage requirements (complete with calcs) and conveyance capacity for 5 yr and 100 yr events.	Y	Refer to Appendix C
Identification of watercourse within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	N/A	
Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Y	Refer to Appendix C
Any proposed diversion of drainage catchment areas from one outlet to another.	N/A	
Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and SWM facilities.	N/A	
If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	N/A	

4149 Strandherd Drive, Ottawa
Phase 3 - Parking Lot Expansion
DEVELOPMENT SERVICING STUDY CHECKLIST

4.4 Stormwater	Addressed (Y/N/NA)	Comments
Identification of potential impacts to receiving watercourses.	N/A	
Identification of municipal drains and related approval requirements.	N/A	
Description of how the conveyance and storage capacity will be achieved for the development.	Y	Report Section 9.0 Storm Drainage and Stormwater Management
100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	Y	Refer to Stormwater Management
Inclusion of hydraulic analysis including HGL elevations.	N/A	
Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Y	Report Section 10.0 Erosion and Sediment Control Measures
Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A	
Identification of fill constraints related to floodplain and geotechnical investigation.	N/A	

4.5 Approval and Permit Requirements	Addressed (Y/N/NA)	Comments
Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.	N/A	
Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	N/A	
Changes to Municipal Drains.	N/A	
Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	N/A	

4.6 Conclusion	Addressed (Y/N/NA)	Comments
Clearly stated conclusions and recommendations.	Y	
Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	N/A	First Submission
All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario.	Y	

Appendix C: Storm Servicing Information and Stormwater Management Modeling

LEGEND

- 0.32ha
POST-B1
0.90

DRAINAGE AREA IN HECTARES

AREA I.D.

RUN-OFF COEFFICIENT
- STORM DRAINAGE AREA

STORM DRAINAGE SUBAREA
- PROPERTY LINE (4149 STRANDHERD)

PROPOSED MANHOLE AND STORM SEWER

PROPOSED CATCH BASIN MANHOLE AND STORM SEWER

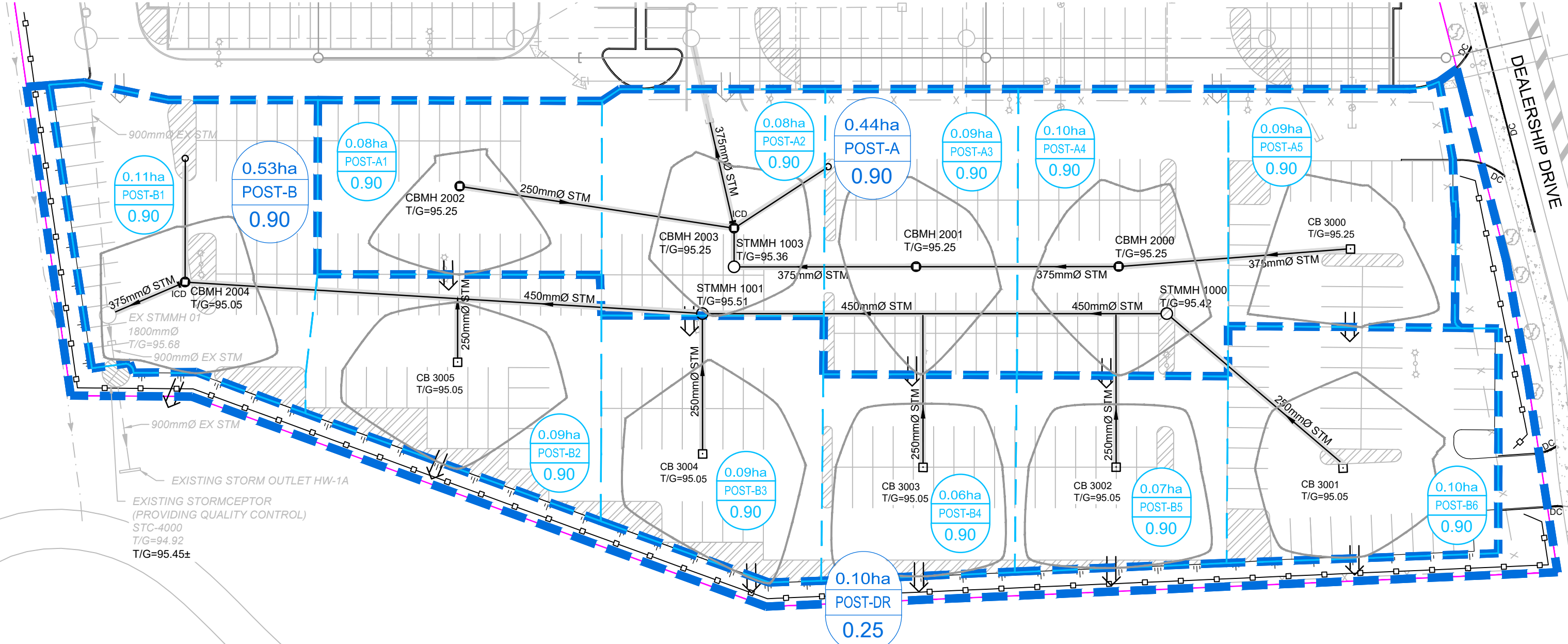
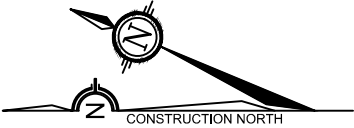
PROPOSED CATCH BASIN AND STORM SEWER
- ICD

DIRECTION OF FLOW

DIRECTION OF OVERLAND FLOW

PONDING AREA

PHASE 3 TOTAL DRAINAGE AREA = 1.07ha



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NOVATECH

Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA (PHASE 3)
4149 STRANDHERD DRIVE

POST-DEVELOPMENT
DRAINAGE AREA PLAN

SCALE 1 : 500
DATE JULY 2026
JOB 125132
FIGURE 125132-POST

8.5.2 Water Quantity

Public Roads

The storm sewers in the public right-of-ways will convey stormwater uncontrolled for storm events up to and including the 5-year storm event. For storm greater than the 5-year storm event, the public right-of-ways will provide approximately 100 m³/ha of storage within the road sags.

While, peak flows from the right-of-ways will be higher than pre-development conditions, the SWM facility on the west-side of the O'Keefe Drain has been oversized to ensure that flows in the O'Keefe Drain do not exceed pre-development levels.

Private Sites

The private sites east of the O'Keefe Drain will be designed to provide sufficient on-site storage to ensure that peak flows in the O'Keefe Drain are maintained to below pre-development levels at all stages of development. Per hectare release rates and on-site storage requirements (based on 85% impervious) are shown in **Table 8.13**.

Table 8.13: SWM Targets for Areas East of the O'Keefe Drain



Design Event	Release Rate (L/s/ha)	On-Site Storage* (m ³ /ha)
2-yr Event	20	179
5-yr Event	35	232
10-yr Event	45	267
25-yr Event	64	310
50-yr Event	75	333
100-yr Event	126	351

* Based on 85% imperviousness

Site-specific SWM reports will be required as part of the site plan application and detailed design of each individual site to demonstrate that the design adheres to the release rates listed in **Table 8.13**. Storage requirements will vary based on the imperviousness of each site. The allowable release rates for each Block are summarized in **Table 8.14**.

Table 8.14: Allowable Release Rates for Areas East of the O'Keefe drain

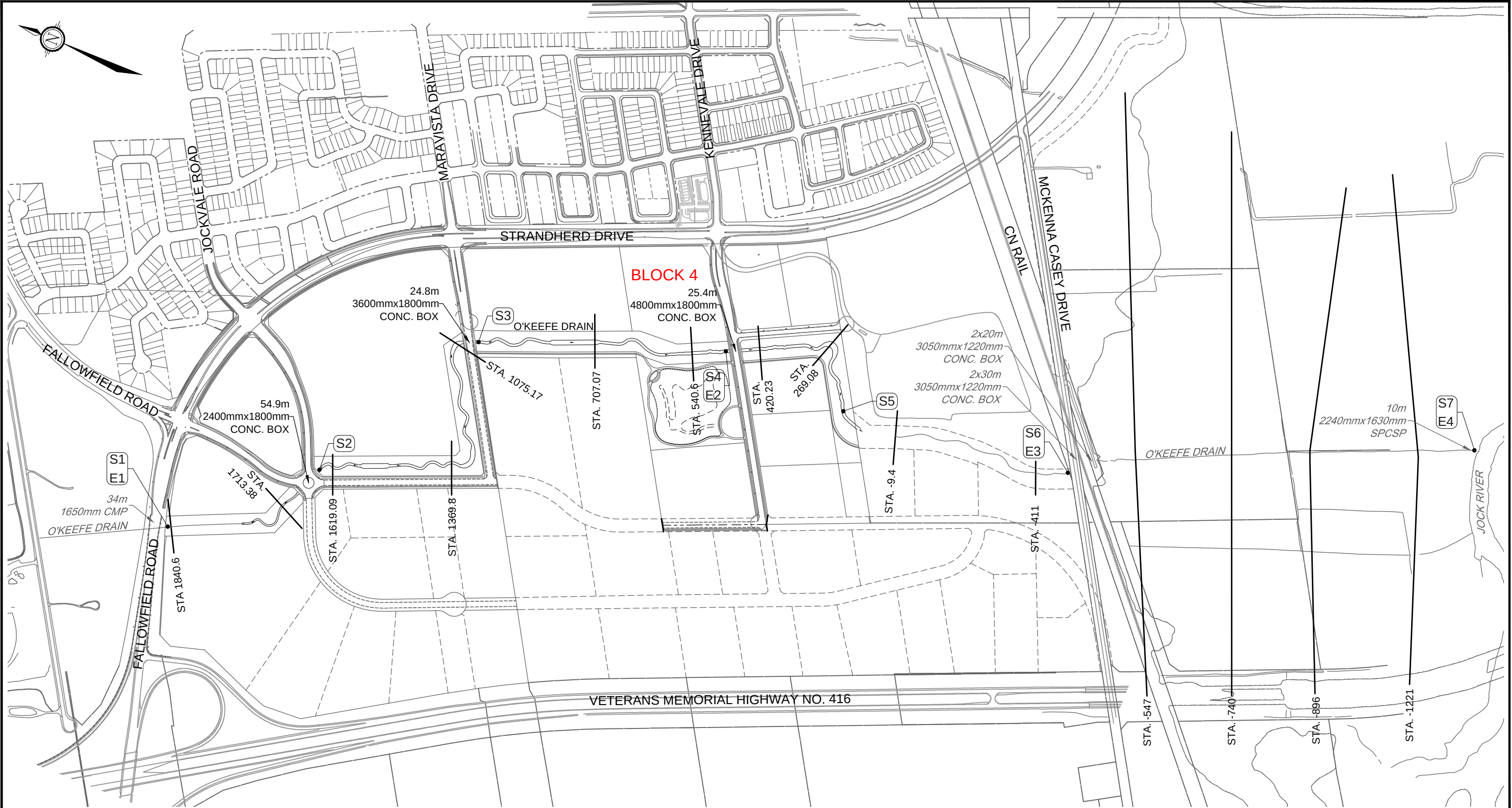


Block	Area (ha)	Allowable Release Rate (L/s)					
		2yr	5yr	10yr	25yr	50yr	100yr
Block 16	2.50	50	88	113	160	188	315
Block 1	3.51	70	123	158	225	263	442
Block 2	12.04	241	421	542	771	903	1,517
Block 3	5.30	106	186	239	339	398	668
Block 4	3.41	68	119	153	218	256	430
Blocks 5 & 6	3.49	70	122	157	223	262	440

Temperature Mitigation

Best-management practices for temperature mitigation are encouraged for development on the east side of the O'Keefe Drain. Examples of suitable BMPs are provided in **Section 9.2.5**.

M:\2009\109203\Citi Gate\CAD\Design\Figures\Design Brief\2014\March31-Servicing Report\109203-Figure7.dwg, FIG 7, Oct 03, 2014 - 1:39pm, cstang



LEGEND

- (S1) HYDROLOGIC MODELING (SWMHYMO) ANALYSIS POINT
(E1) ENVIRONMENTAL MANAGEMENT PLAN (EMP) ANALYSIS POINT

— STA.1840.6 CROSS SECTION AND STATION

NOVATECH
ENGINEERING
CONSULTANTS LTD.
ENGINEERS & PLANNERS
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada
K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Email: novainfo@novatech-eng.com

CITI GATE 416
EMPLOYMENT LANDS
Post-Development Conditions
Hydraulic Model
Cross-Section Locations

SCALE		1:7500	
DATE	JOB	FIGURE	
SEP 2014	109203	FIGURE 7	

HEC-RAS Summary Output Proposed Conditions

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)
Proposed Channel	1840.38	100-yr 12hr SCS	7.16	97.42	98.25	1.95	7.36	27.91
Proposed Channel	615.6	100-yr 12hr SCS	10.46	92.42	93.88	0.73	20.99	30.58
Proposed Channel	615.6	50-yr 12hr SCS	8.77	92.42	93.78	0.7	17.96	29.97
Proposed Channel	615.6	25-yr 12hr SCS	7.49	92.42	93.69	0.7	15.28	29.42
Proposed Channel	615.6	10-yr 12hr SCS	5.39	92.42	93.54	0.68	10.89	28.48
Proposed Channel	615.6	5-yr 12hr SCS	4.09	92.42	93.42	0.66	7.74	25.55
Proposed Channel	615.6	2-yr 12hr SCS	2.40	92.42	93.23	0.64	3.86	12.66
Proposed Channel	615.6	25mm 6hr SCS	1.04	92.42	92.95	0.57	1.81	5.5
Proposed Channel	590.6	100-yr 12hr SCS	10.46	92.36	93.83	1.02	16.83	23.28
Proposed Channel	590.6	50-yr 12hr SCS	8.77	92.36	93.73	0.98	14.5	22.67
Proposed Channel	590.6	25-yr 12hr SCS	7.49	92.36	93.63	0.97	12.4	22.1
Proposed Channel	590.6	10-yr 12hr SCS	5.39	92.36	93.48	0.93	8.96	21.14
Proposed Channel	590.6	5-yr 12hr SCS	4.09	92.36	93.35	0.93	6.34	20.38
Proposed Channel	590.6	2-yr 12hr SCS	2.40	92.36	93.13	0.88	2.76	7.14
Proposed Channel	590.6	25mm 6hr SCS	1.04	92.36	92.87	0.68	1.54	4.03
Proposed Channel	585.6	Inl Struct						
Proposed Channel	540.6	100-yr 12hr SCS	10.46	92.27	93.81	1.08	14.66	21.81
Proposed Channel	540.6	50-yr 12hr SCS	8.77	92.27	93.71	1.04	12.46	21.19
Proposed Channel	540.6	25-yr 12hr SCS	7.49	92.27	93.62	1.03	10.55	20.65
Proposed Channel	540.6	10-yr 12hr SCS	5.39	92.27	93.46	0.96	7.4	19.71
Proposed Channel	540.6	5-yr 12hr SCS	4.09	92.27	93.34	0.92	5.05	16.95
Proposed Channel	540.6	2-yr 12hr SCS	2.40	92.27	93.11	0.77	3.1	5.37
Proposed Channel	540.6	25mm 6hr SCS	1.04	92.27	92.82	0.61	1.72	4.21
Proposed Channel	535.6	Inl Struct						
Proposed Channel	497.42	100-yr 12hr SCS	10.46	92.23	93.81	1.03	15.38	21.87
Proposed Channel	497.42	50-yr 12hr SCS	8.77	92.23	93.70	0.99	13.16	21.25
Proposed Channel	497.42	25-yr 12hr SCS	7.49	92.23	93.61	0.97	11.23	20.7
Proposed Channel	497.42	10-yr 12hr SCS	5.39	92.23	93.46	0.91	8.06	19.76
Proposed Channel	497.42	5-yr 12hr SCS	4.09	92.23	93.33	0.87	5.6	18.32
Proposed Channel	497.42	2-yr 12hr SCS	2.40	92.23	93.10	0.74	3.25	5.48
Proposed Channel	497.42	25mm 6hr SCS	1.04	92.23	92.81	0.56	1.84	4.33
Proposed Channel	490.6	100-yr 12hr SCS	10.46	92.22	93.79	1.06	14.62	20.58
Proposed Channel	490.6	50-yr 12hr SCS	8.77	92.22	93.69	1.02	12.53	19.96
Proposed Channel	490.6	25-yr 12hr SCS	7.49	92.22	93.60	1	10.72	19.41
Proposed Channel	490.6	10-yr 12hr SCS	5.39	92.22	93.44	0.92	7.77	18.36
Proposed Channel	490.6	5-yr 12hr SCS	4.09	92.22	93.31	0.88	5.47	17.43
Proposed Channel	490.6	2-yr 12hr SCS	2.40	92.22	93.08	0.75	3.2	5.44
Proposed Channel	490.6	25mm 6hr SCS	1.04	92.22	92.80	0.57	1.82	4.3
Proposed Channel	485.6	Culvert						
Proposed Channel	457.6	100-yr 12hr SCS	10.46	92.19	93.76	1.03	15.96	24.11
Proposed Channel	457.6	50-yr 12hr SCS	8.77	92.19	93.67	0.98	13.83	23.59
Proposed Channel	457.6	25-yr 12hr SCS	7.49	92.19	93.59	0.94	12.04	23.13
Proposed Channel	457.6	10-yr 12hr SCS	5.39	92.19	93.44	0.87	8.59	22.22
Proposed Channel	457.6	5-yr 12hr SCS	4.09	92.19	93.32	0.83	5.97	17.92
Proposed Channel	457.6	2-yr 12hr SCS	2.40	92.19	93.08	0.71	3.4	5.59
Proposed Channel	457.6	25mm 6hr SCS	1.04	92.19	92.80	0.53	1.97	4.45
Proposed Channel	451.71	100-yr 12hr SCS	10.46	92.18	93.75	1.01	15.96	24.24
Proposed Channel	451.71	50-yr 12hr SCS	8.77	92.18	93.66	0.96	13.82	23.7
Proposed Channel	451.71	25-yr 12hr SCS	7.49	92.18	93.58	0.93	12.01	23.24
Proposed Channel	451.71	10-yr 12hr SCS	5.39	92.18	93.43	0.87	8.53	22.32
Proposed Channel	451.71	5-yr 12hr SCS	4.09	92.18	93.30	0.83	5.88	17.78
Proposed Channel	451.71	2-yr 12hr SCS	2.40	92.18	93.07	0.72	3.35	5.55
Proposed Channel	451.71	25mm 6hr SCS	1.04	92.18	92.79	0.53	1.95	4.43
Proposed Channel	420.23	100-yr 12hr SCS	12.71	92.15	93.64	1.37	14.48	24.5
Proposed Channel	420.23	50-yr 12hr SCS	10.55	92.15	93.56	1.3	12.36	23.97
Proposed Channel	420.23	25-yr 12hr SCS	8.88	92.15	93.48	1.25	10.55	23.51
Proposed Channel	420.23	10-yr 12hr SCS	6.15	92.15	93.33	1.14	7.03	21.56
Proposed Channel	420.23	5-yr 12hr SCS	4.49	92.15	93.20	1.03	4.77	14.86
Proposed Channel	420.23	2-yr 12hr SCS	2.60	92.15	92.98	0.86	3.01	5.31
Proposed Channel	420.23	25mm 6hr SCS	1.18	92.15	92.71	0.68	1.72	4.22
Proposed Channel	410.23	Inl Struct						
Proposed Channel	340.6	100-yr 12hr SCS	12.71	92.07	93.64	1.19	17.38	27.04
Proposed Channel	340.6	50-yr 12hr SCS	10.55	92.07	93.55	1.13	15.04	26.52
Proposed Channel	340.6	25-yr 12hr SCS	8.88	92.07	93.48	1.07	13.03	26.06
Proposed Channel	340.6	10-yr 12hr SCS	6.15	92.07	93.32	0.98	9.1	25.14
Proposed Channel	340.6	5-yr 12hr SCS	4.49	92.07	93.19	0.91	6.1	19.96
Proposed Channel	340.6	2-yr 12hr SCS	2.60	92.07	92.96	0.77	3.36	5.56
Proposed Channel	340.6	25mm 6hr SCS	1.18	92.07	92.66	0.62	1.89	4.37
Proposed Channel	288.36	100-yr 12hr SCS	12.71	92.02	93.60	0.76	25.19	36.41
Proposed Channel	288.36	50-yr 12hr SCS	10.55	92.02	93.51	0.71	22.1	35.9
Proposed Channel	288.36	25-yr 12hr SCS	8.88	92.02	93.44	0.66	19.44	35.45
Proposed Channel	288.36	10-yr 12hr SCS	6.15	92.02	93.29	0.57	14.27	32.94
Proposed Channel	288.36	5-yr 12hr SCS	4.49	92.02	93.16	0.51	10.37	27.56
Proposed Channel	288.36	2-yr 12hr SCS	2.60	92.02	92.92	0.42	6.24	9.4
Proposed Channel	288.36	25mm 6hr SCS	1.18	92.02	92.63	0.31	3.75	7.45

4149 Strandherd Drive - Myers Site Plan (125132)**Ponding Area Volumes**

Area ID	Structure ID	T/G Elevation (m)	Ponding Elevation (m)	Max Ponding Depth (m)	Storage Volume (m3)	Equivalent Area (m2)
POST-A						
POST-A1	CBMH2002	95.25	95.50	0.25	18.99	151.92
POST-A2	CBMH2003	95.25	95.50	0.25	27.52	220.16
POST-A3	CBMH2001	95.25	95.50	0.25	30.29	242.32
POST-A4	CBMH2000	95.25	95.50	0.25	33.01	264.08
POST-A5	CB3000	95.25	95.50	0.25	29.22	233.76
POST-B						
POST-B1	CBMH2004	95.05	95.35	0.30	36.14	240.93
POST-B2	CB3005	95.05	95.35	0.30	43.86	292.40
POST-B3	CB3004	95.05	95.35	0.30	46.72	311.47
POST-B4	CB3003	95.05	95.35	0.30	44.82	298.80
POST-B5	CB3002	95.05	95.35	0.30	48.68	324.53
POST-B6	CB3001	95.05	95.35	0.30	49.92	332.80

Stormceptor Design Summary

PCSWMM for Stormceptor

Project Information

Date	06/12/2013
Project Name	Oil/Grit Separator #9
Project Number	109203 - Citi Gate (416) Lands
Location	Block 4

Designer Information

Company	Novatech Engineering Consultants Ltd.
Contact	Conrad Stang, M.A.Sc., P.Eng.

Rainfall

Name	OTTAWA MACDONALD-CARTIER INT'L A
State	ON
ID	6000
Years of Records	1967 to 2003
Latitude	45°19'N
Longitude	75°40'W

Notes

N/A

Water Quality Objective

TSS Removal (%)	80
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Drainage Area

Total Area (ha)	3.67
Imperviousness (%)	85

Upstream Storage

Storage (ha-m)	Discharge (L/s)
0	0

The Stormceptor System model STC 4000 achieves the water quality objective removing 80% TSS for a CLOCA (clay, silt and sand) particle size distribution.

Stormceptor Sizing Summary

Stormceptor Model	TSS Removal %
STC 300	51
STC 750	66
STC 1000	66
STC 1500	67
STC 2000	74
STC 3000	75
STC 4000	80
STC 5000	80
STC 6000	83
STC 9000	87
STC 10000	86
STC 14000	89



Particle Size Distribution

Removing silt particles from runoff ensures that the majority of the pollutants, such as hydrocarbons and heavy metals that adhere to fine particles, are not discharged into our natural water courses. The table below lists the particle size distribution used to define the annual TSS removal.

CLOCA (clay, silt and sand)							
Particle Size µm	Distribution %	Specific Gravity	Settling Velocity m/s	Particle Size µm	Distribution %	Specific Gravity	Settling Velocity m/s
850	3.3	2.65	0.1465	50	3.9	2.65	0.0022
425	23.4	2.65	0.0698	36	2.6	2.65	0.0012
300	17.5	2.65	0.0439	22	1.3	2.65	0.0004
250	6.5	2.65	0.0335	12	1.9	2.65	0.0004
212	6.5	2.65	0.0259	9	0	2.65	0.0004
150	11.7	2.65	0.0145	6.5	1.3	2.65	0.0004
125	5.2	2.65	0.0105	3	1.3	2.65	0.0004
100	3.9	2.65	0.0070	1.5	1.3	2.65	0.0004
75	3.9	2.65	0.0040	1	4.5	2.65	0.0004

Stormceptor Design Notes

- Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor version 1.0
- Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal.
- Only the STC 300 is adaptable to function with a catch basin inlet and/or inline pipes.
- Only the Stormceptor models STC 750 to STC 6000 may accommodate multiple inlet pipes.
- Inlet and outlet invert elevation differences are as follows:

Inlet and Outlet Pipe Invert Elevations Differences

Inlet Pipe Configuration	STC 300	STC 750 to STC 6000	STC 9000 to STC 14000
Single inlet pipe	75 mm	25 mm	75 mm
Multiple inlet pipes	75 mm	75 mm	Only one inlet pipe.

- Design estimates are based on stable site conditions only, after construction is completed.
- Design estimates assume that the storm drain is not submerged during zero flows. For submerged applications, please contact your local Stormceptor representative.
- Design estimates may be modified for specific spills controls. Please contact your local Stormceptor representative for further assistance.
- For pricing inquiries or assistance, please contact Imbrium Systems Inc., 1-800-565-4801.

**VORTECHS SYSTEM[®] ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON AN AVERAGE PARTICLE SIZE OF 80 MICRONS**



**CITI GATE - 416 LANDS
OTTAWA, ON
MODEL 7000 OFF-LINE
BLOCK 4 - OGS #9**

Design Ratio¹ =
$$\frac{(3.67 \text{ hectares}) \times (0.85) \times (2.775)}{(4.7 \text{ m}^2)} = 1.84$$

Bypass occurs at an elevation of 0.76m (at approximately 23 l/s/m²)

Rainfall Intensity mm/hr	Operating Rate² % of capacity	Flow Treated (l/s)	% Total Rainfall Volume ³	Rmvl. Effic⁴ (%)	Rel. Effic⁴ (%)
0.5	1.4	4.3	10.7%	98.0%	10.5%
1.0	2.8	8.6	9.3%	98.0%	9.1%
1.5	4.1	12.9	10.3%	98.0%	10.1%
2.0	5.5	17.1	8.6%	98.0%	8.4%
2.5	6.9	21.4	6.7%	98.0%	6.6%
3.0	8.3	25.7	5.8%	96.9%	5.6%
3.6	9.6	30.0	5.0%	96.3%	4.8%
4.1	11.0	34.3	4.4%	95.3%	4.2%
4.6	12.4	38.6	2.3%	94.7%	2.2%
5.1	13.8	42.9	4.2%	93.8%	3.9%
6.4	17.2	53.6	7.4%	89.9%	6.6%
7.6	20.6	64.3	4.0%	87.3%	3.5%
8.9	24.1	75.0	3.5%	85.3%	3.0%
10.2	27.5	85.7	1.8%	83.8%	1.5%
11.4	31.0	96.4	3.8%	82.0%	3.1%
12.7	34.4	107.2	1.4%	80.0%	1.1%
19.1	51.6	160.7	4.3%	63.6%	2.7%
25.4	68.8	214.3	1.6%	51.0%	0.8%
38.1	103.2	321.5	1.2%	8.0%	0.1%
					88.0%

% rain falling at >38.1 mm/hr or bypassing treatment =	3.6%
Assumed removal efficiency for bypassed flows =	0.0%
Estimated reduction in efficiency⁵ =	6.5%
Predicted Net Annual Load Removal Efficiency =	82%

1 - Design Ratio = (Total Drainage Area) x (Runoff Coefficient) x (Rational Method Conversion) / Grit Chamber Area

- The Total Drainage Area and Runoff Coefficient are specified by the site engineer.
- The rational method conversion based on the units in the above equation is 2.775.

2 - Operating Rate (% of capacity) = percentage of peak operating rate of 68 l/s/m².

3 - Based on 10 years of rainfall data from Canadian Station 6105976, Ottawa CDA, ON

4 - Based on Contech Construction Products laboratory verified removal of an average particle size of 80 microns (see Vortechs Guide).

5- Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

Calculated by:	JAK	12/6	Checked by:
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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

Update to 117148 Model
 Updated by: Aiden Mallany-Stanley
 Boundary Conditions:

WARNING 04: minimum elevation drop used for Conduit C07
 WARNING 04: minimum elevation drop used for Conduit C08
 WARNING 04: minimum elevation drop used for Conduit C26
 WARNING 04: minimum elevation drop used for Conduit C27
 WARNING 04: minimum elevation drop used for Conduit C28
 WARNING 04: minimum elevation drop used for Conduit C30
 WARNING 04: minimum elevation drop used for Conduit C31
 WARNING 04: minimum elevation drop used for Conduit C37

Element Count

Number of rain gages 1
 Number of subcatchments ... 30
 Number of nodes 81
 Number of links 109
 Number of pollutants 0
 Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Design_Storms	C3hr-2yr	INTENSITY	10 min.

Subcatchment Summary

Name Outlet	Area	Width	%Imperv	%Slope	Rain Gage
A01 CBMH114	0.06	40.00	93.00	2.0000	Design_Storms
A02 CBMH115	0.07	46.67	89.00	2.0000	Design_Storms
A03 CBMH116	0.07	35.00	83.00	2.0000	Design_Storms
A04 CB09	0.10	66.67	96.00	2.0000	Design_Storms
A05 CB10	0.10	50.00	99.00	2.0000	Design_Storms
A06 CBMH122	0.04	40.00	87.00	2.0000	Design_Storms
A07 CBMH121	0.05	33.33	100.00	2.0000	Design_Storms
A08 CBMH120	0.07	46.67	86.00	2.0000	Design_Storms

A09	0.12	120.00	93.00	2.0000	Design_Storms
CBMH119					
A10	0.05	50.00	94.00	2.0000	Design_Storms
CB11					
A11	0.06	40.00	94.00	2.0000	Design_Storms
CB12					
A12	0.05	50.00	83.00	2.0000	Design_Storms
CBMH113					
A13	0.08	26.67	100.00	2.0000	Design_Storms
CB12					
A14	0.04	13.33	100.00	2.0000	Design_Storms
CB11					
A15	0.13	32.50	100.00	2.0000	Design_Storms
Volkswagen					
B2-MP	0.28	80.00	100.00	2.0000	Design_Storms
Subaru					
B5-MP	0.61	406.67	89.00	2.0000	Design_Storms
CBMH103					
B6-MP	0.27	180.00	97.00	2.0000	Design_Storms
CBMH108					
POST-A1	0.08	40.07	100.00	3.0000	Design_Storms
CBMH2002					
POST-A2	0.08	38.67	100.00	3.0000	Design_Storms
CBMH2003					
POST-A3	0.09	38.60	100.00	2.5000	Design_Storms
CBMH2001					
POST-A4	0.10	45.22	100.00	2.5000	Design_Storms
CBMH2000					
POST-A5	0.09	47.78	100.00	3.0000	Design_Storms
CB3000					
POST-B1	0.11	39.91	100.00	3.0000	Design_Storms
CBMH2004					
POST-B2	0.09	34.84	100.00	2.5000	Design_Storms
CB3005					
POST-B3	0.09	43.71	100.00	2.5000	Design_Storms
CB3004					
POST-B4	0.06	50.85	100.00	2.5000	Design_Storms
CB3003					
POST-B5	0.07	52.98	100.00	2.5000	Design_Storms
CB3002					
POST-B6	0.10	41.46	100.00	2.5000	Design_Storms
CB3001					
POST-DR	0.10	333.33	7.00	5.0000	Design_Storms
Uncontrolled					

 Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
CB03-Dummy	JUNCTION	93.66	2.94	0.0	
CBMH116a	JUNCTION	94.01	2.50	0.0	
HP-CB09	JUNCTION	95.78	1.00	0.0	
HP-CB10	JUNCTION	95.70	1.00	0.0	
HP-CB11	JUNCTION	95.80	1.00	0.0	
HP-CB12	JUNCTION	95.80	1.00	0.0	
HP-CB3000	JUNCTION	95.50	1.00	0.0	

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

HP-CBMH103	JUNCTION	95.80	1.00	0.0
HP-CBMH103A	JUNCTION	95.80	1.00	0.0
HP-CBMH108	JUNCTION	95.80	1.00	0.0
HP-CBMH113	JUNCTION	95.72	1.00	0.0
HP-CBMH114	JUNCTION	95.80	1.00	0.0
HP-CBMH115	JUNCTION	95.80	1.00	0.0
HP-CBMH116	JUNCTION	95.79	1.00	0.0
HP-CBMH119	JUNCTION	95.78	1.00	0.0
HP-CBMH120	JUNCTION	95.75	1.00	0.0
HP-CBMH121	JUNCTION	95.76	1.00	0.0
HP-CBMH122	JUNCTION	95.77	1.00	0.0
HP-CBMH2000	JUNCTION	95.50	1.00	0.0
HP-CBMH2001	JUNCTION	95.50	1.00	0.0
HP-CBMH2002	JUNCTION	95.50	1.00	0.0
HP-CBMH2003	JUNCTION	95.50	1.00	0.0
MH04a	JUNCTION	93.32	2.30	0.0
HP-CB3001	OUTFALL	95.35	1.00	0.0
HP-CB3002	OUTFALL	95.35	1.00	0.0
HP-CB3003	OUTFALL	95.35	1.00	0.0
HP-CB3004	OUTFALL	95.35	1.00	0.0
HP-CB3005	OUTFALL	95.35	1.00	0.0
HP-CBMH2004	OUTFALL	95.35	1.00	0.0
STC-4000	OUTFALL	93.12	0.90	0.0
Uncontrolled	OUTFALL	94.00	0.00	0.0
CB04	STORAGE	94.31	2.29	0.0
CB06	STORAGE	94.37	2.13	0.0
CB09	STORAGE	94.32	2.18	0.0
CB10	STORAGE	94.44	2.06	0.0
CB11	STORAGE	94.11	2.44	0.0
CB12	STORAGE	94.11	2.44	0.0
CB3000	STORAGE	94.23	2.02	0.0
CB3001	STORAGE	94.43	1.62	0.0
CB3002	STORAGE	94.35	1.70	0.0
CB3003	STORAGE	94.29	1.76	0.0
CB3004	STORAGE	94.22	1.83	0.0
CB3005	STORAGE	94.06	1.99	0.0
CBMH103	STORAGE	93.58	2.92	0.0
CBMH103A	STORAGE	93.69	2.91	0.0
CBMH104	STORAGE	93.64	2.96	0.0
CBMH105	STORAGE	93.77	2.73	0.0
CBMH106	STORAGE	93.88	2.72	0.0
CBMH107	STORAGE	93.97	2.63	0.0
CBMH108	STORAGE	93.76	2.74	0.0
CBMH109	STORAGE	94.13	2.37	0.0
CBMH110	STORAGE	94.24	2.26	0.0
CBMH113	STORAGE	93.78	2.72	0.0
CBMH114	STORAGE	93.84	2.68	0.0
CBMH115	STORAGE	93.93	2.62	0.0
CBMH116	STORAGE	94.03	2.47	0.0
CBMH119	STORAGE	93.93	2.50	0.0
CBMH120	STORAGE	94.01	2.49	0.0
CBMH121	STORAGE	94.07	2.43	0.0
CBMH122	STORAGE	94.14	2.41	0.0
CBMH2000	STORAGE	94.13	2.12	0.0
CBMH2001	STORAGE	94.04	2.21	0.0
CBMH2002	STORAGE	94.25	2.00	0.0
CBMH2003	STORAGE	93.91	2.34	0.0

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

CBMH2004	STORAGE	93.70	2.35	0.0
MH01	STORAGE	93.13	2.55	0.0
MH02	STORAGE	93.20	2.45	0.0
MH04	STORAGE	93.36	2.24	0.0
MH05	STORAGE	93.47	2.12	0.0
MH06	STORAGE	93.61	2.18	0.0
MH08	STORAGE	93.69	1.99	0.0
MH1000	STORAGE	94.08	1.34	0.0
MH1001	STORAGE	93.90	1.61	0.0
MH1002	STORAGE	93.95	1.41	0.0
ST-CBMH103A	STORAGE	93.87	2.73	0.0
ST-CBMH113	STORAGE	94.01	2.49	0.0
ST-CBMH119	STORAGE	94.11	2.45	0.0
ST-CBMH2003	STORAGE	94.05	2.45	0.0
ST-CBMH2004	STORAGE	93.93	2.12	0.0
Subaru	STORAGE	100.00	1.00	0.0
Volkswagen	STORAGE	100.00	1.00	0.0

Link Summary

Name		From Node	To Node	Type	Length	%
Slope	Roughness					

C07		CBMH107	CB04	CONDUIT	2.0	
0.0152	0.0150					
C08		CB06	CBMH110	CONDUIT	2.0	
0.0152	0.0150					
C1		CBMH103	HP-CBMH103	CONDUIT	2.0	-
15.1717	0.0150					
C10		HP-CBMH2001	CB3003	CONDUIT	2.0	
23.0921	0.0150					
C11		CB3003	HP-CB3003	CONDUIT	2.0	-
15.1717	0.0150					
C12		HP-CBMH113	CBMH2003	CONDUIT	2.0	
29.7331	0.0150					
C13		CBMH2003	HP-CBMH2003	CONDUIT	2.0	-
17.7743	0.0150					
C14		HP-CBMH2003	CB3004	CONDUIT	2.0	
23.0921	0.0150					
C15		CB3004	HP-CB3004	CONDUIT	2.0	-
15.1717	0.0150					
C16		CBMH2002	HP-CBMH2002	CONDUIT	2.0	-
12.5988	0.0150					
C17		CBMH103	HP-CBMH103A	CONDUIT	2.0	-
10.0504	0.0150					
C18		HP-CBMH103A	CBMH108	CONDUIT	2.0	
15.1717	0.0150					
C19		HP-CBMH2002	CB3005	CONDUIT	2.0	
23.0921	0.0150					
C2		CB3000	HP-CB3000	CONDUIT	2.0	-
17.7743	0.0150					
C20		CB3005	HP-CB3005	CONDUIT	2.0	-
15.1717	0.0150					
C21		HP-CBMH108	CBMH2002	CONDUIT	2.0	
28.6028	0.0150					
C22		HP-CBMH103	CBMH2004	CONDUIT	2.0	40.45

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

C23		CBMH2004	HP-CBMH2004	CONDUIT	2.0	-
15.1717	0.0150					
C24		ST-CBMH2004	CBMH2004	CONDUIT	3.0	
2.0004	0.0130					
C25		ST-CBMH2003	CBMH2003	CONDUIT	3.0	
2.0004	0.0130					
C26		CBMH107	CBMH106	CONDUIT	2.0	
0.0152	0.0150					
C27		CBMH106	CBMH105	CONDUIT	2.0	
0.0152	0.0150					
C28		CBMH105	CBMH104	CONDUIT	2.0	
0.0152	0.0150					
C29		CBMH108	HP-CBMH108	CONDUIT	2.0	-
15.1717	0.0150					
C3		HP-CB3000	CB3001	CONDUIT	2.0	
23.0921	0.0150					
C30		CBMH104	CBMH103	CONDUIT	2.0	
0.0152	0.0150					
C31		CBMH110	CBMH109	CONDUIT	2.0	
0.0152	0.0150					
C32		CBMH114	HP-CBMH114	CONDUIT	2.0	-
14.1393	0.0150					
C33		HP-CBMH114	CBMH113	CONDUIT	2.0	
15.1717	0.0150					
C34		CB12	HP-CB12	CONDUIT	2.0	-
12.5988	0.0150					
C35		HP-CB12	CBMH113	CONDUIT	2.0	
15.1717	0.0150					
C36		CBMH113	HP-CBMH113	CONDUIT	2.0	-
11.0672	0.0150					
C37		CBMH109	CBMH108	CONDUIT	2.0	
0.0152	0.0150					
C4		CB3001	HP-CB3001	CONDUIT	2.0	-
15.1717	0.0150					
C45		CBMH115	HP-CBMH115	CONDUIT	2.0	-
12.5988	0.0150					
C46		HP-CBMH115	CBMH114	CONDUIT	2.0	
14.1393	0.0150					
C47		CBMH116	HP-CBMH116	CONDUIT	2.0	-
14.6549	0.0150					
C48		HP-CBMH116	CB09	CONDUIT	2.0	
14.6549	0.0150					
C49		CB09	HP-CB09	CONDUIT	2.0	-
14.1393	0.0150					
C5		HP-CBMH119	CBMH2000	CONDUIT	2.0	
33.1896	0.0150					
C50		HP-CB09	CB10	CONDUIT	2.0	
14.1393	0.0150					
C51		CB10	HP-CB10	CONDUIT	2.0	-
10.0504	0.0150					
C52		HP-CB10	CBMH122	CONDUIT	2.0	
7.5212	0.0150					
C53		CBMH122	HP-CBMH122	CONDUIT	2.0	-
11.0672	0.0150					
C54		HP-CBMH122	CBMH121	CONDUIT	2.0	
13.6247	0.0150					
C55		CBMH121	HP-CBMH121	CONDUIT	2.0	-
13.1113	0.0150					
C56		HP-CBMH121	CBMH120	CONDUIT	2.0	
13.1113	0.0150					

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

C57		CBMH120	HP-CBMH120	CONDUIT	2.0	-
12.5988	0.0150					
C58		HP-CBMH120	CBMH119	CONDUIT	2.0	
16.2088	0.0150					
C59		CB11	HP-CB11	CONDUIT	2.0	-
12.5988	0.0150					
C6		CBMH2000	HP-CBMH2000	CONDUIT	2.0	-
17.7743	0.0150					
C60		HP-CB11	CBMH119	CONDUIT	2.0	
18.8249	0.0150					
C61		CBMH119	HP-CBMH119	CONDUIT	2.0	-
17.7743	0.0150					
C7		HP-CBMH2000	CB3002	CONDUIT	2.0	
23.0921	0.0150					
C8		CB3002	HP-CB3002	CONDUIT	2.0	-
15.1717	0.0150					
C9		CBMH2001	HP-CBMH2001	CONDUIT	2.0	-
17.7743	0.0150					
CB04-CBMH107		CB04	CBMH107	CONDUIT	29.4	
1.0541	0.0130					
CB06-CBMH110		CB06	CBMH110	CONDUIT	23.3	
0.5150	0.0130					
CB09-CBMH116a		CB09	CBMH116a	CONDUIT	21.1	
0.5213	0.0130					
CB10-CBMH122		CB10	CBMH122	CONDUIT	19.3	
0.5181	0.0130					
CB11-CBMH119		CB11	CBMH119	CONDUIT	23.4	
0.4701	0.0130					
CB12-CBMH113		CB12	CBMH113	CONDUIT	27.0	
1.0001	0.0130					
CBMH103A-CBMH103		CBMH103A	CB03-Dummy	CONDUIT	26.7	
0.4869	0.0130					
CBMH104-CBMH103_1		CBMH104	CB03-Dummy	CONDUIT	16.2	
0.1417	0.0130					
CBMH104-CBMH103_2		CB03-Dummy	CBMH103	CONDUIT	11.8	
0.1445	0.0130					
CBMH105-CBMH104		CBMH105	CBMH104	CONDUIT	38.0	
0.1581	0.0130					
CBMH106-CBMH105		CBMH106	CBMH105	CONDUIT	34.4	
0.2326	0.0130					
CBMH107-CBMH106		CBMH107	CBMH106	CONDUIT	32.2	
0.1863	0.0130					
CBMH109-CBMH108		CBMH109	CBMH108	CONDUIT	26.9	
0.2602	0.0130					
CBMH110-CBMH109		CBMH110	CBMH109	CONDUIT	27.8	
0.3597	0.0130					
CBMH114-CBMH113		CBMH114	CBMH113	CONDUIT	26.5	
0.2264	0.0130					
CBMH115-CBMH114		CBMH115	CBMH114	CONDUIT	32.8	
0.2439	0.0130					
CBMH116a-CBMH115		CBMH116a	CBMH115	CONDUIT	30.4	
0.2632	0.0130					
CBMH116-CBMH116a		CBMH116	CBMH116a	CONDUIT	9.7	
0.2062	0.0130					
CBMH120-CBMH119		CBMH120	CBMH119	CONDUIT	37.4	
0.2139	0.0130					
CBMH121-CBMH120		CBMH121	CBMH120	CONDUIT	29.6	
0.2027	0.0130					
CBMH122-CBMH121		CBMH122	CBMH121	CONDUIT	20.9	
0.1914	0.0130					

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

MH01-STC4000	MH01	STC-4000	CONDUIT	3.3
0.3030 0.0130				
MH02-MH01	MH02	MH01	CONDUIT	35.6
0.1966 0.0130				
MH04a-MH02	MH04a	MH02	CONDUIT	32.8
0.1524 0.0130				
MH04-MH04a	MH04	MH04a	CONDUIT	22.2
0.1802 0.0130				
MH05-MH04	MH05	MH04	CONDUIT	22.6
0.1770 0.0130				
MH06-MH05	MH06	MH05	CONDUIT	35.3
0.1983 0.0130				
MH08-MH06	MH08	MH06	CONDUIT	38.5
0.2078 0.0130				
OVF-A	Volkswagen	CBMH120	CONDUIT	5.0
257.1330 0.0150				
OVF-C	Subaru	CBMH103	CONDUIT	5.0
222.3359 0.0150				
STCBMH103-CB MH103A ST-CB MH103A		CBMH103	CONDUIT	3.0
2.0004 0.0130				
STCBMH113-CB MH113 ST-CB MH113		CBMH113	CONDUIT	3.0
2.0004 0.0130				
STCBMH119-CB MH119 ST-CB MH119		CBMH119	CONDUIT	3.0
2.0004 0.0130				
STM_PHASE_3-10	CBMH2000	CBMH2001	CONDUIT	26.0
0.2311 0.0130				
STM_PHASE_3-14	CBMH2001	MH1002	CONDUIT	23.3
0.2573 0.0130				
STM_PHASE_3-14 (1)	MH1002	CBMH2003	CONDUIT	5.0
0.2020 0.0130				
STM_PHASE_3-15	CBMH2002	CBMH2003	CONDUIT	35.6
0.5061 0.0130				
STM_PHASE_3-18	CB3001	MH1000	CONDUIT	29.7
0.5056 0.0130				
STM_PHASE_3-19	CB3003	MH1000	CONDUIT	18.9
0.4754 0.0130				
STM_PHASE_3-20	CB3002	MH1000	CONDUIT	18.9
0.4749 0.0130				
STM_PHASE_3-21	CB3004	MH1001	CONDUIT	17.4
0.5158 0.0130				
STM_PHASE_3-22	CB3005	MH1001	CONDUIT	7.7
0.5229 0.0130				
STM_PHASE_3-3	MH1000	MH1001	CONDUIT	59.5
0.2521 0.0130				
STM_PHASE_3-4	CB3000	CBMH2000	CONDUIT	29.3
0.2392 0.0130				
STM_PHASE_3-9	MH1001	CBMH2004	CONDUIT	66.4
0.2559 0.0130				
CBMH103-ICD	CBMH103	MH02	ORIFICE	
CBMH108-ICD	CBMH108	MH04	ORIFICE	
CBMH113-ICD	CBMH113	MH05	ORIFICE	
CBMH119-ICD	CBMH119	MH08	ORIFICE	
CBMH2003-ICD	CBMH2003	MH05	ORIFICE	
CBMH2004-ICD	CBMH2004	MH01	ORIFICE	
Subaru-OUT	Subaru	MH04a	OUTLET	
Volkswagen-OUT	Volkswagen	MH06	OUTLET	

Cross Section Summary

Full Conduit Flow	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels

C07 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C08 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C1 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C10 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C11 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C12 77584.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C13 59986.43	RECT_OPEN	1.00	3.00	0.60	3.00	1
C14 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C15 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C16 50503.54	RECT_OPEN	1.00	3.00	0.60	3.00	1
C17 45107.44	RECT_OPEN	1.00	3.00	0.60	3.00	1
C18 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C19 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C2 59986.43	RECT_OPEN	1.00	3.00	0.60	3.00	1
C20 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C21 76095.90	RECT_OPEN	1.00	3.00	0.60	3.00	1
C22 90495.49	RECT_OPEN	1.00	3.00	0.60	3.00	1
C23 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C24 84.11	CIRCULAR	0.25	0.05	0.06	0.25	1
C25 84.11	CIRCULAR	0.25	0.05	0.06	0.25	1
C26 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C27 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C28 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C29 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C3 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C30 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1

4149 Strandherd Drive - Myers Site Plan (125132)
PCSWMM Model Output
Chicago 3-hr, 2-yr Storm

C31	RECT_OPEN	1.00	3.00	0.60	3.00	1
1756.51						
C32	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C33	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C34	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C35	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C36	RECT_OPEN	1.00	3.00	0.60	3.00	1
47334.20						
C37	RECT_OPEN	1.00	3.00	0.60	3.00	1
1756.51						
C4	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C45	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C46	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C47	RECT_OPEN	1.00	3.00	0.60	3.00	1
54468.83						
C48	RECT_OPEN	1.00	3.00	0.60	3.00	1
54468.83						
C49	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C5	RECT_OPEN	1.00	3.00	0.60	3.00	1
81970.61						
C50	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C51	RECT_OPEN	1.00	3.00	0.60	3.00	1
45107.44						
C52	RECT_OPEN	1.00	3.00	0.60	3.00	1
39021.15						
C53	RECT_OPEN	1.00	3.00	0.60	3.00	1
47334.20						
C54	RECT_OPEN	1.00	3.00	0.60	3.00	1
52519.53						
C55	RECT_OPEN	1.00	3.00	0.60	3.00	1
51520.40						
C56	RECT_OPEN	1.00	3.00	0.60	3.00	1
51520.40						
C57	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C58	RECT_OPEN	1.00	3.00	0.60	3.00	1
57283.91						
C59	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C6	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						
C60	RECT_OPEN	1.00	3.00	0.60	3.00	1
61733.92						
C61	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						
C7	RECT_OPEN	1.00	3.00	0.60	3.00	1
68373.65						
C8	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C9	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

CB04-CBMH107	CIRCULAR	0.25	0.05	0.06	0.25	1
61.06						
CB06-CBMH110	CIRCULAR	0.25	0.05	0.06	0.25	1
42.68						
CB09-CBMH116a	CIRCULAR	0.25	0.05	0.06	0.25	1
42.94						
CB10-CBMH122	CIRCULAR	0.25	0.05	0.06	0.25	1
42.81						
CB11-CBMH119	CIRCULAR	0.25	0.05	0.06	0.25	1
40.78						
CB12-CBMH113	CIRCULAR	0.25	0.05	0.06	0.25	1
59.47						
CBMH103A-CBMH103	CIRCULAR	0.25	0.05	0.06	0.25	1
41.50						
CBMH104-CBMH103_1	CIRCULAR	0.45	0.16	0.11	0.45	1
107.32						
CBMH104-CBMH103_2	CIRCULAR	0.45	0.16	0.11	0.45	1
108.38						
CBMH105-CBMH104	CIRCULAR	0.45	0.16	0.11	0.45	1
113.36						
CBMH106-CBMH105	CIRCULAR	0.38	0.11	0.09	0.38	1
84.57						
CBMH107-CBMH106	CIRCULAR	0.38	0.11	0.09	0.38	1
75.68						
CBMH109-CBMH108	CIRCULAR	0.38	0.11	0.09	0.38	1
89.45						
CBMH110-CBMH109	CIRCULAR	0.30	0.07	0.07	0.30	1
58.00						
CBMH114-CBMH113	CIRCULAR	0.45	0.16	0.11	0.45	1
135.67						
CBMH115-CBMH114	CIRCULAR	0.45	0.16	0.11	0.45	1
140.81						
CBMH116a-CBMH115	CIRCULAR	0.45	0.16	0.11	0.45	1
146.27						
CBMH116-CBMH116a	CIRCULAR	0.45	0.16	0.11	0.45	1
129.47						
CBMH120-CBMH119	CIRCULAR	0.45	0.16	0.11	0.45	1
131.87						
CBMH121-CBMH120	CIRCULAR	0.45	0.16	0.11	0.45	1
128.37						
CBMH122-CBMH121	CIRCULAR	0.45	0.16	0.11	0.45	1
124.74						
MH01-STC4000	CIRCULAR	0.90	0.64	0.23	0.90	1
996.61						
MH02-MH01	CIRCULAR	0.90	0.64	0.23	0.90	1
802.79						
MH04a-MH02	CIRCULAR	0.82	0.53	0.21	0.82	1
560.48						
MH04-MH04a	CIRCULAR	0.82	0.53	0.21	0.82	1
609.35						
MH05-MH04	CIRCULAR	0.75	0.44	0.19	0.75	1
468.39						
MH06-MH05	CIRCULAR	0.68	0.36	0.17	0.68	1
374.34						
MH08-MH06	CIRCULAR	0.68	0.36	0.17	0.68	1
383.20						
OVF-A	RECT_OPEN	1.00	3.00	0.60	3.00	1
228158.12						
OVF-C	RECT_OPEN	1.00	3.00	0.60	3.00	1
212159.15						

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

STCBMH103-CBMH103A CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STCBMH113-CBMH113 CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STCBMH119-CBMH119 CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STM_PHASE_3-10 CIRCULAR	0.38	0.11	0.09	0.38	1
84.30					
STM_PHASE_3-14 CIRCULAR	0.38	0.11	0.09	0.38	1
88.94					
STM_PHASE_3-14(1) CIRCULAR	0.38	0.11	0.09	0.38	1
78.81					
STM_PHASE_3-15 CIRCULAR	0.25	0.05	0.06	0.25	1
42.31					
STM_PHASE_3-18 CIRCULAR	0.25	0.05	0.06	0.25	1
42.29					
STM_PHASE_3-19 CIRCULAR	0.25	0.05	0.06	0.25	1
41.01					
STM_PHASE_3-20 CIRCULAR	0.25	0.05	0.06	0.25	1
40.99					
STM_PHASE_3-21 CIRCULAR	0.25	0.05	0.06	0.25	1
42.71					
STM_PHASE_3-22 CIRCULAR	0.25	0.05	0.06	0.25	1
43.00					
STM_PHASE_3-3 CIRCULAR	0.45	0.16	0.11	0.45	1
143.15					
STM_PHASE_3-4 CIRCULAR	0.38	0.11	0.09	0.38	1
85.76					
STM_PHASE_3-9 CIRCULAR	0.45	0.16	0.11	0.45	1
144.25					

Analysis Options

Flow Units LPS

Process Models:

Rainfall/Runoff YES

RDII NO

Snowmelt NO

Groundwater NO

Flow Routing YES

Ponding Allowed YES

Water Quality NO

Infiltration Method HORTON

Flow Routing Method DYNWAVE

Surcharge Method EXTRAN

Starting Date 10/16/2019 00:00:00

Ending Date 10/24/2019 00:00:00

Antecedent Dry Days 0.0

Report Time Step 00:01:00

Wet Time Step 00:05:00

Dry Time Step 00:05:00

Routing Time Step 2.00 sec

Variable Time Step YES

Maximum Trials 8

Number of Threads 4

Head Tolerance 0.001500 m

	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
	-----	-----
Initial LID Storage	0.004	1.207
Total Precipitation	0.105	31.857
Evaporation Loss	0.000	0.000
Infiltration Loss	0.007	2.246
Surface Runoff	0.099	29.772
Final Storage	0.004	1.207
Continuity Error (%)	-0.487	

	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
	-----	-----
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.099	0.986
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.099	0.986
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.002
Final Stored Volume	0.000	0.002
Continuity Error (%)	-0.010	

 Highest Continuity Errors

 Node CB3001 (1.04%)

 Time-Step Critical Elements

 Link MH01-STC4000 (2.00%)
 Link STCBMH103-CBMH103A (1.27%)

 Highest Flow Instability Indexes

 All links are stable.

 Most Frequent Nonconverging Nodes

 Convergence obtained at all time steps.

Routing Time Step Summary

Minimum Time Step : 0.50 sec
Average Time Step : 1.95 sec
Maximum Time Step : 2.00 sec
% of Time in Steady State : 0.00
Average Iterations per Step : 2.00
% of Steps Not Converging : 0.00
Time Step Frequencies :
2.000 - 1.516 sec : 95.13 %
1.516 - 1.149 sec : 2.54 %
1.149 - 0.871 sec : 1.06 %
0.871 - 0.660 sec : 0.93 %
0.660 - 0.500 sec : 0.35 %

Subcatchment Runoff Summary

Perv	Total	Total	Total	Total	Total	Total	Imperv
Runoff	Runoff	Runoff	Precip	Runoff	Evap	Infil	Runoff
Subcatchment	Runoff	Runoff	Runoff	Runoff	Runoff	Runoff	Runoff
mm	mm	10^6 ltr	mm	mm	mm	mm	mm

A01			31.86	0.00	0.00	2.21	29.73
0.07	29.80	0.02	12.04	0.935			
A02			31.86	0.00	0.00	3.47	28.45
0.08	28.52	0.02	13.47	0.895			
A03			31.86	0.00	0.00	5.39	26.55
0.06	26.61	0.02	12.54	0.835			
A04			31.86	0.00	0.00	1.26	30.69
0.06	30.75	0.03	20.68	0.965			
A05			31.86	0.00	0.00	0.31	31.69
0.03	31.72	0.03	21.21	0.996			
A06			31.86	0.00	0.00	4.10	27.77
0.11	27.88	0.01	7.57	0.875			
A07			31.86	0.00	0.00	0.00	31.97
0.00	31.97	0.02	10.67	1.004			
A08			31.86	0.00	0.00	4.43	27.48
0.08	27.56	0.02	13.03	0.865			
A09			31.86	0.00	0.00	2.20	29.69
0.09	29.79	0.04	24.19	0.935			
A10			31.86	0.00	0.00	1.88	30.01
0.09	30.10	0.02	10.18	0.945			
A11			31.86	0.00	0.00	1.89	30.05
0.07	30.12	0.02	12.17	0.945			
A12			31.86	0.00	0.00	5.37	26.49
0.11	26.61	0.01	9.04	0.835			
A13			31.86	0.00	0.00	0.00	32.06
0.00	32.06	0.03	17.06	1.007			
A14			31.86	0.00	0.00	0.00	32.06
0.00	32.06	0.01	8.53	1.007			
A15			31.86	0.00	0.00	0.00	32.09
0.00							

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 PCSWMM Model Output
 Chicago 3-hr, 2-yr Storm

B2-MP		31.86	0.00	0.00	0.00	32.08
0.00	32.08	0.09	59.65	1.007		
B5-MP		31.86	0.00	0.00	3.47	28.45
0.08	28.52	0.17	117.36	0.895		
B6-MP		31.86	0.00	0.00	0.94	31.01
0.05	31.07	0.08	56.36	0.975		
POST-A1		31.86	0.00	0.00	0.00	31.99
0.00	31.99	0.03	17.07	1.004		
POST-A2		31.86	0.00	0.00	0.00	31.99
0.00	31.99	0.03	17.07	1.004		
POST-A3		31.86	0.00	0.00	0.00	32.02
0.00	32.02	0.03	19.20	1.005		
POST-A4		31.86	0.00	0.00	0.00	32.01
0.00	32.01	0.03	21.33	1.005		
POST-A5		31.86	0.00	0.00	0.00	31.98
0.00	31.98	0.03	19.20	1.004		
POST-B1		31.86	0.00	0.00	0.00	32.03
0.00	32.03	0.04	23.47	1.005		
POST-B2		31.86	0.00	0.00	0.00	32.03
0.00	32.03	0.03	19.20	1.005		
POST-B3		31.86	0.00	0.00	0.00	32.00
0.00	32.00	0.03	19.20	1.005		
POST-B4		31.86	0.00	0.00	0.00	31.94
0.00	31.94	0.02	12.80	1.003		
POST-B5		31.86	0.00	0.00	0.00	31.95
0.00	31.95	0.02	14.94	1.003		
POST-B6		31.86	0.00	0.00	0.00	32.02
0.00	32.02	0.03	21.33	1.005		
POST-DR		31.86	0.00	0.00	29.38	2.23
0.60	2.83	0.00	3.49	0.089		

 Node Depth Summary

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
CB03-Dummy	JUNCTION	0.02	0.78	94.43	0 01:41	0.78
CBMH116a	JUNCTION	0.03	0.73	94.74	0 01:52	0.73
HP-CB09	JUNCTION	0.00	0.00	95.78	0 00:00	0.00
HP-CB10	JUNCTION	0.00	0.00	95.70	0 00:00	0.00
HP-CB11	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CB12	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CB3000	JUNCTION	0.00	0.00	95.50	0 00:00	0.00
HP-CBMH103	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH103A	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH108	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH113	JUNCTION	0.00	0.00	95.72	0 00:00	0.00
HP-CBMH114	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH115	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH116	JUNCTION	0.00	0.00	95.79	0 00:00	0.00
HP-CBMH119	JUNCTION	0.00	0.00	95.78	0 00:00	0.00
HP-CBMH120	JUNCTION	0.00	0.00	95.75	0 00:00	0.00
HP-CBMH121	JUNCTION	0.00	0.00	95.76	0 00:00	0.00

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HP-CBMH122	JUNCTION	0.00	0.00	95.77	0	00:00	0.00
HP-CBMH2000	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
HP-CBMH2001	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
HP-CBMH2002	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
HP-CBMH2003	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
MH04a	JUNCTION	0.01	0.17	93.49	0	01:35	0.17
HP-CB3001	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3002	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3003	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3004	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3005	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CBMH2004	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
STC-4000	OUTFALL	0.11	0.14	93.26	0	01:40	0.14
Uncontrolled	OUTFALL	0.00	0.00	94.00	0	00:00	0.00
CB04	STORAGE	0.00	0.13	94.44	0	01:43	0.13
CB06	STORAGE	0.03	1.25	95.62	0	01:24	1.25
CB09	STORAGE	0.01	0.42	94.74	0	01:52	0.42
CB10	STORAGE	0.01	0.43	94.87	0	01:52	0.43
CB11	STORAGE	0.03	0.76	94.87	0	01:51	0.76
CB12	STORAGE	0.02	0.63	94.74	0	01:51	0.63
CB3000	STORAGE	0.03	1.01	95.24	0	01:44	1.01
CB3001	STORAGE	0.01	0.55	94.98	0	01:50	0.55
CB3002	STORAGE	0.01	0.63	94.98	0	01:50	0.63
CB3003	STORAGE	0.02	0.69	94.98	0	01:50	0.69
CB3004	STORAGE	0.02	0.76	94.98	0	01:51	0.76
CB3005	STORAGE	0.03	0.92	94.98	0	01:50	0.92
CBMH103	STORAGE	0.03	0.85	94.43	0	01:41	0.85
CBMH103A	STORAGE	0.12	0.75	94.44	0	01:41	0.75
CBMH104	STORAGE	0.06	0.80	94.44	0	01:42	0.80
CBMH105	STORAGE	0.02	0.67	94.44	0	01:42	0.67
CBMH106	STORAGE	0.01	0.56	94.44	0	01:43	0.56
CBMH107	STORAGE	0.01	0.47	94.44	0	01:43	0.47
CBMH108	STORAGE	0.04	1.85	95.61	0	01:34	1.85
CBMH109	STORAGE	0.03	1.49	95.62	0	01:31	1.48
CBMH110	STORAGE	0.03	1.38	95.62	0	01:24	1.38
CBMH113	STORAGE	0.04	0.96	94.74	0	01:51	0.96
CBMH114	STORAGE	0.03	0.90	94.74	0	01:52	0.90
CBMH115	STORAGE	0.03	0.81	94.74	0	01:52	0.81
CBMH116	STORAGE	0.02	0.71	94.74	0	01:52	0.71
CBMH119	STORAGE	0.04	0.94	94.87	0	01:51	0.94
CBMH120	STORAGE	0.03	0.86	94.87	0	01:52	0.86
CBMH121	STORAGE	0.03	0.80	94.87	0	01:52	0.80
CBMH122	STORAGE	0.03	0.73	94.87	0	01:52	0.73
CBMH2000	STORAGE	0.03	1.11	95.24	0	01:44	1.11
CBMH2001	STORAGE	0.04	1.20	95.24	0	01:42	1.20
CBMH2002	STORAGE	0.03	0.99	95.24	0	01:42	0.99
CBMH2003	STORAGE	0.04	1.33	95.24	0	01:42	1.33
CBMH2004	STORAGE	0.05	1.28	94.98	0	01:52	1.28
MH01	STORAGE	0.10	0.18	93.31	0	01:40	0.18
MH02	STORAGE	0.04	0.16	93.36	0	01:36	0.16
MH04	STORAGE	0.01	0.15	93.51	0	01:34	0.15
MH05	STORAGE	0.01	0.12	93.59	0	01:32	0.12
MH06	STORAGE	0.00	0.09	93.70	0	01:27	0.09
MH08	STORAGE	0.00	0.06	93.75	0	01:52	0.06
MH1000	STORAGE	0.02	0.90	94.98	0	01:50	0.90
MH1001	STORAGE	0.03	1.08	94.98	0	01:51	1.08
MH1002	STORAGE	0.04	1.29	95.24	0	01:42	1.29

Total		Flow	Maximum	Maximum			Lateral		
Inflow	Balance		Lateral	Total	Time of Max		Inflow		
Volume	Error		Inflow	Inflow	Occurrence		Volume		
Node		Type	LPS	LPS	days	hr:min	10^6	ltr	10^6
ltr	Percent								

CB03-Dummy		JUNCTION	0.00	37.06	0	01:05		0	
0.0534	0.006								
CBMH116a		JUNCTION	0.00	31.94	0	01:05		0	
0.0492	-0.450								
HP-CB09		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CB10		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CB11		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CB12		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CB3000		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH103		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH103A		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH108		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH113		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH114		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH115		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH116		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH119		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH120		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							
HP-CBMH121		JUNCTION	0.00	0.00	0	00:00		0	
0	0.000	ltr							

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HP-CBMH122	JUNCTION	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CBMH2000	JUNCTION	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CBMH2001	JUNCTION	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CBMH2002	JUNCTION	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CBMH2003	JUNCTION	0.00	0.00	0	00:00	0
0.000 ltr						
MH04a	JUNCTION	0.00	41.87	0	01:34	0
0.642 0.005						
HP-CB3001	OUTFALL	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CB3002	OUTFALL	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CB3003	OUTFALL	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CB3004	OUTFALL	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CB3005	OUTFALL	0.00	0.00	0	00:00	0
0.000 ltr						
HP-CBMH2004	OUTFALL	0.00	0.00	0	00:00	0
0.000 ltr						
STC-4000	OUTFALL	0.00	62.01	0	01:40	0
0.983 0.000						
Uncontrolled	OUTFALL	3.49	3.49	0	01:10	0.00283
0.00283 0.000						
CB04	STORAGE	0.00	1.99	0	01:10	0
0.00065 0.031						
CB06	STORAGE	0.00	6.05	0	01:05	0
0.00329 0.096						
CB09	STORAGE	20.68	20.68	0	01:10	0.0308
0.0308 0.729						
CB10	STORAGE	21.21	21.21	0	01:10	0.0317
0.0317 0.593						
CB11	STORAGE	18.71	18.71	0	01:10	0.0279
0.0279 0.019						
CB12	STORAGE	29.22	29.22	0	01:10	0.0437
0.0437 -0.004						
CB3000	STORAGE	19.20	19.20	0	01:10	0.0288
0.0288 0.203						
CB3001	STORAGE	21.33	21.33	0	01:10	0.032
0.032 1.047						
CB3002	STORAGE	14.94	14.94	0	01:10	0.0224
0.0224 0.838						
CB3003	STORAGE	12.80	12.80	0	01:10	0.0192
0.0192 0.765						
CB3004	STORAGE	19.20	19.20	0	01:10	0.0288
0.0288 0.555						
CB3005	STORAGE	19.20	19.20	0	01:10	0.0288
0.0288 0.067						
CBMH103	STORAGE	117.36	117.36	0	01:10	0.174
0.272 -0.001						
CBMH103A	STORAGE	0.00	1.77	0	01:04	0
0.00207 -1.004						
CBMH104	STORAGE	0.00	34.91	0	01:05	0
0.0396 -0.021						
CBMH105	STORAGE	0.00	29.59	0	01:05	0
0.026 0.010						

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CBMH106		STORAGE	0.00	20.75	0	01:05	0
0.0138	-0.028						
CBMH107		STORAGE	0.00	9.86	0	01:05	0
0.00499	0.380						
CBMH108		STORAGE	56.36	71.18	0	01:08	0.0839
0.105	-0.012						
CBMH109		STORAGE	0.00	38.80	0	01:05	0
0.0328	0.013						
CBMH110		STORAGE	0.00	21.04	0	01:05	0
0.015	0.052						
CBMH113		STORAGE	9.04	87.95	0	01:10	0.0133
0.211	-0.016						
CBMH114		STORAGE	12.04	53.62	0	01:09	0.0179
0.0872	-0.038						
CBMH115		STORAGE	13.47	45.19	0	01:10	0.02
0.0694	0.058						
CBMH116		STORAGE	12.54	12.54	0	01:10	0.0186
0.0186	-0.012						
CBMH119		STORAGE	24.19	85.99	0	01:10	0.0357
0.209	-0.002						
CBMH120		STORAGE	13.03	47.43	0	01:09	0.0193
0.0782	0.019						
CBMH121		STORAGE	10.67	37.06	0	01:09	0.016
0.0588	-0.102						
CBMH122		STORAGE	7.57	28.67	0	01:05	0.0112
0.0427	-0.335						
CBMH2000		STORAGE	21.33	45.44	0	01:11	0.032
0.0636	-0.003						
CBMH2001		STORAGE	19.20	47.07	0	01:07	0.0288
0.0939	-0.014						
CBMH2002		STORAGE	17.07	17.07	0	01:10	0.0256
0.0256	0.033						
CBMH2003		STORAGE	17.07	63.48	0	01:07	0.0256
0.174	-0.012						
CBMH2004		STORAGE	23.47	77.30	0	01:10	0.0352
0.227	-0.013						
MH01		STORAGE	0.00	62.01	0	01:39	0
0.984	0.000						
MH02		STORAGE	0.00	53.52	0	01:36	0
0.818	-0.000						
MH04		STORAGE	0.00	36.72	0	01:33	0
0.552	-0.007						
MH05		STORAGE	0.00	29.54	0	01:32	0
0.469	-0.000						
MH06		STORAGE	0.00	13.56	0	01:25	0
0.184	0.009						
MH08		STORAGE	0.00	7.27	0	01:51	0
0.142	-0.011						
MH1000		STORAGE	0.00	49.12	0	01:05	0
0.0729	-0.725						
MH1001		STORAGE	0.00	68.79	0	01:10	0
0.131	-0.227						
MH1002		STORAGE	0.00	39.39	0	01:07	0
0.0928	-0.040						
ST-CBMH103A		STORAGE	0.00	91.73	0	01:08	0
0.0699	0.024						
ST-CBMH113		STORAGE	0.00	79.05	0	01:10	0
0.0669	0.014						
ST-CBMH119		STORAGE	0.00	76.73	0	01:10	0
0.0674	0.013						

ST-CBMH2003	STORAGE	0.00	50.92	0	01:07	0
0.0317	0.017					
ST-CBMH2004	STORAGE	0.00	63.15	0	01:10	0
0.0602	0.010					
Subaru	STORAGE	59.65	59.65	0	01:10	0.0898
0.0899	-0.000					
Volkswagen	STORAGE	27.67	27.67	0	01:10	0.0417
0.0417	-0.004					

 Node Surcharge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
CB03-Dummy	JUNCTION	3.26	0.328	2.165
CBMH116a	JUNCTION	3.47	0.281	1.769
MH1002	STORAGE	4.17	0.885	0.120

 Node Flooding Summary

No nodes were flooded.

 Storage Volume Summary

Max	Maximum	Average	Avg	Evap	Exfil	Maximum	Max	Time of
Occurrence	Outflow	Volume	Pcnt	Pcnt	Pcnt	Volume	Pcnt	
Storage Unit		1000 m ³	Full	Loss	Loss	1000 m ³	Full	days
hr:min	LPS							
CB04		0.000	0.1	0.0	0.0	0.000	5.5	0
01:43	0.49							
CB06		0.000	1.2	0.0	0.0	0.000	58.8	0
01:24	4.93							
CB09		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	20.85							
CB10		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	21.24							
CB11		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	17.99							
CB12		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	28.38							

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CB3000		0.000	0.0	0.0	0.0	0.000	1.2	0
01:44	19.32							
CB3001		0.000	0.0	0.0	0.0	0.000	0.4	0
01:50	21.75							
CB3002		0.000	0.0	0.0	0.0	0.000	0.5	0
01:50	15.55							
CB3003		0.000	0.0	0.0	0.0	0.000	0.5	0
01:50	13.55							
CB3004		0.000	0.0	0.0	0.0	0.000	0.6	0
01:51	18.81							
CB3005		0.000	0.0	0.0	0.0	0.000	0.7	0
01:50	18.06							
CBMH103		0.000	0.0	0.0	0.0	0.002	1.1	0
01:41	115.90							
CBMH103A		0.000	4.0	0.0	0.0	0.001	25.6	0
01:41	0.74							
CBMH104		0.000	2.1	0.0	0.0	0.001	26.9	0
01:42	29.59							
CBMH105		0.000	0.7	0.0	0.0	0.001	24.4	0
01:42	20.75							
CBMH106		0.000	0.5	0.0	0.0	0.001	20.4	0
01:43	9.86							
CBMH107		0.000	0.4	0.0	0.0	0.001	17.7	0
01:43	1.99							
CBMH108		0.000	0.2	0.0	0.0	0.023	14.5	0
01:34	44.86							
CBMH109		0.000	1.4	0.0	0.0	0.002	62.7	0
01:31	21.04							
CBMH110		0.000	1.3	0.0	0.0	0.002	61.0	0
01:24	11.03							
CBMH113		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	85.65							
CBMH114		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	50.71							
CBMH115		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	41.89							
CBMH116		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	12.11							
CBMH119		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	83.23							
CBMH120		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	44.02							
CBMH121		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	34.42							
CBMH122		0.000	0.0	0.0	0.0	0.000	0.0	0
00:00	26.40							
CBMH2000		0.000	0.7	0.0	0.0	0.018	53.2	0
01:44	28.00							
CBMH2001		0.000	0.3	0.0	0.0	0.007	22.6	0
01:42	39.39							
CBMH2002		0.000	0.1	0.0	0.0	0.001	5.5	0
01:42	13.72							
CBMH2003		0.000	0.2	0.0	0.0	0.002	5.1	0
01:42	57.95							
CBMH2004		0.000	0.1	0.0	0.0	0.001	3.8	0
01:52	70.45							
MH01		0.000	4.0	0.0	0.0	0.000	7.2	0
01:40	62.01							
MH02		0.000	1.4	0.0	0.0	0.001	6.5	0
01:36	53.52							

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MH04		0.000	0.3	0.0	0.0	0.000	6.6	0
01:34	36.71							
MH05		0.000	0.3	0.0	0.0	0.000	5.8	0
01:32	29.54							
MH06		0.000	0.2	0.0	0.0	0.000	4.1	0
01:27	13.55							
MH08		0.000	0.2	0.0	0.0	0.000	3.2	0
01:52	7.27							
MH1000		0.000	1.9	0.0	0.0	0.001	67.4	0
01:50	34.50							
MH1001		0.000	2.2	0.0	0.0	0.001	67.3	0
01:51	56.07							
MH1002		0.000	2.9	0.0	0.0	0.001	91.5	0
01:42	34.15							
ST-CBMH103A		0.001	1.1	0.0	0.0	0.070	55.2	0
01:41	8.71							
ST-CBMH113		0.002	2.4	0.0	0.0	0.067	92.4	0
01:51	6.07							
ST-CBMH119		0.002	2.7	0.0	0.0	0.067	98.8	0
01:51	5.92							
ST-CBMH2003		0.001	3.1	0.0	0.0	0.031	100.0	0
01:15	4.18							
ST-CBMH2004		0.002	3.0	0.0	0.0	0.060	94.9	0
01:52	4.49							
Subaru		0.002	1.4	0.0	0.0	0.062	36.7	0
01:47	5.23							
Volkswagen		0.000	0.4	0.0	0.0	0.019	36.0	0
01:23	6.43							

 Outfall Loading Summary

Outfall Node	Flow Freq Pcnt	Avg Flow LPS	Max Flow LPS	Total Volume 10^6 ltr
HP-CB3001	0.00	0.00	0.00	0.000
HP-CB3002	0.00	0.00	0.00	0.000
HP-CB3003	0.00	0.00	0.00	0.000
HP-CB3004	0.00	0.00	0.00	0.000
HP-CB3005	0.00	0.00	0.00	0.000
HP-CBMH2004	0.00	0.00	0.00	0.000
STC-4000	12.35	18.77	62.01	0.983
Uncontrolled	2.24	0.38	3.49	0.003
System	1.82	19.16	62.17	0.986

 Link Flow Summary

Maximum Flow	Time of Max Occurrence	Maximum Veloc	Max/ Full	Max/ Full
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Link	Type	LPS	days	hr:min	m/sec	Flow	Depth
C07	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C08	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C1	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C10	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C11	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C12	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
C13	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
C14	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C15	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C16	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C17	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C18	CONDUIT	0.00	0	00:00	0.00	0.00	0.06
C19	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C2	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C20	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C21	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C22	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C23	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C24	CONDUIT	63.15	0	01:10	1.29	0.75	1.00
C25	CONDUIT	50.92	0	01:07	1.04	0.61	1.00
C26	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C27	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C28	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C29	CONDUIT	0.00	0	00:00	0.00	0.00	0.06
C3	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C30	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C31	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C32	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C33	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C34	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C35	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C36	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C37	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C4	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C45	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C46	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C47	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C48	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C49	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C5	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
C50	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C51	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C52	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C53	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C54	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C55	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C56	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C57	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C58	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C59	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C6	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
C60	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C61	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C7	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C8	CONDUIT	0.00	0	00:00	0.00	0.00	0.00

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C9	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
CB04-CBMH107	CONDUIT	1.99	0	01:10	0.07	0.03	0.75
CB06-CBMH110	CONDUIT	6.05	0	01:05	0.14	0.14	1.00
CB09-CBMH116a	CONDUIT	20.85	0	01:05	0.77	0.49	1.00
CB10-CBMH122	CONDUIT	21.24	0	01:05	0.83	0.50	1.00
CB11-CBMH119	CONDUIT	17.99	0	01:10	0.37	0.44	1.00
CB12-CBMH113	CONDUIT	28.38	0	01:10	0.58	0.48	1.00
CBMH103A-CBMH103	CONDUIT	1.77	0	01:04	0.04	0.04	1.00
CBMH104-CBMH103_1	CONDUIT	34.91	0	01:05	0.22	0.33	1.00
CBMH104-CBMH103_2	CONDUIT	37.06	0	01:05	0.27	0.34	1.00
CBMH105-CBMH104	CONDUIT	29.59	0	01:05	0.20	0.26	1.00
CBMH106-CBMH105	CONDUIT	20.75	0	01:05	0.23	0.25	1.00
CBMH107-CBMH106	CONDUIT	9.86	0	01:05	0.24	0.13	1.00
CBMH109-CBMH108	CONDUIT	38.80	0	01:05	0.35	0.43	1.00
CBMH110-CBMH109	CONDUIT	21.04	0	01:05	0.30	0.36	1.00
CBMH114-CBMH113	CONDUIT	50.71	0	01:10	0.32	0.37	1.00
CBMH115-CBMH114	CONDUIT	41.89	0	01:10	0.31	0.30	1.00
CBMH116a-CBMH115	CONDUIT	31.76	0	01:10	0.28	0.22	1.00
CBMH116-CBMH116a	CONDUIT	12.11	0	01:08	0.18	0.09	1.00
CBMH120-CBMH119	CONDUIT	44.02	0	01:10	0.28	0.33	1.00
CBMH121-CBMH120	CONDUIT	34.42	0	01:10	0.25	0.27	1.00
CBMH122-CBMH121	CONDUIT	26.40	0	01:09	0.32	0.21	1.00
MH01-STC4000	CONDUIT	62.01	0	01:40	0.80	0.06	0.18
MH02-MH01	CONDUIT	53.52	0	01:36	0.64	0.07	0.19
MH04a-MH02	CONDUIT	41.87	0	01:35	0.67	0.07	0.17
MH04-MH04a	CONDUIT	36.71	0	01:33	0.51	0.06	0.19
MH05-MH04	CONDUIT	29.54	0	01:33	0.72	0.06	0.15
MH06-MH05	CONDUIT	13.55	0	01:27	0.57	0.04	0.12
MH08-MH06	CONDUIT	7.27	0	01:52	0.38	0.02	0.11
OVF-A	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
OVF-C	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
STCBMH103-CBMH103A	CONDUIT	91.73	0	01:08	0.63	0.23	1.00
STCBMH113-CBMH113	CONDUIT	79.05	0	01:10	0.50	0.20	1.00
STCBMH119-CBMH119	CONDUIT	76.73	0	01:10	0.48	0.19	1.00
STM_PHASE_3-10	CONDUIT	28.00	0	01:07	0.38	0.33	1.00
STM_PHASE_3-14	CONDUIT	39.39	0	01:07	0.36	0.44	1.00
STM_PHASE_3-14(1)	CONDUIT	34.15	0	01:07	0.31	0.43	1.00
STM_PHASE_3-15	CONDUIT	13.72	0	01:10	0.37	0.32	1.00
STM_PHASE_3-18	CONDUIT	21.75	0	01:06	0.88	0.51	1.00
STM_PHASE_3-19	CONDUIT	13.55	0	01:05	0.68	0.33	1.00
STM_PHASE_3-20	CONDUIT	15.55	0	01:06	0.73	0.38	1.00
STM_PHASE_3-21	CONDUIT	18.81	0	01:05	0.72	0.44	1.00
STM_PHASE_3-22	CONDUIT	18.06	0	01:09	0.52	0.42	1.00
STM_PHASE_3-3	CONDUIT	34.50	0	01:10	0.42	0.24	1.00
STM_PHASE_3-4	CONDUIT	19.32	0	01:10	0.38	0.23	1.00
STM_PHASE_3-9	CONDUIT	56.07	0	01:10	0.35	0.39	1.00
CBMH103-ICD	ORIFICE	11.66	0	01:41			1.00
CBMH108-ICD	ORIFICE	7.17	0	01:34			1.00
CBMH113-ICD	ORIFICE	7.37	0	01:51			1.00
CBMH119-ICD	ORIFICE	7.27	0	01:51			1.00
CBMH2003-ICD	ORIFICE	8.71	0	01:42			1.00
CBMH2004-ICD	ORIFICE	8.55	0	01:52			1.00
Subaru-OUT	DUMMY	5.23	0	01:47			
Volkswagen-OUT	DUMMY	6.43	0	01:23			

Flow Classification Summary

		Adjusted	----- Fraction of Time in Flow Class -----							
		/Actual	Up		Down	Sub	Sup	Up	Down	Norm
Inlet	Conduit	Length	Dry	Dry	Dry	Crit	Crit	Crit	Crit	Ltd
Ctrl										

C07		1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C08	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C10	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C11	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C12	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C13	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C14	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C15	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C16	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C17	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C18	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C19	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C2	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C20	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C21	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C22	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C23	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C24	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
0.00	C25	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
0.00	C26	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C27	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C28	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	C29	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00	0.00

C3	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C30	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C31	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C32	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C33	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C34	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C35	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C36	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C37	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C4	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C45	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C46	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C47	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C48	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C49	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C5	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C50	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C51	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C52	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C53	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C54	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C55	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C56	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C57	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C58	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C59	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C6	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C60	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C61	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C7	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

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OVF-A	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
OVF-C	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00									
STCBMH103-CBMH103A	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00
0.00									
STCBMH113-CBMH113	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.96
0.00									
STCBMH119-CBMH119	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.96	0.96
0.00									
STM_PHASE_3-10	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
0.00									
STM_PHASE_3-14	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
0.00									
STM_PHASE_3-14(1)	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
0.00									
STM_PHASE_3-15	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.01
0.00									
STM_PHASE_3-18	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00
0.00									
STM_PHASE_3-19	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.01
0.00									
STM_PHASE_3-20	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00
0.00									
STM_PHASE_3-21	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.01
0.00									
STM_PHASE_3-22	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
0.00									
STM_PHASE_3-3	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.01
0.00									
STM_PHASE_3-4	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
0.00									
STM_PHASE_3-9	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
0.00									

 Conduit Surcharge Summary

Conduit	Hours Full			Hours	
	Both Ends	Upstream	Dnstream	Above Full Normal Flow	Capacity Limited
C24	5.09	5.09	5.57	0.01	0.01
C25	4.45	4.45	4.80	0.01	0.01
CB04-CBMH107	0.01	0.01	2.42	0.01	0.01
CB06-CBMH110	2.69	2.69	2.81	0.01	0.01
CB09-CBMH116a	2.75	2.75	3.47	0.01	0.01
CB10-CBMH122	2.78	2.78	3.45	0.01	0.01
CB11-CBMH119	4.86	4.86	5.56	0.01	0.01
CB12-CBMH113	4.13	4.13	5.76	0.01	0.01
CBMH103A-CBMH103	3.60	3.60	4.22	0.01	0.01
CBMH104-CBMH103_1	3.13	3.13	3.26	0.01	0.01
CBMH104-CBMH103_2	3.26	3.26	3.35	0.01	0.01
CBMH105-CBMH104	2.63	2.63	2.97	0.01	0.01
CBMH106-CBMH105	2.42	2.42	2.89	0.01	0.01
CBMH107-CBMH106	1.74	1.74	2.23	0.01	0.01

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CBMH109-CBMH108	2.80	2.80	2.91	0.01	0.01
CBMH110-CBMH109	2.77	2.77	2.90	0.01	0.01
CBMH114-CBMH113	4.53	4.53	4.90	0.01	0.01
CBMH115-CBMH114	3.99	3.99	4.47	0.01	0.01
CBMH116a-CBMH115	3.47	3.47	3.99	0.01	0.01
CBMH116-CBMH116a	3.34	3.34	3.47	0.01	0.01
CBMH120-CBMH119	4.27	4.27	4.74	0.01	0.01
CBMH121-CBMH120	3.90	3.90	4.27	0.01	0.01
CBMH122-CBMH121	3.45	3.45	3.71	0.01	0.01
STCBMH103-CBMH103A	1.97	1.97	2.39	0.01	0.01
STCBMH113-CBMH113	3.46	3.46	3.86	0.01	0.01
STCBMH119-CBMH119	3.63	3.63	4.02	0.01	0.01
STM_PHASE_3-10	3.61	3.61	3.81	0.01	0.01
STM_PHASE_3-14	3.92	3.92	4.17	0.01	0.01
STM_PHASE_3-14 (1)	4.31	4.31	4.37	0.01	0.01
STM_PHASE_3-15	3.62	3.62	4.34	0.01	0.01
STM_PHASE_3-18	2.42	2.42	3.04	0.01	0.01
STM_PHASE_3-19	3.00	3.00	3.44	0.01	0.01
STM_PHASE_3-20	2.74	2.74	3.14	0.01	0.01
STM_PHASE_3-21	3.34	3.34	3.82	0.01	0.01
STM_PHASE_3-22	4.24	4.24	4.49	0.01	0.01
STM_PHASE_3-3	3.04	3.04	3.82	0.01	0.01
STM_PHASE_3-4	3.33	3.33	3.52	0.01	0.01
STM_PHASE_3-9	3.99	3.99	5.11	0.01	0.01

Analysis begun on: Wed Jul 29 09:02:37 2026
 Analysis ended on: Wed Jul 29 09:02:47 2026
 Total elapsed time: 00:00:10

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

Update to 117148 Model
 Updated by: Aiden Mallany-Stanley
 Boundary Conditions:

WARNING 04: minimum elevation drop used for Conduit C07
 WARNING 04: minimum elevation drop used for Conduit C08
 WARNING 04: minimum elevation drop used for Conduit C26
 WARNING 04: minimum elevation drop used for Conduit C27
 WARNING 04: minimum elevation drop used for Conduit C28
 WARNING 04: minimum elevation drop used for Conduit C30
 WARNING 04: minimum elevation drop used for Conduit C31
 WARNING 04: minimum elevation drop used for Conduit C37

Element Count

Number of rain gages 1
 Number of subcatchments ... 30
 Number of nodes 81
 Number of links 109
 Number of pollutants 0
 Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Design_Storms	C3hr-5yr	INTENSITY	10 min.

Subcatchment Summary

Name Outlet	Area	Width	%Imperv	%Slope	Rain Gage
A01 CBMH114	0.06	40.00	93.00	2.0000	Design_Storms
A02 CBMH115	0.07	46.67	89.00	2.0000	Design_Storms
A03 CBMH116	0.07	35.00	83.00	2.0000	Design_Storms
A04 CB09	0.10	66.67	96.00	2.0000	Design_Storms
A05 CB10	0.10	50.00	99.00	2.0000	Design_Storms
A06 CBMH122	0.04	40.00	87.00	2.0000	Design_Storms
A07 CBMH121	0.05	33.33	100.00	2.0000	Design_Storms
A08 CBMH120	0.07	46.67	86.00	2.0000	Design_Storms

A09	0.12	120.00	93.00	2.0000	Design_Storms
CBMH119					
A10	0.05	50.00	94.00	2.0000	Design_Storms
CB11					
A11	0.06	40.00	94.00	2.0000	Design_Storms
CB12					
A12	0.05	50.00	83.00	2.0000	Design_Storms
CBMH113					
A13	0.08	26.67	100.00	2.0000	Design_Storms
CB12					
A14	0.04	13.33	100.00	2.0000	Design_Storms
CB11					
A15	0.13	32.50	100.00	2.0000	Design_Storms
Volkswagen					
B2-MP	0.28	80.00	100.00	2.0000	Design_Storms
Subaru					
B5-MP	0.61	406.67	89.00	2.0000	Design_Storms
CBMH103					
B6-MP	0.27	180.00	97.00	2.0000	Design_Storms
CBMH108					
POST-A1	0.08	40.07	100.00	3.0000	Design_Storms
CBMH2002					
POST-A2	0.08	38.67	100.00	3.0000	Design_Storms
CBMH2003					
POST-A3	0.09	38.60	100.00	2.5000	Design_Storms
CBMH2001					
POST-A4	0.10	45.22	100.00	2.5000	Design_Storms
CBMH2000					
POST-A5	0.09	47.78	100.00	3.0000	Design_Storms
CB3000					
POST-B1	0.11	39.91	100.00	3.0000	Design_Storms
CBMH2004					
POST-B2	0.09	34.84	100.00	2.5000	Design_Storms
CB3005					
POST-B3	0.09	43.71	100.00	2.5000	Design_Storms
CB3004					
POST-B4	0.06	50.85	100.00	2.5000	Design_Storms
CB3003					
POST-B5	0.07	52.98	100.00	2.5000	Design_Storms
CB3002					
POST-B6	0.10	41.46	100.00	2.5000	Design_Storms
CB3001					
POST-DR	0.10	333.33	7.00	5.0000	Design_Storms
Uncontrolled					

 Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
CB03-Dummy	JUNCTION	93.66	2.94	0.0	
CBMH116a	JUNCTION	94.01	2.50	0.0	
HP-CB09	JUNCTION	95.78	1.00	0.0	
HP-CB10	JUNCTION	95.70	1.00	0.0	
HP-CB11	JUNCTION	95.80	1.00	0.0	
HP-CB12	JUNCTION	95.80	1.00	0.0	
HP-CB3000	JUNCTION	95.50	1.00	0.0	

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 Chicago 3-hr, 5-yr Storm

HP-CBMH103	JUNCTION	95.80	1.00	0.0
HP-CBMH103A	JUNCTION	95.80	1.00	0.0
HP-CBMH108	JUNCTION	95.80	1.00	0.0
HP-CBMH113	JUNCTION	95.72	1.00	0.0
HP-CBMH114	JUNCTION	95.80	1.00	0.0
HP-CBMH115	JUNCTION	95.80	1.00	0.0
HP-CBMH116	JUNCTION	95.79	1.00	0.0
HP-CBMH119	JUNCTION	95.78	1.00	0.0
HP-CBMH120	JUNCTION	95.75	1.00	0.0
HP-CBMH121	JUNCTION	95.76	1.00	0.0
HP-CBMH122	JUNCTION	95.77	1.00	0.0
HP-CBMH2000	JUNCTION	95.50	1.00	0.0
HP-CBMH2001	JUNCTION	95.50	1.00	0.0
HP-CBMH2002	JUNCTION	95.50	1.00	0.0
HP-CBMH2003	JUNCTION	95.50	1.00	0.0
MH04a	JUNCTION	93.32	2.30	0.0
HP-CB3001	OUTFALL	95.35	1.00	0.0
HP-CB3002	OUTFALL	95.35	1.00	0.0
HP-CB3003	OUTFALL	95.35	1.00	0.0
HP-CB3004	OUTFALL	95.35	1.00	0.0
HP-CB3005	OUTFALL	95.35	1.00	0.0
HP-CBMH2004	OUTFALL	95.35	1.00	0.0
STC-4000	OUTFALL	93.12	0.90	0.0
Uncontrolled	OUTFALL	94.00	0.00	0.0
CB04	STORAGE	94.31	2.29	0.0
CB06	STORAGE	94.37	2.13	0.0
CB09	STORAGE	94.32	2.18	0.0
CB10	STORAGE	94.44	2.06	0.0
CB11	STORAGE	94.11	2.44	0.0
CB12	STORAGE	94.11	2.44	0.0
CB3000	STORAGE	94.23	2.02	0.0
CB3001	STORAGE	94.43	1.62	0.0
CB3002	STORAGE	94.35	1.70	0.0
CB3003	STORAGE	94.29	1.76	0.0
CB3004	STORAGE	94.22	1.83	0.0
CB3005	STORAGE	94.06	1.99	0.0
CBMH103	STORAGE	93.58	2.92	0.0
CBMH103A	STORAGE	93.69	2.91	0.0
CBMH104	STORAGE	93.64	2.96	0.0
CBMH105	STORAGE	93.77	2.73	0.0
CBMH106	STORAGE	93.88	2.72	0.0
CBMH107	STORAGE	93.97	2.63	0.0
CBMH108	STORAGE	93.76	2.74	0.0
CBMH109	STORAGE	94.13	2.37	0.0
CBMH110	STORAGE	94.24	2.26	0.0
CBMH113	STORAGE	93.78	2.72	0.0
CBMH114	STORAGE	93.84	2.68	0.0
CBMH115	STORAGE	93.93	2.62	0.0
CBMH116	STORAGE	94.03	2.47	0.0
CBMH119	STORAGE	93.93	2.50	0.0
CBMH120	STORAGE	94.01	2.49	0.0
CBMH121	STORAGE	94.07	2.43	0.0
CBMH122	STORAGE	94.14	2.41	0.0
CBMH2000	STORAGE	94.13	2.12	0.0
CBMH2001	STORAGE	94.04	2.21	0.0
CBMH2002	STORAGE	94.25	2.00	0.0
CBMH2003	STORAGE	93.91	2.34	0.0

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

CBMH2004	STORAGE	93.70	2.35	0.0
MH01	STORAGE	93.13	2.55	0.0
MH02	STORAGE	93.20	2.45	0.0
MH04	STORAGE	93.36	2.24	0.0
MH05	STORAGE	93.47	2.12	0.0
MH06	STORAGE	93.61	2.18	0.0
MH08	STORAGE	93.69	1.99	0.0
MH1000	STORAGE	94.08	1.34	0.0
MH1001	STORAGE	93.90	1.61	0.0
MH1002	STORAGE	93.95	1.41	0.0
ST-CBMH103A	STORAGE	93.87	2.73	0.0
ST-CBMH113	STORAGE	94.01	2.49	0.0
ST-CBMH119	STORAGE	94.11	2.45	0.0
ST-CBMH2003	STORAGE	94.05	2.45	0.0
ST-CBMH2004	STORAGE	93.93	2.12	0.0
Subaru	STORAGE	100.00	1.00	0.0
Volkswagen	STORAGE	100.00	1.00	0.0

Link Summary

Name		From Node	To Node	Type	Length	%
Slope Roughness						

C07		CBMH107	CB04	CONDUIT	2.0	
0.0152	0.0150					
C08		CB06	CBMH110	CONDUIT	2.0	
0.0152	0.0150					
C1		CBMH103	HP-CBMH103	CONDUIT	2.0	-
15.1717	0.0150					
C10		HP-CBMH2001	CB3003	CONDUIT	2.0	
23.0921	0.0150					
C11		CB3003	HP-CB3003	CONDUIT	2.0	-
15.1717	0.0150					
C12		HP-CBMH113	CBMH2003	CONDUIT	2.0	
29.7331	0.0150					
C13		CBMH2003	HP-CBMH2003	CONDUIT	2.0	-
17.7743	0.0150					
C14		HP-CBMH2003	CB3004	CONDUIT	2.0	
23.0921	0.0150					
C15		CB3004	HP-CB3004	CONDUIT	2.0	-
15.1717	0.0150					
C16		CBMH2002	HP-CBMH2002	CONDUIT	2.0	-
12.5988	0.0150					
C17		CBMH103	HP-CBMH103A	CONDUIT	2.0	-
10.0504	0.0150					
C18		HP-CBMH103A	CBMH108	CONDUIT	2.0	
15.1717	0.0150					
C19		HP-CBMH2002	CB3005	CONDUIT	2.0	
23.0921	0.0150					
C2		CB3000	HP-CB3000	CONDUIT	2.0	-
17.7743	0.0150					
C20		CB3005	HP-CB3005	CONDUIT	2.0	-
15.1717	0.0150					
C21		HP-CBMH108	CBMH2002	CONDUIT	2.0	
28.6028	0.0150					
C22		HP-CBMH103	CBMH2004	CONDUIT	2.0	40.45

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C23		CBMH2004	HP-CBMH2004	CONDUIT	2.0	-
15.1717	0.0150					
C24		ST-CBMH2004	CBMH2004	CONDUIT	3.0	
2.0004	0.0130					
C25		ST-CBMH2003	CBMH2003	CONDUIT	3.0	
2.0004	0.0130					
C26		CBMH107	CBMH106	CONDUIT	2.0	
0.0152	0.0150					
C27		CBMH106	CBMH105	CONDUIT	2.0	
0.0152	0.0150					
C28		CBMH105	CBMH104	CONDUIT	2.0	
0.0152	0.0150					
C29		CBMH108	HP-CBMH108	CONDUIT	2.0	-
15.1717	0.0150					
C3		HP-CB3000	CB3001	CONDUIT	2.0	
23.0921	0.0150					
C30		CBMH104	CBMH103	CONDUIT	2.0	
0.0152	0.0150					
C31		CBMH110	CBMH109	CONDUIT	2.0	
0.0152	0.0150					
C32		CBMH114	HP-CBMH114	CONDUIT	2.0	-
14.1393	0.0150					
C33		HP-CBMH114	CBMH113	CONDUIT	2.0	
15.1717	0.0150					
C34		CB12	HP-CB12	CONDUIT	2.0	-
12.5988	0.0150					
C35		HP-CB12	CBMH113	CONDUIT	2.0	
15.1717	0.0150					
C36		CBMH113	HP-CBMH113	CONDUIT	2.0	-
11.0672	0.0150					
C37		CBMH109	CBMH108	CONDUIT	2.0	
0.0152	0.0150					
C4		CB3001	HP-CB3001	CONDUIT	2.0	-
15.1717	0.0150					
C45		CBMH115	HP-CBMH115	CONDUIT	2.0	-
12.5988	0.0150					
C46		HP-CBMH115	CBMH114	CONDUIT	2.0	
14.1393	0.0150					
C47		CBMH116	HP-CBMH116	CONDUIT	2.0	-
14.6549	0.0150					
C48		HP-CBMH116	CB09	CONDUIT	2.0	
14.6549	0.0150					
C49		CB09	HP-CB09	CONDUIT	2.0	-
14.1393	0.0150					
C5		HP-CBMH119	CBMH2000	CONDUIT	2.0	
33.1896	0.0150					
C50		HP-CB09	CB10	CONDUIT	2.0	
14.1393	0.0150					
C51		CB10	HP-CB10	CONDUIT	2.0	-
10.0504	0.0150					
C52		HP-CB10	CBMH122	CONDUIT	2.0	
7.5212	0.0150					
C53		CBMH122	HP-CBMH122	CONDUIT	2.0	-
11.0672	0.0150					
C54		HP-CBMH122	CBMH121	CONDUIT	2.0	
13.6247	0.0150					
C55		CBMH121	HP-CBMH121	CONDUIT	2.0	-
13.1113	0.0150					
C56		HP-CBMH121	CBMH120	CONDUIT	2.0	
13.1113	0.0150					

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PCSWMM Model Output
Chicago 3-hr, 5-yr Storm

C57		CBMH120	HP-CBMH120	CONDUIT	2.0	-
12.5988	0.0150					
C58		HP-CBMH120	CBMH119	CONDUIT	2.0	
16.2088	0.0150					
C59		CB11	HP-CB11	CONDUIT	2.0	-
12.5988	0.0150					
C6		CBMH2000	HP-CBMH2000	CONDUIT	2.0	-
17.7743	0.0150					
C60		HP-CB11	CBMH119	CONDUIT	2.0	
18.8249	0.0150					
C61		CBMH119	HP-CBMH119	CONDUIT	2.0	-
17.7743	0.0150					
C7		HP-CBMH2000	CB3002	CONDUIT	2.0	
23.0921	0.0150					
C8		CB3002	HP-CB3002	CONDUIT	2.0	-
15.1717	0.0150					
C9		CBMH2001	HP-CBMH2001	CONDUIT	2.0	-
17.7743	0.0150					
CB04-CBMH107		CB04	CBMH107	CONDUIT	29.4	
1.0541	0.0130					
CB06-CBMH110		CB06	CBMH110	CONDUIT	23.3	
0.5150	0.0130					
CB09-CBMH116a		CB09	CBMH116a	CONDUIT	21.1	
0.5213	0.0130					
CB10-CBMH122		CB10	CBMH122	CONDUIT	19.3	
0.5181	0.0130					
CB11-CBMH119		CB11	CBMH119	CONDUIT	23.4	
0.4701	0.0130					
CB12-CBMH113		CB12	CBMH113	CONDUIT	27.0	
1.0001	0.0130					
CBMH103A-CBMH103		CBMH103A	CB03-Dummy	CONDUIT	26.7	
0.4869	0.0130					
CBMH104-CBMH103_1		CBMH104	CB03-Dummy	CONDUIT	16.2	
0.1417	0.0130					
CBMH104-CBMH103_2		CB03-Dummy	CBMH103	CONDUIT	11.8	
0.1445	0.0130					
CBMH105-CBMH104		CBMH105	CBMH104	CONDUIT	38.0	
0.1581	0.0130					
CBMH106-CBMH105		CBMH106	CBMH105	CONDUIT	34.4	
0.2326	0.0130					
CBMH107-CBMH106		CBMH107	CBMH106	CONDUIT	32.2	
0.1863	0.0130					
CBMH109-CBMH108		CBMH109	CBMH108	CONDUIT	26.9	
0.2602	0.0130					
CBMH110-CBMH109		CBMH110	CBMH109	CONDUIT	27.8	
0.3597	0.0130					
CBMH114-CBMH113		CBMH114	CBMH113	CONDUIT	26.5	
0.2264	0.0130					
CBMH115-CBMH114		CBMH115	CBMH114	CONDUIT	32.8	
0.2439	0.0130					
CBMH116a-CBMH115		CBMH116a	CBMH115	CONDUIT	30.4	
0.2632	0.0130					
CBMH116-CBMH116a		CBMH116	CBMH116a	CONDUIT	9.7	
0.2062	0.0130					
CBMH120-CBMH119		CBMH120	CBMH119	CONDUIT	37.4	
0.2139	0.0130					
CBMH121-CBMH120		CBMH121	CBMH120	CONDUIT	29.6	
0.2027	0.0130					
CBMH122-CBMH121		CBMH122	CBMH121	CONDUIT	20.9	
0.1914	0.0130					

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

MH01-STC4000	MH01	STC-4000	CONDUIT	3.3
0.3030 0.0130				
MH02-MH01	MH02	MH01	CONDUIT	35.6
0.1966 0.0130				
MH04a-MH02	MH04a	MH02	CONDUIT	32.8
0.1524 0.0130				
MH04-MH04a	MH04	MH04a	CONDUIT	22.2
0.1802 0.0130				
MH05-MH04	MH05	MH04	CONDUIT	22.6
0.1770 0.0130				
MH06-MH05	MH06	MH05	CONDUIT	35.3
0.1983 0.0130				
MH08-MH06	MH08	MH06	CONDUIT	38.5
0.2078 0.0130				
OVF-A	Volkswagen	CBMH120	CONDUIT	5.0
257.1330 0.0150				
OVF-C	Subaru	CBMH103	CONDUIT	5.0
222.3359 0.0150				
STCBMH103-CB MH103A ST-CB MH103A		CB MH103	CONDUIT	3.0
2.0004 0.0130				
STCBMH113-CB MH113 ST-CB MH113		CB MH113	CONDUIT	3.0
2.0004 0.0130				
STCBMH119-CB MH119 ST-CB MH119		CB MH119	CONDUIT	3.0
2.0004 0.0130				
STM_PHASE_3-10	CB MH2000	CB MH2001	CONDUIT	26.0
0.2311 0.0130				
STM_PHASE_3-14	CB MH2001	MH1002	CONDUIT	23.3
0.2573 0.0130				
STM_PHASE_3-14 (1)	MH1002	CB MH2003	CONDUIT	5.0
0.2020 0.0130				
STM_PHASE_3-15	CB MH2002	CB MH2003	CONDUIT	35.6
0.5061 0.0130				
STM_PHASE_3-18	CB3001	MH1000	CONDUIT	29.7
0.5056 0.0130				
STM_PHASE_3-19	CB3003	MH1000	CONDUIT	18.9
0.4754 0.0130				
STM_PHASE_3-20	CB3002	MH1000	CONDUIT	18.9
0.4749 0.0130				
STM_PHASE_3-21	CB3004	MH1001	CONDUIT	17.4
0.5158 0.0130				
STM_PHASE_3-22	CB3005	MH1001	CONDUIT	7.7
0.5229 0.0130				
STM_PHASE_3-3	MH1000	MH1001	CONDUIT	59.5
0.2521 0.0130				
STM_PHASE_3-4	CB3000	CB MH2000	CONDUIT	29.3
0.2392 0.0130				
STM_PHASE_3-9	MH1001	CB MH2004	CONDUIT	66.4
0.2559 0.0130				
CB MH103-ICD	CB MH103	MH02	ORIFICE	
CB MH108-ICD	CB MH108	MH04	ORIFICE	
CB MH113-ICD	CB MH113	MH05	ORIFICE	
CB MH119-ICD	CB MH119	MH08	ORIFICE	
CB MH2003-ICD	CB MH2003	MH05	ORIFICE	
CB MH2004-ICD	CB MH2004	MH01	ORIFICE	
Subaru-OUT	Subaru	MH04a	OUTLET	
Volkswagen-OUT	Volkswagen	MH06	OUTLET	

Cross Section Summary

Full Conduit Flow	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels

C07 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C08 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C1 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C10 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C11 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C12 77584.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C13 59986.43	RECT_OPEN	1.00	3.00	0.60	3.00	1
C14 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C15 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C16 50503.54	RECT_OPEN	1.00	3.00	0.60	3.00	1
C17 45107.44	RECT_OPEN	1.00	3.00	0.60	3.00	1
C18 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C19 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C2 59986.43	RECT_OPEN	1.00	3.00	0.60	3.00	1
C20 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C21 76095.90	RECT_OPEN	1.00	3.00	0.60	3.00	1
C22 90495.49	RECT_OPEN	1.00	3.00	0.60	3.00	1
C23 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C24 84.11	CIRCULAR	0.25	0.05	0.06	0.25	1
C25 84.11	CIRCULAR	0.25	0.05	0.06	0.25	1
C26 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C27 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C28 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C29 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C3 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C30 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

C31	RECT_OPEN	1.00	3.00	0.60	3.00	1
1756.51						
C32	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C33	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C34	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C35	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C36	RECT_OPEN	1.00	3.00	0.60	3.00	1
47334.20						
C37	RECT_OPEN	1.00	3.00	0.60	3.00	1
1756.51						
C4	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C45	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C46	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C47	RECT_OPEN	1.00	3.00	0.60	3.00	1
54468.83						
C48	RECT_OPEN	1.00	3.00	0.60	3.00	1
54468.83						
C49	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C5	RECT_OPEN	1.00	3.00	0.60	3.00	1
81970.61						
C50	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C51	RECT_OPEN	1.00	3.00	0.60	3.00	1
45107.44						
C52	RECT_OPEN	1.00	3.00	0.60	3.00	1
39021.15						
C53	RECT_OPEN	1.00	3.00	0.60	3.00	1
47334.20						
C54	RECT_OPEN	1.00	3.00	0.60	3.00	1
52519.53						
C55	RECT_OPEN	1.00	3.00	0.60	3.00	1
51520.40						
C56	RECT_OPEN	1.00	3.00	0.60	3.00	1
51520.40						
C57	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C58	RECT_OPEN	1.00	3.00	0.60	3.00	1
57283.91						
C59	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C6	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						
C60	RECT_OPEN	1.00	3.00	0.60	3.00	1
61733.92						
C61	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						
C7	RECT_OPEN	1.00	3.00	0.60	3.00	1
68373.65						
C8	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C9	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						

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PCSWMM Model Output
Chicago 3-hr, 5-yr Storm

CB04-CBMH107	CIRCULAR	0.25	0.05	0.06	0.25	1
61.06						
CB06-CBMH110	CIRCULAR	0.25	0.05	0.06	0.25	1
42.68						
CB09-CBMH116a	CIRCULAR	0.25	0.05	0.06	0.25	1
42.94						
CB10-CBMH122	CIRCULAR	0.25	0.05	0.06	0.25	1
42.81						
CB11-CBMH119	CIRCULAR	0.25	0.05	0.06	0.25	1
40.78						
CB12-CBMH113	CIRCULAR	0.25	0.05	0.06	0.25	1
59.47						
CBMH103A-CBMH103	CIRCULAR	0.25	0.05	0.06	0.25	1
41.50						
CBMH104-CBMH103_1	CIRCULAR	0.45	0.16	0.11	0.45	1
107.32						
CBMH104-CBMH103_2	CIRCULAR	0.45	0.16	0.11	0.45	1
108.38						
CBMH105-CBMH104	CIRCULAR	0.45	0.16	0.11	0.45	1
113.36						
CBMH106-CBMH105	CIRCULAR	0.38	0.11	0.09	0.38	1
84.57						
CBMH107-CBMH106	CIRCULAR	0.38	0.11	0.09	0.38	1
75.68						
CBMH109-CBMH108	CIRCULAR	0.38	0.11	0.09	0.38	1
89.45						
CBMH110-CBMH109	CIRCULAR	0.30	0.07	0.07	0.30	1
58.00						
CBMH114-CBMH113	CIRCULAR	0.45	0.16	0.11	0.45	1
135.67						
CBMH115-CBMH114	CIRCULAR	0.45	0.16	0.11	0.45	1
140.81						
CBMH116a-CBMH115	CIRCULAR	0.45	0.16	0.11	0.45	1
146.27						
CBMH116-CBMH116a	CIRCULAR	0.45	0.16	0.11	0.45	1
129.47						
CBMH120-CBMH119	CIRCULAR	0.45	0.16	0.11	0.45	1
131.87						
CBMH121-CBMH120	CIRCULAR	0.45	0.16	0.11	0.45	1
128.37						
CBMH122-CBMH121	CIRCULAR	0.45	0.16	0.11	0.45	1
124.74						
MH01-STC4000	CIRCULAR	0.90	0.64	0.23	0.90	1
996.61						
MH02-MH01	CIRCULAR	0.90	0.64	0.23	0.90	1
802.79						
MH04a-MH02	CIRCULAR	0.82	0.53	0.21	0.82	1
560.48						
MH04-MH04a	CIRCULAR	0.82	0.53	0.21	0.82	1
609.35						
MH05-MH04	CIRCULAR	0.75	0.44	0.19	0.75	1
468.39						
MH06-MH05	CIRCULAR	0.68	0.36	0.17	0.68	1
374.34						
MH08-MH06	CIRCULAR	0.68	0.36	0.17	0.68	1
383.20						
OVF-A	RECT_OPEN	1.00	3.00	0.60	3.00	1
228158.12						
OVF-C	RECT_OPEN	1.00	3.00	0.60	3.00	1
212159.15						

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

STCBMH103-CBMH103A CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STCBMH113-CBMH113 CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STCBMH119-CBMH119 CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STM_PHASE_3-10 CIRCULAR	0.38	0.11	0.09	0.38	1
84.30					
STM_PHASE_3-14 CIRCULAR	0.38	0.11	0.09	0.38	1
88.94					
STM_PHASE_3-14(1) CIRCULAR	0.38	0.11	0.09	0.38	1
78.81					
STM_PHASE_3-15 CIRCULAR	0.25	0.05	0.06	0.25	1
42.31					
STM_PHASE_3-18 CIRCULAR	0.25	0.05	0.06	0.25	1
42.29					
STM_PHASE_3-19 CIRCULAR	0.25	0.05	0.06	0.25	1
41.01					
STM_PHASE_3-20 CIRCULAR	0.25	0.05	0.06	0.25	1
40.99					
STM_PHASE_3-21 CIRCULAR	0.25	0.05	0.06	0.25	1
42.71					
STM_PHASE_3-22 CIRCULAR	0.25	0.05	0.06	0.25	1
43.00					
STM_PHASE_3-3 CIRCULAR	0.45	0.16	0.11	0.45	1
143.15					
STM_PHASE_3-4 CIRCULAR	0.38	0.11	0.09	0.38	1
85.76					
STM_PHASE_3-9 CIRCULAR	0.45	0.16	0.11	0.45	1
144.25					

Analysis Options

Flow Units LPS

Process Models:

Rainfall/Runoff YES

RDII NO

Snowmelt NO

Groundwater NO

Flow Routing YES

Ponding Allowed YES

Water Quality NO

Infiltration Method HORTON

Flow Routing Method DYNWAVE

Surcharge Method EXTRAN

Starting Date 10/16/2019 00:00:00

Ending Date 10/24/2019 00:00:00

Antecedent Dry Days 0.0

Report Time Step 00:01:00

Wet Time Step 00:05:00

Dry Time Step 00:05:00

Routing Time Step 2.00 sec

Variable Time Step YES

Maximum Trials 8

Number of Threads 4

Head Tolerance 0.001500 m

	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
	-----	-----
Initial LID Storage	0.004	1.207
Total Precipitation	0.141	42.512
Evaporation Loss	0.000	0.000
Infiltration Loss	0.008	2.557
Surface Runoff	0.133	40.144
Final Storage	0.004	1.207
Continuity Error (%)	-0.434	

	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
	-----	-----
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.133	1.329
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.133	1.329
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.001	0.010
Final Stored Volume	0.001	0.010
Continuity Error (%)	-0.016	

 Time-Step Critical Elements

 Link MH01-STC4000 (3.97%)
 Link STCBMH103-CBMH103A (1.23%)

 Highest Flow Instability Indexes

 All links are stable.

 Most Frequent Nonconverging Nodes

 Convergence obtained at all time steps.

 Routing Time Step Summary

 Minimum Time Step : 0.34 sec
 Average Time Step : 1.94 sec
 Maximum Time Step : 2.00 sec
 % of Time in Steady State : 0.00

Average Iterations per Step : 2.00
 % of Steps Not Converging : 0.00
 Time Step Frequencies :
 2.000 - 1.516 sec : 93.92 %
 1.516 - 1.149 sec : 3.78 %
 1.149 - 0.871 sec : 1.08 %
 0.871 - 0.660 sec : 0.87 %
 0.660 - 0.500 sec : 0.35 %

 Subcatchment Runoff Summary

Perv	Total	Total	Total	Total	Total	Total	Imperv
Runoff	Runoff	Precip	Peak	Runoff	Evap	Infil	Runoff
Subcatchment	Runoff	Runoff	Runoff	Runoff	mm	mm	mm
mm	mm	10^6 ltr	mm	Coeff	mm	mm	mm

A01			42.51	0.00	0.00	2.51	39.65
0.51	40.15	0.02	16.94	0.945			
A02			42.51	0.00	0.00	3.95	37.94
0.79	38.73	0.03	19.41	0.911			
A03			42.51	0.00	0.00	6.16	35.40
1.17	36.57	0.03	18.59	0.860			
A04			42.51	0.00	0.00	1.43	40.93
0.30	41.22	0.04	28.55	0.970			
A05			42.51	0.00	0.00	0.36	42.26
0.08	42.34	0.04	28.84	0.996			
A06			42.51	0.00	0.00	4.66	37.05
0.94	37.99	0.02	11.03	0.894			
A07			42.51	0.00	0.00	0.00	42.64
0.00	42.64	0.02	14.47	1.003			
A08			42.51	0.00	0.00	5.04	36.65
1.00	37.65	0.03	19.11	0.886			
A09			42.51	0.00	0.00	2.50	39.61
0.51	40.12	0.05	33.91	0.944			
A10			42.51	0.00	0.00	2.14	40.03
0.44	40.48	0.02	14.18	0.952			
A11			42.51	0.00	0.00	2.15	40.07
0.44	40.51	0.02	17.01	0.953			
A12			42.51	0.00	0.00	6.11	35.34
1.22	36.56	0.02	13.53	0.860			
A13			42.51	0.00	0.00	0.00	42.76
0.00	42.76	0.03	23.15	1.006			
A14			42.51	0.00	0.00	0.00	42.76
0.00	42.76	0.02	11.57	1.006			
A15			42.51	0.00	0.00	0.00	42.81
0.00	42.81	0.06	37.58	1.007			
B2-MP			42.51	0.00	0.00	0.00	42.79
0.00	42.79	0.12	80.99	1.007			
B5-MP			42.51	0.00	0.00	3.95	37.94
0.79	38.73	0.24	169.18	0.911			
B6-MP			42.51	0.00	0.00	1.07	41.36
0.22	41.58	0.11	77.36	0.978			

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

POST-A1	42.51	0.00	0.00	0.00	42.65
0.00 42.65	0.03 23.15	1.003			
POST-A2	42.51	0.00	0.00	0.00	42.66
0.00 42.66	0.03 23.15	1.003			
POST-A3	42.51	0.00	0.00	0.00	42.70
0.00 42.70	0.04 26.05	1.004			
POST-A4	42.51	0.00	0.00	0.00	42.69
0.00 42.69	0.04 28.94	1.004			
POST-A5	42.51	0.00	0.00	0.00	42.64
0.00 42.64	0.04 26.05	1.003			
POST-B1	42.51	0.00	0.00	0.00	42.71
0.00 42.71	0.05 31.83	1.005			
POST-B2	42.51	0.00	0.00	0.00	42.71
0.00 42.71	0.04 26.05	1.005			
POST-B3	42.51	0.00	0.00	0.00	42.67
0.00 42.67	0.04 26.05	1.004			
POST-B4	42.51	0.00	0.00	0.00	42.60
0.00 42.60	0.03 17.36	1.002			
POST-B5	42.51	0.00	0.00	0.00	42.61
0.00 42.61	0.03 20.26	1.002			
POST-B6	42.51	0.00	0.00	0.00	42.70
0.00 42.70	0.04 28.94	1.004			
POST-DR	42.51	0.00	0.00	33.45	2.98
6.66 9.64	0.01 18.56	0.227			

 Node Depth Summary

Node	Type	Average	Maximum	Maximum	Time of Max		Reported
		Depth	Depth	HGL	Occurrence		Max Depth
		Meters	Meters	Meters	days	hr:min	Meters
CB03-Dummy	JUNCTION	0.03	0.93	94.59	0	01:48	0.93
CBMH116a	JUNCTION	0.04	1.55	95.56	0	01:50	1.55
HP-CB09	JUNCTION	0.00	0.00	95.78	0	00:00	0.00
HP-CB10	JUNCTION	0.00	0.00	95.70	0	00:00	0.00
HP-CB11	JUNCTION	0.00	0.00	95.80	0	00:00	0.00
HP-CB12	JUNCTION	0.00	0.00	95.80	0	00:00	0.00
HP-CB3000	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
HP-CBMH103	JUNCTION	0.00	0.00	95.80	0	00:00	0.00
HP-CBMH103A	JUNCTION	0.00	0.00	95.80	0	00:00	0.00
HP-CBMH108	JUNCTION	0.00	0.00	95.80	0	00:00	0.00
HP-CBMH113	JUNCTION	0.00	0.00	95.72	0	00:00	0.00
HP-CBMH114	JUNCTION	0.00	0.00	95.80	0	00:00	0.00
HP-CBMH115	JUNCTION	0.00	0.00	95.80	0	00:00	0.00
HP-CBMH116	JUNCTION	0.00	0.00	95.79	0	00:00	0.00
HP-CBMH119	JUNCTION	0.00	0.00	95.78	0	00:00	0.00
HP-CBMH120	JUNCTION	0.00	0.00	95.75	0	00:00	0.00
HP-CBMH121	JUNCTION	0.00	0.00	95.76	0	00:00	0.00
HP-CBMH122	JUNCTION	0.00	0.00	95.77	0	00:00	0.00
HP-CBMH2000	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
HP-CBMH2001	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
HP-CBMH2002	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
HP-CBMH2003	JUNCTION	0.00	0.00	95.50	0	00:00	0.00
MH04a	JUNCTION	0.10	0.19	93.51	0	01:35	0.19

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

HP-CB3001	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3002	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3003	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3004	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3005	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CBMH2004	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
STC-4000	OUTFALL	0.30	0.30	93.42	0	00:00	0.30
Uncontrolled	OUTFALL	0.00	0.00	94.00	0	00:00	0.00
CB04	STORAGE	0.00	0.28	94.59	0	01:44	0.28
CB06	STORAGE	0.04	1.29	95.66	0	01:33	1.29
CB09	STORAGE	0.03	1.24	95.56	0	01:50	1.24
CB10	STORAGE	0.03	1.11	95.55	0	01:51	1.11
CB11	STORAGE	0.04	1.44	95.55	0	01:52	1.44
CB12	STORAGE	0.04	1.45	95.56	0	01:51	1.45
CB3000	STORAGE	0.04	1.09	95.32	0	01:53	1.09
CB3001	STORAGE	0.02	0.72	95.15	0	02:03	0.72
CB3002	STORAGE	0.03	0.80	95.15	0	02:03	0.80
CB3003	STORAGE	0.03	0.86	95.15	0	02:02	0.86
CB3004	STORAGE	0.03	0.93	95.15	0	02:01	0.93
CB3005	STORAGE	0.04	1.09	95.15	0	02:01	1.09
CBMH103	STORAGE	0.04	1.01	94.59	0	01:45	1.01
CBMH103A	STORAGE	0.13	0.90	94.59	0	01:48	0.90
CBMH104	STORAGE	0.07	0.95	94.59	0	01:43	0.95
CBMH105	STORAGE	0.03	0.82	94.59	0	01:47	0.82
CBMH106	STORAGE	0.02	0.71	94.59	0	01:44	0.71
CBMH107	STORAGE	0.02	0.62	94.59	0	01:44	0.62
CBMH108	STORAGE	0.06	1.90	95.66	0	01:42	1.90
CBMH109	STORAGE	0.04	1.53	95.66	0	01:35	1.53
CBMH110	STORAGE	0.04	1.42	95.66	0	01:33	1.42
CBMH113	STORAGE	0.06	1.78	95.56	0	01:50	1.78
CBMH114	STORAGE	0.05	1.72	95.56	0	01:51	1.72
CBMH115	STORAGE	0.05	1.63	95.56	0	01:49	1.63
CBMH116	STORAGE	0.04	1.53	95.56	0	01:51	1.53
CBMH119	STORAGE	0.06	1.62	95.55	0	01:51	1.62
CBMH120	STORAGE	0.05	1.54	95.55	0	01:52	1.54
CBMH121	STORAGE	0.05	1.48	95.55	0	01:51	1.48
CBMH122	STORAGE	0.04	1.41	95.55	0	01:51	1.41
CBMH2000	STORAGE	0.05	1.19	95.32	0	01:51	1.19
CBMH2001	STORAGE	0.05	1.28	95.32	0	01:52	1.28
CBMH2002	STORAGE	0.04	1.07	95.32	0	01:53	1.07
CBMH2003	STORAGE	0.06	1.41	95.32	0	01:53	1.41
CBMH2004	STORAGE	0.07	1.45	95.15	0	02:00	1.45
MH01	STORAGE	0.29	0.30	93.43	0	01:37	0.30
MH02	STORAGE	0.22	0.23	93.43	0	01:35	0.23
MH04	STORAGE	0.06	0.16	93.52	0	01:34	0.16
MH05	STORAGE	0.01	0.14	93.61	0	01:29	0.14
MH06	STORAGE	0.01	0.10	93.71	0	01:26	0.10
MH08	STORAGE	0.00	0.07	93.76	0	01:52	0.07
MH1000	STORAGE	0.04	1.07	95.15	0	02:02	1.07
MH1001	STORAGE	0.05	1.25	95.15	0	02:01	1.25
MH1002	STORAGE	0.06	1.37	95.32	0	01:52	1.37
ST-CBMH103A	STORAGE	0.02	0.72	94.59	0	01:46	0.72
ST-CBMH113	STORAGE	0.04	1.55	95.56	0	01:50	1.55
ST-CBMH119	STORAGE	0.04	1.44	95.55	0	01:51	1.44
ST-CBMH2003	STORAGE	0.05	1.27	95.32	0	01:54	1.27
ST-CBMH2004	STORAGE	0.05	1.22	95.15	0	02:00	1.22
Subaru	STORAGE	0.00	0.04	100.04	0	01:44	0.04

Volkswagen	STORAGE	0.00	0.11	100.11	0	01:24	0.11
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 Node Inflow Summary

Total Flow		Type	Maximum	Maximum	Time of Max		Lateral	Volume	
Inflow	Balance		Lateral	Total	days	hr:min	Inflow		
Volume	Error		Inflow	Inflow	Occurrence		Volume		
Node	Percent		LPS	LPS	days	hr:min	10^6 ltr	10^6	
ltr									

CB03-Dummy		JUNCTION	0.00	37.85	0	01:03	0		
0.0626	-0.013								
CBMH116a		JUNCTION	0.00	45.41	0	01:10	0		
0.0673	-0.503								
HP-CB09		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CB10		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CB11		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CB12		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CB3000		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH103		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH103A		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH108		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH113		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH114		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH115		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH116		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH119		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH120		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH121		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH122		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH2000		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								
HP-CBMH2001		JUNCTION	0.00	0.00	0	00:00	0		
0	0.000 ltr								

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PCSWMM Model Output
Chicago 3-hr, 5-yr Storm

HP-CBMH2002	JUNCTION	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CBMH2003	JUNCTION	0.00	0.00	0	00:00	0
0 0.000 ltr						
MH04a	JUNCTION	0.00	50.43	0	01:34	0
0.877 -0.000						
HP-CB3001	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3002	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3003	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3004	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3005	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CBMH2004	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
STC-4000	OUTFALL	0.00	72.22	0	01:37	0
1.32 0.000						
Uncontrolled	OUTFALL	18.56	18.56	0	01:10	0.00965
0.00965 0.000						
CB04	STORAGE	0.00	3.59	0	01:09	0
0.000941 0.056						
CB06	STORAGE	0.00	7.67	0	01:05	0
0.00356 0.100						
CB09	STORAGE	28.55	28.55	0	01:10	0.0412
0.0414 0.403						
CB10	STORAGE	28.84	28.84	0	01:10	0.0424
0.0425 0.325						
CB11	STORAGE	25.75	25.75	0	01:10	0.0374
0.0395 0.038						
CB12	STORAGE	40.15	40.15	0	01:10	0.0585
0.0604 0.001						
CB3000	STORAGE	26.05	26.05	0	01:10	0.0384
0.0384 0.150						
CB3001	STORAGE	28.94	28.94	0	01:10	0.0427
0.0429 0.893						
CB3002	STORAGE	20.26	20.26	0	01:10	0.0298
0.0307 0.641						
CB3003	STORAGE	17.36	17.36	0	01:10	0.0256
0.0262 0.493						
CB3004	STORAGE	26.05	26.05	0	01:10	0.0384
0.039 0.303						
CB3005	STORAGE	26.05	26.05	0	01:10	0.0385
0.0387 0.054						
CBMH103	STORAGE	169.18	169.18	0	01:10	0.236
0.383 0.001						
CBMH103A	STORAGE	0.00	2.37	0	01:04	0
0.00246 -0.702						
CBMH104	STORAGE	0.00	35.73	0	01:03	0
0.0472 -0.011						
CBMH105	STORAGE	0.00	30.45	0	01:03	0
0.0315 0.027						
CBMH106	STORAGE	0.00	22.07	0	01:03	0
0.0172 -0.029						
CBMH107	STORAGE	0.00	11.01	0	01:04	0
0.00649 0.222						
CBMH108	STORAGE	77.36	95.74	0	01:06	0.112
0.135 -0.012						

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

CBMH109		STORAGE	0.00	50.81	0	01:04	0
0.0348	0.001						
CBMH110		STORAGE	0.00	27.23	0	01:04	0
0.0161	0.039						
CBMH113		STORAGE	13.53	126.25	0	01:10	0.0183
0.272	-0.006						
CBMH114		STORAGE	16.94	77.41	0	01:10	0.0241
0.122	-0.030						
CBMH115		STORAGE	19.41	64.58	0	01:10	0.0271
0.0959	0.041						
CBMH116		STORAGE	18.59	18.59	0	01:10	0.0256
0.0258	0.066						
CBMH119		STORAGE	33.91	121.97	0	01:10	0.0482
0.265	0.007						
CBMH120		STORAGE	19.11	67.39	0	01:10	0.0264
0.11	0.014						
CBMH121		STORAGE	14.47	51.49	0	01:10	0.0213
0.0818	-0.079						
CBMH122		STORAGE	11.03	39.03	0	01:10	0.0152
0.0584	-0.188						
CBMH2000		STORAGE	28.94	73.65	0	01:10	0.0427
0.0866	0.020						
CBMH2001		STORAGE	26.05	62.00	0	01:06	0.0384
0.133	-0.011						
CBMH2002		STORAGE	23.15	23.15	0	01:10	0.0341
0.0341	0.029						
CBMH2003		STORAGE	23.15	82.01	0	01:06	0.0341
0.228	-0.007						
CBMH2004		STORAGE	31.83	105.24	0	01:10	0.047
0.287	-0.007						
MH01		STORAGE	0.00	72.22	0	01:37	0
1.33	0.000						
MH02		STORAGE	0.00	63.13	0	01:36	0
1.11	0.000						
MH04		STORAGE	0.00	43.52	0	01:30	0
0.747	-0.000						
MH05		STORAGE	0.00	36.27	0	01:29	0
0.629	-0.000						
MH06		STORAGE	0.00	17.28	0	01:24	0
0.246	0.006						
MH08		STORAGE	0.00	9.64	0	01:51	0
0.191	-0.008						
MH1000		STORAGE	0.00	59.90	0	01:09	0
0.101	-0.545						
MH1001		STORAGE	0.00	93.78	0	01:10	0
0.178	-0.171						
MH1002		STORAGE	0.00	50.52	0	01:06	0
0.136	-0.031						
ST-CBMH103A		STORAGE	0.00	135.43	0	01:07	0
0.113	0.013						
ST-CBMH113		STORAGE	0.00	116.25	0	01:10	0
0.0735	0.012						
ST-CBMH119		STORAGE	0.00	111.56	0	01:10	0
0.0691	0.022						
ST-CBMH2003		STORAGE	0.00	65.81	0	01:06	0
0.0319	0.014						
ST-CBMH2004		STORAGE	0.00	86.16	0	01:10	0
0.064	-0.022						
Subaru		STORAGE	80.99	80.99	0	01:10	0.12
0.12	-0.000						

Volkswagen STORAGE 37.58 37.58 0 01:10 0.0557
 0.0557 -0.003

 Node Surcharge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
CB03-Dummy	JUNCTION	4.53	0.483	2.010
CBMH116a	JUNCTION	4.61	1.102	0.948
MH1002	STORAGE	5.61	0.967	0.038

 Node Flooding Summary

No nodes were flooded.

 Storage Volume Summary

Max	Maximum	Average	Avg	Evap	Exfil	Maximum	Max	Time of
Occurrence	Outflow	Volume	Pcnt	Pcnt	Pcnt	Volume	Pcnt	
Storage Unit		1000 m ³	Full	Loss	Loss	1000 m ³	Full	days
hr:min	LPS							
CB04		0.000	0.2	0.0	0.0	0.000	12.3	0
01:44	0.42							
CB06		0.000	1.6	0.0	0.0	0.000	60.8	0
01:33	5.64							
CB09		0.000	0.0	0.0	0.0	0.002	4.7	0
01:50	27.67							
CB10		0.000	0.0	0.0	0.0	0.002	6.1	0
01:51	28.00							
CB11		0.000	0.4	0.0	0.0	0.008	34.9	0
01:52	24.92							
CB12		0.000	0.2	0.0	0.0	0.008	27.0	0
01:51	39.16							
CB3000		0.000	0.1	0.0	0.0	0.003	9.5	0
01:53	26.67							
CB3001		0.000	0.2	0.0	0.0	0.006	11.8	0
02:03	28.62							
CB3002		0.000	0.2	0.0	0.0	0.007	14.2	0
02:03	19.82							

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

CB3003		0.000	0.2	0.0	0.0	0.006	11.9	0
02:02	15.50							
CB3004		0.000	0.2	0.0	0.0	0.006	12.0	0
02:01	24.20							
CB3005		0.000	0.2	0.0	0.0	0.005	12.1	0
02:01	24.28							
CBMH103		0.000	0.0	0.0	0.0	0.002	1.3	0
01:45	167.25							
CBMH103A		0.000	4.3	0.0	0.0	0.001	30.9	0
01:48	0.74							
CBMH104		0.000	2.4	0.0	0.0	0.001	32.1	0
01:43	30.45							
CBMH105		0.000	1.0	0.0	0.0	0.001	30.1	0
01:47	22.07							
CBMH106		0.000	0.8	0.0	0.0	0.001	26.1	0
01:44	11.01							
CBMH107		0.000	0.7	0.0	0.0	0.001	23.6	0
01:44	3.59							
CBMH108		0.001	0.4	0.0	0.0	0.044	27.6	0
01:42	57.76							
CBMH109		0.000	1.9	0.0	0.0	0.002	64.6	0
01:35	27.23							
CBMH110		0.000	1.8	0.0	0.0	0.002	63.0	0
01:33	13.42							
CBMH113		0.000	0.0	0.0	0.0	0.001	4.7	0
01:50	123.53							
CBMH114		0.000	0.0	0.0	0.0	0.001	2.1	0
01:51	73.89							
CBMH115		0.000	0.0	0.0	0.0	0.000	0.2	0
01:49	60.67							
CBMH116		0.000	0.0	0.0	0.0	0.002	4.4	0
01:51	17.74							
CBMH119		0.000	0.1	0.0	0.0	0.006	14.6	0
01:51	118.72							
CBMH120		0.000	0.0	0.0	0.0	0.001	3.9	0
01:52	63.56							
CBMH121		0.000	0.0	0.0	0.0	0.001	3.6	0
01:51	48.46							
CBMH122		0.000	0.0	0.0	0.0	0.000	0.0	0
01:51	37.05							
CBMH2000		0.001	2.1	0.0	0.0	0.034	100.0	0
01:31	36.09							
CBMH2001		0.000	1.1	0.0	0.0	0.019	60.5	0
01:52	50.52							
CBMH2002		0.000	0.3	0.0	0.0	0.003	13.6	0
01:53	21.68							
CBMH2003		0.000	0.3	0.0	0.0	0.004	13.1	0
01:53	73.82							
CBMH2004		0.000	0.3	0.0	0.0	0.006	15.0	0
02:00	94.59							
MH01		0.001	11.4	0.0	0.0	0.001	11.7	0
01:37	72.22							
MH02		0.001	9.0	0.0	0.0	0.001	9.6	0
01:35	63.13							
MH04		0.000	2.9	0.0	0.0	0.000	7.3	0
01:34	43.52							
MH05		0.000	0.4	0.0	0.0	0.000	6.4	0
01:29	36.27							
MH06		0.000	0.2	0.0	0.0	0.000	4.6	0
01:26	17.27							

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

MH08		0.000	0.2	0.0	0.0	0.000	3.7	0
01:52	9.64							
MH1000		0.000	3.0	0.0	0.0	0.001	79.9	0
02:02	45.30							
MH1001		0.000	3.2	0.0	0.0	0.001	77.7	0
02:01	73.79							
MH1002		0.000	4.0	0.0	0.0	0.002	97.3	0
01:52	42.76							
ST-CBMH103A		0.003	2.1	0.0	0.0	0.113	89.6	0
01:46	10.42							
ST-CBMH113		0.002	3.4	0.0	0.0	0.072	100.0	0
01:13	12.07							
ST-CBMH119		0.002	3.5	0.0	0.0	0.068	100.0	0
01:12	16.56							
ST-CBMH2003		0.001	4.2	0.0	0.0	0.031	100.0	0
01:09	6.36							
ST-CBMH2004		0.003	4.3	0.0	0.0	0.063	100.0	0
01:15	12.63							
Subaru		0.003	1.9	0.0	0.0	0.083	49.2	0
01:44	7.02							
Volkswagen		0.000	0.6	0.0	0.0	0.027	51.6	0
01:24	7.72							

 Outfall Loading Summary

Outfall Node	Flow Freq Pcnt	Avg Flow LPS	Max Flow LPS	Total Volume 10^6 ltr
HP-CB3001	0.00	0.00	0.00	0.000
HP-CB3002	0.00	0.00	0.00	0.000
HP-CB3003	0.00	0.00	0.00	0.000
HP-CB3004	0.00	0.00	0.00	0.000
HP-CB3005	0.00	0.00	0.00	0.000
HP-CBMH2004	0.00	0.00	0.00	0.000
STC-4000	12.97	23.30	72.22	1.320
Uncontrolled	2.32	1.04	18.56	0.010
System	1.91	24.34	77.02	1.329

 Link Flow Summary

Link	Type	Maximum Flow LPS	Time of Max Occurrence days hr:min	Maximum Veloc m/sec	Max/ Full Flow	Max/ Full Depth
C07	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C08	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C1	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C10	CONDUIT	0.00	0 00:00	0.00	0.00	0.05

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

C11	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C12	CONDUIT	0.00	0	00:00	0.00	0.00	0.09
C13	CONDUIT	0.00	0	00:00	0.00	0.00	0.09
C14	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C15	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C16	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
C17	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C18	CONDUIT	0.00	0	00:00	0.00	0.00	0.08
C19	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C2	CONDUIT	0.00	0	00:00	0.00	0.00	0.09
C20	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C21	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
C22	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C23	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C24	CONDUIT	86.16	0	01:10	1.76	1.02	1.00
C25	CONDUIT	65.81	0	01:06	1.34	0.78	1.00
C26	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C27	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C28	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C29	CONDUIT	0.00	0	00:00	0.00	0.00	0.08
C3	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C30	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C31	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C32	CONDUIT	0.00	0	00:00	0.00	0.00	0.02
C33	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C34	CONDUIT	0.00	0	00:00	0.00	0.00	0.01
C35	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C36	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C37	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C4	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C45	CONDUIT	0.00	0	00:00	0.00	0.00	0.01
C46	CONDUIT	0.00	0	00:00	0.00	0.00	0.02
C47	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C48	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C49	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C5	CONDUIT	0.00	0	00:00	0.00	0.00	0.09
C50	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C51	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C52	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C53	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C54	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C55	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C56	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C57	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
C58	CONDUIT	0.00	0	00:00	0.00	0.00	0.06
C59	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C6	CONDUIT	0.00	0	00:00	0.00	0.00	0.09
C60	CONDUIT	0.00	0	00:00	0.00	0.00	0.06
C61	CONDUIT	0.00	0	00:00	0.00	0.00	0.06
C7	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C8	CONDUIT	0.00	0	00:00	0.00	0.00	0.05
C9	CONDUIT	0.00	0	00:00	0.00	0.00	0.09
CB04-CBMH107	CONDUIT	3.59	0	01:09	0.10	0.06	1.00
CB06-CBMH110	CONDUIT	7.67	0	01:05	0.16	0.18	1.00
CB09-CBMH116a	CONDUIT	27.67	0	01:10	0.71	0.64	1.00
CB10-CBMH122	CONDUIT	28.00	0	01:10	0.76	0.65	1.00
CB11-CBMH119	CONDUIT	24.92	0	01:10	0.51	0.61	1.00

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

CB12-CBMH113	CONDUIT	39.16	0	01:10	0.80	0.66	1.00
CBMH103A-CBMH103	CONDUIT	2.37	0	01:04	0.05	0.06	1.00
CBMH104-CBMH103_1	CONDUIT	35.73	0	01:03	0.22	0.33	1.00
CBMH104-CBMH103_2	CONDUIT	37.85	0	01:03	0.27	0.35	1.00
CBMH105-CBMH104	CONDUIT	30.45	0	01:03	0.20	0.27	1.00
CBMH106-CBMH105	CONDUIT	22.07	0	01:03	0.22	0.26	1.00
CBMH107-CBMH106	CONDUIT	11.01	0	01:04	0.19	0.15	1.00
CBMH109-CBMH108	CONDUIT	50.81	0	01:04	0.46	0.57	1.00
CBMH110-CBMH109	CONDUIT	27.23	0	01:04	0.39	0.47	1.00
CBMH114-CBMH113	CONDUIT	73.89	0	01:10	0.46	0.54	1.00
CBMH115-CBMH114	CONDUIT	60.67	0	01:10	0.38	0.43	1.00
CBMH116a-CBMH115	CONDUIT	45.22	0	01:10	0.28	0.31	1.00
CBMH116-CBMH116a	CONDUIT	17.74	0	01:10	0.19	0.14	1.00
CBMH120-CBMH119	CONDUIT	63.56	0	01:10	0.40	0.48	1.00
CBMH121-CBMH120	CONDUIT	48.46	0	01:10	0.30	0.38	1.00
CBMH122-CBMH121	CONDUIT	37.05	0	01:10	0.33	0.30	1.00
MH01-STC4000	CONDUIT	72.22	0	01:37	0.39	0.07	0.33
MH02-MH01	CONDUIT	63.13	0	01:36	0.40	0.08	0.30
MH04a-MH02	CONDUIT	50.43	0	01:35	0.60	0.09	0.21
MH04-MH04a	CONDUIT	43.52	0	01:30	0.53	0.07	0.21
MH05-MH04	CONDUIT	36.27	0	01:30	0.76	0.08	0.16
MH06-MH05	CONDUIT	17.27	0	01:26	0.61	0.05	0.13
MH08-MH06	CONDUIT	9.64	0	01:52	0.39	0.03	0.13
OVF-A	CONDUIT	0.00	0	00:00	0.00	0.00	0.03
OVF-C	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
STCBMH103-CBMH103A	CONDUIT	135.43	0	01:07	0.86	0.34	1.00
STCBMH113-CBMH113	CONDUIT	116.25	0	01:10	0.73	0.29	1.00
STCBMH119-CBMH119	CONDUIT	111.56	0	01:10	0.70	0.28	1.00
STM_PHASE_3-10	CONDUIT	36.09	0	01:06	0.38	0.43	1.00
STM_PHASE_3-14	CONDUIT	50.52	0	01:06	0.46	0.57	1.00
STM_PHASE_3-14 (1)	CONDUIT	42.76	0	01:06	0.39	0.54	1.00
STM_PHASE_3-15	CONDUIT	21.68	0	01:08	0.44	0.51	1.00
STM_PHASE_3-18	CONDUIT	28.62	0	01:05	0.89	0.68	1.00
STM_PHASE_3-19	CONDUIT	15.50	0	01:06	0.65	0.38	1.00
STM_PHASE_3-20	CONDUIT	19.82	0	01:05	0.73	0.48	1.00
STM_PHASE_3-21	CONDUIT	24.20	0	01:10	0.68	0.57	1.00
STM_PHASE_3-22	CONDUIT	24.28	0	01:10	0.53	0.56	1.00
STM_PHASE_3-3	CONDUIT	45.30	0	01:10	0.41	0.32	1.00
STM_PHASE_3-4	CONDUIT	26.67	0	01:06	0.37	0.31	1.00
STM_PHASE_3-9	CONDUIT	73.79	0	01:10	0.46	0.51	1.00
CBMH103-ICD	ORIFICE	12.72	0	01:45			1.00
CBMH108-ICD	ORIFICE	7.26	0	01:42			1.00
CBMH113-ICD	ORIFICE	10.11	0	01:50			1.00
CBMH119-ICD	ORIFICE	9.64	0	01:51			1.00
CBMH2003-ICD	ORIFICE	8.98	0	01:53			1.00
CBMH2004-ICD	ORIFICE	9.11	0	02:01			1.00
Subaru-OUT	DUMMY	7.02	0	01:44			
Volkswagen-OUT	DUMMY	7.72	0	01:24			

 Flow Classification Summary

 Adjusted ----- Fraction of Time in Flow Class -----

Inlet Conduit Ctrl	/Actual Length	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd
-----	-----	-----	-----	-----	-----	-----	-----	-----
C07 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C08 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C1 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C10 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C11 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C12 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C13 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C14 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C15 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C16 0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C17 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C18 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C19 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C2 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C20 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C21 0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C22 0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C23 0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C24 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.95	0.00
C25 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.96	0.00
C26 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C27 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C28 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C29 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C3 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C30 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C31 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

4149 Strandherd Drive - Myers Site Plan (125132)
PCSWMM Model Output
Chicago 3-hr, 5-yr Storm

C32	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C33	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C34	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C35	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C36	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C37	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C4	0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C45	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C46	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C47	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C48	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C49	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C5	0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C50	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C51	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C52	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C53	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C54	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C55	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C56	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C57	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C58	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C59	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C6	0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C60	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C61	0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C7	0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C8	0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C9	0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
CB04-CBMH107	0.00	1.00	0.97	0.00	0.00	0.02	0.00	0.00	0.98

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 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

CB06-CBMH110 0.00	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00
CB09-CBMH116a 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.01
CB10-CBMH122 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.01
CB11-CBMH119 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
CB12-CBMH113 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.01
CBMH103A-CBMH103 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.97
CBMH104-CBMH103_1 0.00	1.00	0.00	0.95	0.00	0.05	0.00	0.00	0.00	0.96
CBMH104-CBMH103_2 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
CBMH105-CBMH104 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
CBMH106-CBMH105 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
CBMH107-CBMH106 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
CBMH109-CBMH108 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
CBMH110-CBMH109 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
CBMH114-CBMH113 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01
CBMH115-CBMH114 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
CBMH116a-CBMH115 0.00	1.00	0.00	0.65	0.00	0.35	0.00	0.00	0.00	0.96
CBMH116-CBMH116a 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.02
CBMH120-CBMH119 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.01
CBMH121-CBMH120 0.00	1.00	0.00	0.02	0.00	0.98	0.00	0.00	0.00	0.96
CBMH122-CBMH121 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
MH01-STC4000 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH02-MH01 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH04a-MH02 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH04-MH04a 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH05-MH04 0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
MH06-MH05 0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
MH08-MH06 0.00	1.00	0.00	0.31	0.00	0.69	0.00	0.00	0.00	1.00
OVF-A 0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00	0.00
OVF-C 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STCBMH103-CBMH103A 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

STCBMH113-CBMH113 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.96
STCBMH119-CBMH119 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.96
STM_PHASE_3-10 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
STM_PHASE_3-14 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
STM_PHASE_3-14 (1) 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
STM_PHASE_3-15 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.01
STM_PHASE_3-18 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
STM_PHASE_3-19 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.09
STM_PHASE_3-20 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.02
STM_PHASE_3-21 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.01
STM_PHASE_3-22 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
STM_PHASE_3-3 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.01
STM_PHASE_3-4 0.00	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.00
STM_PHASE_3-9 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.00

 Conduit Surcharge Summary

Conduit	----- Both Ends	Hours Full Upstream	----- Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C24	6.68	6.68	7.19	0.04	0.01
C25	5.89	5.89	6.24	0.01	0.01
CB04-CBMH107	1.14	1.14	3.72	0.01	0.01
CB06-CBMH110	3.75	3.75	3.89	0.01	0.01
CB09-CBMH116a	3.91	3.91	4.61	0.01	0.01
CB10-CBMH122	3.92	3.92	4.58	0.01	0.01
CB11-CBMH119	6.00	6.00	6.70	0.01	0.01
CB12-CBMH113	5.25	5.25	6.95	0.01	0.01
CBMH103A-CBMH103	4.88	4.88	5.53	0.01	0.01
CBMH104-CBMH103_1	4.40	4.40	4.53	0.01	0.01
CBMH104-CBMH103_2	4.53	4.53	4.62	0.01	0.01
CBMH105-CBMH104	3.91	3.91	4.24	0.01	0.01
CBMH106-CBMH105	3.71	3.71	4.16	0.01	0.01
CBMH107-CBMH106	3.15	3.15	3.54	0.01	0.01
CBMH109-CBMH108	3.88	3.88	3.99	0.01	0.01
CBMH110-CBMH109	3.84	3.84	3.98	0.01	0.01
CBMH114-CBMH113	5.67	5.67	6.05	0.01	0.01
CBMH115-CBMH114	5.12	5.12	5.60	0.01	0.01
CBMH116a-CBMH115	4.61	4.61	5.12	0.01	0.01

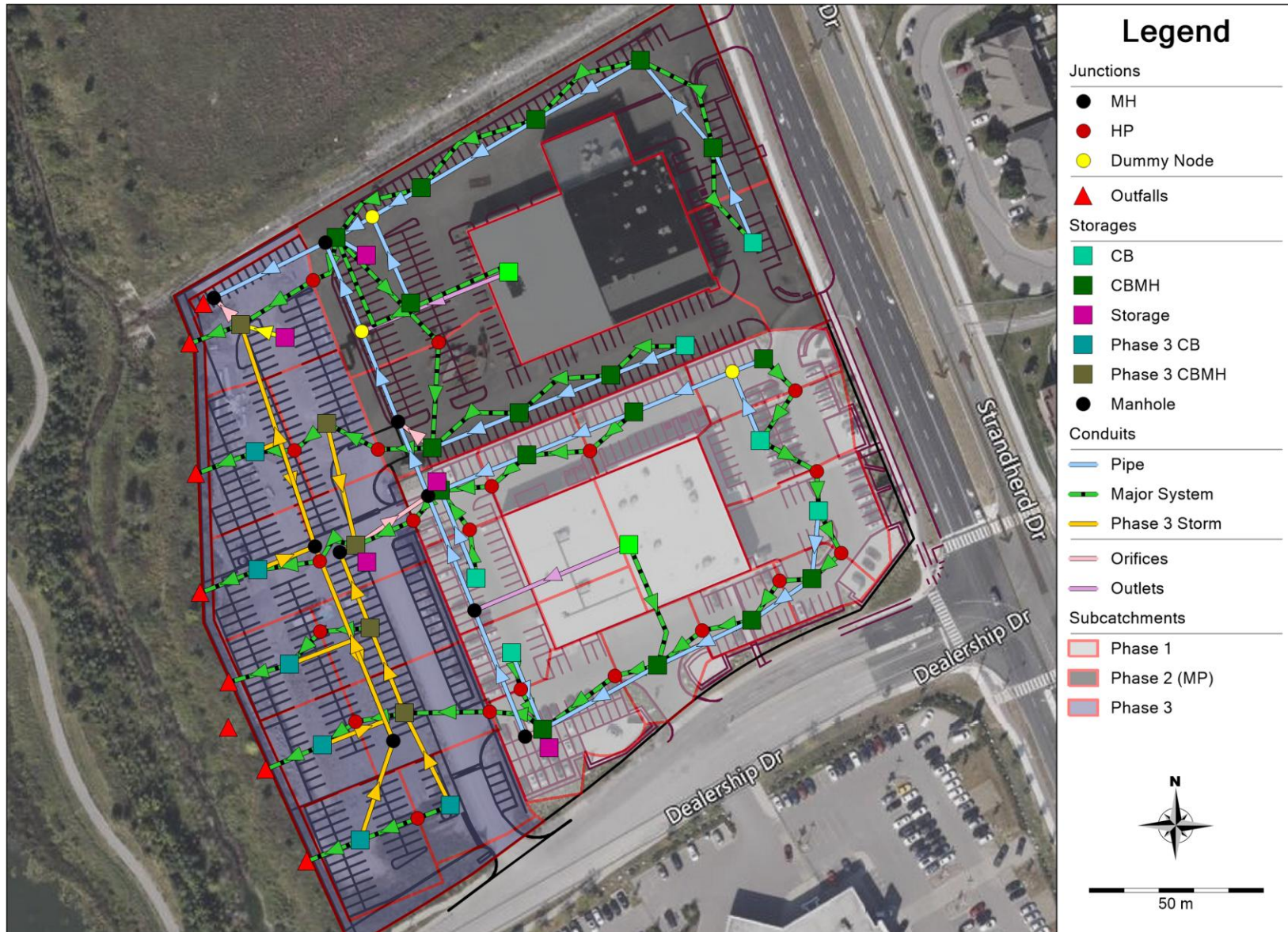
4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 5-yr Storm

CBMH116-CBMH116a	4.49	4.49	4.61	0.01	0.01
CBMH120-CBMH119	5.38	5.38	5.87	0.01	0.01
CBMH121-CBMH120	5.02	5.02	5.38	0.01	0.01
CBMH122-CBMH121	4.58	4.58	4.83	0.01	0.01
STCBMH103-CBMH103A	3.30	3.30	3.68	0.01	0.01
STCBMH113-CBMH113	4.60	4.60	4.99	0.01	0.01
STCBMH119-CBMH119	4.75	4.75	5.13	0.01	0.01
STM_PHASE_3-10	5.02	5.02	5.22	0.01	0.01
STM_PHASE_3-14	5.33	5.33	5.61	0.01	0.01
STM_PHASE_3-14 (1)	5.76	5.76	5.82	0.01	0.01
STM_PHASE_3-15	5.03	5.03	5.79	0.01	0.01
STM_PHASE_3-18	4.03	4.03	4.64	0.01	0.01
STM_PHASE_3-19	4.59	4.59	5.02	0.01	0.01
STM_PHASE_3-20	4.34	4.34	4.73	0.01	0.01
STM_PHASE_3-21	4.92	4.92	5.39	0.01	0.01
STM_PHASE_3-22	5.81	5.81	6.06	0.01	0.01
STM_PHASE_3-3	4.64	4.64	5.39	0.01	0.01
STM_PHASE_3-4	4.74	4.74	4.93	0.01	0.01
STM_PHASE_3-9	5.57	5.57	6.69	0.01	0.01

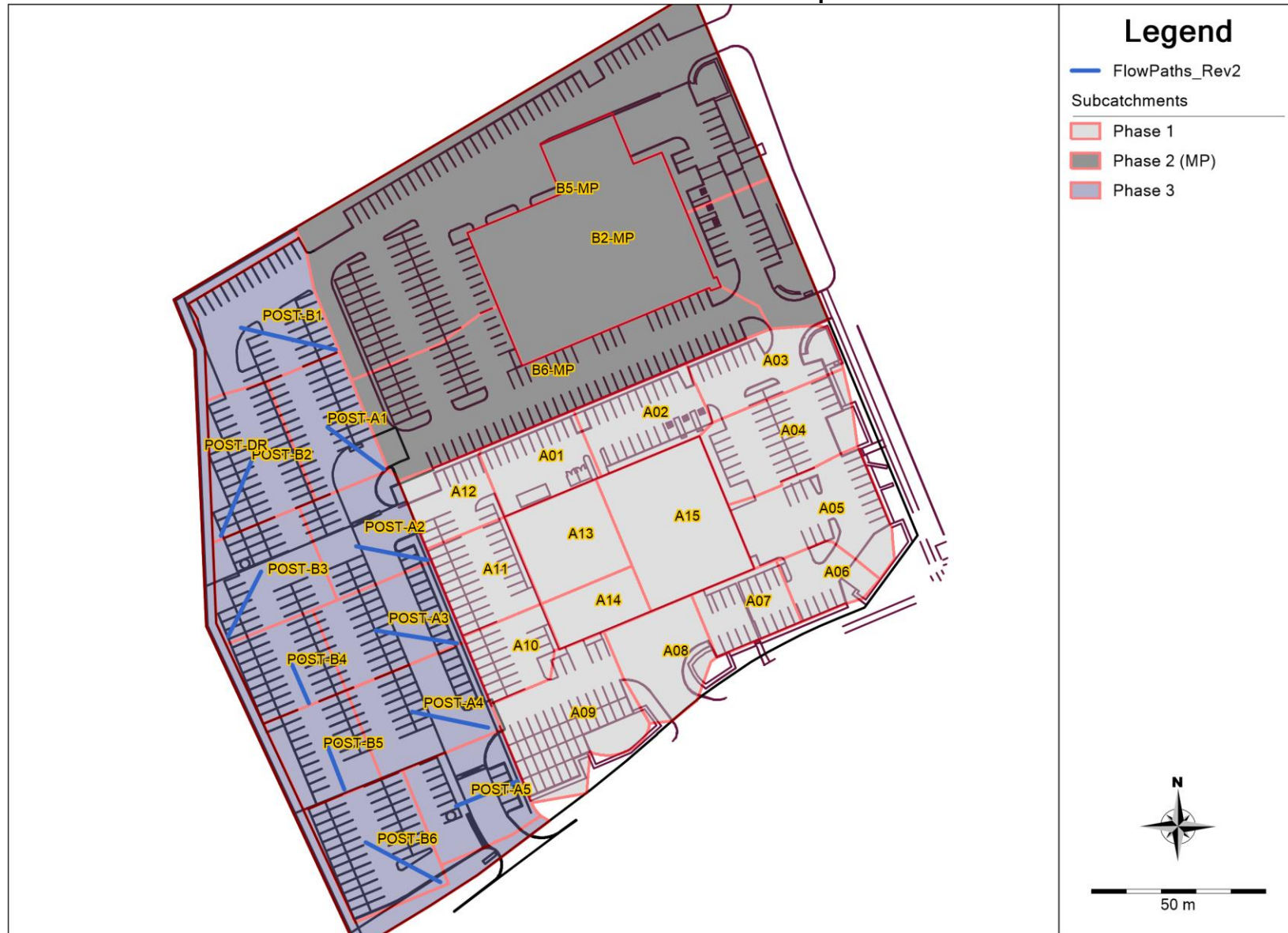
Analysis begun on: Wed Jul 29 09:04:06 2026
 Analysis ended on: Wed Jul 29 09:04:16 2026
 Total elapsed time: 00:00:10

4149 Strandherd Drive – Myers Site Plan (125132)
PCSWMM Model Schematics

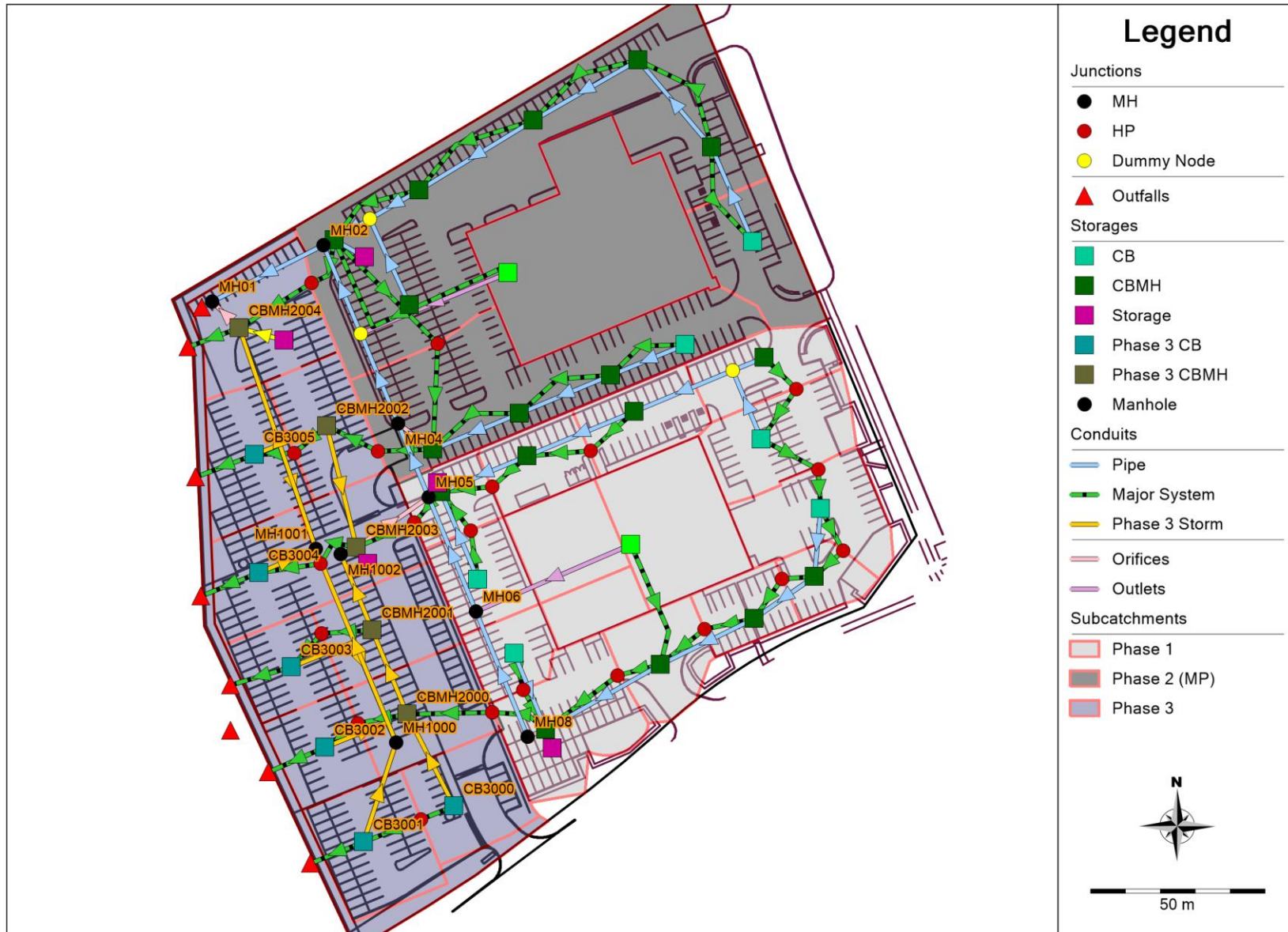
Overall Model Schematic



Subcatchments & Phase 3 Flowpaths

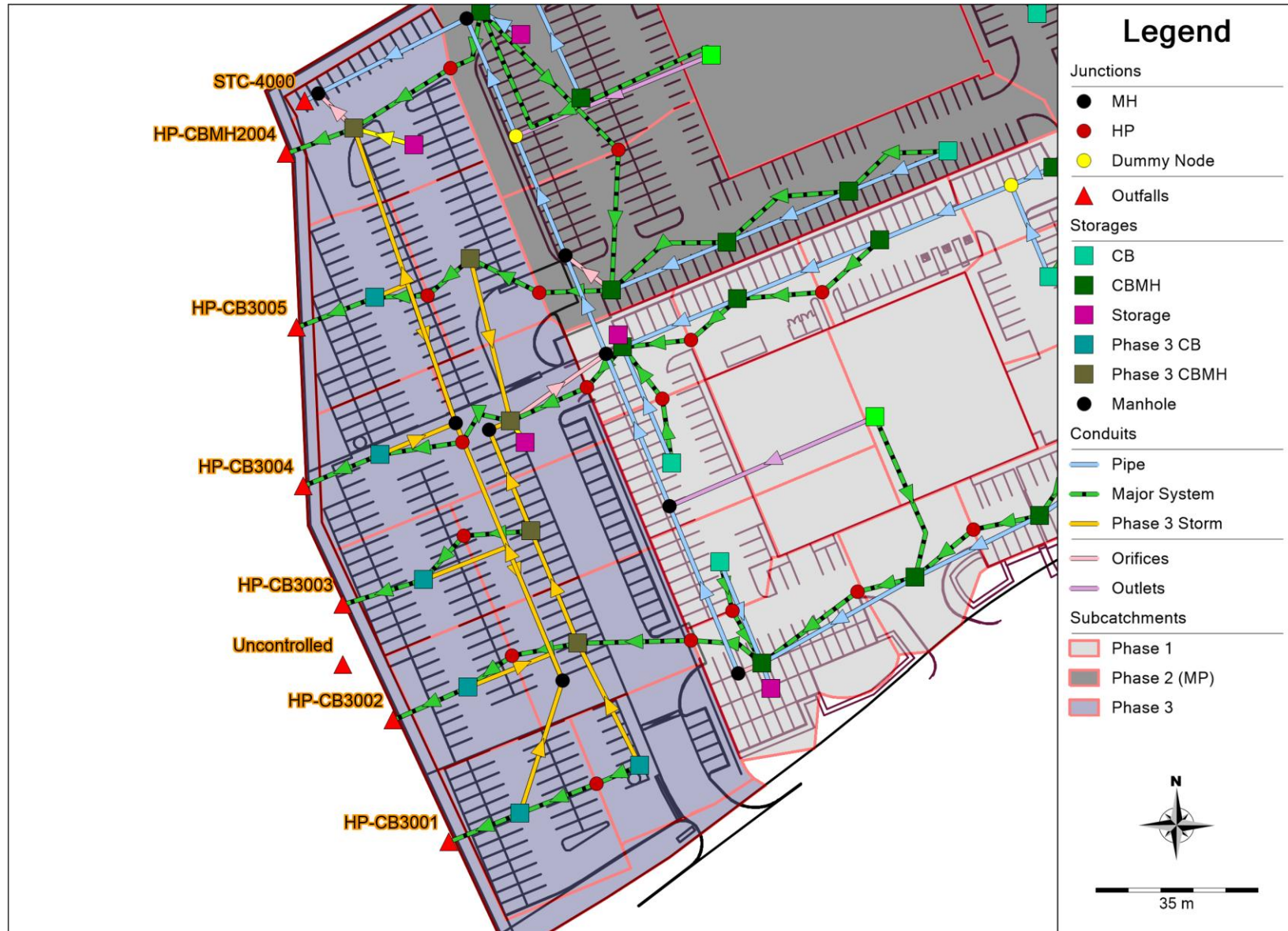


Phase 3 CBs and MHs



4149 Strandherd Drive – Myers Site Plan (125132)
PCSWMM Model Schematics

Outfall IDs



EPA STORM WATER MANAGEMENT MODEL - VERSION 5.2 (Build 5.2.4)

Update to 117148 Model
 Updated by: Aiden Mallany-Stanley
 Boundary Conditions:

WARNING 04: minimum elevation drop used for Conduit C07
 WARNING 04: minimum elevation drop used for Conduit C08
 WARNING 04: minimum elevation drop used for Conduit C26
 WARNING 04: minimum elevation drop used for Conduit C27
 WARNING 04: minimum elevation drop used for Conduit C28
 WARNING 04: minimum elevation drop used for Conduit C30
 WARNING 04: minimum elevation drop used for Conduit C31
 WARNING 04: minimum elevation drop used for Conduit C37

Element Count

Number of rain gages 1
 Number of subcatchments ... 30
 Number of nodes 81
 Number of links 109
 Number of pollutants 0
 Number of land uses 0

Raingage Summary

Name	Data Source	Data Type	Recording Interval
Design_Storms	C3hr-100yr	INTENSITY	10 min.

Subcatchment Summary

Name Outlet	Area	Width	%Imperv	%Slope	Rain Gage
A01 CBMH114	0.06	40.00	93.00	2.0000	Design_Storms
A02 CBMH115	0.07	46.67	89.00	2.0000	Design_Storms
A03 CBMH116	0.07	35.00	83.00	2.0000	Design_Storms
A04 CB09	0.10	66.67	96.00	2.0000	Design_Storms
A05 CB10	0.10	50.00	99.00	2.0000	Design_Storms
A06 CBMH122	0.04	40.00	87.00	2.0000	Design_Storms
A07 CBMH121	0.05	33.33	100.00	2.0000	Design_Storms
A08 CBMH120	0.07	46.67	86.00	2.0000	Design_Storms

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 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

A09	0.12	120.00	93.00	2.0000	Design_Storms
CBMH119					
A10	0.05	50.00	94.00	2.0000	Design_Storms
CB11					
A11	0.06	40.00	94.00	2.0000	Design_Storms
CB12					
A12	0.05	50.00	83.00	2.0000	Design_Storms
CBMH113					
A13	0.08	26.67	100.00	2.0000	Design_Storms
CB12					
A14	0.04	13.33	100.00	2.0000	Design_Storms
CB11					
A15	0.13	32.50	100.00	2.0000	Design_Storms
Volkswagen					
B2-MP	0.28	80.00	100.00	2.0000	Design_Storms
Subaru					
B5-MP	0.61	406.67	89.00	2.0000	Design_Storms
CBMH103					
B6-MP	0.27	180.00	97.00	2.0000	Design_Storms
CBMH108					
POST-A1	0.08	40.07	100.00	3.0000	Design_Storms
CBMH2002					
POST-A2	0.08	38.67	100.00	3.0000	Design_Storms
CBMH2003					
POST-A3	0.09	38.60	100.00	2.5000	Design_Storms
CBMH2001					
POST-A4	0.10	45.22	100.00	2.5000	Design_Storms
CBMH2000					
POST-A5	0.09	47.78	100.00	3.0000	Design_Storms
CB3000					
POST-B1	0.11	39.91	100.00	3.0000	Design_Storms
CBMH2004					
POST-B2	0.09	34.84	100.00	2.5000	Design_Storms
CB3005					
POST-B3	0.09	43.71	100.00	2.5000	Design_Storms
CB3004					
POST-B4	0.06	50.85	100.00	2.5000	Design_Storms
CB3003					
POST-B5	0.07	52.98	100.00	2.5000	Design_Storms
CB3002					
POST-B6	0.10	41.46	100.00	2.5000	Design_Storms
CB3001					
POST-DR	0.10	333.33	7.00	5.0000	Design_Storms
Uncontrolled					

 Node Summary

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
CB03-Dummy	JUNCTION	93.66	2.94	0.0	
CBMH116a	JUNCTION	94.01	2.50	0.0	
HP-CB09	JUNCTION	95.78	1.00	0.0	
HP-CB10	JUNCTION	95.70	1.00	0.0	
HP-CB11	JUNCTION	95.80	1.00	0.0	
HP-CB12	JUNCTION	95.80	1.00	0.0	
HP-CB3000	JUNCTION	95.50	1.00	0.0	

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 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

HP-CBMH103	JUNCTION	95.80	1.00	0.0
HP-CBMH103A	JUNCTION	95.80	1.00	0.0
HP-CBMH108	JUNCTION	95.80	1.00	0.0
HP-CBMH113	JUNCTION	95.72	1.00	0.0
HP-CBMH114	JUNCTION	95.80	1.00	0.0
HP-CBMH115	JUNCTION	95.80	1.00	0.0
HP-CBMH116	JUNCTION	95.79	1.00	0.0
HP-CBMH119	JUNCTION	95.78	1.00	0.0
HP-CBMH120	JUNCTION	95.75	1.00	0.0
HP-CBMH121	JUNCTION	95.76	1.00	0.0
HP-CBMH122	JUNCTION	95.77	1.00	0.0
HP-CBMH2000	JUNCTION	95.50	1.00	0.0
HP-CBMH2001	JUNCTION	95.50	1.00	0.0
HP-CBMH2002	JUNCTION	95.50	1.00	0.0
HP-CBMH2003	JUNCTION	95.50	1.00	0.0
MH04a	JUNCTION	93.32	2.30	0.0
HP-CB3001	OUTFALL	95.35	1.00	0.0
HP-CB3002	OUTFALL	95.35	1.00	0.0
HP-CB3003	OUTFALL	95.35	1.00	0.0
HP-CB3004	OUTFALL	95.35	1.00	0.0
HP-CB3005	OUTFALL	95.35	1.00	0.0
HP-CBMH2004	OUTFALL	95.35	1.00	0.0
STC-4000	OUTFALL	93.12	0.90	0.0
Uncontrolled	OUTFALL	94.00	0.00	0.0
CB04	STORAGE	94.31	2.29	0.0
CB06	STORAGE	94.37	2.13	0.0
CB09	STORAGE	94.32	2.18	0.0
CB10	STORAGE	94.44	2.06	0.0
CB11	STORAGE	94.11	2.44	0.0
CB12	STORAGE	94.11	2.44	0.0
CB3000	STORAGE	94.23	2.02	0.0
CB3001	STORAGE	94.43	1.62	0.0
CB3002	STORAGE	94.35	1.70	0.0
CB3003	STORAGE	94.29	1.76	0.0
CB3004	STORAGE	94.22	1.83	0.0
CB3005	STORAGE	94.06	1.99	0.0
CBMH103	STORAGE	93.58	2.92	0.0
CBMH103A	STORAGE	93.69	2.91	0.0
CBMH104	STORAGE	93.64	2.96	0.0
CBMH105	STORAGE	93.77	2.73	0.0
CBMH106	STORAGE	93.88	2.72	0.0
CBMH107	STORAGE	93.97	2.63	0.0
CBMH108	STORAGE	93.76	2.74	0.0
CBMH109	STORAGE	94.13	2.37	0.0
CBMH110	STORAGE	94.24	2.26	0.0
CBMH113	STORAGE	93.78	2.72	0.0
CBMH114	STORAGE	93.84	2.68	0.0
CBMH115	STORAGE	93.93	2.62	0.0
CBMH116	STORAGE	94.03	2.47	0.0
CBMH119	STORAGE	93.93	2.50	0.0
CBMH120	STORAGE	94.01	2.49	0.0
CBMH121	STORAGE	94.07	2.43	0.0
CBMH122	STORAGE	94.14	2.41	0.0
CBMH2000	STORAGE	94.13	2.12	0.0
CBMH2001	STORAGE	94.04	2.21	0.0
CBMH2002	STORAGE	94.25	2.00	0.0
CBMH2003	STORAGE	93.91	2.34	0.0

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 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

CBMH2004	STORAGE	93.70	2.35	0.0
MH01	STORAGE	93.13	2.55	0.0
MH02	STORAGE	93.20	2.45	0.0
MH04	STORAGE	93.36	2.24	0.0
MH05	STORAGE	93.47	2.12	0.0
MH06	STORAGE	93.61	2.18	0.0
MH08	STORAGE	93.69	1.99	0.0
MH1000	STORAGE	94.08	1.34	0.0
MH1001	STORAGE	93.90	1.61	0.0
MH1002	STORAGE	93.95	1.41	0.0
ST-CBMH103A	STORAGE	93.87	2.73	0.0
ST-CBMH113	STORAGE	94.01	2.49	0.0
ST-CBMH119	STORAGE	94.11	2.45	0.0
ST-CBMH2003	STORAGE	94.05	2.45	0.0
ST-CBMH2004	STORAGE	93.93	2.12	0.0
Subaru	STORAGE	100.00	1.00	0.0
Volkswagen	STORAGE	100.00	1.00	0.0

Link Summary

Name		From Node	To Node	Type	Length	%
Slope	Roughness					

C07		CBMH107	CB04	CONDUIT	2.0	
0.0152	0.0150					
C08		CB06	CBMH110	CONDUIT	2.0	
0.0152	0.0150					
C1		CBMH103	HP-CBMH103	CONDUIT	2.0	-
15.1717	0.0150					
C10		HP-CBMH2001	CB3003	CONDUIT	2.0	
23.0921	0.0150					
C11		CB3003	HP-CB3003	CONDUIT	2.0	-
15.1717	0.0150					
C12		HP-CBMH113	CBMH2003	CONDUIT	2.0	
29.7331	0.0150					
C13		CBMH2003	HP-CBMH2003	CONDUIT	2.0	-
17.7743	0.0150					
C14		HP-CBMH2003	CB3004	CONDUIT	2.0	
23.0921	0.0150					
C15		CB3004	HP-CB3004	CONDUIT	2.0	-
15.1717	0.0150					
C16		CBMH2002	HP-CBMH2002	CONDUIT	2.0	-
12.5988	0.0150					
C17		CBMH103	HP-CBMH103A	CONDUIT	2.0	-
10.0504	0.0150					
C18		HP-CBMH103A	CBMH108	CONDUIT	2.0	
15.1717	0.0150					
C19		HP-CBMH2002	CB3005	CONDUIT	2.0	
23.0921	0.0150					
C2		CB3000	HP-CB3000	CONDUIT	2.0	-
17.7743	0.0150					
C20		CB3005	HP-CB3005	CONDUIT	2.0	-
15.1717	0.0150					
C21		HP-CBMH108	CBMH2002	CONDUIT	2.0	
28.6028	0.0150					
C22		HP-CBMH103	CBMH2004	CONDUIT	2.0	40.45

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 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

C23		CBMH2004	HP-CBMH2004	CONDUIT	2.0	-
15.1717	0.0150					
C24		ST-CBMH2004	CBMH2004	CONDUIT	3.0	
2.0004	0.0130					
C25		ST-CBMH2003	CBMH2003	CONDUIT	3.0	
2.0004	0.0130					
C26		CBMH107	CBMH106	CONDUIT	2.0	
0.0152	0.0150					
C27		CBMH106	CBMH105	CONDUIT	2.0	
0.0152	0.0150					
C28		CBMH105	CBMH104	CONDUIT	2.0	
0.0152	0.0150					
C29		CBMH108	HP-CBMH108	CONDUIT	2.0	-
15.1717	0.0150					
C3		HP-CB3000	CB3001	CONDUIT	2.0	
23.0921	0.0150					
C30		CBMH104	CBMH103	CONDUIT	2.0	
0.0152	0.0150					
C31		CBMH110	CBMH109	CONDUIT	2.0	
0.0152	0.0150					
C32		CBMH114	HP-CBMH114	CONDUIT	2.0	-
14.1393	0.0150					
C33		HP-CBMH114	CBMH113	CONDUIT	2.0	
15.1717	0.0150					
C34		CB12	HP-CB12	CONDUIT	2.0	-
12.5988	0.0150					
C35		HP-CB12	CBMH113	CONDUIT	2.0	
15.1717	0.0150					
C36		CBMH113	HP-CBMH113	CONDUIT	2.0	-
11.0672	0.0150					
C37		CBMH109	CBMH108	CONDUIT	2.0	
0.0152	0.0150					
C4		CB3001	HP-CB3001	CONDUIT	2.0	-
15.1717	0.0150					
C45		CBMH115	HP-CBMH115	CONDUIT	2.0	-
12.5988	0.0150					
C46		HP-CBMH115	CBMH114	CONDUIT	2.0	
14.1393	0.0150					
C47		CBMH116	HP-CBMH116	CONDUIT	2.0	-
14.6549	0.0150					
C48		HP-CBMH116	CB09	CONDUIT	2.0	
14.6549	0.0150					
C49		CB09	HP-CB09	CONDUIT	2.0	-
14.1393	0.0150					
C5		HP-CBMH119	CBMH2000	CONDUIT	2.0	
33.1896	0.0150					
C50		HP-CB09	CB10	CONDUIT	2.0	
14.1393	0.0150					
C51		CB10	HP-CB10	CONDUIT	2.0	-
10.0504	0.0150					
C52		HP-CB10	CBMH122	CONDUIT	2.0	
7.5212	0.0150					
C53		CBMH122	HP-CBMH122	CONDUIT	2.0	-
11.0672	0.0150					
C54		HP-CBMH122	CBMH121	CONDUIT	2.0	
13.6247	0.0150					
C55		CBMH121	HP-CBMH121	CONDUIT	2.0	-
13.1113	0.0150					
C56		HP-CBMH121	CBMH120	CONDUIT	2.0	
13.1113	0.0150					

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 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

C57		CBMH120	HP-CBMH120	CONDUIT	2.0	-
12.5988	0.0150					
C58		HP-CBMH120	CBMH119	CONDUIT	2.0	
16.2088	0.0150					
C59		CB11	HP-CB11	CONDUIT	2.0	-
12.5988	0.0150					
C6		CBMH2000	HP-CBMH2000	CONDUIT	2.0	-
17.7743	0.0150					
C60		HP-CB11	CBMH119	CONDUIT	2.0	
18.8249	0.0150					
C61		CBMH119	HP-CBMH119	CONDUIT	2.0	-
17.7743	0.0150					
C7		HP-CBMH2000	CB3002	CONDUIT	2.0	
23.0921	0.0150					
C8		CB3002	HP-CB3002	CONDUIT	2.0	-
15.1717	0.0150					
C9		CBMH2001	HP-CBMH2001	CONDUIT	2.0	-
17.7743	0.0150					
CB04-CBMH107		CB04	CBMH107	CONDUIT	29.4	
1.0541	0.0130					
CB06-CBMH110		CB06	CBMH110	CONDUIT	23.3	
0.5150	0.0130					
CB09-CBMH116a		CB09	CBMH116a	CONDUIT	21.1	
0.5213	0.0130					
CB10-CBMH122		CB10	CBMH122	CONDUIT	19.3	
0.5181	0.0130					
CB11-CBMH119		CB11	CBMH119	CONDUIT	23.4	
0.4701	0.0130					
CB12-CBMH113		CB12	CBMH113	CONDUIT	27.0	
1.0001	0.0130					
CBMH103A-CBMH103		CBMH103A	CB03-Dummy	CONDUIT	26.7	
0.4869	0.0130					
CBMH104-CBMH103_1		CBMH104	CB03-Dummy	CONDUIT	16.2	
0.1417	0.0130					
CBMH104-CBMH103_2		CB03-Dummy	CBMH103	CONDUIT	11.8	
0.1445	0.0130					
CBMH105-CBMH104		CBMH105	CBMH104	CONDUIT	38.0	
0.1581	0.0130					
CBMH106-CBMH105		CBMH106	CBMH105	CONDUIT	34.4	
0.2326	0.0130					
CBMH107-CBMH106		CBMH107	CBMH106	CONDUIT	32.2	
0.1863	0.0130					
CBMH109-CBMH108		CBMH109	CBMH108	CONDUIT	26.9	
0.2602	0.0130					
CBMH110-CBMH109		CBMH110	CBMH109	CONDUIT	27.8	
0.3597	0.0130					
CBMH114-CBMH113		CBMH114	CBMH113	CONDUIT	26.5	
0.2264	0.0130					
CBMH115-CBMH114		CBMH115	CBMH114	CONDUIT	32.8	
0.2439	0.0130					
CBMH116a-CBMH115		CBMH116a	CBMH115	CONDUIT	30.4	
0.2632	0.0130					
CBMH116-CBMH116a		CBMH116	CBMH116a	CONDUIT	9.7	
0.2062	0.0130					
CBMH120-CBMH119		CBMH120	CBMH119	CONDUIT	37.4	
0.2139	0.0130					
CBMH121-CBMH120		CBMH121	CBMH120	CONDUIT	29.6	
0.2027	0.0130					
CBMH122-CBMH121		CBMH122	CBMH121	CONDUIT	20.9	
0.1914	0.0130					

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 PCSWMM Model Output
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MH01-STC4000	MH01	STC-4000	CONDUIT	3.3
0.3030 0.0130				
MH02-MH01	MH02	MH01	CONDUIT	35.6
0.1966 0.0130				
MH04a-MH02	MH04a	MH02	CONDUIT	32.8
0.1524 0.0130				
MH04-MH04a	MH04	MH04a	CONDUIT	22.2
0.1802 0.0130				
MH05-MH04	MH05	MH04	CONDUIT	22.6
0.1770 0.0130				
MH06-MH05	MH06	MH05	CONDUIT	35.3
0.1983 0.0130				
MH08-MH06	MH08	MH06	CONDUIT	38.5
0.2078 0.0130				
OVF-A	Volkswagen	CBMH120	CONDUIT	5.0
257.1330 0.0150				
OVF-C	Subaru	CBMH103	CONDUIT	5.0
222.3359 0.0150				
STCBMH103-CB MH103A ST-CB MH103A		CBMH103	CONDUIT	3.0
2.0004 0.0130				
STCBMH113-CB MH113 ST-CB MH113		CBMH113	CONDUIT	3.0
2.0004 0.0130				
STCBMH119-CB MH119 ST-CB MH119		CBMH119	CONDUIT	3.0
2.0004 0.0130				
STM_PHASE_3-10	CBMH2000	CBMH2001	CONDUIT	26.0
0.2311 0.0130				
STM_PHASE_3-14	CBMH2001	MH1002	CONDUIT	23.3
0.2573 0.0130				
STM_PHASE_3-14 (1)	MH1002	CBMH2003	CONDUIT	5.0
0.2020 0.0130				
STM_PHASE_3-15	CBMH2002	CBMH2003	CONDUIT	35.6
0.5061 0.0130				
STM_PHASE_3-18	CB3001	MH1000	CONDUIT	29.7
0.5056 0.0130				
STM_PHASE_3-19	CB3003	MH1000	CONDUIT	18.9
0.4754 0.0130				
STM_PHASE_3-20	CB3002	MH1000	CONDUIT	18.9
0.4749 0.0130				
STM_PHASE_3-21	CB3004	MH1001	CONDUIT	17.4
0.5158 0.0130				
STM_PHASE_3-22	CB3005	MH1001	CONDUIT	7.7
0.5229 0.0130				
STM_PHASE_3-3	MH1000	MH1001	CONDUIT	59.5
0.2521 0.0130				
STM_PHASE_3-4	CB3000	CBMH2000	CONDUIT	29.3
0.2392 0.0130				
STM_PHASE_3-9	MH1001	CBMH2004	CONDUIT	66.4
0.2559 0.0130				
CBMH103-ICD	CBMH103	MH02	ORIFICE	
CBMH108-ICD	CBMH108	MH04	ORIFICE	
CBMH113-ICD	CBMH113	MH05	ORIFICE	
CBMH119-ICD	CBMH119	MH08	ORIFICE	
CBMH2003-ICD	CBMH2003	MH05	ORIFICE	
CBMH2004-ICD	CBMH2004	MH01	ORIFICE	
Subaru-OUT	Subaru	MH04a	OUTLET	
Volkswagen-OUT	Volkswagen	MH06	OUTLET	

Cross Section Summary

Full Conduit Flow	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels

C07 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C08 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C1 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C10 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C11 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C12 77584.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C13 59986.43	RECT_OPEN	1.00	3.00	0.60	3.00	1
C14 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C15 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C16 50503.54	RECT_OPEN	1.00	3.00	0.60	3.00	1
C17 45107.44	RECT_OPEN	1.00	3.00	0.60	3.00	1
C18 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C19 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C2 59986.43	RECT_OPEN	1.00	3.00	0.60	3.00	1
C20 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C21 76095.90	RECT_OPEN	1.00	3.00	0.60	3.00	1
C22 90495.49	RECT_OPEN	1.00	3.00	0.60	3.00	1
C23 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C24 84.11	CIRCULAR	0.25	0.05	0.06	0.25	1
C25 84.11	CIRCULAR	0.25	0.05	0.06	0.25	1
C26 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C27 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C28 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1
C29 55420.88	RECT_OPEN	1.00	3.00	0.60	3.00	1
C3 68373.65	RECT_OPEN	1.00	3.00	0.60	3.00	1
C30 1756.51	RECT_OPEN	1.00	3.00	0.60	3.00	1

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

C31	RECT_OPEN	1.00	3.00	0.60	3.00	1
1756.51						
C32	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C33	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C34	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C35	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C36	RECT_OPEN	1.00	3.00	0.60	3.00	1
47334.20						
C37	RECT_OPEN	1.00	3.00	0.60	3.00	1
1756.51						
C4	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C45	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C46	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C47	RECT_OPEN	1.00	3.00	0.60	3.00	1
54468.83						
C48	RECT_OPEN	1.00	3.00	0.60	3.00	1
54468.83						
C49	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C5	RECT_OPEN	1.00	3.00	0.60	3.00	1
81970.61						
C50	RECT_OPEN	1.00	3.00	0.60	3.00	1
53502.02						
C51	RECT_OPEN	1.00	3.00	0.60	3.00	1
45107.44						
C52	RECT_OPEN	1.00	3.00	0.60	3.00	1
39021.15						
C53	RECT_OPEN	1.00	3.00	0.60	3.00	1
47334.20						
C54	RECT_OPEN	1.00	3.00	0.60	3.00	1
52519.53						
C55	RECT_OPEN	1.00	3.00	0.60	3.00	1
51520.40						
C56	RECT_OPEN	1.00	3.00	0.60	3.00	1
51520.40						
C57	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C58	RECT_OPEN	1.00	3.00	0.60	3.00	1
57283.91						
C59	RECT_OPEN	1.00	3.00	0.60	3.00	1
50503.54						
C6	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						
C60	RECT_OPEN	1.00	3.00	0.60	3.00	1
61733.92						
C61	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						
C7	RECT_OPEN	1.00	3.00	0.60	3.00	1
68373.65						
C8	RECT_OPEN	1.00	3.00	0.60	3.00	1
55420.88						
C9	RECT_OPEN	1.00	3.00	0.60	3.00	1
59986.43						

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

CB04-CBMH107	CIRCULAR	0.25	0.05	0.06	0.25	1
61.06						
CB06-CBMH110	CIRCULAR	0.25	0.05	0.06	0.25	1
42.68						
CB09-CBMH116a	CIRCULAR	0.25	0.05	0.06	0.25	1
42.94						
CB10-CBMH122	CIRCULAR	0.25	0.05	0.06	0.25	1
42.81						
CB11-CBMH119	CIRCULAR	0.25	0.05	0.06	0.25	1
40.78						
CB12-CBMH113	CIRCULAR	0.25	0.05	0.06	0.25	1
59.47						
CBMH103A-CBMH103	CIRCULAR	0.25	0.05	0.06	0.25	1
41.50						
CBMH104-CBMH103_1	CIRCULAR	0.45	0.16	0.11	0.45	1
107.32						
CBMH104-CBMH103_2	CIRCULAR	0.45	0.16	0.11	0.45	1
108.38						
CBMH105-CBMH104	CIRCULAR	0.45	0.16	0.11	0.45	1
113.36						
CBMH106-CBMH105	CIRCULAR	0.38	0.11	0.09	0.38	1
84.57						
CBMH107-CBMH106	CIRCULAR	0.38	0.11	0.09	0.38	1
75.68						
CBMH109-CBMH108	CIRCULAR	0.38	0.11	0.09	0.38	1
89.45						
CBMH110-CBMH109	CIRCULAR	0.30	0.07	0.07	0.30	1
58.00						
CBMH114-CBMH113	CIRCULAR	0.45	0.16	0.11	0.45	1
135.67						
CBMH115-CBMH114	CIRCULAR	0.45	0.16	0.11	0.45	1
140.81						
CBMH116a-CBMH115	CIRCULAR	0.45	0.16	0.11	0.45	1
146.27						
CBMH116-CBMH116a	CIRCULAR	0.45	0.16	0.11	0.45	1
129.47						
CBMH120-CBMH119	CIRCULAR	0.45	0.16	0.11	0.45	1
131.87						
CBMH121-CBMH120	CIRCULAR	0.45	0.16	0.11	0.45	1
128.37						
CBMH122-CBMH121	CIRCULAR	0.45	0.16	0.11	0.45	1
124.74						
MH01-STC4000	CIRCULAR	0.90	0.64	0.23	0.90	1
996.61						
MH02-MH01	CIRCULAR	0.90	0.64	0.23	0.90	1
802.79						
MH04a-MH02	CIRCULAR	0.82	0.53	0.21	0.82	1
560.48						
MH04-MH04a	CIRCULAR	0.82	0.53	0.21	0.82	1
609.35						
MH05-MH04	CIRCULAR	0.75	0.44	0.19	0.75	1
468.39						
MH06-MH05	CIRCULAR	0.68	0.36	0.17	0.68	1
374.34						
MH08-MH06	CIRCULAR	0.68	0.36	0.17	0.68	1
383.20						
OVF-A	RECT_OPEN	1.00	3.00	0.60	3.00	1
228158.12						
OVF-C	RECT_OPEN	1.00	3.00	0.60	3.00	1
212159.15						

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

STCBMH103-CBMH103A CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STCBMH113-CBMH113 CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STCBMH119-CBMH119 CIRCULAR	0.45	0.16	0.11	0.45	1
403.27					
STM_PHASE_3-10 CIRCULAR	0.38	0.11	0.09	0.38	1
84.30					
STM_PHASE_3-14 CIRCULAR	0.38	0.11	0.09	0.38	1
88.94					
STM_PHASE_3-14(1) CIRCULAR	0.38	0.11	0.09	0.38	1
78.81					
STM_PHASE_3-15 CIRCULAR	0.25	0.05	0.06	0.25	1
42.31					
STM_PHASE_3-18 CIRCULAR	0.25	0.05	0.06	0.25	1
42.29					
STM_PHASE_3-19 CIRCULAR	0.25	0.05	0.06	0.25	1
41.01					
STM_PHASE_3-20 CIRCULAR	0.25	0.05	0.06	0.25	1
40.99					
STM_PHASE_3-21 CIRCULAR	0.25	0.05	0.06	0.25	1
42.71					
STM_PHASE_3-22 CIRCULAR	0.25	0.05	0.06	0.25	1
43.00					
STM_PHASE_3-3 CIRCULAR	0.45	0.16	0.11	0.45	1
143.15					
STM_PHASE_3-4 CIRCULAR	0.38	0.11	0.09	0.38	1
85.76					
STM_PHASE_3-9 CIRCULAR	0.45	0.16	0.11	0.45	1
144.25					

Analysis Options

Flow Units LPS

Process Models:

Rainfall/Runoff YES

RDII NO

Snowmelt NO

Groundwater NO

Flow Routing YES

Ponding Allowed YES

Water Quality NO

Infiltration Method HORTON

Flow Routing Method DYNWAVE

Surcharge Method EXTRAN

Starting Date 10/16/2019 00:00:00

Ending Date 10/24/2019 00:00:00

Antecedent Dry Days 0.0

Report Time Step 00:01:00

Wet Time Step 00:05:00

Dry Time Step 00:05:00

Routing Time Step 2.00 sec

Variable Time Step YES

Maximum Trials 8

Number of Threads 4

Head Tolerance 0.001500 m

	Volume	Depth
Runoff Quantity Continuity	hectare-m	mm
	-----	-----
Initial LID Storage	0.004	1.207
Total Precipitation	0.237	71.667
Evaporation Loss	0.000	0.000
Infiltration Loss	0.010	3.110
Surface Runoff	0.229	69.041
Final Storage	0.004	1.207
Continuity Error (%)	-0.665	

	Volume	Volume
Flow Routing Continuity	hectare-m	10^6 ltr
	-----	-----
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.229	2.285
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.228	2.285
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.007	0.075
Final Stored Volume	0.008	0.075
Continuity Error (%)	0.010	

 Time-Step Critical Elements

 Link MH01-STC4000 (11.67%)

 Highest Flow Instability Indexes

 Link CBMH103-ICD (13)

 Most Frequent Nonconverging Nodes

 Convergence obtained at all time steps.

 Routing Time Step Summary

Minimum Time Step	:	0.50 sec
Average Time Step	:	1.84 sec
Maximum Time Step	:	2.00 sec
% of Time in Steady State	:	0.00
Average Iterations per Step	:	2.00

% of Steps Not Converging : 0.00
 Time Step Frequencies :
 2.000 - 1.516 sec : 86.78 %
 1.516 - 1.149 sec : 0.31 %
 1.149 - 0.871 sec : 0.21 %
 0.871 - 0.660 sec : 12.37 %
 0.660 - 0.500 sec : 0.32 %

 Subcatchment Runoff Summary

Perv	Total	Total	Total	Total	Total	Total	Imperv
Runoff	Runoff	Precip	Peak	Runoff	Evap	Infil	Runoff
Subcatchment	Runoff	Runoff	Runoff	Runoff			
mm	mm	10^6 ltr	mm	mm	mm	mm	mm

A01			71.67	0.00	0.00	3.05	66.78
2.28	69.06	0.04	29.46	0.964			
A02			71.67	0.00	0.00	4.81	63.96
3.54	67.50	0.05	34.16	0.942			
A03			71.67	0.00	0.00	7.46	59.62
5.25	64.87	0.05	33.76	0.905			
A04			71.67	0.00	0.00	1.74	68.93
1.31	70.25	0.07	49.31	0.980			
A05			71.67	0.00	0.00	0.44	71.15
0.33	71.48	0.07	49.53	0.997			
A06			71.67	0.00	0.00	5.68	62.42
4.22	66.64	0.03	19.46	0.930			
A07			71.67	0.00	0.00	0.00	71.81
0.00	71.81	0.04	24.80	1.002			
A08			71.67	0.00	0.00	6.13	61.74
4.45	66.19	0.05	33.99	0.924			
A09			71.67	0.00	0.00	3.05	66.73
2.29	69.03	0.08	58.91	0.963			
A10			71.67	0.00	0.00	2.62	67.45
1.97	69.42	0.03	24.58	0.969			
A11			71.67	0.00	0.00	2.62	67.50
1.96	69.46	0.04	29.50	0.969			
A12			71.67	0.00	0.00	7.43	59.55
5.46	65.01	0.03	24.18	0.907			
A13			71.67	0.00	0.00	0.00	71.99
0.00	71.99	0.06	39.68	1.004			
A14			71.67	0.00	0.00	0.00	71.99
0.00	71.99	0.03	19.84	1.004			
A15			71.67	0.00	0.00	0.00	72.08
0.00	72.08	0.09	64.47	1.006			
B2-MP			71.67	0.00	0.00	0.00	72.04
0.00	72.04	0.20	138.87	1.005			
B5-MP			71.67	0.00	0.00	4.81	63.96
3.54	67.50	0.41	297.66	0.942			
B6-MP			71.67	0.00	0.00	1.31	69.65
0.98	70.64	0.19	133.33	0.986			

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PCSWMM Model Output
Chicago 3-hr, 100-yr Storm

POST-A1	71.67	0.00	0.00	0.00	71.83
0.00 71.83	0.06 39.68	1.002			
POST-A2	71.67	0.00	0.00	0.00	71.83
0.00 71.83	0.06 39.68	1.002			
POST-A3	71.67	0.00	0.00	0.00	71.88
0.00 71.88	0.06 44.64	1.003			
POST-A4	71.67	0.00	0.00	0.00	71.87
0.00 71.87	0.07 49.60	1.003			
POST-A5	71.67	0.00	0.00	0.00	71.82
0.00 71.82	0.06 44.64	1.002			
POST-B1	71.67	0.00	0.00	0.00	71.90
0.00 71.90	0.08 54.56	1.003			
POST-B2	71.67	0.00	0.00	0.00	71.91
0.00 71.91	0.06 44.64	1.003			
POST-B3	71.67	0.00	0.00	0.00	71.85
0.00 71.85	0.06 44.64	1.003			
POST-B4	71.67	0.00	0.00	0.00	71.77
0.00 71.77	0.04 29.76	1.001			
POST-B5	71.67	0.00	0.00	0.00	71.78
0.00 71.78	0.05 34.72	1.002			
POST-B6	71.67	0.00	0.00	0.00	71.89
0.00 71.89	0.07 49.60	1.003			
POST-DR	71.67	0.00	0.00	40.67	5.02
29.80 34.82	0.03 42.79	0.486			

Node Depth Summary

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
CB03-Dummy	JUNCTION	0.33	2.02	95.68	0 01:52	2.02
CBMH116a	JUNCTION	0.14	1.72	95.73	0 01:40	1.72
HP-CB09	JUNCTION	0.00	0.00	95.78	0 00:00	0.00
HP-CB10	JUNCTION	0.00	0.03	95.73	0 02:11	0.02
HP-CB11	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CB12	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CB3000	JUNCTION	0.00	0.00	95.50	0 01:28	0.00
HP-CBMH103	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH103A	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH108	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH113	JUNCTION	0.00	0.00	95.72	0 01:42	0.00
HP-CBMH114	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH115	JUNCTION	0.00	0.00	95.80	0 00:00	0.00
HP-CBMH116	JUNCTION	0.00	0.00	95.79	0 00:00	0.00
HP-CBMH119	JUNCTION	0.00	0.00	95.78	0 00:00	0.00
HP-CBMH120	JUNCTION	0.00	0.00	95.75	0 00:00	0.00
HP-CBMH121	JUNCTION	0.00	0.00	95.76	0 00:00	0.00
HP-CBMH122	JUNCTION	0.00	0.00	95.77	0 00:00	0.00
HP-CBMH2000	JUNCTION	0.00	0.00	95.50	0 01:30	0.00
HP-CBMH2001	JUNCTION	0.00	0.00	95.50	0 01:40	0.00
HP-CBMH2002	JUNCTION	0.00	0.00	95.50	0 01:29	0.00
HP-CBMH2003	JUNCTION	0.00	0.00	95.50	0 01:29	0.00
MH04a	JUNCTION	0.56	0.56	93.88	0 01:08	0.56

4149 Strandherd Drive - Myers Site Plan (125132)
 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

HP-CB3001	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3002	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3003	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3004	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CB3005	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
HP-CBMH2004	OUTFALL	0.00	0.00	95.35	0	00:00	0.00
STC-4000	OUTFALL	0.76	0.76	93.88	0	00:00	0.76
Uncontrolled	OUTFALL	0.00	0.00	94.00	0	00:00	0.00
CB04	STORAGE	0.06	1.38	95.69	0	01:11	1.38
CB06	STORAGE	0.10	1.38	95.75	0	01:59	1.38
CB09	STORAGE	0.10	1.41	95.73	0	01:42	1.41
CB10	STORAGE	0.10	1.28	95.72	0	02:12	1.28
CB11	STORAGE	0.13	1.61	95.72	0	02:15	1.61
CB12	STORAGE	0.12	1.64	95.75	0	01:18	1.63
CB3000	STORAGE	0.10	1.27	95.50	0	01:28	1.27
CB3001	STORAGE	0.09	0.88	95.31	0	02:40	0.88
CB3002	STORAGE	0.10	0.96	95.31	0	02:40	0.96
CB3003	STORAGE	0.11	1.02	95.31	0	02:40	1.02
CB3004	STORAGE	0.12	1.09	95.31	0	02:41	1.09
CB3005	STORAGE	0.14	1.25	95.31	0	02:41	1.25
CBMH103	STORAGE	0.41	2.10	95.68	0	01:54	2.10
CBMH103A	STORAGE	0.30	1.99	95.68	0	01:52	1.99
CBMH104	STORAGE	0.35	2.04	95.68	0	01:52	2.04
CBMH105	STORAGE	0.22	1.91	95.68	0	01:52	1.91
CBMH106	STORAGE	0.11	1.81	95.69	0	01:52	1.81
CBMH107	STORAGE	0.10	1.72	95.69	0	01:11	1.72
CBMH108	STORAGE	0.27	1.99	95.75	0	02:02	1.99
CBMH109	STORAGE	0.13	1.62	95.75	0	02:01	1.62
CBMH110	STORAGE	0.12	1.51	95.75	0	01:59	1.51
CBMH113	STORAGE	0.25	1.94	95.72	0	01:42	1.94
CBMH114	STORAGE	0.19	1.89	95.73	0	01:41	1.89
CBMH115	STORAGE	0.15	1.80	95.73	0	01:41	1.80
CBMH116	STORAGE	0.13	1.70	95.73	0	01:39	1.70
CBMH119	STORAGE	0.16	1.79	95.72	0	02:14	1.79
CBMH120	STORAGE	0.15	1.71	95.72	0	02:15	1.71
CBMH121	STORAGE	0.14	1.65	95.72	0	02:11	1.65
CBMH122	STORAGE	0.13	1.58	95.72	0	02:13	1.58
CBMH2000	STORAGE	0.12	1.37	95.50	0	01:30	1.37
CBMH2001	STORAGE	0.13	1.46	95.50	0	01:40	1.46
CBMH2002	STORAGE	0.10	1.25	95.50	0	01:29	1.25
CBMH2003	STORAGE	0.14	1.59	95.50	0	01:29	1.59
CBMH2004	STORAGE	0.35	1.60	95.30	0	02:40	1.60
MH01	STORAGE	0.75	0.75	93.88	0	01:33	0.75
MH02	STORAGE	0.68	0.68	93.88	0	01:09	0.68
MH04	STORAGE	0.52	0.52	93.88	0	01:08	0.52
MH05	STORAGE	0.41	0.42	93.89	0	01:08	0.42
MH06	STORAGE	0.27	0.28	93.89	0	01:07	0.28
MH08	STORAGE	0.19	0.20	93.89	0	01:08	0.20
MH1000	STORAGE	0.14	1.23	95.31	0	02:40	1.23
MH1001	STORAGE	0.16	1.41	95.31	0	02:41	1.41
MH1002	STORAGE	0.14	1.55	95.50	0	01:29	1.55
ST-CBMH103A	STORAGE	0.12	1.81	95.68	0	01:54	1.81
ST-CBMH113	STORAGE	0.13	1.71	95.72	0	01:42	1.71
ST-CBMH119	STORAGE	0.13	1.61	95.72	0	02:14	1.61
ST-CBMH2003	STORAGE	0.12	1.45	95.50	0	01:29	1.45
ST-CBMH2004	STORAGE	0.16	1.37	95.30	0	02:40	1.37
Subaru	STORAGE	0.00	0.07	100.07	0	01:44	0.07

Volkswagen	STORAGE	0.00	0.15	100.15	0	01:24	0.15
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 Node Inflow Summary

Total Flow		Type	Maximum Lateral Inflow	Maximum Total Inflow	Time of Max Occurrence		Lateral Inflow Volume
Inflow Volume	Balance Error		LPS	LPS	days	hr:min	10^6 ltr
Node ltr	Percent						10^6

CB03-Dummy		JUNCTION	0.00	278.44	0	01:09	0
0.157	-0.051						
CBMH116a		JUNCTION	0.00	79.08	0	01:06	0
0.126	-0.148						
HP-CB09		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CB10		JUNCTION	0.00	38.46	0	02:12	0
0.0574	-0.158						
HP-CB11		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CB12		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CB3000		JUNCTION	0.00	9.04	0	01:28	0
0.00799	-0.001						
HP-CBMH103		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH103A		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH108		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH113		JUNCTION	0.00	11.30	0	01:42	0
0.0155	0.000						
HP-CBMH114		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH115		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH116		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH119		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH120		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH121		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH122		JUNCTION	0.00	0.00	0	00:00	0
0	0.000 ltr						
HP-CBMH2000		JUNCTION	0.00	4.57	0	01:30	0
0.00768	-0.000						
HP-CBMH2001		JUNCTION	0.00	4.82	0	01:40	0
0.00748	-0.000						

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HP-CBMH2002	JUNCTION	0.00	5.59	0	01:29	0
0.00723 -0.000						
HP-CBMH2003	JUNCTION	0.00	6.54	0	01:29	0
0.00673 -0.001						
MH04a	JUNCTION	0.00	60.37	0	01:33	0
1.44 -0.000						
HP-CB3001	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3002	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3003	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3004	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CB3005	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
HP-CBMH2004	OUTFALL	0.00	0.00	0	00:00	0
0 0.000 ltr						
STC-4000	OUTFALL	0.00	86.67	0	01:33	0
2.25 0.000						
Uncontrolled	OUTFALL	42.79	42.79	0	01:10	0.0348
0.0348 0.000						
CB04	STORAGE	0.00	26.58	0	01:09	0
0.00477 0.009						
CB06	STORAGE	0.00	5.31	0	01:00	0
0.00357 0.071						
CB09	STORAGE	49.31	53.89	0	01:08	0.0702
0.0725 0.196						
CB10	STORAGE	49.53	63.12	0	01:07	0.0715
0.0982 0.861						
CB11	STORAGE	44.42	62.12	0	01:09	0.0635
0.0687 0.069						
CB12	STORAGE	69.18	86.62	0	01:08	0.0993
0.102 0.007						
CB3000	STORAGE	44.64	87.66	0	01:09	0.0646
0.0738 0.094						
CB3001	STORAGE	49.60	49.60	0	01:10	0.0719
0.0799 0.237						
CB3002	STORAGE	34.72	35.12	0	01:11	0.0502
0.0626 0.172						
CB3003	STORAGE	29.76	31.83	0	01:11	0.0431
0.0556 0.145						
CB3004	STORAGE	44.64	44.64	0	01:10	0.0647
0.0719 0.096						
CB3005	STORAGE	44.64	44.64	0	01:10	0.0647
0.0722 0.010						
CBMH103	STORAGE	297.66	324.21	0	01:09	0.412
0.623 0.004						
CBMH103A	STORAGE	0.00	46.79	0	01:09	0
0.00919 0.008						
CBMH104	STORAGE	0.00	231.90	0	01:09	0
0.128 0.006						
CBMH105	STORAGE	0.00	190.19	0	01:09	0
0.0932 -0.001						
CBMH106	STORAGE	0.00	128.53	0	01:09	0
0.0555 -0.004						
CBMH107	STORAGE	0.00	79.80	0	01:09	0
0.024 0.019						
CBMH108	STORAGE	133.33	137.73	0	01:06	0.191
0.213 -0.004						

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CBMH109		STORAGE	0.00	27.22	0	01:00	0
0.035	0.007						
CBMH110		STORAGE	0.00	16.35	0	01:00	0
0.0161	0.036						
CBMH113		STORAGE	24.18	227.65	0	01:06	0.0325
0.418	-0.001						
CBMH114		STORAGE	29.46	137.52	0	01:06	0.0414
0.213	0.026						
CBMH115		STORAGE	34.16	136.33	0	01:07	0.0472
0.171	0.028						
CBMH116		STORAGE	33.76	54.35	0	01:07	0.0454
0.0494	0.080						
CBMH119		STORAGE	58.91	231.62	0	01:06	0.0828
0.405	0.010						
CBMH120		STORAGE	33.99	116.96	0	01:06	0.0463
0.189	0.018						
CBMH121		STORAGE	24.80	96.13	0	01:06	0.0359
0.141	-0.033						
CBMH122		STORAGE	19.46	70.41	0	01:06	0.0267
0.134	-0.074						
CBMH2000		STORAGE	49.60	114.79	0	01:06	0.0719
0.144	0.026						
CBMH2001		STORAGE	44.64	130.83	0	01:09	0.0647
0.204	-0.001						
CBMH2002		STORAGE	39.68	39.68	0	01:10	0.0575
0.0596	0.031						
CBMH2003		STORAGE	39.68	101.12	0	01:12	0.0575
0.348	-0.007						
CBMH2004		STORAGE	54.56	129.59	0	01:04	0.0791
0.48	-0.002						
MH01		STORAGE	0.00	86.67	0	01:33	0
2.26	0.001						
MH02		STORAGE	0.00	77.66	0	01:33	0
1.85	0.000						
MH04		STORAGE	0.00	48.73	0	01:21	0
1.24	0.000						
MH05		STORAGE	0.00	41.45	0	01:22	0
1.05	0.000						
MH06		STORAGE	0.00	21.51	0	01:21	0
0.429	0.001						
MH08		STORAGE	0.00	10.12	0	02:14	0
0.331	-0.000						
MH1000		STORAGE	0.00	82.80	0	01:04	0
0.204	-0.127						
MH1001		STORAGE	0.00	121.37	0	01:04	0
0.343	-0.058						
MH1002		STORAGE	0.00	59.43	0	01:12	0
0.202	-0.024						
ST-CBMH103A		STORAGE	0.00	258.30	0	01:07	0
0.132	0.019						
ST-CBMH113		STORAGE	0.00	207.93	0	01:06	0
0.0741	-0.100						
ST-CBMH119		STORAGE	0.00	198.14	0	01:06	0
0.0699	-0.088						
ST-CBMH2003		STORAGE	0.00	61.62	0	01:03	0
0.0322	0.009						
ST-CBMH2004		STORAGE	0.00	102.04	0	01:05	0
0.0646	0.002						
Subaru		STORAGE	138.87	138.87	0	01:10	0.202
0.202	-0.000						

Volkswagen STORAGE 64.47 64.47 0 01:10 0.0937
 0.0937 -0.000

 Node Surcharge Summary

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
CB03-Dummy	JUNCTION	8.31	1.572	0.921
CBMH116a	JUNCTION	8.12	1.266	0.784
MH1002	STORAGE	8.73	1.148	0.000

 Node Flooding Summary

No nodes were flooded.

 Storage Volume Summary

Max	Maximum	Average	Avg	Evap	Exfil	Maximum	Max	Time of
Occurrence	Outflow	Volume	Pcnt	Pcnt	Pcnt	Volume	Pcnt	
Storage Unit		1000 m ³	Full	Loss	Loss	1000 m ³	Full	days
hr:min	LPS							
CB04		0.000	2.8	0.0	0.0	0.000	60.5	0
01:11	6.24							
CB06		0.000	4.9	0.0	0.0	0.000	65.0	0
01:59	3.00							
CB09		0.001	2.3	0.0	0.0	0.028	63.7	0
01:42	47.84							
CB10		0.001	4.0	0.0	0.0	0.031	100.0	0
01:49	48.10							
CB11		0.001	5.5	0.0	0.0	0.023	100.0	0
01:16	42.86							
CB12		0.001	4.8	0.0	0.0	0.030	100.0	0
01:18	67.27							
CB3000		0.001	3.7	0.0	0.0	0.030	100.0	0
01:28	42.29							
CB3001		0.002	4.4	0.0	0.0	0.037	72.6	0
02:40	35.77							
CB3002		0.002	4.8	0.0	0.0	0.038	78.3	0
02:40	26.69							

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CB3003		0.002	4.4	0.0	0.0	0.034	72.5	0
02:40	23.11							
CB3004		0.002	4.4	0.0	0.0	0.034	72.5	0
02:41	35.50							
CB3005		0.002	4.4	0.0	0.0	0.032	72.5	0
02:41	36.85							
CBMH103		0.003	2.4	0.0	0.0	0.105	76.3	0
01:54	317.15							
CBMH103A		0.000	10.2	0.0	0.0	0.002	68.4	0
01:52	7.26							
CBMH104		0.000	11.7	0.0	0.0	0.002	68.9	0
01:52	190.19							
CBMH105		0.000	7.9	0.0	0.0	0.002	70.1	0
01:52	128.53							
CBMH106		0.000	3.9	0.0	0.0	0.002	66.4	0
01:52	79.80							
CBMH107		0.000	3.7	0.0	0.0	0.002	65.4	0
01:11	26.58							
CBMH108		0.005	3.1	0.0	0.0	0.109	68.1	0
02:02	33.97							
CBMH109		0.000	5.3	0.0	0.0	0.002	68.5	0
02:01	16.35							
CBMH110		0.000	5.1	0.0	0.0	0.002	67.0	0
01:59	6.86							
CBMH113		0.001	2.3	0.0	0.0	0.015	62.0	0
01:42	215.64							
CBMH114		0.000	1.8	0.0	0.0	0.013	51.8	0
01:41	129.19							
CBMH115		0.000	1.6	0.0	0.0	0.011	47.4	0
01:41	106.05							
CBMH116		0.001	2.1	0.0	0.0	0.022	58.6	0
01:39	31.24							
CBMH119		0.002	3.5	0.0	0.0	0.036	82.1	0
02:14	205.89							
CBMH120		0.000	2.7	0.0	0.0	0.013	71.5	0
02:15	109.87							
CBMH121		0.001	2.5	0.0	0.0	0.015	66.3	0
02:11	83.63							
CBMH122		0.000	1.8	0.0	0.0	0.006	55.3	0
02:13	64.10							
CBMH2000		0.002	7.0	0.0	0.0	0.034	100.0	0
01:08	104.47							
CBMH2001		0.002	6.0	0.0	0.0	0.032	100.0	0
01:11	75.71							
CBMH2002		0.001	4.0	0.0	0.0	0.020	100.0	0
01:29	26.02							
CBMH2003		0.001	3.9	0.0	0.0	0.029	100.0	0
01:29	69.87							
CBMH2004		0.002	5.1	0.0	0.0	0.028	73.2	0
02:40	110.29							
MH01		0.002	29.4	0.0	0.0	0.002	29.5	0
01:33	86.67							
MH02		0.003	27.8	0.0	0.0	0.003	27.9	0
01:09	77.67							
MH04		0.001	23.2	0.0	0.0	0.001	23.4	0
01:08	48.73							
MH05		0.001	19.4	0.0	0.0	0.001	19.6	0
01:08	41.52							
MH06		0.001	12.4	0.0	0.0	0.001	12.7	0
01:07	21.67							

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MH08		0.000	9.6	0.0	0.0	0.001	9.9	0
01:08	10.13							
MH1000		0.000	10.3	0.0	0.0	0.001	91.5	0
02:40	50.30							
MH1001		0.000	10.2	0.0	0.0	0.002	87.3	0
02:41	76.77							
MH1002		0.000	9.4	0.0	0.0	0.002	100.0	0
01:10	59.50							
ST-CBMH103A		0.009	7.3	0.0	0.0	0.126	100.0	0
01:08	27.45							
ST-CBMH113		0.007	9.1	0.0	0.0	0.072	100.0	0
01:06	29.18							
ST-CBMH119		0.006	9.5	0.0	0.0	0.068	100.0	0
01:06	31.57							
ST-CBMH2003		0.003	9.6	0.0	0.0	0.031	100.0	0
01:04	10.06							
ST-CBMH2004		0.008	12.5	0.0	0.0	0.063	100.0	0
01:09	20.98							
Subaru		0.008	4.5	0.0	0.0	0.140	83.3	0
01:44	11.87							
Volkswagen		0.001	1.9	0.0	0.0	0.049	94.6	0
01:24	11.40							

 Outfall Loading Summary

Outfall Node	Flow Freq Pcnt	Avg Flow LPS	Max Flow LPS	Total Volume 10^6 ltr
HP-CB3001	0.00	0.00	0.00	0.000
HP-CB3002	0.00	0.00	0.00	0.000
HP-CB3003	0.00	0.00	0.00	0.000
HP-CB3004	0.00	0.00	0.00	0.000
HP-CB3005	0.00	0.00	0.00	0.000
HP-CBMH2004	0.00	0.00	0.00	0.000
STC-4000	18.50	38.68	86.67	2.250
Uncontrolled	3.51	3.32	42.79	0.035
System	2.75	42.00	121.81	2.285

 Link Flow Summary

Link	Type	Maximum Flow LPS	Time of Max Occurrence days hr:min	Maximum Veloc m/sec	Max/ Full Flow	Max/ Full Depth
C07	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C08	CONDUIT	0.00	0 00:00	0.00	0.00	0.00
C1	CONDUIT	0.00	0 00:00	0.00	0.00	0.09
C10	CONDUIT	4.82	0 01:40	0.01	0.00	0.13

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C11	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C12	CONDUIT	11.30	0	01:42	0.02	0.00	0.18
C13	CONDUIT	6.54	0	01:29	0.01	0.00	0.18
C14	CONDUIT	6.43	0	01:29	0.02	0.00	0.13
C15	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C16	CONDUIT	5.59	0	01:29	0.01	0.00	0.13
C17	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
C18	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C19	CONDUIT	5.56	0	01:29	0.02	0.00	0.13
C2	CONDUIT	9.04	0	01:28	0.02	0.00	0.18
C20	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C21	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C22	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C23	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C24	CONDUIT	102.04	0	01:05	2.08	1.21	1.00
C25	CONDUIT	61.62	0	01:03	1.26	0.73	1.00
C26	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C27	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C28	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C29	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C3	CONDUIT	8.27	0	01:28	0.03	0.00	0.13
C30	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C31	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C32	CONDUIT	0.00	0	00:00	0.00	0.00	0.10
C33	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C34	CONDUIT	0.00	0	00:00	0.00	0.00	0.10
C35	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C36	CONDUIT	11.30	0	01:42	0.03	0.00	0.11
C37	CONDUIT	0.00	0	00:00	0.00	0.00	0.00
C4	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C45	CONDUIT	0.00	0	00:00	0.00	0.00	0.09
C46	CONDUIT	0.00	0	00:00	0.00	0.00	0.10
C47	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C48	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C49	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C5	CONDUIT	0.00	0	00:00	0.00	0.00	0.18
C50	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C51	CONDUIT	38.46	0	02:12	0.11	0.00	0.12
C52	CONDUIT	39.87	0	02:12	0.15	0.00	0.10
C53	CONDUIT	0.00	0	00:00	0.00	0.00	0.08
C54	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C55	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C56	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C57	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
C58	CONDUIT	0.00	0	00:00	0.00	0.00	0.14
C59	CONDUIT	0.00	0	00:00	0.00	0.00	0.08
C6	CONDUIT	4.57	0	01:30	0.01	0.00	0.18
C60	CONDUIT	0.00	0	00:00	0.00	0.00	0.14
C61	CONDUIT	0.00	0	00:00	0.00	0.00	0.14
C7	CONDUIT	4.56	0	01:30	0.01	0.00	0.13
C8	CONDUIT	0.00	0	00:00	0.00	0.00	0.13
C9	CONDUIT	4.82	0	01:40	0.01	0.00	0.18
CB04-CBMH107	CONDUIT	26.58	0	01:09	0.54	0.44	1.00
CB06-CBMH110	CONDUIT	5.31	0	01:00	0.11	0.12	1.00
CB09-CBMH116a	CONDUIT	47.84	0	01:06	0.97	1.11	1.00
CB10-CBMH122	CONDUIT	48.10	0	01:06	0.98	1.12	1.00
CB11-CBMH119	CONDUIT	42.86	0	01:06	0.87	1.05	1.00

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 PCSWMM Model Output
 Chicago 3-hr, 100-yr Storm

CB12-CBMH113	CONDUIT	67.27	0	01:06	1.37	1.13	1.00
CBMH103A-CBMH103	CONDUIT	46.79	0	01:09	0.95	1.13	1.00
CBMH104-CBMH103_1	CONDUIT	231.90	0	01:09	1.46	2.16	1.00
CBMH104-CBMH103_2	CONDUIT	278.44	0	01:09	1.75	2.57	1.00
CBMH105-CBMH104	CONDUIT	190.19	0	01:09	1.20	1.68	1.00
CBMH106-CBMH105	CONDUIT	128.53	0	01:09	1.16	1.52	1.00
CBMH107-CBMH106	CONDUIT	79.80	0	01:09	0.72	1.05	1.00
CBMH109-CBMH108	CONDUIT	27.22	0	01:00	0.25	0.30	1.00
CBMH110-CBMH109	CONDUIT	16.35	0	01:00	0.23	0.28	1.00
CBMH114-CBMH113	CONDUIT	129.19	0	01:06	0.81	0.95	1.00
CBMH115-CBMH114	CONDUIT	106.05	0	01:06	0.67	0.75	1.00
CBMH116a-CBMH115	CONDUIT	78.96	0	01:06	0.50	0.54	1.00
CBMH116-CBMH116a	CONDUIT	31.24	0	01:06	0.20	0.24	1.00
CBMH120-CBMH119	CONDUIT	109.87	0	01:06	0.69	0.83	1.00
CBMH121-CBMH120	CONDUIT	83.63	0	01:06	0.53	0.65	1.00
CBMH122-CBMH121	CONDUIT	64.10	0	01:06	0.40	0.51	1.00
MH01-STC4000	CONDUIT	86.67	0	01:33	0.15	0.09	0.84
MH02-MH01	CONDUIT	77.67	0	01:33	0.14	0.10	0.80
MH04a-MH02	CONDUIT	60.38	0	01:33	0.15	0.11	0.71
MH04-MH04a	CONDUIT	48.73	0	01:22	0.13	0.08	0.66
MH05-MH04	CONDUIT	41.52	0	01:21	0.16	0.09	0.58
MH06-MH05	CONDUIT	21.67	0	01:22	0.14	0.06	0.46
MH08-MH06	CONDUIT	10.13	0	02:14	0.09	0.03	0.35
OVF-A	CONDUIT	0.00	0	00:00	0.00	0.00	0.11
OVF-C	CONDUIT	0.00	0	00:00	0.00	0.00	0.04
STCBMH103-CBMH103A	CONDUIT	258.30	0	01:07	1.62	0.64	1.00
STCBMH113-CBMH113	CONDUIT	207.93	0	01:06	1.31	0.52	1.00
STCBMH119-CBMH119	CONDUIT	198.14	0	01:06	1.25	0.49	1.00
STM_PHASE_3-10	CONDUIT	61.46	0	01:09	0.56	0.73	1.00
STM_PHASE_3-14	CONDUIT	59.43	0	01:12	0.54	0.67	1.00
STM_PHASE_3-14(1)	CONDUIT	59.50	0	01:12	0.54	0.75	1.00
STM_PHASE_3-15	CONDUIT	26.02	0	01:03	0.53	0.62	1.00
STM_PHASE_3-18	CONDUIT	35.77	0	01:04	0.74	0.85	1.00
STM_PHASE_3-19	CONDUIT	23.11	0	01:04	0.59	0.56	1.00
STM_PHASE_3-20	CONDUIT	26.69	0	01:04	0.62	0.65	1.00
STM_PHASE_3-21	CONDUIT	35.50	0	01:04	0.72	0.83	1.00
STM_PHASE_3-22	CONDUIT	36.85	0	01:04	0.75	0.86	1.00
STM_PHASE_3-3	CONDUIT	50.30	0	01:04	0.41	0.35	1.00
STM_PHASE_3-4	CONDUIT	44.61	0	01:12	0.40	0.52	1.00
STM_PHASE_3-9	CONDUIT	76.77	0	01:04	0.48	0.53	1.00
CBMH103-ICD	ORIFICE	17.31	0	01:54			1.00
CBMH108-ICD	ORIFICE	7.25	0	02:04			1.00
CBMH113-ICD	ORIFICE	10.36	0	01:42			1.00
CBMH119-ICD	ORIFICE	10.12	0	02:14			1.00
CBMH2003-ICD	ORIFICE	9.55	0	01:29			1.00
CBMH2004-ICD	ORIFICE	9.12	0	02:41			1.00
Subaru-OUT	DUMMY	11.87	0	01:44			
Volkswagen-OUT	DUMMY	11.40	0	01:21			

 Flow Classification Summary

 --- Adjusted ----- Fraction of Time in Flow Class -----

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 Chicago 3-hr, 100-yr Storm

Inlet Conduit Ctrl	/Actual Length	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd

C07 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C08 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C1 0.00	1.00	0.98	0.02	0.00	0.00	0.00	0.00	0.00
C10 0.00	1.00	0.95	0.04	0.00	0.01	0.00	0.00	0.99
C11 0.00	1.00	0.95	0.05	0.00	0.00	0.00	0.00	0.00
C12 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.99
C13 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.99
C14 0.00	1.00	0.95	0.04	0.00	0.00	0.00	0.00	0.99
C15 0.00	1.00	0.95	0.05	0.00	0.00	0.00	0.00	0.00
C16 0.00	1.00	0.97	0.02	0.00	0.00	0.00	0.00	0.99
C17 0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00
C18 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00
C19 0.00	1.00	0.95	0.04	0.00	0.00	0.00	0.00	0.99
C2 0.00	1.00	0.97	0.03	0.00	0.01	0.00	0.00	0.99
C20 0.00	1.00	0.95	0.05	0.00	0.00	0.00	0.00	0.00
C21 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00
C22 0.00	1.00	0.95	0.05	0.00	0.00	0.00	0.00	0.00
C23 0.00	1.00	0.95	0.05	0.00	0.00	0.00	0.00	0.00
C24 0.00	1.00	0.00	0.82	0.00	0.18	0.00	0.00	0.92
C25 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.95	0.00
C26 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C27 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C28 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C29 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00
C3 0.00	1.00	0.95	0.04	0.00	0.01	0.00	0.00	0.99
C30 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
C31 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

C32 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C33 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C34 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C35 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C36 0.00	1.00	0.97	0.02	0.00	0.00	0.00	0.00	0.00	0.99
C37 0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C4 0.00	1.00	0.95	0.05	0.00	0.00	0.00	0.00	0.00	0.00
C45 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C46 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C47 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C48 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C49 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C5 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C50 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C51 0.00	1.00	0.97	0.02	0.00	0.01	0.00	0.00	0.00	0.98
C52 0.00	1.00	0.97	0.02	0.00	0.01	0.00	0.00	0.00	0.98
C53 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C54 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C55 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C56 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C57 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C58 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C59 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C6 0.00	1.00	0.97	0.03	0.00	0.01	0.00	0.00	0.00	0.99
C60 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C61 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
C7 0.00	1.00	0.95	0.04	0.00	0.01	0.00	0.00	0.00	0.99
C8 0.00	1.00	0.95	0.05	0.00	0.00	0.00	0.00	0.00	0.00
C9 0.00	1.00	0.97	0.03	0.00	0.01	0.00	0.00	0.00	0.99
CB04-CBMH107 0.00	1.00	0.95	0.01	0.00	0.04	0.00	0.00	0.00	0.96

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CB06-CBMH110 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
CB09-CBMH116a 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.38
CB10-CBMH122 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.03
CB11-CBMH119 0.00	1.00	0.00	0.00	0.00	0.06	0.00	0.00	0.94	0.00
CB12-CBMH113 0.00	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	0.94
CBMH103A-CBMH103 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
CBMH104-CBMH103_1 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
CBMH104-CBMH103_2 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
CBMH105-CBMH104 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
CBMH106-CBMH105 0.00	1.00	0.00	0.69	0.00	0.31	0.00	0.00	0.00	0.92
CBMH107-CBMH106 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.00
CBMH109-CBMH108 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
CBMH110-CBMH109 0.00	1.00	0.00	0.00	0.00	0.04	0.00	0.00	0.96	0.00
CBMH114-CBMH113 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
CBMH115-CBMH114 0.00	1.00	0.00	0.92	0.00	0.08	0.00	0.00	0.00	0.94
CBMH116a-CBMH115 0.00	1.00	0.22	0.02	0.00	0.76	0.00	0.00	0.00	0.25
CBMH116-CBMH116a 0.00	1.00	0.00	0.03	0.00	0.97	0.00	0.00	0.00	0.94
CBMH120-CBMH119 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.03
CBMH121-CBMH120 0.00	1.00	0.00	0.02	0.00	0.98	0.00	0.00	0.00	0.94
CBMH122-CBMH121 0.00	1.00	0.00	0.00	0.00	0.06	0.00	0.00	0.94	0.00
MH01-STC4000 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH02-MH01 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH04a-MH02 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH04-MH04a 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH05-MH04 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH06-MH05 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
MH08-MH06 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
OVF-A 0.00	1.00	0.97	0.03	0.00	0.00	0.00	0.00	0.00	0.00
OVF-C 0.00	1.00	0.99	0.01	0.00	0.00	0.00	0.00	0.00	0.00
STCBMH103-CBMH103A 0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

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STCBMH113-CBMH113 0.00	1.00	0.00	0.00	0.00	0.06	0.00	0.00	0.94	0.94
STCBMH119-CBMH119 0.00	1.00	0.00	0.00	0.00	0.06	0.00	0.00	0.94	0.94
STM_PHASE_3-10 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.00
STM_PHASE_3-14 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.00
STM_PHASE_3-14(1) 0.00	1.00	0.00	0.00	0.00	0.06	0.00	0.00	0.94	0.00
STM_PHASE_3-15 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.01
STM_PHASE_3-18 0.00	1.00	0.00	0.00	0.00	0.06	0.00	0.00	0.94	0.11
STM_PHASE_3-19 0.00	1.00	0.00	0.00	0.00	0.07	0.00	0.00	0.93	0.93
STM_PHASE_3-20 0.00	1.00	0.00	0.00	0.00	0.07	0.00	0.00	0.93	0.93
STM_PHASE_3-21 0.00	1.00	0.00	0.00	0.00	0.07	0.00	0.00	0.93	0.93
STM_PHASE_3-22 0.00	1.00	0.00	0.00	0.00	0.08	0.00	0.00	0.92	0.00
STM_PHASE_3-3 0.00	1.00	0.00	0.00	0.00	0.08	0.00	0.00	0.92	0.01
STM_PHASE_3-4 0.00	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.00
STM_PHASE_3-9 0.00	1.00	0.00	0.88	0.00	0.12	0.00	0.00	0.00	0.92

 Conduit Surcharge Summary

Conduit	----- Both Ends	Hours Full Upstream	----- Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C24	13.28	13.28	13.93	0.05	0.01
C25	9.05	9.05	9.44	0.01	0.01
CB04-CBMH107	4.61	4.61	7.13	0.01	0.01
CB06-CBMH110	6.92	6.92	7.08	0.01	0.01
CB09-CBMH116a	7.38	7.38	8.12	0.04	0.06
CB10-CBMH122	7.60	7.60	8.26	0.04	0.05
CB11-CBMH119	9.74	9.74	10.51	0.02	0.04
CB12-CBMH113	8.84	8.84	10.81	0.03	0.05
CBMH103A-CBMH103	8.93	8.93	10.33	0.01	0.01
CBMH104-CBMH103_1	8.12	8.12	8.31	0.03	0.01
CBMH104-CBMH103_2	8.31	8.31	8.46	0.03	0.01
CBMH105-CBMH104	7.40	7.40	7.88	0.02	0.01
CBMH106-CBMH105	7.12	7.12	7.76	0.02	0.01
CBMH107-CBMH106	6.42	6.42	6.89	0.01	0.01
CBMH109-CBMH108	7.08	7.08	7.21	0.01	0.01
CBMH110-CBMH109	7.02	7.02	7.20	0.01	0.01
CBMH114-CBMH113	9.31	9.31	9.73	0.01	0.01
CBMH115-CBMH114	8.69	8.69	9.24	0.01	0.01
CBMH116a-CBMH115	8.12	8.12	8.69	0.01	0.01

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 PCSWMM Model Output
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CBMH116-CBMH116a	7.99	7.99	8.12	0.01	0.01
CBMH120-CBMH119	9.10	9.10	9.61	0.01	0.01
CBMH121-CBMH120	8.72	8.72	9.10	0.01	0.01
CBMH122-CBMH121	8.26	8.26	8.51	0.01	0.01
STCBMH103-CBMH103A	6.61	6.61	7.08	0.01	0.01
STCBMH113-CBMH113	8.11	8.11	8.54	0.01	0.01
STCBMH119-CBMH119	8.44	8.44	8.84	0.01	0.01
STM_PHASE_3-10	8.13	8.13	8.34	0.01	0.01
STM_PHASE_3-14	8.46	8.46	8.73	0.01	0.01
STM_PHASE_3-14 (1)	8.90	8.90	8.96	0.01	0.01
STM_PHASE_3-15	8.15	8.15	8.93	0.01	0.01
STM_PHASE_3-18	10.17	10.17	10.83	0.01	0.01
STM_PHASE_3-19	10.79	10.79	11.26	0.01	0.01
STM_PHASE_3-20	10.51	10.51	10.93	0.01	0.01
STM_PHASE_3-21	11.15	11.15	11.71	0.01	0.01
STM_PHASE_3-22	12.21	12.21	12.52	0.01	0.03
STM_PHASE_3-3	10.83	10.83	11.71	0.01	0.01
STM_PHASE_3-4	7.84	7.84	8.04	0.01	0.01
STM_PHASE_3-9	11.91	11.91	13.29	0.01	0.01

Analysis begun on: Tue Jul 28 10:52:20 2026
 Analysis ended on: Tue Jul 28 10:52:32 2026
 Total elapsed time: 00:00:12

4149 Strandherd Drive - Myers Site Plan (125132)
PCSWMM Model Results (Ponding)

CB / CBMH ID	Invert Elev. (m)	Rim Elev. (m)	Spill Elev. (m)	Ponding Depth (m)	HGL Elev. (m) ¹				Ponding Depth (m)				Spill Depth (m)			
					2-yr	5-yr	100-yr	100-yr (+20%)	2-yr	5-yr	100-yr	100-yr (+20%)	2-yr	5-yr	100-yr	100-yr (+20%)
Phase 1 and 2																
CB04	94.31	95.60	95.80	0.20	94.44	94.59	95.69	95.83	0.00	0.00	0.09	0.23	0.00	0.00	0.00	0.03
CB06	94.37	95.50	95.80	0.30	95.62	95.66	95.75	95.80	0.12	0.16	0.25	0.30	0.00	0.00	0.00	0.00
CB09	94.32	95.50	95.78	0.28	94.74	95.56	95.73	95.76	0.00	0.06	0.23	0.26	0.00	0.00	0.00	0.00
CB10	94.44	95.50	95.70	0.20	94.87	95.55	95.72	95.79	0.00	0.05	0.22	0.29	0.00	0.00	0.02	0.09
CB11	94.11	95.55	95.80	0.25	94.87	95.55	95.72	95.81	0.00	0.00	0.17	0.26	0.00	0.00	0.00	0.01
CB12	94.11	95.55	95.80	0.25	94.74	95.56	95.75	95.82	0.00	0.01	0.20	0.27	0.00	0.00	0.00	0.02
CBMH103	93.58	95.50	95.80	0.30	94.43	94.59	95.68	95.81	0.00	0.00	0.18	0.31	0.00	0.00	0.00	0.01
CBMH103A	93.69	95.60	95.80	0.20	94.44	94.59	95.68	95.83	0.00	0.00	0.08	0.23	0.00	0.00	0.00	0.03
CBMH104	93.64	95.60	95.80	0.20	94.44	94.59	95.68	95.82	0.00	0.00	0.08	0.22	0.00	0.00	0.00	0.02
CBMH105	93.77	95.50	95.80	0.30	94.44	94.59	95.68	95.82	0.00	0.00	0.18	0.32	0.00	0.00	0.00	0.02
CBMH106	93.88	95.60	95.80	0.20	94.44	94.59	95.69	95.83	0.00	0.00	0.09	0.23	0.00	0.00	0.00	0.03
CBMH107	93.97	95.60	95.80	0.20	94.44	94.59	95.69	95.83	0.00	0.00	0.09	0.23	0.00	0.00	0.00	0.03
CBMH108	93.76	95.50	95.80	0.30	95.61	95.66	95.75	95.80	0.11	0.16	0.25	0.30	0.00	0.00	0.00	0.00
CBMH109	94.13	95.50	95.80	0.30	95.62	95.66	95.75	95.80	0.12	0.16	0.25	0.30	0.00	0.00	0.00	0.00
CBMH110	94.24	95.50	95.80	0.30	95.62	95.66	95.75	95.80	0.12	0.16	0.25	0.30	0.00	0.00	0.00	0.00
CBMH113	93.78	95.50	95.78	0.28	94.74	95.56	95.72	95.73	0.00	0.06	0.22	0.23	0.00	0.00	0.00	0.00
CBMH114	93.84	95.52	95.80	0.28	94.74	95.56	95.73	95.74	0.00	0.04	0.21	0.22	0.00	0.00	0.00	0.00
CBMH115	93.93	95.55	95.80	0.25	94.74	95.56	95.73	95.74	0.00	0.01	0.18	0.19	0.00	0.00	0.00	0.00
CBMH116	94.03	95.50	95.79	0.29	94.74	95.56	95.73	95.74	0.00	0.06	0.23	0.24	0.00	0.00	0.00	0.00
CBMH119	93.93	95.43	95.74	0.31	94.87	95.55	95.72	95.79	0.00	0.12	0.29	0.36	0.00	0.00	0.00	0.05
CBMH120	94.01	95.50	95.75	0.25	94.87	95.55	95.72	95.79	0.00	0.05	0.22	0.29	0.00	0.00	0.00	0.04
CBMH121	94.07	95.50	95.76	0.26	94.87	95.55	95.72	95.79	0.00	0.05	0.22	0.29	0.00	0.00	0.00	0.03
CBMH122	94.14	95.55	95.77	0.22	94.87	95.55	95.72	95.79	0.00	0.00	0.17	0.24	0.00	0.00	0.00	0.02
Phase 3																
CBMH2000	94.13	95.25	95.75	0.50	95.24	95.32	95.50	95.51	0.00	0.07	0.25	0.26	0.00	0.00	0.00	0.00
CBMH2001	94.04	95.25	95.75	0.50	95.24	95.32	95.50	95.51	0.00	0.07	0.25	0.26	0.00	0.00	0.00	0.00
CBMH2002	94.25	95.25	95.75	0.50	95.24	95.32	95.50	95.51	0.00	0.07	0.25	0.26	0.00	0.00	0.00	0.00
CBMH2003	93.91	95.25	95.75	0.50	95.24	95.32	95.50	95.51	0.00	0.07	0.25	0.26	0.00	0.00	0.00	0.00
CBMH2004	93.70	95.05	95.60	0.55	94.98	95.15	95.30	95.36	0.00	0.10	0.25	0.31	0.00	0.00	0.00	0.00
CB3000	94.23	95.25	95.62	0.37	95.24	95.32	95.50	95.52	0.00	0.07	0.25	0.27	0.00	0.00	0.00	0.00
CB3001	94.43	95.05	95.65	0.60	94.98	95.15	95.31	95.36	0.00	0.10	0.26	0.31	0.00	0.00	0.00	0.00
CB3002	94.35	95.05	95.62	0.57	94.98	95.15	95.31	95.36	0.00	0.10	0.26	0.31	0.00	0.00	0.00	0.00
CB3003	94.29	95.05	95.60	0.55	94.98	95.15	95.31	95.36	0.00	0.10	0.26	0.31	0.00	0.00	0.00	0.00
CB3004	94.22	95.05	95.79	0.74	94.98	95.15	95.31	95.36	0.00	0.10	0.26	0.31	0.00	0.00	0.00	0.00
CB3005	94.06	95.05	95.65	0.60	94.98	95.15	95.31	95.36	0.00	0.10	0.26	0.31	0.00	0.00	0.00	0.00

¹ 3-hour Chicago Storm.

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



125132 - MYERS BARRHAVEN - CBMH2003

OTTAWA, ON, CANADA

SC-800 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-800.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL BE CERTIFIED TO CSA B184.2, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES FOR POLYPROPYLENE (PP) CHAMBERS"
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH CSA B184.0 AND CSA B184.2, "POLYMERIC SUBSURFACE STORMWATER MANAGEMENT STRUCTURES FOR POLYPROPYLENE CHAMBERS (PP)". THE STRUCTURAL DESIGN SHALL CONSIDER BOTH LONG-TERM (DEAD) AND SHORT-TERM (LIVE) LOADS IN ACCORDANCE WITH THE LOAD AND RESISTANCE FACTORS SPECIFIED IN CSA S6, "CANADIAN HIGHWAY BRIDGE DESIGN CODE." DESIGN LOADS SHALL INCLUDE PERMANENT EARTH AND SURCHARGE LOADS, AS WELL AS TRAFFIC LOADS BASED ON THE CSA S6 CL-625 DESIGN TRUCK, INCLUDING CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE. STRUCTURAL PERFORMANCE SHALL BE VERIFIED BY TESTING IN ACCORDANCE WITH CLAUSE 7.2 OF CSA B184.2.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 50 mm (2").
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 700 LBS/FT/%. THE ASC IS DEFINED IN SECTION 7.2.2.6 OF CSA B184.0. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE COMPLIANCE WITH THE STRUCTURAL DESIGN AND PERFORMANCE REQUIREMENTS OF CSA B184.0 AND CSA B184.2, SPECIFICALLY WITH CLAUSES 4.1.2 AND 5 OF CSA B184.0, FOR APPLICABLE PERMANENT AND LIVE LOADS.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN SECTION 5.3 OF CSA B184.2 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-800 SYSTEM

- STORMTECH SC-800 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 75 mm (3") SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

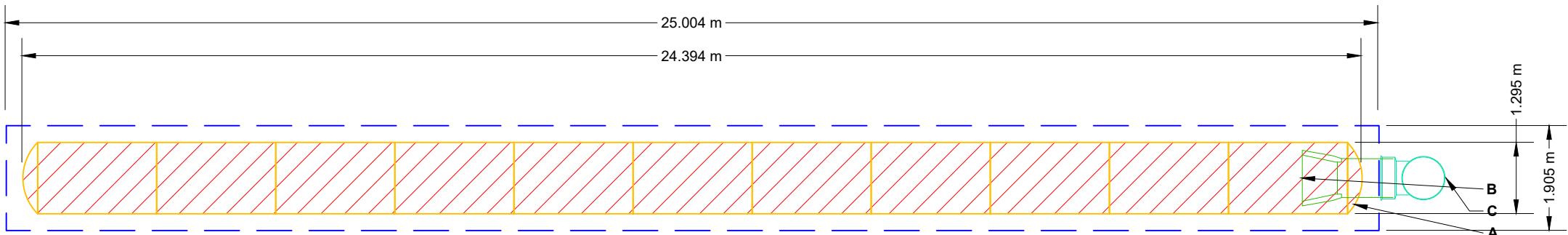
- STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-800 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
- FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

ADDITIONAL INSTRUCTIONS OR FOR SITE SPECIFIC DEVIATIONS FROM THESE GUIDELINE CAN BE OBTAINED DIRECTLY FROM YOUR LOCAL ADS REPRESENTATIVE OR BY LOGGING ON TO WWW.ADSPICE.CA.

PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS	
11	STORMTECH SC-800 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	3.429
2	STORMTECH SC-800 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	1.524
152	STONE ABOVE (mm)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	1.372
152	STONE BELOW (mm)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	1.372
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	1.372
31.4	INSTALLED SYSTEM VOLUME (m ³)	TOP OF STONE:	1.143
	(PERIMETER STONE INCLUDED)	TOP OF SC-800 CHAMBER:	0.991
	(COVER STONE INCLUDED)	600 mm ISOLATOR ROW PLUS INVERT:	0.211
	(BASE STONE INCLUDED)	BOTTOM OF SC-800 CHAMBER:	0.152
47.6	SYSTEM AREA (m ²)	BOTTOM OF STONE:	0.000
53.8	SYSTEM PERIMETER (m)		

					*INVERT ABOVE BASE OF CHAMBER
PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW	
PREFABRICATED EZ END CAP	A	600 mm BOTTOM PREFABRICATED EZ END CAP, PART#: SC800ECEZ / TYP OF ALL 600 mm BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS			
FLAMP	B	INSTALL FLAMP ON 600 mm ACCESS PIPE / PART#: SC80024RAMP			
NYLOPLAST (INLET W/ ISO PLUS ROW)	C	750 mm DIAMETER (610 mm SUMP MIN)			



ISOLATOR ROW PLUS
(SEE DETAIL)

NO WOVEN GEOTEXTILE

— BED LIMITS

NOTES

THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.

- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

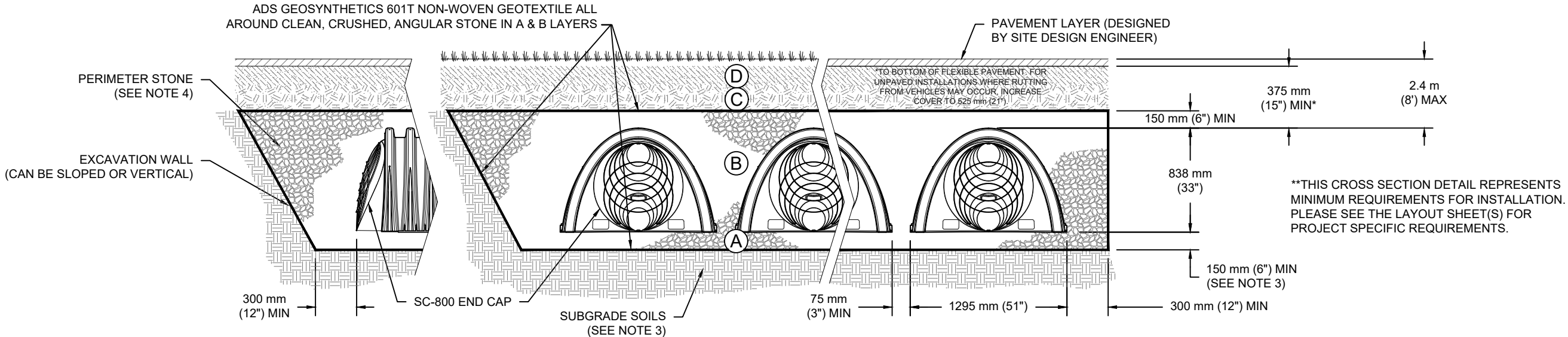
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 375 mm (15") ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 300 mm (12") OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 150 mm (6") MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ⁵	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ⁵	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 150 mm (6") (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF CSA B184.2 "POLYMERIC SUBSURFACE STORMWATER MANAGEMENT STRUCTURES FOR POLYPROPYLENE (PP) CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH CSA B184.0 "POLYMERIC SUBSURFACE STORMWATER MANAGEMENT STRUCTURES".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 50 mm (2").
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 7.2.2.6 OF CSA B184.0 SHALL BE GREATER THAN OR EQUAL TO 700 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

125132 - MYERS BARRHAVEN -
CBMH2003
OTTAWA, ON, CANADA

DATE: 07/24/2026 DRAWN: AS

PROJECT #:	CHECKED: N/A
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StormTech®
Chamber System

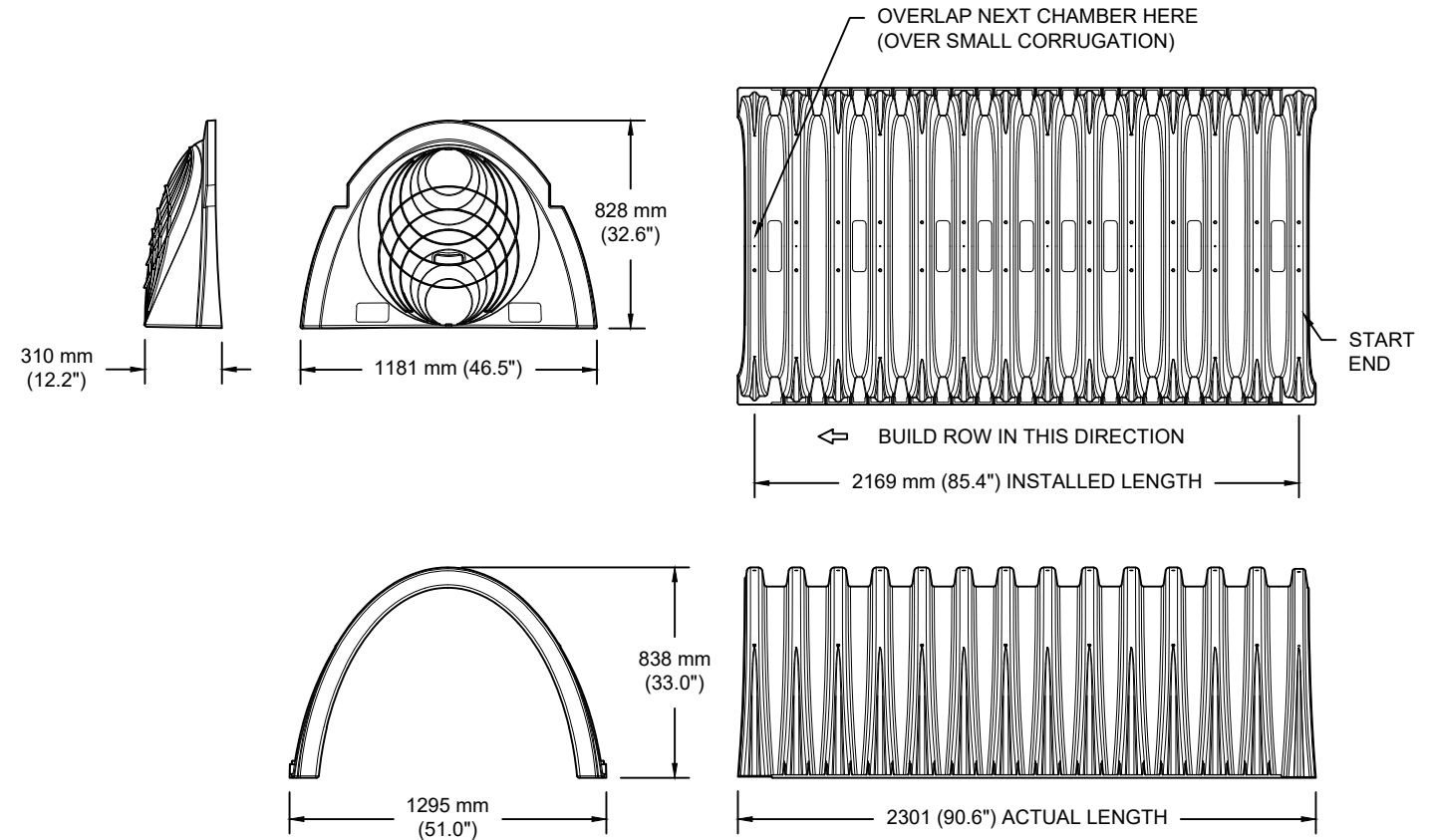
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SHEET

3 OF 6

SC-800 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	1295 mm X 838 mm X 2169 mm	(51.0" X 33.0" X 85.4")
CHAMBER STORAGE	1.43 m³	(50.6 CUBIC FEET)
MINIMUM INSTALLED STORAGE*	2.22 m³	(78.4 CUBIC FEET)
WEIGHT	37.1 kg	(81.8 lbs.)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	1181 mm X 828 mm X 267 mm	(46.5" X 32.6" X 10.5")
END CAP STORAGE	0.09 m³	(3.4 CUBIC FEET)
MINIMUM INSTALLED STORAGE**	0.42 m³	(14.7 CUBIC FEET)
WEIGHT	7.1 kg	(15.7 lbs.)

* ASSUMES 150 mm (6") STONE ABOVE AND BELOW CHAMBERS, 75 mm (3") BETWEEN CHAMBERS

**ASSUMES 150 mm (6") STONE ABOVE AND BELOW END CAPS, 75 mm (3") BETWEEN ROWS, 300 mm (12") BEYOND END CAPS

PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"

PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	150 mm (6")	544 mm (21.4")	---
SC800EPE06BPC		---	23 mm (0.9")
SC800EPE08TPC	200 mm (8")	488 mm (19.2")	---
SC800EPE08BPC		---	25 mm (1.0")
SC800EPE10TPC	250 mm (10")	432 mm (17.0")	---
SC800EPE10BPC		---	30 mm (1.2")
SC800EPE12TPC	300 mm (12")	366 mm (14.4")	---
SC800EPE12BPC		---	41 mm (1.6")
SC800EPE15TPC	375 mm (15")	287 mm (11.3")	---
SC800EPE15BPC		---	43 mm (1.7")
SC800EPE18TPC	450 mm (18")	203 mm (8.0")	---
SC800EPE18BPC		---	51 mm (2.0")
SC800ECEZ	600 mm (24")	---	58 mm (2.3")

Figure 1 consists of three schematic diagrams labeled A, B, and C. Diagram A shows a side view of a subject sitting at a table. A horizontal force transducer, labeled B, is connected to a force-measuring cable that runs over a pulley and is attached to the subject's hand. A vertical force transducer, labeled C, is also connected to the same cable. Diagram B is a detailed view of the horizontal force transducer B, showing a series of vertical lines representing the cable and a downward arrow indicating the direction of force. Diagram C is a detailed view of the vertical force transducer C, showing a series of vertical lines representing the cable and an upward arrow indicating the direction of force.

NOTE: ALL DIMENSIONS ARE NOMINAL

125132 - MYERS BARRHAVEN -
CBMH2003

OTTAWA, ON, CANADA

DRAWN: AS

DATE: 07/24/2026

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PROJECT #:

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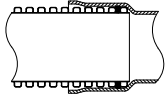
StormTech®
Chamber System

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SHEET

5 OF 6

NTS



CBMH2003

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PROJECT #:

PROJECT #:	CHECKED: N/A
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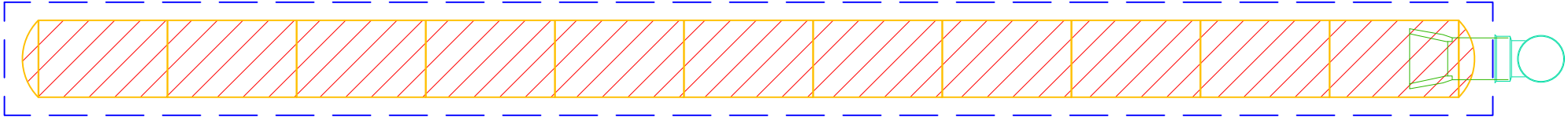
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6 OF 6

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PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	



125132 - MYERS BARRHAVEN - CBMH2004

OTTAWA, ON, CANADA

SC-800 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-800.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL BE CERTIFIED TO CSA B184.2, "POLYMERIC SUB-SURFACE STORMWATER MANAGEMENT STRUCTURES FOR POLYPROPYLENE (PP) CHAMBERS"
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE CSA S6 CL-625 TRUCK AND THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH CSA B184.0 AND CSA B184.2, "POLYMERIC SUBSURFACE STORMWATER MANAGEMENT STRUCTURES FOR POLYPROPYLENE CHAMBERS (PP)". THE STRUCTURAL DESIGN SHALL CONSIDER BOTH LONG-TERM (DEAD) AND SHORT-TERM (LIVE) LOADS IN ACCORDANCE WITH THE LOAD AND RESISTANCE FACTORS SPECIFIED IN CSA S6, "CANADIAN HIGHWAY BRIDGE DESIGN CODE." DESIGN LOADS SHALL INCLUDE PERMANENT EARTH AND SURCHARGE LOADS, AS WELL AS TRAFFIC LOADS BASED ON THE CSA S6 CL-625 DESIGN TRUCK, INCLUDING CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE. STRUCTURAL PERFORMANCE SHALL BE VERIFIED BY TESTING IN ACCORDANCE WITH CLAUSE 7.2 OF CSA B184.2.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 50 mm (2").
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 700 LBS/FT/%. THE ASC IS DEFINED IN SECTION 7.2.2.6 OF CSA B184.0. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 23° C / 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE COMPLIANCE WITH THE STRUCTURAL DESIGN AND PERFORMANCE REQUIREMENTS OF CSA B184.0 AND CSA B184.2, SPECIFICALLY WITH CLAUSES 4.1.2 AND 5 OF CSA B184.0, FOR APPLICABLE PERMANENT AND LIVE LOADS.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN SECTION 5.3 OF CSA B184.2 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-800 SYSTEM

- STORMTECH SC-800 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 75 mm (3") SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

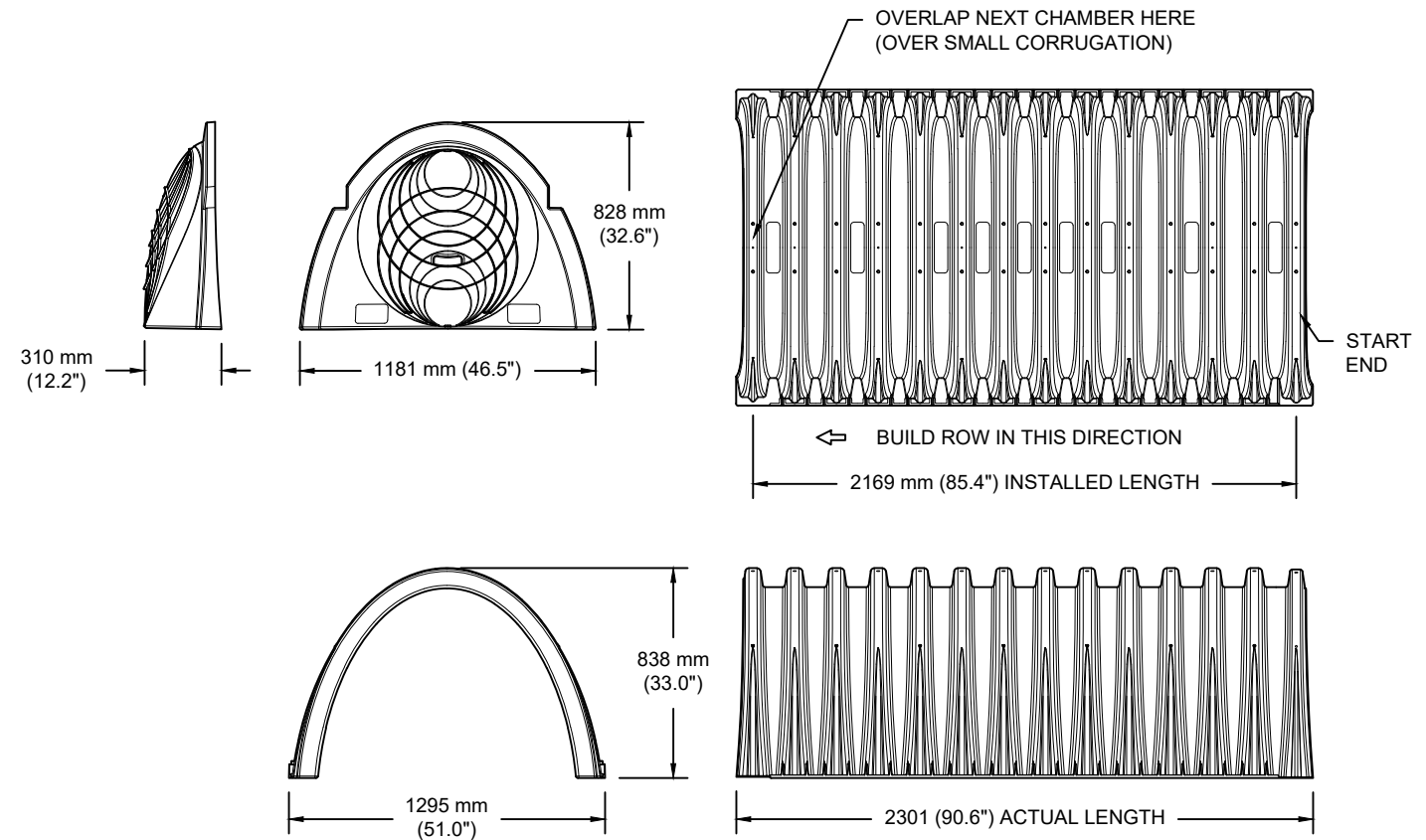
- STORMTECH SC-800 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-800 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH INSTALLATION GUIDE SC-310/DC-780/SC-800".
- FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

ADDITIONAL INSTRUCTIONS OR FOR SITE SPECIFIC DEVIATIONS FROM THESE GUIDELINE CAN BE OBTAINED DIRECTLY FROM YOUR LOCAL ADS REPRESENTATIVE OR BY LOGGING ON TO WWW.ADSPIPE.CA.

SC-800 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	1295 mm X 838 mm X 2169 mm	(51.0" X 33.0" X 85.4")
CHAMBER STORAGE	1.43 m³	(50.6 CUBIC FEET)
MINIMUM INSTALLED STORAGE*	2.22 m³	(78.4 CUBIC FEET)
WEIGHT	37.1 kg	(81.8 lbs.)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	1181 mm X 828 mm X 267 mm	(46.5" X 32.6" X 10.5")
END CAP STORAGE	0.09 m³	(3.4 CUBIC FEET)
MINIMUM INSTALLED STORAGE**	0.42 m³	(14.7 CUBIC FEET)
WEIGHT	7.1 kg	(15.7 lbs.)

* ASSUMES 150 mm (6") STONE ABOVE AND BELOW CHAMBERS, 75 mm (3") BETWEEN CHAMBERS

**ASSUMES 150 mm (6") STONE ABOVE AND BELOW END CAPS, 75 mm (3") BETWEEN ROWS, 300 mm (12") BEYOND END CAPS

PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"

PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	150 mm (6")	544 mm (21.4")	---
SC800EPE06BPC		---	23 mm (0.9")
SC800EPE08TPC	200 mm (8")	488 mm (19.2")	---
SC800EPE08BPC		---	25 mm (1.0")
SC800EPE10TPC	250 mm (10")	432 mm (17.0")	---
SC800EPE10BPC		---	30 mm (1.2")
SC800EPE12TPC	300 mm (12")	366 mm (14.4")	---
SC800EPE12BPC		---	41 mm (1.6")
SC800EPE15TPC	375 mm (15")	287 mm (11.3")	---
SC800EPE15BPC		---	43 mm (1.7")
SC800EPE18TPC	450 mm (18")	203 mm (8.0")	---
SC800EPE18BPC		---	51 mm (2.0")
SC800ECEZ	600 mm (24")	---	58 mm (2.3")

NOTE: ALL DIMENSIONS ARE NOMINAL

125132 - MYERS BARRHAVEN -
CBMH2004

OTTAWA, ON, CANADA

DRAWN: AS

DATE: 07/27/2026

PROJECT #:	CHECKED: N/A
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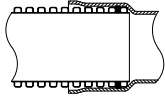
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5 OF 6

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NTS



1. 200-750 m

6. TO ORDER CALL: **800-821-6710**

(30")	Z850AG	AASHTO H-20	H-20	AASHTO H-20
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2026

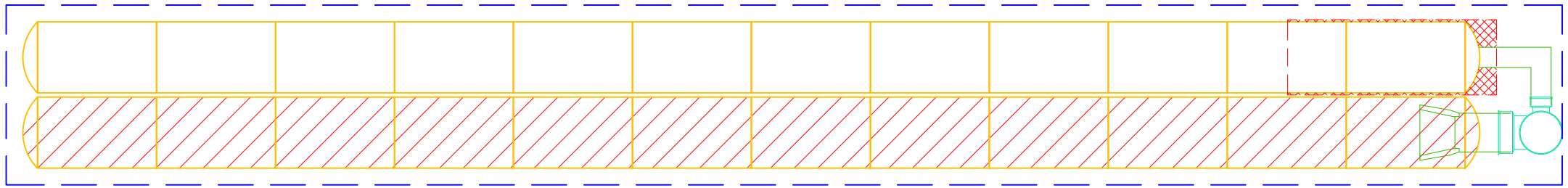
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6 OF 6



Drawings

GENERAL NOTES:

- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
- OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR \$5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
- RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- ALL ELEVATIONS ARE GEODETIC.
- REFER TO GEOTECHNICAL REPORT (No. PG5045-1 REV. 4, DATED AUGUST 30, 2022), PREPARED BY PATERSON CONSULTING ENGINEERS FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
- REFER TO NOVATECH SITE PLAN AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.

- REFER TO STORMWATER MANAGEMENT REPORT (R-2026-072) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
- SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
- PROVIDE LINE/PARKING PAINTING.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, TWM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.

PAVEMENT STRUCTURE:

AS PER GEOTECHNICAL REPORT (PATERSON)

LIGHT DUTY
50mm SUPERPAVE 12.5, PG 58-34
150mm OPSS GRANULAR A
300mm OPSS GRANULAR B TYPE II
500mm

HEAVY DUTY
40mm SUPERPAVE 12.5, PG 58-34
50mm SUPERPAVE 19.0, PG 58-34
150mm OPSS GRANULAR A
450mm OPSS GRANULAR B TYPE II
690mm

NOTES:

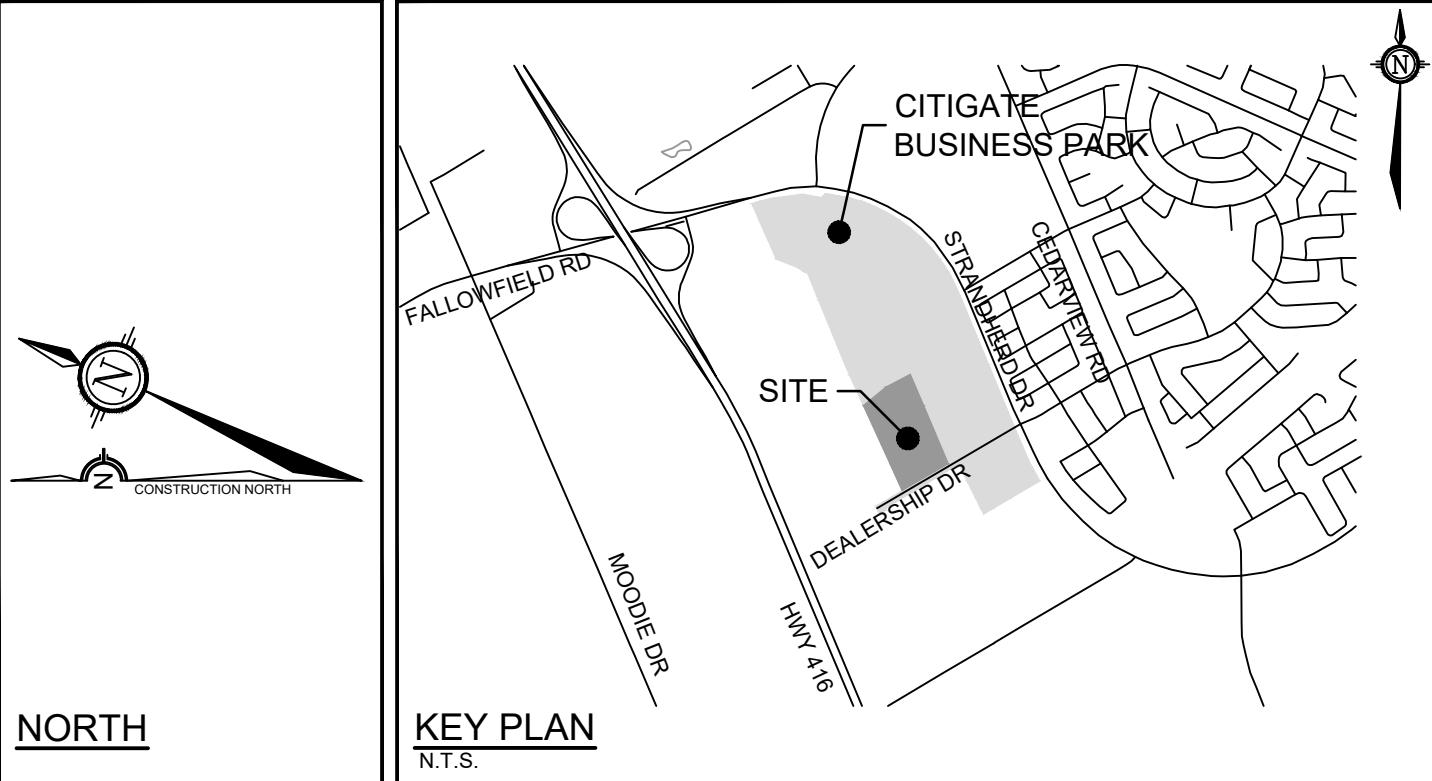
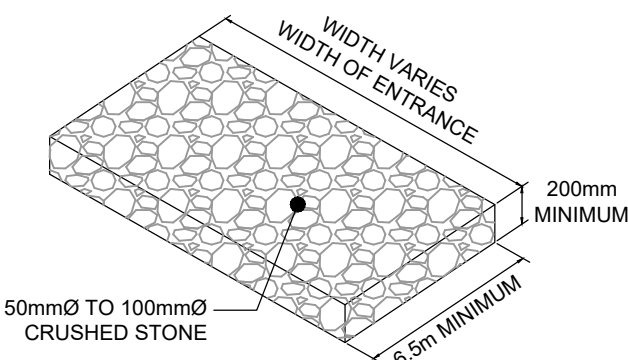
- MINIMUM PG 58-34 ASPHALT CEMENT
- SOFT SPOTS IN SUBGRADE FOUND DURING CONSTRUCTION TO BE EXCAVATED AND REPLACED WITH OPSS GRANULAR "B" TYPE II

GRADING NOTES:

- ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED PAVED AREAS AS DIRECTED BY THE SITE ENGINEER OR GEOTECHNICAL ENGINEER.
- EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF GRANULARS.
- ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUB-EXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- THE GRANULAR BASE SHOULD BE COMPACTED TO AT LEAST 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE. ANY ADDITIONAL GRANULAR FILL USED BELOW THE PROPOSED PAVEMENT SHOULD BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE.
- MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
- MAXIMUM TERRACING GRADE TO BE 3:1 UNLESS OTHERWISE NOTED.
- ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
- ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED AND CONSTRUCTED AS PER CITY OF OTTAWA STANDARDS (SC1.1).
- REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.
- THE PAVEMENT GRANULAR BASE AND SUBBASE SHOULD BE PLACED IN MAXIMUM 300mm THICK LIFTS AND COMPACTED TO A MINIMUM OF 100% OF THE MATERIALS SPMD USING SUITABLE VIBRATORY EQUIPMENT.

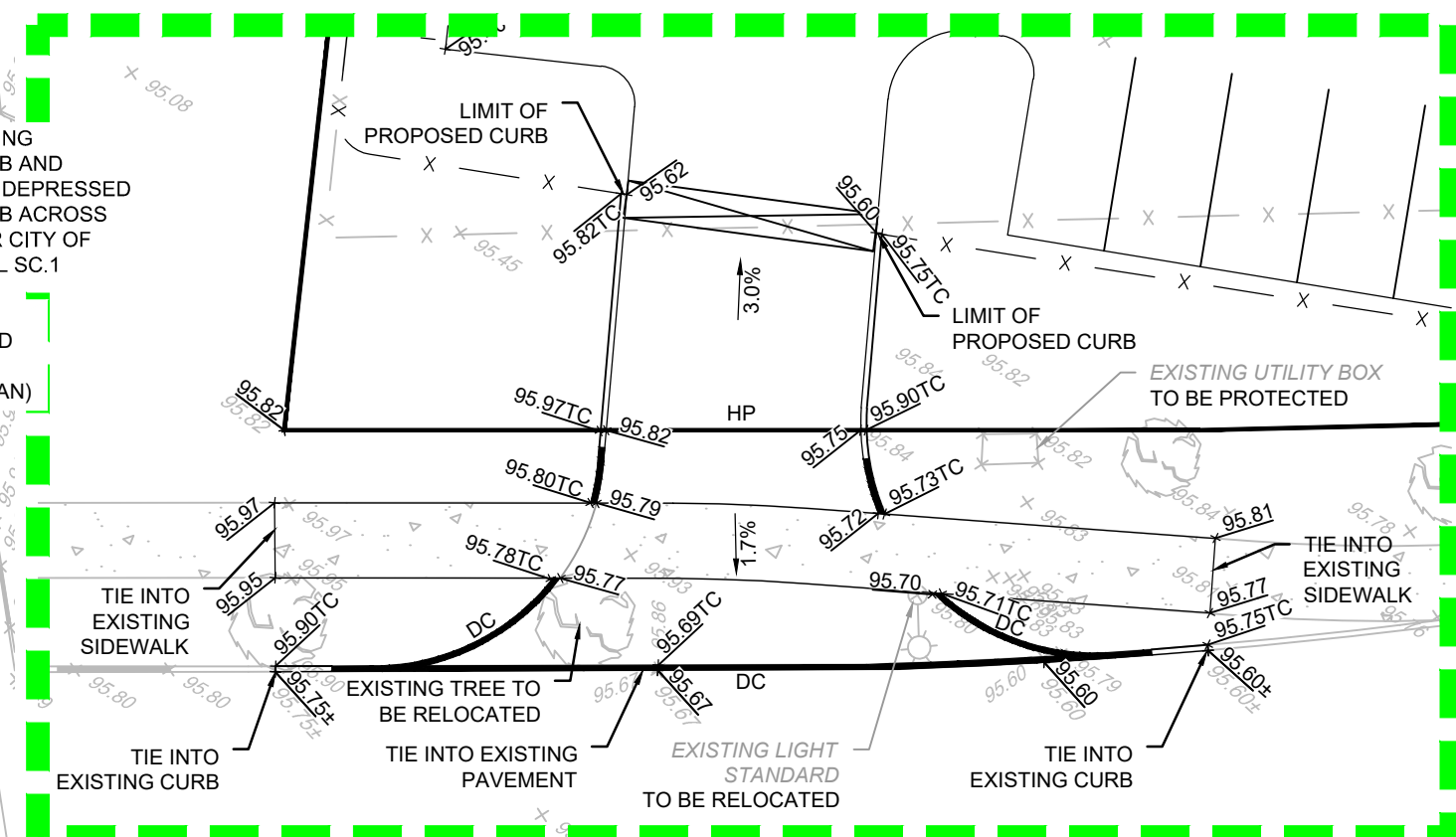
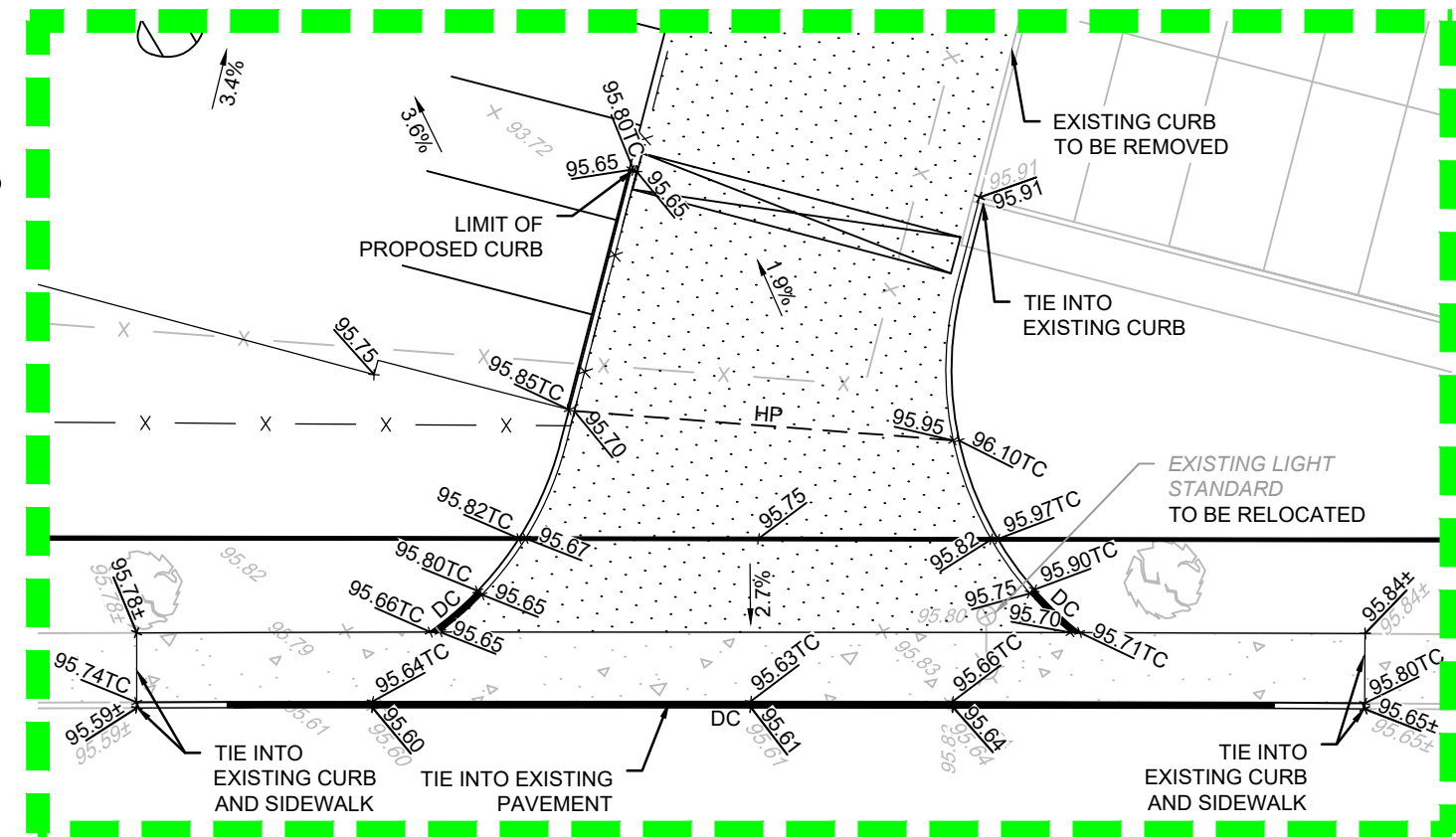
EROSION AND SEDIMENT CONTROL NOTES:

- THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL SUCH AS BUT NOT LIMITED TO INSTALLING FILTER CLOTHS ACROSS MANHOLE/CATCHBASIN LIDS TO PREVENT SEDIMENTS FROM ENTERING STRUCTURES AND INSTALL AND MAINTAIN A LIGHT DUTY SILT FENCE BARRIER AS REQUIRED.
- THE CONTRACTOR SHALL PLACE FILTER CLOTH UNDER THE CATCHBASIN AND MANHOLE GRATES FOR THE DURATION OF CONSTRUCTION AND WILL REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION.
- SILT FENCING FOR ENTIRE PERIMETER OF SITE, SHALL BE UTILIZED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION.
- THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
- PROVIDE MUD MATS AT ALL CONSTRUCTION ACCESS POINTS TO MINIMIZE SEDIMENT TRANSPORT OFFSITE.



LEGEND

- PROPERTY LINE
- PROPOSED BARRIER CURB
- DC PROPOSED DEPRESSED CURB AS PER CITY DETAIL SC1.1
- PROPOSED SECURITY GATE (REFER TO LANDSCAPE DRAWINGS)
- X DECORATIVE SECURITY FENCE (REFER TO LANDSCAPE DRAWINGS)
- PROPOSED LIGHT STANDARD
- PROPOSED ELEVATION
- EXISTING ELEVATION (SEE SOURCE REFERENCE THIS PAGE)
- 2.3% SLOPE AND DIRECTION
- HP PROPOSED HIGH POINT
- HP DIRECTION OF MAJOR OVERLAND FLOW
- PROPOSED STORM MANHOLE
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- BOREHOLE LOCATION (GEOTECHNICAL INVESTIGATION PREPARED BY PATERSON GROUP DATED AUGUST 30, 2022)
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LINE PAINTING
- PROPOSED HEAVY DUTY SILT FENCE (OPSD 219.130)
- PROPOSED MUD MAT



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

SOURCE REFERENCE:

TOPOGRAPHIC ELEVATIONS: TOPOGRAPHICAL SKETCH OF BLOCK 4, REGISTERED PLAN 4M-1538, CITY OF OTTAWA/ANNIS, O'SULLIVAN, VOLLEBEKK LTD. / SEPTEMBER 18, 2019 / CGVD28 GEODETIC DATUM

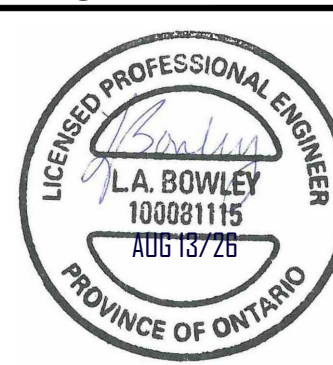
NOTE: SURVEY WAS COMPLETED PRIOR TO THE CONSTRUCTION OF THE PHASE 1 AND PHASE 2 AUTOMOBILE DEALERSHIPS

No.	REVISION	DATE	BY
3.	ISSUED FOR REVIEW	AUG 13/26	LKC
2.	ISSUED FOR COORDINATION	JUL 16/26	LKC
1.	ISSUED FOR COORDINATION	JUN 26/26	LKC

SCALE
1:400
0 4 8 12 16

DESIGN
LKC
CHECKED
LAB
DRAWN
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CHECKED
LAB
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Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
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LOCATION
CITY OF OTTAWA
4149 STRANDHERD DRIVE

DRAWING NAME
GRADING AND EROSION SEDIMENT
CONTROL PLAN

PROJECT No.	125132
REV	REV # 3
DRAWING No.	125132-GR

GENERAL NOTES:

- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
- OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR \$5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
- RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- ALL ELEVATIONS ARE GEODETIC.
- REFER TO GEOTECHNICAL REPORT (No. PG5045-1 REV. 4, DATED AUGUST 30, 2022), PREPARED BY PATERSON CONSULTING ENGINEERS FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
- REFER TO NOVATECH SITE PLAN AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.

SEWER NOTES:

- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
STORM / SANITARY MANHOLE (12000)	701.010	OPSD
STORM MANHOLE (15000)	701.011	OPSD
STORM MANHOLE (18000)	701.012	OPSD
CATCHBASIN (600x600mm)	705.010	OPSD
CB, FRAME & COVER	400.020	OPSD
STORM / SANITARY MH FRAME	S25	CITY OF OTTAWA
SANITARY COVER	S24	CITY OF OTTAWA
STORM COVER (CLOSED)	S24.1	CITY OF OTTAWA
STORM COVER (OPEN)	S28.1	CITY OF OTTAWA
SEWER TRENCH	S8 & S7	CITY OF OTTAWA
STORMTECH CHAMBERS	SC-800	ADS Inc.
SANITARY SEWER	PVC DR 35	CITY OF OTTAWA
STORM SEWER < 450mmØ	PVC DR 35	CITY OF OTTAWA
STORM SEWER >= 450mmØ	CONC 650	(UNLESS SPECIFIED OTHERWISE)
- INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.5m COVER. PER INSULATION DETAIL FOR SHALLOW SEWERS (CITY OF OTTAWA DETAIL DRAWING S35). PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
- FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX, POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
- STORM MANHOLES AND CBMHs ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
- ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.

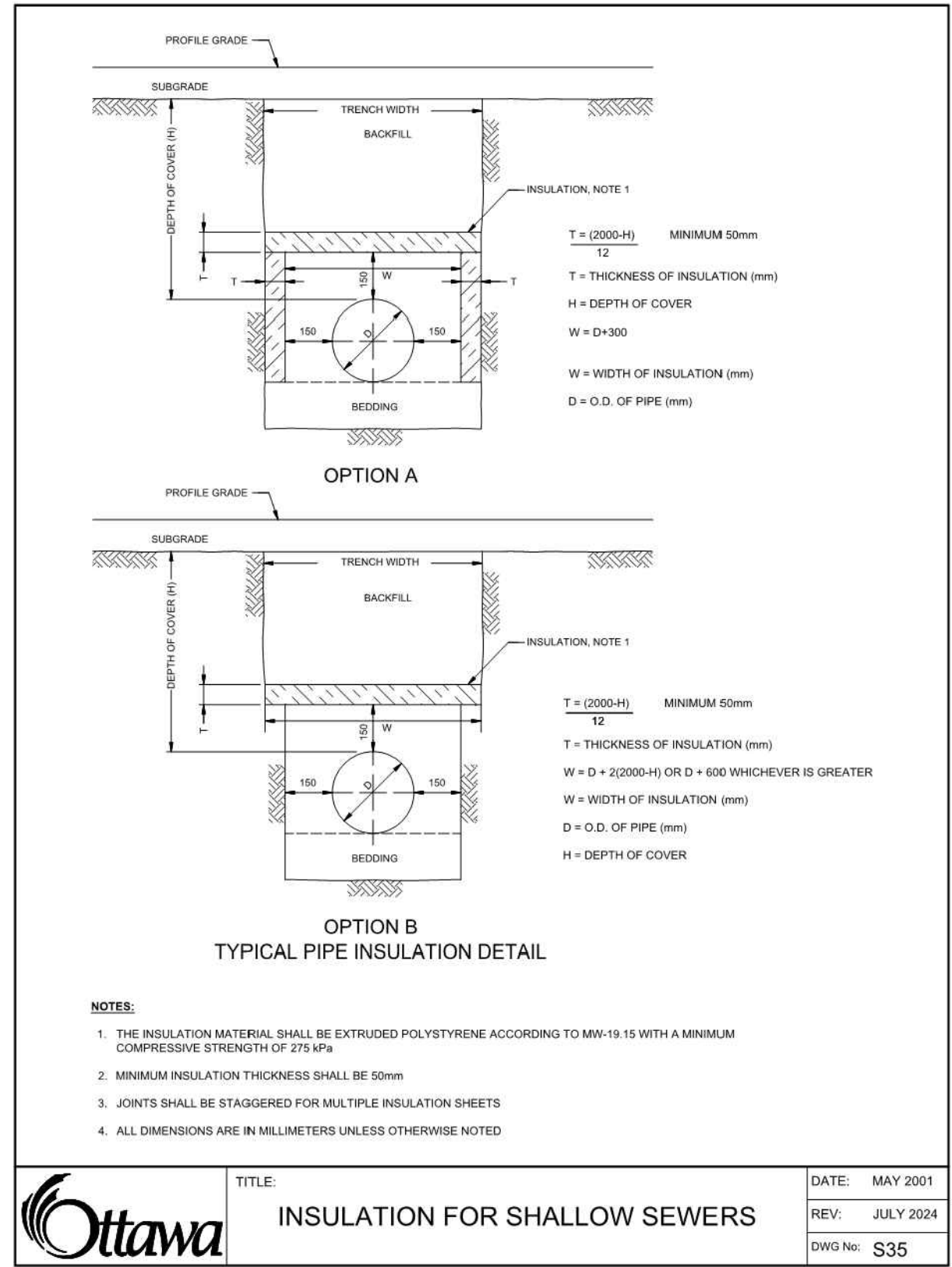
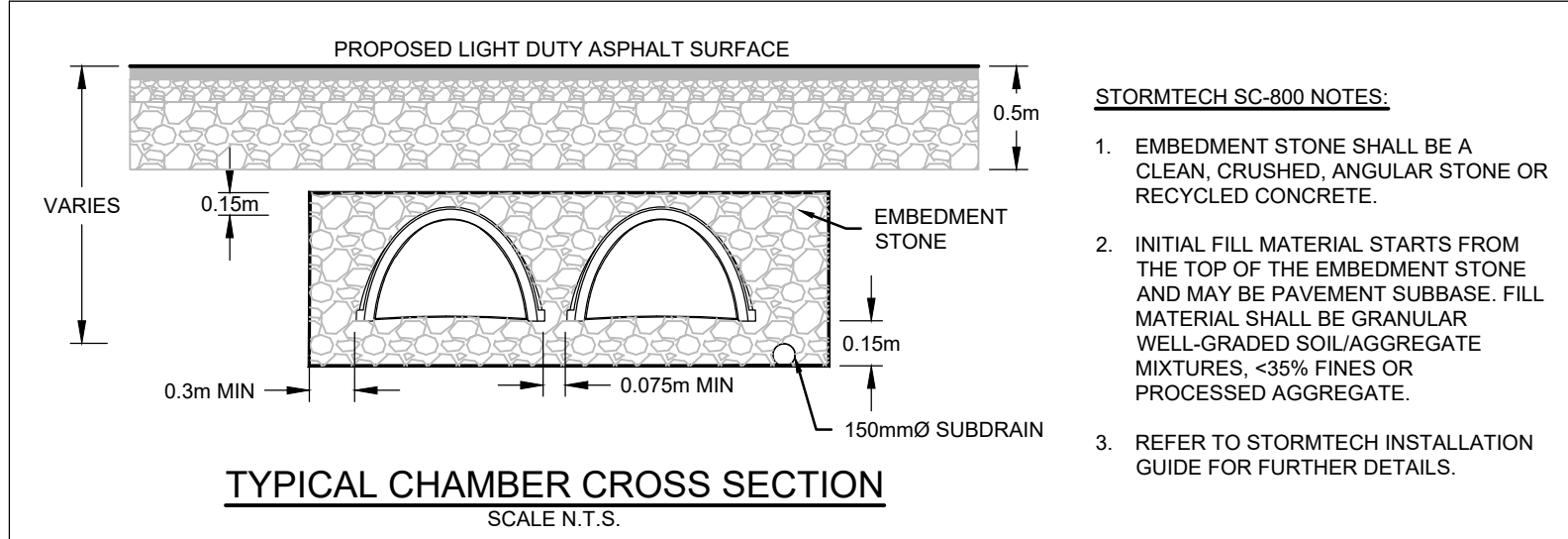
- ALL CATCHBASINS AND CATCHBASIN MANHOLES ARE TO BE PROVIDED WITH MINIMUM 3 METER LONG PERFORATED SUBDRAINS WHICH EXTEND IN TWO DIRECTIONS LONGITUDINALLY AT THE SUBGRADE LEVEL.
- 1.5m LONG CLAY SEALS ARE TO BE PROVIDED IN THE SERVICE TRENCHES AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT STRATEGIC LOCATIONS AT NO MORE THAN 60m INTERVALS (REFER TO GEOTECHNICAL REPORT).
- CONTRACTOR TO TELEWISE (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES AND RE CCTV PRIOR TO ACCEPTANCE.
- THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPS5 410.07.16, 410.07.16.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.

INLET CONTROL DEVICE TABLE:

TEMPEST LMF/MHF ICDs			
LOCATION	T/G ELEVATION	OUTLET INVERT	MODEL NO.
CBMH 2003	95.25	93.91	TEMPEST LMF VORTEX 93
CBMH 2004	95.05	93.70	TEMPEST LMF VORTEX 93

LEGEND

- PROPERTY LINE
- PROPOSED BARRIER CURB
- DC PROPOSED DEPRESSED CURB AS PER CITY DETAIL SC1.1
- PROPOSED SECURITY GATE (REFER TO LANDSCAPE DRAWINGS)
- DECORATIVE SECURITY FENCE (REFER TO LANDSCAPE DRAWINGS)
- PROPOSED LIGHT STANDARD
- PROPOSED STORM SEWER AND DIRECTION OF FLOW
- PROPOSED STORM SEWER WITH INSULATION
- PROPOSED STORM MANHOLE
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED INLET CONTROL DEVICE (REFER TO TABLE ON THIS PAGE)
- PROPOSED LINE PAINTING
- EXISTING UTILITY POLE C/W GUY WIRES
- EXISTING WATERMAIN C/W VALVE & VALVE CHAMBER
- EXISTING HYDRANT C/W VALVE & LEAD
- EXISTING SANITARY MANHOLE & SEWER
- EXISTING STORM MANHOLE & SEWER
- EXISTING STORMCEPTOR MH
- EXISTING CATCHBASIN
- EXISTING GAS MAIN
- EXISTING OVERHEAD WIRES
- EXISTING BELL LINE
- EXISTING HYDRO
- EXISTING STREETLIGHT

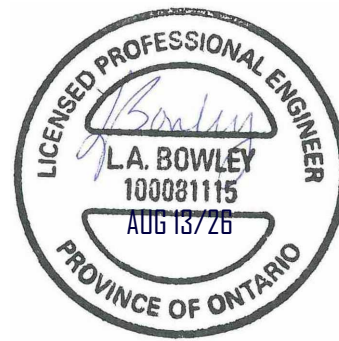


NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS. AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE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

SCALE			
1:400			
0 4 8 12 16			
1. ISSUED FOR REVIEW	AUG 13/26	LKC	
No.	REVISION	DATE	BY

DESIGN	LKC
CHECKED	LAB
DRAWN	CABD
CHECKED	LAB
APPROVED	CJR

FOR REVIEW ONLY



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LOCATION CITY OF OTTAWA 4149 STRANDHERD DRIVE	DRAWING NAME GENERAL PLAN OF SERVICES	PROJECT No. 125132
		REV REV # 1
		DRAWING No. 125132-GP