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FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT

5150 NINTH LINE

CITY OF MISSISSAUGA

REGION OF PEEL

PREPARED FOR
MATTAMY (5150 NINTH LINE) LIMITED

Urbantech File No.: 19-608

3RD SUBMISSION – NOVEMBER 2020

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1 INTRODUCTION

1.1. BACKGROUND

This report provides functional servicing design and stormwater management information in support of the site plan application for the proposed residential development located at 5150 Ninth Line, hereafter referred to as the subject property.

The development concepts contained in this report are an extension of the information contained within the following reports:

- Ninth Line South Urban Design Study by NAK Design Strategies (2019)
- Ninth Line Lands Scoped Subwatershed Study by Wood (2018)
- Ninth Line Lands: Servicing Strategy Report by Region of Peel (2016)

This study presents the recommended stormwater management and municipal servicing scheme for the development of the subject property. This report is also applicable for any future revisions to the site plan, assuming the revisions are minor and in general conformance with the concepts outlined herein.

The information presented in this report conforms to the following guidelines:

- City of Mississauga T&W Development Requirements
- Region of Peel Public Works Design, Specifications & Procedures Manual
- Stormwater Management Planning and Design Manual by the Ministry of Environment (MOE)

1.2. SUBJECT PROPERTY

The subject property is approximately 4.33 ha in size including the setback and MTO buffer, and 3.85 ha not including these features. The site currently consists mainly of agricultural land with a veterinary hospital and various residential properties. The site is bounded by an existing woodlot to the north, Ninth Line to the east, a holdout property to the south and Highway 407 ETR to the west.

1.3. LAND USE

The proposed land use consists of primarily low-rise residential (townhouses) with supporting roads and amenity spaces. A public right-of-way is proposed to connect to Ninth Line which will ultimately extend through the properties to the south. The western portion of the property is designated as a future transitway corridor. A City-owned buffer block is proposed along the existing woodlot at the northern limit of the property.

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2 GRADING & ROADS

The site grading design considers the following objectives and constraints:

- Conform to City of Mississauga grading criteria
- Match existing boundary conditions
- Minimize cut and fill operations and work towards a balanced site
- Provide overland flow conveyance for major storm conditions
- Provide minimum cover on proposed servicing

Refer to **Drawing 1**, "*Site Grading,*" and **Drawings 2A** and **2B** "*Grading Cross Sections*," for additional grading details.

2.1.1. RETAINING WALLS & NOISE BARRIERS

Where required, retaining walls are proposed limit of the adjacent holdout property, 5170 Ninth Line. This is unavoidable due to constraints with required grading of the public road and the maximum allowable grade difference across the proposed townhouse units in relation to the high existing ground on the adjacent property. A retaining wall is also proposed along the Heritage House property to the south to keep the site's drainage self-contained per City requirements.

Noise barriers are proposed for Blocks 4, 19 and 20, in accordance with recommendations prepared by YCA Engineering. Refer to the Acoustic Report for further information. In some cases, an acoustic fence on top of retaining wall is required to achieve the total barrier height.

2.1.2. WOODLOT BUFFER REGRADING & RESTORATION

It is proposed to regrade within the existing buffer at the northern limit of the development, adjacent to the existing woodlot. There are several existing man-made depressions in this area which have no positive drainage outlets resulting in small pool features. In general, the area is poorly graded which results in ponded areas. It is noted that the existing homeowner of 5170 Ninth Line has also identified problems with flooding on his lot.

As part of the development works, it is proposed to regrade within the buffer area to recreate and improve the existing pool features to provide a more suitable habitat for amphibian species. Due to grading and servicing constraints within the development, the proposed condo road in this area will be higher than the buffer, blocking incoming woodlot drainage from the north. As the external drainage is municipally owned, the drainage will be conveyed by a separate clean water sewer (refer to Section 3.3). Two ditch inlet catchbasins sized to capture flows from the 100-year storm event are proposed along the buffer to prevent the area from flooding during large storm events. This will also reduce or eliminate flooding issues on the adjacent holdout property. For emergency overflow situations (i.e. events larger than the 100-year storm) overland flow will be conveyed downstream via the proposed condo roads. Easements will be provided in favour of the City over these roads to ensure perpetual conveyance of overland flow.

Although the condo road runs parallel with the buffer block, all roadway and sidewalk drainage will be self-contained and no contaminated runoff from the road will be directed to the buffer block or

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proposed pool features. These will strictly be fed by incoming clean drainage from the woodlot, as well as a small 2.8m landscape buffer between the road and the buffer block.

Salt from future roadway deicing activities has been identified as a potential contaminant for the proposed features. As the condo road in this area is not a through-road and is expected to have minimal, low-speed traffic, spray is not anticipated to be an issue. If necessary, alternative methods of deicing can be implemented in this area which will be maintained by the condo corporation, not City forces. To reiterate, the sidewalk will drain towards the road so any contaminated water or snowmelt would drain back towards the roadway storm sewers.

2.1.3. ROADS

A public 20m right-of-way is proposed in accordance with City standard 2211.070 which will connect to Ninth Line. Prior to completion of the Ninth Line EA and road widening (estimated construction date of 2023), the public road will match into the existing pavement and curbs. The proposed public right-of-way will be extended south through the future developments west of Ninth Line.

Typical condo roads will feature 7m wide pavement and are sized sufficiently to accommodate proposed services and utilities, as well as to convey overland flow for major storm conditions. Where on street parking is required, wider pavement is proposed to accommodate two travel lanes in addition to a parking lane.

Refer to **Drawing 4**, "*ROW Cross Sections*," for additional details regarding rights-of-way and typical cross sections.

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3 STORM SERVICING AND STORMWATER MANAGEMENT

3.1. MODELLING APPROACH

A PC SWMM model was selected in place of the previously completed Visual OTTHYMO model to provide a better evaluation of the existing target flows, system performance and the impact of post-development conditions on the existing storm infrastructure on Ninth Line. The PC SWMM model can better assess the system hydraulics and major and minor system flows on the Ninth Line ROW.

PCSWMM includes several hydrology methods to simulate rainfall-runoff responses. The hydrology method selected for this study is the Rainfall/Runoff process simulation with dynamic flow routing for the hydraulic component (i.e. pipes / overland flow). The 4-hour Chicago design storm distribution with five-minute time steps was considered appropriate to use for the site since it will have a high peak and provide more conservative flows. The City of Mississauga intensity-duration-frequency (IDF) curves were used to develop the design storm time series. Refer to **Section 3.2** and **Section 3.3** for further information used in establishing existing and proposed subcatchment, major and minor system characteristics.

A dual drainage model was developed for subject lands, including the existing Ninth Line right-of-way and sewers. The interaction between the major and minor system flow was modelled by using catchbasin capture curves from *City of Toronto Infoworks CB Basement Flooding Model Studies Guidelines (October 2014)*. Capture curves represent the amount of flow captured into the minor system based on major system flow depths. Flat grade horizontal bar fishbone, gentle grade horizontal bar fishbone and sag horizontal bar fishbone curves were utilized where appropriate on the Ninth Line ROW and in the proposed development area. The catchbasin curves are multiplied by the number of catchbasins in each ROW segment to get the total captured flow to the minor system. Refer to **Appendix A** for additional information.

3.2. EXISTING STORM DRAINAGE

The site is within the Credit Valley Conservation Authority jurisdiction, within the Sawmill Creek Subwatershed. There are no regulated features on the subject lands, although the woodlot and wetlands to the north of the property are regulated features.

Existing drainage patterns for the subject property are shown on **Drawing 5A**, "*Existing Storm Drainage*." The majority of the property, as well as the woodlot to the north of the site drains to the existing storm sewers on Ninth Line via several existing culverts, street catchbasins and ditch inlet catchbasins. The Ninth Line storm sewers appear to be adequately sized to convey the 10-year storm event from the contributing areas. Included in the **Appendix A** are 10-year and 100-year HGL for the existing condition. The southwest portion of the subject property drains southwards overland to an existing storm sewer at Eglinton Avenue (total catchment area to Eglinton is approximately 8.5 ha).

As noted above, a PC SWMM model was created to simulate the various return period event flows from the site including the external areas and Ninth Line ROW. Since Ninth Line is the outfall for the subject lands (including the 750mm storm sewer immediately south of the subject property),

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the model includes a minor, major and total combined flow location for comparison purposes. The summary of flows was provided at three locations. Refer to **Appendix A** for PC SWMM Plan and MH locations.

Table 1: System Performance Nodes and Corresponding Existing Areas

Minor System		Major System		Location
Junction Name	**Existing Upstream Drainage Area (ha)**	**Junction Name**	**Existing Upstream Drainage Area (ha)**	
EX_STM_MH4	4.74	**EX_STM_MH4-S**	4.74	Upstream of proposed site
EX_MH1	15.36	**EX_MH1-S**	15.36	Proposed Site Storm Sewer Connection
EX_STM_MH5	17.83	**EX_STM_MH5-S**	17.83	Downstream of proposed site

The infiltration model used in the PC SWMM was the SCS curve number (CN) approach. Model parameters were based on available land use / soil information and measurements. Table 2 provides the PC SWMM model input for the existing conditions simulation.

In order to account for the increase in runoff due to saturation of the catchment surface that would occur for larger, less frequent storms, the adjustment factor was applied to the 100 year storm as per City of Mississauga Stormwater Management Manual. Runoff Coefficients and updated impervious areas are summarized in Table 3.

The results of the existing conditions model are illustrated graphically in Tables 4 and 5. Table 4 summarizes the major and minor system peak flows at each of the identified nodes; Table 5 summarizes the total flow (major plus minor) at the nodes.

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Table 2: Existing Conditions Model Parameters

Area Description	Area [ha]	Surface slope [%]	Soil Group	Land Use	Curve Number	Initial Abstractions Pervious/ impervious [mm]	Runoff Coefficient
External "east" woodlot area and portion of 5170 Ninth Line	2.51	1	C	20% Meadow / 80% Forest	74	5	0.20
External "west" woodlot and agricultural area on 5150 Ninth Line	10.25	2.5	C	20% Meadow / 80% Forest	74	5	0.20
Existing drainage on 5150 and 5104 Ninth Line	2.04	1.5	C	20% Meadow / 80% Forest	82	5	0.20
5170 Ninth Line frontage on Ninth Line	0.35	1.5	C	75% IMP	74	5 / 1	0.65
5150 Ninth Line frontage on Ninth Line	0.29	1.5	C	50% IMP	74	5 / 1	0.55
Ninth Line ROW to existing 750mm storm sewer	1.81	1.8	C	70% IMP	74	5 / 1	0.65

Table 3: Adjusted Runoff Coefficients

Area Description	Runoff Coefficient	Adjusted Runoff Coefficient (100-year Return Period)	Land Use
External "east" woodlot area and portion of 5170 Ninth Line	0.20	0.25	7% IMP
External "west" woodlot and agricultural area on 5150 Ninth Line	0.20	0.25	7% IMP
Existing drainage on 5150 and 5104 Ninth Line	0.20	0.25	7% IMP
5170 Ninth Line frontage on Ninth Line	0.65	0.80	85%
5150 Ninth Line frontage on Ninth Line	0.55	0.70	80%
Ninth Line ROW to existing 750mm storm sewer	0.65	0.80	85%

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Table 4: Existing Major and Minor System Flows

Design Event	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]
	EX_STM_MH4	EX_STM_MH4-S	EX_MH1	EX_MH1-S	EX_STM_MH5	EX_STM_MH5-S
25mm 4hr storm	0.08	0.12	0.11	0.2	0.26	0.23
(1) 2yr 4hr 5min Chicago	0.12	0.22	0.16	0.37	0.42	0.40
(2) 5yr 4hr 5min Chicago	0.16	0.32	0.21	0.54	0.61	0.59
(3) 10yr 4hr 5min Chicago	0.20	0.41	0.27	0.69	0.76	0.78
(4) 25yr 4hr 5min Chicago	0.23	0.50	0.32	0.83	0.89	0.93
(5) 50yr 4hr 5min Chicago	0.26	0.58	0.37	0.95	0.98	1.07
(6) 100yr 4hr 5min Chicago [1]	0.33	0.97	0.52	1.4	1.33	1.78

[1] 100-year storm impervious area was modelled based on adjusted runoff coefficients per City standard

Table 5: Total Existing System Flow

Design Event	Total System Peak Flow [m^3/s]	Total System Peak Flow [m^3/s]	Total System Peak Flow [m^3/s]
	EX_STM_MH4	EX_MH1	EX_STM_MH5
25 mm 4hr storm	0.2	0.31	0.49
(1) 2yr 4hr 5min Chicago	0.34	0.53	0.82
(2) 5yr 4hr 5min Chicago	0.48	0.75	1.2
(3) 10yr 4hr 5min Chicago	0.61	0.96	1.54
(4) 25yr 4hr 5min Chicago	0.73	1.15	1.82
(5) 50yr 4hr 5min Chicago	0.84	1.32	2.05
(6) 100yr 4hr 5min Chicago	1.33	1.92	3.11

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The validity of the existing conditions model was assessed through comparison to the existing studies for the subject lands. The Ninth Line Lands Scoped Subwatershed Study by Wood (2018) established the following criteria for new pre-development flow targets in the Sawmill Creek watershed (for the overall Ninth Line study area between Ninth Line and Highway 407). Please refer to the excerpt from the SWS below:

Table 2.2.2 Stormwater Management Facility Sizing Criteria for Flood Control – Sixteen Mile Creek Watershed		
Quantity Component	Cumulative Unitary Volume[1.] (m^3/impervious ha)	Unitary Discharge (m^3/s/ha)
Sawmill Creek Subwatershed		
5 Year	500	0.015
100 Year	800	0.050

While the subwatershed study flows are generally calculated using continuous modelling and frequency analysis (and are typically lower than event-based modelling), it was found that the existing conditions unit rates calculated based on the existing PC SWMM model were generally higher than the subwatershed study results. This is due to a more detailed subcatchment discretization (more, smaller catchments = lower time to peak = higher flows) compared to the typically generalized, larger catchments used in the SWS study model.

Total Existing 5 Year flow at EX_MH1= 0.75m^3/s
Total Area at EX_MH1= 15.36 ha
5 Year Unitary Discharge (PC SWMM) = **0.049 m^3/s/ha** (vs. 0.015 m^3/s/ha)

Total Existing 100 Year flow at EX_MH1= 1.92 m^3/s
Total Area at EX_MH1= 15.36 ha
5 Year Unitary Discharge (PC SWMM) = **0.125 m^3/s/ha** (vs. 0.050 m^3/s/ha)

A verification Analysis was conducted for the last existing MH that was modelled:

Total Existing 5 Year flow at EX_STM_MH7=0.60 m^3/s
Total Area at EX_STM_MH5= 26.87ha
5 Year Unitary Discharge (PC SWMM) = **0.022 m^3/s/ha** (vs. 0.015 m^3/s/ha)

Total Existing 100 Year flow at EX_STM_MH7= 1.28m^3/s
Total Area at EX_STM_MH5= 26.87 ha
5 Year Unitary Discharge (PC SWMM) = **0.048 m^3/s/ha** (vs. 0.050 m^3/s/ha)

A verification analysis will be conducted by the SWS consultant to demonstrate that the target flows downstream continue to be met through provision of post-to-pre control on the subject lands.

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3.3. PROPOSED STORM SERVICING

The storm drainage concept for the site has been designed to maintain flows and contributing drainage areas to the existing outlets on the site where possible and meet the existing targets established in the preceding section. Storm sewers for the subject lands have been sized according to the City of Mississauga sewer design criteria to convey flow for the 10-year storm, with the exception of the designated clean water sewer which is sized to convey flow for the 100-year storm.

3.3.1. EXTERNAL DRAINAGE

External storm drainage from the municipal woodlot area to the north of the development and the associated buffer block will be conveyed through a separate clean water storm sewer. No other flows from the private block will be directed to this sewer; it is strictly for external conveyance. Easements will be provided over the proposed condo roads in favour of the City for maintenance access to their infrastructure.

A small external area from the adjacent holdout property located at 5170 Ninth Line will drain to the proposed sewers. This is accounted for in the sewer design. No drainage from adjacent properties is blocked by the proposed grading / development.

3.3.2. PUBLIC VS PRIVATE DRAINAGE

The public and private storm drainage for the development will be separated. The private drainage will be self-contained and controlled by the proposed underground SWM tank within the proposed amenity space. The public ROW drainage will be controlled by a superpipe within the ROW itself. The superpipe does not provide any compensation for private drainage, only to control the ROW flow to predevelopment rates. The southeast site plan block is not able to drain to the tank due to grading and servicing constraints; however, this will be compensated by the private SWM tank in the western condo block.

Refer to **Drawing 5**, "*Storm Drainage,*" for additional details.

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3.4. STORM WATER MANAGEMENT

3.4.1. WATER BALANCE / RECHARGE

To meet the design criteria described in the T&W Developments Requirements Manual, the first 5mm of runoff should be retained on-site. An annual water balance was established to determine the runoff and infiltration volume under post development conditions with mitigation measures. Based on the 4.23 ha site area, approximately 212m^3 of runoff should be infiltrated / retained on site.

Table 6: Infiltration Targets

Property	Proposed Drainage Area (ha)	Target Infiltration (m^3)	Total Trench Length, L (m)	Total Proposed Infiltration Volume (m^3)[1]
Private Development	3.45	212	504	217
Public ROW – Street A	0.78			

[1]Based on detail on Drawing 403, trench dimensions are 1.2m (W) x 0.9m (H). Porosity of storage layer assumed to be 0.4; therefore, volume=(L)x(W)x(H)x(0.4)

Details on infiltration trenches can be found on **Drawing 1**, "Site Grading."

The infiltration galleries are approximately 504m long. The clear stone can vary in depth from 450mm to 650mm with native soil backfill depth from 400mm to 600mm. Calculations assumed infiltration depth of 0.9m. Based on the minimum trench size, the water balance targets can be met. Based on the results of the Hydrogeological Investigation by DS Consultants, and considering that the majority of the site is being filled above existing grade, there is sufficient depth to the water table for the relatively shallow infiltration galleries to function properly.

All roof leaders within the development area will be discharged to pervious areas; note that the water balance calculations do not account for any infiltration on topsoil which will further improve water balance for the site.

3.4.2. QUALITY CONTROL

Stormwater quality control for the development is required to control runoff to an "Enhanced" standard of treatment or the equivalent of 80% removal of TSS.

Filter (Separator Row) on Storage System

A filter (separator row) will be proposed on the stormwater storage system. Based on ETV test results for Cultec systems, typical TSS removal efficiency ranges from 65-80%. Additional details

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including storage configuration will be provided at part of the detailed subdivision design and future site plan applications.

Oil and Grit Separator (OGS)

Two OGSs will be provided at minimum – one for the subdivision / public portion of the site at the Street A outlet, and one for each of the southeast condominium block which discharges directly to Ninth line storm sewers. As the western condo block discharges to the tank, an additional OGS can be added if it is determined through detailed design that the separator row cannot provide adequate treatment to the satisfaction of the City. OGS sizing and specifications will be provided at detailed design of the subdivision and future site plan applications following coordination with manufacturers.

3.4.3. QUANTITY CONTROL

The Ninth Line Lands Scoped Subwatershed Study (SWS) by Wood (2018) established the following quantity control criteria for stormwater management of the subject lands. However, these targets represent a "total" flow rate and do not consider the capacity of the existing minor system on Ninth Line. Therefore, the proposed approach to matching the existing minor and major system targets based on the PC SWMM model is more appropriate in this case. The SWS also includes clear provisions allowing sites do develop with on-site storage.

Table 2.2.2 Stormwater Management Facility Sizing Criteria for Flood Control – Sixteen Mile Creek Watershed

Quantity Component	Cumulative Unitary Volume[1.] (m^3/impervious ha)	Unitary Discharge (m^3/s/ha)
Sawmill Creek Subwatershed		
5 Year	500	0.015
100 Year	800	0.050

The post-development model simulates the proposed drainage strategy including a storage tank, uncontrolled drainage areas, public ROW, and external woodlot drainage. The ultimate development (including Phase 2) has been considered in the model.

A verification Analysis was conducted for the last existing MH that was modelled:

Total Proposed 5 Year flow at EX_STM_MH7=0.53 m^3/s
Total Area at EX_STM_MH5= 26.87ha
5 Year Unitary Discharge (PC SWMM) = **0.019 m^3/s/ha** (vs. 0.015 m^3/s/ha)

Total Existing 100 Year flow at EX_STM_MH7= 1.36m^3/s
Total Area at EX_STM_MH5= 26.87 ha
5 Year Unitary Discharge (PC SWMM) = **0.05 m^3/s/ha** (vs. 0.050 m^3/s/ha)

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Table 7 describes the post-development model catchment parameters.

Table 8 describes the proposed runoff coefficients with adjustments for larger storms per City standards. Imperviousness was based on the runoff coefficient equivalent; the imperviousness was found to be conservative for this site when the pervious / impervious areas were measured digitally in CAD.

Tables 9 and 10 describe storage characteristics of the proposed underground tank and superpipe.

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Table 7: Proposed Conditions Model Parameters

Area Description	Area [ha]	Surface slope [%]	Soil Group	Land Use	Curve Number	Initial Abstractions Pervious/ impervious [mm]
External "east" woodlot area and portion of 5170 Ninth Line	2.51	1	C	20% Meadow / 80% Forest	74	5
External "west" woodlot area to Tank	6.45	2.5	C	20% Meadow / 80% Forest	74	5
5170 Ninth Line frontage on Ninth Line	0.35	1.5	C	75% IMP	74	5 / 1
Site area to Tank	3.16	1.5	C	65% IMP	74	5 / 1
Public ROW	0.54	1.5	C	65% IMP	74	5 / 1
South-east site plan area to major / minor system	0.38	1.5	C	65% IMP	74	5 / 1
South-east site plan area to Ninth Line major system	0.07	1.5	C	65% IMP	74	5 / 1
Ninth Line ROW to existing 750mm storm sewer	1.81	1.8	C	70% IMP	74	5 / 1

Table 8: Proposed and Adjusted Runoff Coefficients

Area Description	Proposed Runoff Coefficients	Adjusted Runoff Coefficient (100-year Return Period)	Land Use
External "east" woodlot area and portion of 5170 Ninth Line	0.20	0.25	7% IMP
External "west" woodlot area to Tank	0.20	0.25	7%IMP
5170 Ninth Line frontage on Ninth Line	0.75	0.90	95% IMP
Site area to Tank	0.65	0.80	80% IMP
Public ROW	0.65	0.80	80% IMP
South-east site plan area to major / minor system	0.65	0.80	80% IMP
South-east site plan area to Ninth Line major system	0.65	0.80	80% IMP
Ninth Line ROW to existing 750mm storm sewer	0.70	0.85	90%IMP

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Table 9: Underground Storage Tank

Discharge [m^3/s]	Elevation [m]	Volume [m^3]
0	186	0
0.01	186.1	100
0.01	189	1800

Table 10: Superpipe Storage

Discharge [m^3/s]	Elevation[1] [m]	Volume [m^3]
0	Invert (varies)	0
0.18	Obvert (varies)	136

[1] The superpipe is a 1200mm circular concrete sewer

Pumping

Discharge from the underground SWM tank will ultimately have to be pumped to the proposed sewers on Street A. To achieve the required storage volume, the footprint of the tank would need to be significantly larger to be shallow enough to discharge by gravity. Due to ownership (i.e. private vs public) issues, the tank must discharge to the Street A sewer which connects to the existing Ninth Line sewers at a much shallower elevation that the Ninth Line sewers further south. While pumping is not ideal from the City's perspective, this system will be owned and operated by the condo corporation, not City forces. Pump failure scenarios are discussed further on in this section.

Orifice Tube

City standards dictate that orifice tubes are preferred to orifice plates. Accordingly, the entire site is proposed to be controlled by a 250mm diameter circular pipe at the Street A outlet. This closely replicates the existing drainage conditions, since the vast majority of the existing property drains to a catchbasin and lead along the west side of Ninth Line. Regardless of the on-site flow conditions, the sewer discharge will ultimately be constrained to the capacity of this pipe.

Modelling Results

Tables 11 identifies the location of key nodes in the system. Tables 12 to 14 summarize the existing vs. proposed major and minor system flow at each of the identified key system nodes.

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Table 11: System Performance Nodes and Corresponding Existing Areas

Minor System		Major System		Location
Junction Name	**Existing Upstream Drainage Area (ha)**	**Junction Name**	**Existing Upstream Drainage Area (ha)**	
EX_STM_MH4	4.7	**EX_STM_MH4-S**	4.7	Upstream of proposed site
EX_MH1	15.76	**EX_MH1-S**	15.76	Proposed Site Storm Sewer Connection
EX_STM_MH5	17.68	**EX_STM_MH5-S**	17.68	Downstream of proposed site

Table 12: Existing & Proposed EX_STM_MH4 Summary

Design Event	Existing Minor System Peak Flow [m^3/s]	Existing HGL Elevation [m]	Proposed Minor System Peak Flow [m^3/s]	Proposed HGL Elevation [m]	Existing Major System Peak Flow [m^3/s]	Existing Major System Flow Depth [m]	Proposed Major System Peak Flow [m^3/s]	Proposed Major System Flow Depth [m]
(1) 2yr 4hr 5min Chicago	0.12	187.78	0.12	187.6	0.22	0.04	0.17	0.04
(2) 5yr 4hr 5min Chicago	0.16	187.81	0.16	187.79	0.32	0.04	0.25	0.04
(3) 10yr 4hr 5min Chicago	0.20	187.83	0.19	187.81	0.41	0.05	0.33	0.05
(4) 25yr 4hr 5min Chicago	0.23	187.85	0.23	187.83	0.50	0.05	0.41	0.05
(5) 50yr 4hr 5min Chicago	0.26	187.87	0.26	187.85	0.58	0.06	0.48	0.05
(6) 100yr 4hr 5min Chicago	0.33	187.91	0.34	187.95	0.41	0.07	0.83	0.07

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Table 13: Existing vs. Proposed EX_MH1 Summary

Design Event	Existing Minor System Peak Flow [m^3/s]	Existing HGL Elevation [m]	Proposed Minor System Peak Flow [m^3/s]	Proposed HGL Elevation [m]	Existing Major System Peak Flow [m^3/s]	Existing Major System Flow Depth [m]	Proposed Major System Peak Flow [m^3/s]	Proposed Major System Flow Depth [m]
(1) 2yr 4hr 5min Chicago	0.16	185.69	0.2	185.76	0.38	0.05	0.19	0.04
(2) 5yr 4hr 5min Chicago	0.21	185.73	0.27	185.8	0.54	0.06	0.30	0.05
(3) 10yr 4hr 5min Chicago	0.21	185.77	0.33	185.85	0.69	0.07	0.41	0.05
(4) 25yr 4hr 5min Chicago	0.32	185.8	0.38	185.88	0.83	0.08	0.51	0.06
(5) 50yr 4hr 5min Chicago	0.37	185.94	0.43	185.92	0.95	0.08	0.60	0.06
(6) 100yr 4hr 5min Chicago	0.52	188.61	0.60	187.53	1.4	0.09	1.02	0.08

Table 14: Existing vs. Proposed EX_STM_MH5 Summary

Design Event	Existing Minor System Peak Flow [m3/s]	Existing HGL Elevation [m]	Proposed Minor System Peak Flow [m3/s]	Proposed HGL Elevation [m]	Existing Major System Peak Flow [m3/s]	Existing Major System Flow Depth [m]	Proposed Major System Peak Flow [m3/s]	Proposed Major System Flow Depth [m]
(1) 2yr 4hr 5min Chicago	0.42	185.17	0.36	185.13	0.40	0.11	0.22	0.09
(2) 5yr 4hr 5min Chicago	0.60	185.28	0.53	185.23	0.59	0.13	0.34	0.11
(3) 10yr 4hr 5min Chicago	0.76	185.4	0.68	185.32	0.76	0.16	0.46	0.13
(4) 25yr 4hr 5min Chicago	0.89	185.9	0.81	185.42	0.93	0.19	0.57	0.15
(5) 50yr 4hr 5min Chicago	0.98	186.54	0.91	186.22	1.07	0.21	0.67	0.16
(6) 100yr 4hr 5min Chicago	1.33	187.95	1.34	187.50	1.78	0.3	1.40	0.30

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The proposed conditions modelling results indicate that the minor system flows are not exceeded upstream and downstream of the site, demonstrating that the proposed SWM systems can adequately match the prescribed post-to-predevelopment targets. There is a very minimal, localized increase in flows at EX_MH1. However, the results at the next downstream node indicate a significant decrease in both major and minor system flow. Overall, results demonstrate decreases in minor system flows / HGL and depth of surface flow for the proposed conditions, which ultimately provide a net benefit to the City's infrastructure capacity.

Pump Failure

As noted previously, the underground storage tank must incorporate a pump to discharge to the proposed Street A storm sewers. A backup pump will be proposed to account for the unlikely scenario when the primary pump is not functional. To demonstrate that there is no appreciable impact downstream, even in the extremely unlikely scenario where both pumps have failed during a 100-year storm event, a separate model scenario has been prepared. The results are summarized in Table 15.

Table 15: Flows at Ninth Line during Total Pump Failure

Design Event	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]
	EX_STM_MH4	EX_STM_MH4-S	EX_MH1	EX_MH1-S	EX_STM_MH5	EX_STM_MH5-S
100yr 4hr 5min Chicago	0.34	0.83	0.60	1.02	1.33	1.40

Because the proposed pumping rate is very low, there is a trivial difference in usable storage over the duration of the 100-year storm. Accordingly, there is a negligible downstream increase in flows as a potential result of pump failure. Note this model assumes that the tank is empty at the start of a 100-year storm, which is reasonable given that this entire scenario is highly improbably.

Erosion Control

The Ninth Line Lands Scoped Subwatershed Study by Wood (2018) established criteria for erosion control based on the 25mm 4-hour storm. The total volume of rainfall simulated is 25.34mm.

Table 2.6.1 Stormwater Management Facility Sizing Criteria for Erosion Control for Ninth Line Lands – Sawmill Creek Subwatershed

Quantity Component	Cumulative Unitary Volume (m^3/impervious ha)	Unitary Discharge ($m^3/s/ha$)
Erosion	275	0.002

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Similar to the approach for quantity control, the 25mm 4-hour storm was modeled at the key node locations, as summarized in Tables 16 and 17. As the flow differential is minimal and the downstream system is piped, there would be no observable downstream erosion impacts.

Table 16: Existing Flow during 25mm Storm

Design Event	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]
	EX_STM_MH4	EX_STM_MH4-S	EX_MH1	EX_MH1-S	EX_STM_MH5	EX_STM_MH5-S
25mm Storm	0.08	0.12	0.11	0.2	0.25	0.23

Table 17: Proposed Flow during 25mm Storm

Design Event	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]	Minor System Peak Flow [m^3/s]	Major System Peak Flow [m^3/s]
	EX_STM_MH4	EX_STM_MH4-S	EX_MH1	EX_MH1-S	EX_STM_MH5	EX_STM_MH5-S
25mm Storm	0.081	0.10	0.14	0.11	0.22	0.13

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4 SANITARY SERVICING

4.1. EXISTING SANITARY SERVICING

The subject lands fall within Erin Centre and Motorway Sewersheds of the West Trunk System which ultimately discharges to the Clarkson Water Pollution Control Plant. Existing wastewater infrastructure in and around the subject lands is outlined below:

- 1050mm sanitary trunk sewer on Ninth Line from Erin Centre Boulevard north to Britannia Road West
- 900mm sanitary sewer on Erin Centre Boulevard
- No sanitary sewers on Ninth Line north of Saratoga Way or south of Erin Centre Boulevard
- Local sewers within subdivisions east of Ninth Line

As outlined in the Region's *Ninth Line Lands Servicing Strategy Report*, the Clarkson WPCP and the existing 900mm trunk sewer on Erin Centre Boulevard are adequately sized to handle projected flows from the proposed development area along Ninth Line, including the subject property. Therefore, it is assumed that there are no downstream sanitary capacity issues associated with the development of the subject property.

4.2. PROPOSED SANITARY SERVICING

A new 375mm sanitary trunk sewer on Ninth Line is proposed to provide an outlet from the subject lands to the existing 900mm sanitary sewer at Erin Centre Boulevard. The 375mm sanitary sewer will also be extended along Street A (through the proposed development) to provide a drainage outlet for future developments to the south.

Population densities of 3.50 people per unit for low-rise/townhouses and 2.70 people per unit for high-rise/apartments have been assumed based on marketing and demographic info for the area. Note these densities result in higher projected populations than the Region standard densities based on land area (175 people per hectare for townhouses and 475 people per hectare for apartments).

Refer to **Drawing 6**, "*Sanitary Drainage*," for further details. Sanitary design calculations are included in **Appendix A**.

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5 WATER DISTRIBUTION

5.1. EXISTING WATER SERVICING

A 400mm trunk watermain exists within the east boulevard Ninth Line that will supply the proposed development through the construction of new water infrastructure. This watermain is within Pressure Zone 4W of the Region's water distribution system servicing elevations between 166.3m and 198.1m. Pressure Zone 4W is supplied by the Streetsville High-Lift Pumping Station and the Meadowvale North Low-Lift Pumping Station.

As outlined in the Region's Ninth Line Lands Servicing Strategy Report, the need to expand existing water distribution infrastructure in the area of Ninth Line is currently under review.

5.2. PROPOSED WATER SERVICING

A 300mm watermain is proposed within the new public road west of Ninth Line. This watermain will connect to the existing Pressure Zone 4W 400mm watermain on Ninth Line. Local, looped watermains (200mm or smaller) are proposed within the private condo roads to service the development. All proposed units will be provided with individual water service connections in accordance with Region design criteria.

Hydrant testing, water demand, and fire flow calculations have been included in **Appendix C** for reference.

Refer to **Drawing 3**, "*Site Servicing*," for additional details.

6 EROSION AND SEDIMENT CONTROL

The erosion and sediment control plan for the site will be designed in conformance with the City of Mississauga guidelines and Credit Valley Conservation Authority. The following erosion and sediment control measures will be installed and maintained during construction:

- A temporary sediment control fence will be placed prior to grading
- Temporary sediment traps will be provided at each outlet
- Gravel mud mats will be provided at construction vehicle access points to minimize off-site tracking of sediments
- All temporary erosion and sediment control measures will be routinely inspected and repaired during construction. Temporary controls will not be removed until the areas they serve are restored and stable.

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7 CONCLUSION

The proposed residential development at 5150 Ninth Line can be adequately serviced via the existing storm, sanitary and water distribution infrastructure and does not adversely impact any of the surrounding infrastructure or properties.

Storm sewers will discharge to the existing sewers on Ninth Line, matching post-to-predevelopment flows. Quantity control for the private development is provided by an underground storage tank within the outdoor amenity space; quantity control for the public road is provided by a superpipe within the proposed right-of-way.

Water balance is achieved via infiltration trenches within the rear yards of the proposed townhouses, as well as by disconnecting downspouts and directing flows to pervious surfaces. Water quality control is provided via a filter on the proposed underground storage tank and oil and grit separators treating the private and public drainage areas.

Sanitary servicing is provided by a proposed 375mm trunk sewer on Ninth Line to the existing 900mm trunk sewer on Erin Centre Boulevard, ultimately draining to the Clarkson Water Pollution Control Plant.

Water servicing is provided by the existing Pressure Zone 4W 400mm watermain on Ninth Line.

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APPENDIX A

DESIGN CALCULATIONS

- Storm Sewer Design Sheet (10-Year)
- SWM Design Calculations & PC SWMM model results
- Sanitary Sewer Design Sheet

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STORM SEWER DESIGN SHEET

10 Year Storm

5150 NINTH LINE

CITY OF MISSISSAUGA

PROJECT DETAILS

Project No: 19-608
Date: 10-Nov-20
Designed by: SR
Checked by: DZ

DESIGN CRITERIA

Min. Diameter =	300	mm	Rainfall Intensity =	A / (Tc+B)^c
Mannings 'n'=	0.013			
Starting Tc =	15	min	A =	1010
			B =	4.6
Factor of Safety =	15	%	c =	0.78

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	AREA (ha)	RUNOFF COEFFICIENT "R"	'AR'	ACCUM. 'AR'	RAINFALL INTENSITY (mm/hr)	FLOW (m3/s)	CONSTANT FLOW (m3/s)	ACCUM. CONSTANT FLOW (m3/s)	TOTAL FLOW (m3/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (m3/s)	FULL FLOW VELOCITY (m/s)	INITIAL Tc (min)	TIME OF CONCENTRATION (min)	ACC. TIME OF CONCENTRATION (min)	PERCENT FULL (%)
CEC ROAD "E"	1	2	0.34	0.65	0.22	0.22	99.2	0.061			0.061	16.3	0.50	375	0.124	1.12	15.00	0.24	15.24	49%
CEC ROAD "H"	2	3				0.22	98.2	0.060			0.060	48.4	0.50	375	0.124	1.12	15.24	0.72	15.96	49%
CEC ROAD "G"	3	4	0.09	0.65	0.06	0.28	95.5	0.074			0.074	39.4	0.50	375	0.124	1.12	15.96	0.58	16.55	60%
HOLDOUT		5	0.11	0.25	0.03	0.03														
CEC ROAD "F"	5	6	0.25	0.65	0.16	0.19	99.2	0.052			0.052	30.9	1.00	300	0.097	1.37	15.00	0.38	15.38	54%
CEC ROAD "G"	6	7	0.20	0.65	0.13	0.32	97.7	0.087			0.087	50.4	0.50	450	0.202	1.27	15.38	0.66	16.04	43%
CEC ROAD "G"	7	4	0.33	0.65	0.21	0.53	95.2	0.141			0.141	36.4	0.50	450	0.202	1.27	16.04	0.48	16.52	70%
CEC ROAD "I"	4	8				0.81	93.5	0.211			0.211	6.7	0.50	675	0.594	1.66	16.55	0.07	16.61	36%
CEC ROAD "I"	8	9	0.32	0.65	0.21	1.02	93.2	0.265			0.265	44.9	0.50	675	0.594	1.66	16.61	0.45	17.06	45%
CEC ROAD "I"	9	10				1.02	91.7	0.260			0.260	37.9	0.50	675	0.594	1.66	17.06	0.38	17.44	44%
MTO		11	0.16	0.25	0.04	0.04														
CEC ROAD "D"	11	12	0.39	0.65	0.25	0.29	99.2	0.081			0.081	88.4	1.00	375	0.175	1.59	15.00	0.93	15.93	46%
CEC ROAD "D"	12	13	0.15	0.65	0.10	0.39	95.7	0.104			0.104	42.1	0.50	450	0.202	1.27	15.93	0.55	16.48	52%
CEC ROAD "H"	14	13	0.39	0.65	0.25	0.25	99.2	0.070			0.070	64.7	0.50	375	0.124	1.12	15.00	0.96	15.96	56%
CEC ROAD "C"	13	10	0.12	0.65	0.08	0.72	93.7	0.188			0.188	39.1	0.50	525	0.304	1.40	16.48	0.46	16.95	62%
CEC ROAD "C"	10	15	0.06	0.65	0.04	1.78	90.5	0.448			0.448	13.1	0.50				17.44		17.44	
CEC ROAD "C"	15	TANK-IN				1.78	90.5	0.448			0.448	8.0	0.50	750	0.787	1.78	17.44	0.07	17.52	57%
AMENITY AREA	RLCB	TANK-IN	0.11	0.65	0.07	0.07	99.2	0.020			0.020	12.6	0.50	250	0.042	0.86	15.00	0.25	15.25	47%
STREET "A"	16	17					99.2		0.150	0.150	0.150	13.0	0.40	525	0.272	1.26	15.00	0.17	15.17	55%
STREET "A"	17	18	0.78	0.65	0.51	0.51	98.5	0.139		0.150	0.289	11.6	0.25	1200	1.949	1.72	15.17	0.11	15.28	15%
HOLDOUT		18	0.12	0.55	0.07	0.07														
STREET "A"	18	19				0.57	98.1	0.156		0.150	0.306	108.1	0.25	1200	1.949	1.72	15.28	1.05	16.33	16%
STREET "A"	19	OGS1				0.57	94.2	0.150		0.150	0.300	3.5	0.50	250	0.042	0.86	16.33	0.07	16.40	713%
STREET "A"	OGS1	20				0.57	94.0	0.150		0.150	0.300	17.4	0.50	250	0.042	0.86	16.40	0.34	16.74	
CEC ROAD "B"	21	22	0.29	0.65	0.19	0.19	99.2	0.052			0.052	65.1	1.00	450	0.285	1.79	15.00	0.61	15.61	18%
CEC ROAD "B"	22	220				0.19	96.8	0.051			0.051	6.4	0.50	450	0.202	1.27	15.61	0.08	15.69	25%
CEC ROAD "A"	220	23	0.14	0.65	0.09	0.28	96.5	0.075			0.075	17.0	0.50	450	0.202	1.27	15.69	0.22	15.91	37%
CEC ROAD "A"	23	OGS2				0.28	95.7	0.074			0.074	4.4	0.50	450	0.202	1.27	15.91	0.06	15.97	37%
CEC ROAD "A"	OGS2	24				0.28	95.5	0.074			0.074	24.4	0.50	450	0.202	1.27	15.97	0.32	16.29	37%

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STORM SEWER DESIGN SHEET

10 Year Storm

5150 NINTH LINE

CITY OF MISSISSAUGA

PROJECT DETAILS

Project No: 19-608
Date: 10-Nov-20
Designed by: SR
Checked by: DZ

DESIGN CRITERIA

Min. Diameter =	300	mm	Rainfall Intensity =	A / (Tc+B)^c
Mannings 'n'=	0.013			
Starting Tc =	15	min	A =	1010
			B =	4.6
Factor of Safety =	15	%	c =	0.78

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	AREA (ha)	RUNOFF COEFFICIENT "R"	'AR'	ACCUM. 'AR'	RAINFALL INTENSITY (mm/hr)	FLOW (m3/s)	CONSTANT FLOW (m3/s)	ACCUM. CONSTANT FLOW (m3/s)	TOTAL FLOW (m3/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (m3/s)	FULL FLOW VELOCITY (m/s)	INITIAL Tc (min)	TIME OF CONCENTRATION (min)	ACC. TIME OF CONCENTRATION (min)	PERCENT FULL (%)
CEC ROAD "A"	24	25				0.28	94.4	0.073			0.073	14.2	0.50	450	0.202	1.27	16.29	0.19	16.48	36%
NINTH LINE	25	EX. 1				0.28	93.7	0.073			0.073	10.9	0.50	450	0.202	1.27	16.48	0.14	16.62	36%

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CLEAN WATER SEWER DESIGN SHEET

100 Year Storm

5150 NINTH LINE

CITY OF MISSISSAUGA

PROJECT DETAILS

Project No: 19-608
Date: 3-Nov-20
Designed by: SR
Checked by: DZ

DESIGN CRITERIA

Min. Diameter =	300	mm	Rainfall Intensity =	$\frac{A}{(Tc+B)^c}$
Mannings 'n'=	0.013			
Starting Tc =	15	min	A =	1450
			B =	4.9
Factor of Safety =	15	%	c =	0.78

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	AREA (ha)	RUNOFF COEFFICIENT "R"	'AR'	ACCUM. 'AR'	RAINFALL INTENSITY (mm/hr)	FLOW (m3/s)	CONSTANT FLOW (m3/s)	ACCUM. CONSTANT FLOW (m3/s)	TOTAL FLOW (m3/s)	LENGTH (m)	SLOPE (%)	PIPE DIAMETER (mm)	FULL FLOW CAPACITY (m3/s)	FULL FLOW VELOCITY (m/s)	INITIAL Tc (min)	TIME OF CONCENTRATION (min)	ACC. TIME OF CONCENTRATION (min)	PERCENT FULL (%)
																	Tc=15min + 275m/(0.5m/s*60s/min) = 24.17min			
CEC ROAD E	C1	C2	6.45	0.25	1.61	1.61	104.7	0.469			0.469	94.0	0.50	675	0.594	1.66	24.17	0.94	25.11	79%
CEC ROAD F	C2	C3				1.61	102.1	0.457			0.457	18.0	0.50	675	0.594	1.66	25.11	0.18	25.29	77%
CEC ROAD F	C3	C4				1.61	101.6	0.455			0.455	79.9	0.50	675	0.594	1.66	25.29	0.80	26.10	77%
BLOCK	C4	STM				1.61	99.6	0.446			0.446	31.4	0.50	675	0.594	1.66	26.10	0.32	26.41	75%

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Existing Model Setup

Existing 25mm Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

****
Element Count
****
Number of rain gages 10
Number of subcatchments ... 13
Number of nodes 19
Number of links 26
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_10yr	Chicago_24h_10yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

****
Subcatchment Summary
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Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
S1	10.25	208.76	5.00	2.5000	25mm	EX_MH1-S
S2	0.35	35.00	75.00	1.5000	25mm	EX_STM_MH4-S
S3	0.29	29.00	50.00	1.5000	25mm	EX_STM_MH4-S
S4	2.04	102.00	20.00	1.5000	25mm	EX_STM_MH5-S
S5	8.59	859.00	10.00	1.5000	25mm	J9_COM
S6_ROW1	0.50	100.22	70.00	1.8000	25mm	EX_STM_MH1-S
S6_ROW2	0.36	72.87	70.00	1.8000	25mm	EX_STM_MH2-S
S6_ROW3	0.37	73.14	70.00	1.8000	25mm	EX_STM_MH3-S
S6_ROW4	0.36	72.06	70.00	1.8000	25mm	EX_STM_MH4-S
S6_ROW5	0.37	74.56	70.00	1.8000	25mm	EX_MH1-S
S6_ROW6	0.42	84.54	25.00	1.0000	25mm	EX_STM_MH5-S
S6_ROW7	0.45	89.84	25.00	1.0000	25mm	EX_STM_MH6-S
S7	2.51	100.40	3.00	1.0000	25mm	J-S7minor

****
Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	
EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0	
EX_STM_MH2	JUNCTION	191.00	2.00	0.0	
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0	
EX_STM_MH3	JUNCTION	190.09	2.41	0.0	
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0	
EX_STM_MH4	JUNCTION	187.61	3.20	0.0	
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0	
EX_STM_MH5	JUNCTION	184.77	2.53	0.0	
EX_STM_MH5-S	JUNCTION	187.30	0.30	0.0	
EX_STM_MH6	JUNCTION	184.03	3.57	0.0	
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0	
EX_STM_MH7	JUNCTION	183.40	4.22	0.0	
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0	
J-S7	JUNCTION	189.40	2.60	0.0	
J-S7minor	JUNCTION	191.55	1.10	200.0	
J9_COM	OUTFALL	183.10	1.05	0.0	

****
Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5022	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140

C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5464	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.7	0.5013	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6286	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX_MH1	CONDUIT	120.3	1.5966	0.0130
C4-S	EX_STM_MH4-S	EX_MH1-S	CONDUIT	126.1	1.7218	0.0140
C5	EX_MH1	EX_STM_MH5	CONDUIT	129.5	0.5404	0.0130
C5-S	EX_MH1-S	EX_STM_MH5-S	CONDUIT	138.9	0.9646	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	120.0	0.5250	0.0130
C6-S	EX_STM_MH5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.7	0.4390	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5163	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.5	2.3352	0.0130
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.54
C4-S	full-11m	0.30	4.26	0.20	26.00	1	13.78
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.31
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.81
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44

****
Transect Summary
****

Transect full-11m
Area:

	0.0015	0.0062	0.0139	0.0248	0.0387
	0.0542	0.0697	0.0852	0.1007	0.1162
	0.1317	0.1472	0.1627	0.1782	0.1937
	0.2092	0.2246	0.2401	0.2556	0.2711
	0.2866	0.3021	0.3176	0.3331	0.3486
	0.3645	0.3813	0.3989	0.4173	0.4366
	0.4568	0.4777	0.4996	0.5223	0.5458
	0.5701	0.5954	0.6214	0.6483	0.6761
	0.7046	0.7341	0.7644	0.7955	0.8275
	0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

	0.0147	0.0293	0.0440	0.0587	0.0733
	0.1026	0.1317	0.1608	0.1898	0.2188
	0.2477	0.2766	0.3053	0.3341	0.3627
	0.3913	0.4198	0.4483	0.4767	0.5051
	0.5334	0.5616	0.5898	0.6179	0.6459
	0.6735	0.6991	0.7228	0.7447	0.7651
	0.7841	0.8017	0.8182	0.8337	0.8482
	0.8618	0.8747	0.8869	0.8985	0.9095
	0.9200	0.9301	0.9398	0.9492	0.9582
	0.9670	0.9755	0.9839	0.9920	1.0000

Width:

	0.0846	0.1692	0.2538	0.3385	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4462	0.4692	0.4923	0.5154	0.5385
	0.5615	0.5846	0.6077	0.6308	0.6538
	0.6769	0.7000	0.7231	0.7462	0.7692
	0.7923	0.8154	0.8385	0.8615	0.8846
	0.9077	0.9308	0.9538	0.9769	1.0000

Transect Full7m
Area:

0.0006	0.0024	0.0054	0.0097	0.0151
0.0217	0.0296	0.0387	0.0489	0.0604
0.0731	0.0869	0.1010	0.1151	0.1292
0.1433	0.1574	0.1715	0.1856	0.1997
0.2138	0.2279	0.2419	0.2560	0.2701
0.2848	0.3007	0.3179	0.3362	0.3557
0.3764	0.3984	0.4215	0.4459	0.4715
0.4983	0.5262	0.5554	0.5858	0.6174
0.6503	0.6843	0.7195	0.7560	0.7936
0.8325	0.8726	0.9138	0.9563	1.0000

Hrad:

0.0185	0.0370	0.0555	0.0740	0.0925
0.1111	0.1296	0.1481	0.1666	0.1851
0.2036	0.2282	0.2647	0.3011	0.3374
0.3736	0.4097	0.4456	0.4815	0.5172
0.5528	0.5883	0.6236	0.6588	0.6940
0.7280	0.7580	0.7844	0.8076	0.8279
0.8459	0.8617	0.8756	0.8880	0.8991
0.9091	0.9182	0.9265	0.9341	0.9412
0.9480	0.9543	0.9605	0.9664	0.9721
0.9778	0.9834	0.9889	0.9945	1.0000

Width:

0.0273	0.0545	0.0818	0.1091	0.1364
0.1636	0.1909	0.2182	0.2455	0.2727
0.3000	0.3182	0.3182	0.3182	0.3182
0.3182	0.3182	0.3182	0.3182	0.3182
0.3182	0.3182	0.3182	0.3182	0.3182
0.3455	0.3727	0.4000	0.4273	0.4545
0.4818	0.5091	0.5364	0.5636	0.5909
0.6182	0.6455	0.6727	0.7000	0.7273
0.7545	0.7818	0.8091	0.8364	0.8636
0.8909	0.9182	0.9455	0.9727	1.0000

Transect overflow
Area:

0.0151	0.0304	0.0459	0.0616	0.0775
0.0936	0.1099	0.1264	0.1431	0.1600
0.1771	0.1944	0.2119	0.2296	0.2475
0.2656	0.2839	0.3024	0.3211	0.3400
0.3591	0.3784	0.3979	0.4176	0.4375
0.4576	0.4779	0.4984	0.5191	0.5400
0.5611	0.5824	0.6039	0.6256	0.6475
0.6696	0.6919	0.7144	0.7371	0.7600
0.7831	0.8064	0.8299	0.8536	0.8775
0.9016	0.9259	0.9504	0.9751	1.0000

Hrad:

0.0250	0.0496	0.0740	0.0982	0.1221
0.1457	0.1691	0.1922	0.2152	0.2378
0.2603	0.2825	0.3045	0.3263	0.3479
0.3693	0.3905	0.4115	0.4323	0.4530
0.4734	0.4937	0.5137	0.5336	0.5534
0.5730	0.5924	0.6116	0.6307	0.6496
0.6684	0.6871	0.7056	0.7239	0.7421
0.7602	0.7781	0.7959	0.8136	0.8311
0.8486	0.8658	0.8830	0.9001	0.9170
0.9338	0.9505	0.9671	0.9836	1.0000

Width:

0.6080	0.6160	0.6240	0.6320	0.6400
0.6480	0.6560	0.6640	0.6720	0.6800
0.6880	0.6960	0.7040	0.7120	0.7200
0.7280	0.7360	0.7440	0.7520	0.7600
0.7680	0.7760	0.7840	0.7920	0.8000
0.8080	0.8160	0.8240	0.8320	0.8400
0.8480	0.8560	0.8640	0.8720	0.8800
0.8880	0.8960	0.9040	0.9120	0.9200
0.9280	0.9360	0.9440	0.9520	0.9600
0.9680	0.9760	0.9840	0.9920	1.0000

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NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
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****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO

Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 04/29/2020 00:00:00
Ending Date 04/30/2020 00:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:00:30
Dry Time Step 00:01:00
Routing Time Step ..... 2.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 6
Head Tolerance ..... 0.001500 m

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	0.681	25.342
Evaporation Loss	0.000	0.000
Infiltration Loss	0.551	20.527
Surface Runoff	0.093	3.446
Final Storage	0.037	1.370
Continuity Error (%)	-0.003	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.093	0.926
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.092	0.922
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.002
Continuity Error (%)	0.108	

Time-Step Critical Elements

None

Highest Flow Instability Indexes

Link C1-S7 (3)

Routing Time Step Summary

Minimum Time Step	:	1.50 sec
Average Time Step	:	2.00 sec
Maximum Time Step	:	2.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	2.00
Percent Not Converging	:	0.00

Subcatchment Runoff Summary

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
S1	25.34	0.00	0.00	22.87	1.08	0.01	1.09	0.11	0.07	0.043
S2	25.34	0.00	0.00	5.99	16.20	0.03	16.22	0.06	0.03	0.640
S3	25.34	0.00	0.00	12.01	11.92	0.03	11.95	0.03	0.02	0.472
S4	25.34	0.00	0.00	18.59	4.77	0.67	5.44	0.11	0.06	0.215
S5	25.34	0.00	0.00	21.63	2.38	0.03	2.42	0.21	0.12	0.095
S6_ROW1	25.34	0.00	0.00	7.17	16.69	0.05	16.74	0.08	0.05	0.661
S6_ROW2	25.34	0.00	0.00	7.17	16.69	0.05	16.74	0.06	0.04	0.661
S6_ROW3	25.34	0.00	0.00	7.17	16.69	0.05	16.74	0.06	0.04	0.661
S6_ROW4	25.34	0.00	0.00	7.17	16.69	0.05	16.74	0.06	0.04	0.661
S6_ROW5	25.34	0.00	0.00	7.17	16.69	0.05	16.74	0.06	0.04	0.661
S6_ROW6	25.34	0.00	0.00	17.30	5.96	0.76	6.72	0.03	0.01	0.265
S6_ROW7	25.34	0.00	0.00	17.30	5.96	0.76	6.72	0.03	0.02	0.265
S7	25.34	0.00	0.00	23.35	0.65	0.01	0.66	0.02	0.01	0.026

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Node Depth Summary
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Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
EX_MH1	JUNCTION	0.01	0.18	185.65	0 01:32	0.18
EX_MH1-S	JUNCTION	0.00	0.04	188.68	0 01:30	0.04
EX_STM_MH1	JUNCTION	0.00	0.05	191.75	0 01:31	0.05
EX_STM_MH1-S	JUNCTION	0.00	0.03	193.98	0 01:30	0.03
EX_STM_MH2	JUNCTION	0.01	0.09	191.09	0 01:32	0.09
EX_STM_MH2-S	JUNCTION	0.00	0.03	193.03	0 01:31	0.03
EX_STM_MH3	JUNCTION	0.00	0.08	190.17	0 01:32	0.08
EX_STM_MH3-S	JUNCTION	0.00	0.02	192.52	0 01:30	0.02
EX_STM_MH4	JUNCTION	0.01	0.14	187.75	0 01:31	0.14
EX_STM_MH4-S	JUNCTION	0.00	0.03	190.84	0 01:30	0.03
EX_STM_MH5	JUNCTION	0.02	0.29	185.06	0 01:34	0.29
EX_STM_MH5-S	JUNCTION	0.01	0.08	187.38	0 01:34	0.08
EX_STM_MH6	JUNCTION	0.02	0.27	184.30	0 01:36	0.27
EX_STM_MH6-S	JUNCTION	0.00	0.02	187.62	0 01:30	0.02
EX_STM_MH7	JUNCTION	0.02	0.27	183.67	0 01:36	0.27
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0 00:00	0.00
J-S7	JUNCTION	0.01	0.13	189.53	0 01:30	0.13
J-S7minor	JUNCTION	0.02	0.27	191.82	0 01:30	0.27
J9_COM	OUTFALL	0.02	0.25	183.35	0 01:36	0.25

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Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
EX_MH1	JUNCTION	0.000	0.108	0 01:31	0	0.277	-0.100	
EX_MH1-S	JUNCTION	0.108	0.199	0 01:30	0.174	0.34	-0.247	
EX_STM_MH1	JUNCTION	0.000	0.006	0 01:30	0	0.00828	-0.017	
EX_STM_MH1-S	JUNCTION	0.049	0.049	0 01:30	0.0839	0.0839	-0.607	
EX_STM_MH2	JUNCTION	0.000	0.020	0 01:31	0	0.0489	-0.005	
EX_STM_MH2-S	JUNCTION	0.035	0.077	0 01:30	0.061	0.137	0.635	
EX_STM_MH3	JUNCTION	0.000	0.023	0 01:32	0	0.0519	0.021	
EX_STM_MH3-S	JUNCTION	0.036	0.082	0 01:30	0.0612	0.157	-0.036	
EX_STM_MH4	JUNCTION	0.000	0.083	0 01:30	0	0.208	-0.002	
EX_STM_MH4-S	JUNCTION	0.090	0.117	0 01:30	0.152	0.187	-0.060	
EX_STM_MH5	JUNCTION	0.000	0.249	0 01:33	0	0.711	0.035	
EX_STM_MH5-S	JUNCTION	0.071	0.231	0 01:30	0.139	0.438	0.991	
EX_STM_MH6	JUNCTION	0.000	0.247	0 01:35	0	0.715	-0.006	
EX_STM_MH6-S	JUNCTION	0.016	0.016	0 01:30	0.0302	0.0302	-0.332	
EX_STM_MH7	JUNCTION	0.000	0.246	0 01:36	0	0.715	-0.001	
EX_STM_MH7-S	JUNCTION	0.000	0.000	0 00:00	0	0	0.000	ltr
J-S7	JUNCTION	0.000	0.072	0 01:30	0	0.187	0.099	
J-S7minor	JUNCTION	0.011	0.052	0 01:30	0.0165	0.135	-0.148	
J9_COM	OUTFALL	0.120	0.278	0 01:36	0.208	0.922	0.000	

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Node Surcharge Summary
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No nodes were surcharged.

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Node Flooding Summary
****

No nodes were flooded.

****
Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	55.69	0.019	0.278	0.922
System	55.69	0.019	0.278	0.922

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.023	0	01:32	0.87	0.07	0.22
C1-S	CHANNEL	0.028	0	01:30	0.26	0.00	0.08
C1-S7	CONDUIT	0.051	0	01:30	1.26	0.16	0.59
C2	CONDUIT	0.006	0	01:31	0.57	0.03	0.11
C2-S	CHANNEL	0.042	0	01:30	0.30	0.00	0.10
C3	CONDUIT	0.019	0	01:32	0.86	0.09	0.20
C3-S	CHANNEL	0.048	0	01:31	0.39	0.01	0.09
C4	CONDUIT	0.082	0	01:31	1.79	0.15	0.26
C4-S	CHANNEL	0.093	0	01:30	0.43	0.01	0.12
C5	CONDUIT	0.107	0	01:32	1.03	0.13	0.31
C5-S	CHANNEL	0.154	0	01:30	0.35	0.01	0.20
C6	CONDUIT	0.245	0	01:35	1.56	0.30	0.38
C6-S	CHANNEL	0.008	0	01:30	0.03	0.00	0.16
C7	CONDUIT	0.246	0	01:36	1.43	0.14	0.25
C7-S	CHANNEL	0.000	0	00:00	0.00	0.00	0.03
C8	CONDUIT	0.246	0	01:36	1.49	0.13	0.25
C9	CONDUIT	0.071	0	01:30	1.99	0.16	0.28
J-S7minor-IC	WEIR	0.042	0	01:30			0.13
J1_COM-IC	DUMMY	0.006	0	01:30			
J2_COM-IC	DUMMY	0.014	0	01:31			
J3_COM-IC	DUMMY	0.004	0	01:30			
J4_COM-IC	DUMMY	0.012	0	01:30			
J5_COM-IC	DUMMY	0.027	0	01:30			
J6_COM-IC	DUMMY	0.146	0	01:34			
J7_COM-IC	DUMMY	0.003	0	01:30			
J8_COM-IC	DUMMY	0.000	0	00:00			

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.81	0.00	0.18	0.01	0.00	0.00	0.96	0.00
C1-S	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.99	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.04	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.97	0.00
C3	1.00	0.04	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.01	0.99	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.45	0.55	0.00	0.00	1.00	0.00
C5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.97	0.00
C5-S	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.98	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.99	0.00
C7	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C7-S	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C8	1.00	0.01	0.00	0.00	0.85	0.14	0.00	0.00	0.78	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

****
Conduit Surcharge Summary
****

No conduits were surcharged.

Analysis begun on: Tue Nov 10 09:46:40 2020
Analysis ended on: Tue Nov 10 09:46:43 2020

Existing - Chicago 4h 2yr Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

****
Element Count
****
Number of rain gages 10
Number of subcatchments ... 13
Number of nodes 19
Number of links 26
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_10yr	Chicago_24h_10yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
S1	10.25	208.76	5.00	2.5000	Chicago_4h_2yr_COM	EX_MH1-S
S2	0.35	35.00	75.00	1.5000	Chicago_4h_2yr_COM	EX_STM_MH4-S
S3	0.29	29.00	50.00	1.5000	Chicago_4h_2yr_COM	EX_STM_MH4-S
S4	2.04	102.00	20.00	1.5000	Chicago_4h_2yr_COM	EX_STM_MH5-S
S5	8.59	859.00	10.00	1.5000	Chicago_4h_2yr_COM	J9_COM
S6_ROW1	0.50	100.22	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH1-S
S6_ROW2	0.36	72.87	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH2-S
S6_ROW3	0.37	73.14	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH3-S
S6_ROW4	0.36	72.06	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH4-S
S6_ROW5	0.37	74.56	70.00	1.8000	Chicago_4h_2yr_COM	EX_MH1-S
S6_ROW6	0.42	84.54	25.00	1.0000	Chicago_4h_2yr_COM	EX_STM_MH5-S
S6_ROW7	0.45	89.84	25.00	1.0000	Chicago_4h_2yr_COM	EX_STM_MH6-S
S7	2.51	100.40	3.00	1.0000	Chicago_4h_2yr_COM	J-S7minor

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	
EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0	
EX_STM_MH2	JUNCTION	191.00	2.00	0.0	
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0	
EX_STM_MH3	JUNCTION	190.09	2.41	0.0	
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0	
EX_STM_MH4	JUNCTION	187.61	3.20	0.0	
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0	
EX_STM_MH5	JUNCTION	184.77	2.53	0.0	
EX_STM_MH5-S	JUNCTION	187.30	0.30	0.0	
EX_STM_MH6	JUNCTION	184.03	3.57	0.0	
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0	
EX_STM_MH7	JUNCTION	183.40	4.22	0.0	
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0	
J-S7	JUNCTION	189.40	2.60	0.0	
J-S7minor	JUNCTION	191.55	1.10	200.0	
J9_COM	OUTFALL	183.10	1.05	0.0	

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Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5022	0.0130

C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5464	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.7	0.5013	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6286	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX_MH1	CONDUIT	120.3	1.5966	0.0130
C4-S	EX_STM_MH4-S	EX_MH1-S	CONDUIT	126.1	1.7218	0.0140
C5	EX_MH1	EX_STM_MH5	CONDUIT	129.5	0.5404	0.0130
C5-S	EX_MH1-S	EX_STM_MH5-S	CONDUIT	138.9	0.9646	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	120.0	0.5250	0.0130
C6-S	EX_STM_MH5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.7	0.4390	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5163	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.5	2.3352	0.0130
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			

****
Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.54
C4-S	full-11m	0.30	4.26	0.20	26.00	1	13.78
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.31
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.81
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44

****
Transect Summary
****

Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761
0.7046	0.7341	0.7644	0.7955	0.8275
0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

0.0147	0.0293	0.0440	0.0587	0.0733
0.1026	0.1317	0.1608	0.1898	0.2188
0.2477	0.2766	0.3053	0.3341	0.3627
0.3913	0.4198	0.4483	0.4767	0.5051
0.5334	0.5616	0.5898	0.6179	0.6459
0.6735	0.6991	0.7228	0.7447	0.7651
0.7841	0.8017	0.8182	0.8337	0.8482
0.8618	0.8747	0.8869	0.8985	0.9095
0.9200	0.9301	0.9398	0.9492	0.9582
0.9670	0.9755	0.9839	0.9920	1.0000

Width:

0.0846	0.1692	0.2538	0.3385	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4462	0.4692	0.4923	0.5154	0.5385
0.5615	0.5846	0.6077	0.6308	0.6538
0.6769	0.7000	0.7231	0.7462	0.7692
0.7923	0.8154	0.8385	0.8615	0.8846

```
            0.9077     0.9308     0.9538     0.9769     1.0000

Transect Full7m
Area:
            0.0006     0.0024     0.0054     0.0097     0.0151
            0.0217     0.0296     0.0387     0.0489     0.0604
            0.0731     0.0869     0.1010     0.1151     0.1292
            0.1433     0.1574     0.1715     0.1856     0.1997
            0.2138     0.2279     0.2419     0.2560     0.2701
            0.2848     0.3007     0.3179     0.3362     0.3557
            0.3764     0.3984     0.4215     0.4459     0.4715
            0.4983     0.5262     0.5554     0.5858     0.6174
            0.6503     0.6843     0.7195     0.7560     0.7936
            0.8325     0.8726     0.9138     0.9563     1.0000
Hrad:
            0.0185     0.0370     0.0555     0.0740     0.0925
            0.1111     0.1296     0.1481     0.1666     0.1851
            0.2036     0.2282     0.2647     0.3011     0.3374
            0.3736     0.4097     0.4456     0.4815     0.5172
            0.5528     0.5883     0.6236     0.6588     0.6940
            0.7280     0.7580     0.7844     0.8076     0.8279
            0.8459     0.8617     0.8756     0.8880     0.8991
            0.9091     0.9182     0.9265     0.9341     0.9412
            0.9480     0.9543     0.9605     0.9664     0.9721
            0.9778     0.9834     0.9889     0.9945     1.0000
Width:
            0.0273     0.0545     0.0818     0.1091     0.1364
            0.1636     0.1909     0.2182     0.2455     0.2727
            0.3000     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3455     0.3727     0.4000     0.4273     0.4545
            0.4818     0.5091     0.5364     0.5636     0.5909
            0.6182     0.6455     0.6727     0.7000     0.7273
            0.7545     0.7818     0.8091     0.8364     0.8636
            0.8909     0.9182     0.9455     0.9727     1.0000

Transect overflow
Area:
            0.0151     0.0304     0.0459     0.0616     0.0775
            0.0936     0.1099     0.1264     0.1431     0.1600
            0.1771     0.1944     0.2119     0.2296     0.2475
            0.2656     0.2839     0.3024     0.3211     0.3400
            0.3591     0.3784     0.3979     0.4176     0.4375
            0.4576     0.4779     0.4984     0.5191     0.5400
            0.5611     0.5824     0.6039     0.6256     0.6475
            0.6696     0.6919     0.7144     0.7371     0.7600
            0.7831     0.8064     0.8299     0.8536     0.8775
            0.9016     0.9259     0.9504     0.9751     1.0000
Hrad:
            0.0250     0.0496     0.0740     0.0982     0.1221
            0.1457     0.1691     0.1922     0.2152     0.2378
            0.2603     0.2825     0.3045     0.3263     0.3479
            0.3693     0.3905     0.4115     0.4323     0.4530
            0.4734     0.4937     0.5137     0.5336     0.5534
            0.5730     0.5924     0.6116     0.6307     0.6496
            0.6684     0.6871     0.7056     0.7239     0.7421
            0.7602     0.7781     0.7959     0.8136     0.8311
            0.8486     0.8658     0.8830     0.9001     0.9170
            0.9338     0.9505     0.9671     0.9836     1.0000
Width:
            0.6080     0.6160     0.6240     0.6320     0.6400
            0.6480     0.6560     0.6640     0.6720     0.6800
            0.6880     0.6960     0.7040     0.7120     0.7200
            0.7280     0.7360     0.7440     0.7520     0.7600
            0.7680     0.7760     0.7840     0.7920     0.8000
            0.8080     0.8160     0.8240     0.8320     0.8400
            0.8480     0.8560     0.8640     0.8720     0.8800
            0.8880     0.8960     0.9040     0.9120     0.9200
            0.9280     0.9360     0.9440     0.9520     0.9600
            0.9680     0.9760     0.9840     0.9920     1.0000


************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

***************
Analysis Options
***************
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
```

```
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date ..... 04/29/2020 00:00:00
Ending Date ..... 04/30/2020 00:00:00
Antecedent Dry Days ..... 0.0
Report Time Step ..... 00:01:00
Wet Time Step ..... 00:00:30
Dry Time Step ..... 00:01:00
Routing Time Step ..... 2.00 sec
Variable Time Step ..... YES
Maximum Trials ..... 8
Number of Threads ..... 6
Head Tolerance ..... 0.001500 m
```

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	0.899	33.450
Evaporation Loss	0.000	0.000
Infiltration Loss	0.699	26.013
Surface Runoff	0.163	6.069
Final Storage	0.037	1.369
Continuity Error (%)	-0.005	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.163	1.631
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.163	1.627
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.002
Continuity Error (%)	0.056	

```
**************************
Time-Step Critical Elements
**************************
None
```

```
*********************************
Highest Flow Instability Indexes
*********************************
Link C1-S7 (1)
```

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************************
Routing Time Step Summary
************************
Minimum Time Step           :     1.50 sec
Average Time Step           :     2.00 sec
Maximum Time Step           :     2.00 sec
Percent in Steady State     :     0.00
Average Iterations per Step :     2.00
Percent Not Converging      :     0.00
```

```
**************************
Subcatchment Runoff Summary
**************************
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
S1	33.45	0.00	0.00	29.66	1.49	0.91	2.40	0.25	0.15	0.072
S2	33.45	0.00	0.00	7.27	22.28	0.78	23.06	0.08	0.07	0.689
S3	33.45	0.00	0.00	14.78	15.98	1.31	17.29	0.05	0.04	0.517
S4	33.45	0.00	0.00	22.15	6.39	3.60	9.99	0.20	0.11	0.299
S5	33.45	0.00	0.00	27.06	3.20	1.91	5.11	0.44	0.25	0.153
S6_ROW1	33.45	0.00	0.00	8.63	22.37	1.03	23.40	0.12	0.10	0.700
S6_ROW2	33.45	0.00	0.00	8.63	22.37	1.03	23.40	0.09	0.07	0.700
S6_ROW3	33.45	0.00	0.00	8.63	22.37	1.03	23.40	0.09	0.07	0.700
S6_ROW4	33.45	0.00	0.00	8.63	22.37	1.03	23.40	0.08	0.07	0.700
S6_ROW5	33.45	0.00	0.00	8.63	22.37	1.03	23.40	0.09	0.07	0.700
S6_ROW6	33.45	0.00	0.00	20.36	7.99	3.77	11.77	0.05	0.03	0.352
S6_ROW7	33.45	0.00	0.00	20.36	7.99	3.77	11.77	0.05	0.03	0.352
S7	33.45	0.00	0.00	30.15	0.89	1.07	1.96	0.05	0.02	0.059

****
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
EX_MH1	JUNCTION	0.02	0.22	185.69	0 01:29	0.22
EX_MH1-S	JUNCTION	0.00	0.05	188.69	0 01:26	0.05
EX_STM_MH1	JUNCTION	0.00	0.06	191.76	0 01:27	0.06
EX_STM_MH1-S	JUNCTION	0.00	0.03	193.98	0 01:25	0.03
EX_STM_MH2	JUNCTION	0.01	0.11	191.11	0 01:29	0.11
EX_STM_MH2-S	JUNCTION	0.00	0.04	193.04	0 01:27	0.04
EX_STM_MH3	JUNCTION	0.01	0.09	190.18	0 01:29	0.09
EX_STM_MH3-S	JUNCTION	0.00	0.02	192.52	0 01:28	0.02
EX_STM_MH4	JUNCTION	0.01	0.17	187.78	0 01:29	0.17
EX_STM_MH4-S	JUNCTION	0.00	0.04	190.85	0 01:26	0.04
EX_STM_MH5	JUNCTION	0.03	0.40	185.17	0 01:32	0.40
EX_STM_MH5-S	JUNCTION	0.02	0.11	187.41	0 01:31	0.11
EX_STM_MH6	JUNCTION	0.03	0.36	184.39	0 01:33	0.36
EX_STM_MH6-S	JUNCTION	0.00	0.02	187.62	0 01:27	0.02
EX_STM_MH7	JUNCTION	0.03	0.35	183.75	0 01:33	0.35
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0 00:00	0.00
J-S7	JUNCTION	0.01	0.15	189.55	0 01:29	0.15
J-S7minor	JUNCTION	0.02	0.36	191.91	0 01:25	0.36
J9_COM	OUTFALL	0.03	0.33	183.43	0 01:33	0.33

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
EX_MH1	JUNCTION	0.000	0.155	0 01:29	0	0.418	-0.093
EX_MH1-S	JUNCTION	0.222	0.373	0 01:25	0.333	0.58	-0.088
EX_STM_MH1	JUNCTION	0.000	0.009	0 01:25	0	0.0126	-0.016
EX_STM_MH1-S	JUNCTION	0.099	0.099	0 01:25	0.117	0.117	-0.559
EX_STM_MH2	JUNCTION	0.000	0.028	0 01:27	0	0.065	-0.007
EX_STM_MH2-S	JUNCTION	0.072	0.151	0 01:25	0.0853	0.191	0.538
EX_STM_MH3	JUNCTION	0.000	0.032	0 01:29	0	0.0709	0.011
EX_STM_MH3-S	JUNCTION	0.073	0.137	0 01:25	0.0856	0.223	0.005
EX_STM_MH4	JUNCTION	0.000	0.119	0 01:29	0	0.305	-0.002
EX_STM_MH4-S	JUNCTION	0.177	0.218	0 01:25	0.215	0.279	-0.141
EX_STM_MH5	JUNCTION	0.000	0.420	0 01:31	0	1.18	0.029
EX_STM_MH5-S	JUNCTION	0.144	0.395	0 01:25	0.254	0.766	0.562
EX_STM_MH6	JUNCTION	0.000	0.418	0 01:32	0	1.19	-0.008
EX_STM_MH6-S	JUNCTION	0.033	0.033	0 01:25	0.0529	0.0529	-0.385
EX_STM_MH7	JUNCTION	0.000	0.417	0 01:33	0	1.19	-0.001
EX_STM_MH7-S	JUNCTION	0.000	0.000	0 00:00	0	0	0.000 ltr
J-S7	JUNCTION	0.000	0.103	0 01:28	0	0.273	0.006
J-S7minor	JUNCTION	0.022	0.074	0 01:25	0.0492	0.202	-0.014
J9_COM	OUTFALL	0.249	0.486	0 01:33	0.439	1.63	0.000

****
Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

No nodes were flooded.

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	56.01	0.034	0.486	1.627
System	56.01	0.034	0.486	1.627

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.032	0	01:29	0.92	0.09	0.27
C1-S	CHANNEL	0.054	0	01:28	0.33	0.00	0.10
C1-S7	CONDUIT	0.073	0	01:25	1.47	0.23	0.66
C2	CONDUIT	0.008	0	01:27	0.62	0.04	0.13
C2-S	CHANNEL	0.080	0	01:25	0.38	0.01	0.12
C3	CONDUIT	0.027	0	01:29	0.95	0.12	0.23
C3-S	CHANNEL	0.084	0	01:27	0.46	0.01	0.11
C4	CONDUIT	0.118	0	01:29	1.98	0.22	0.32
C4-S	CHANNEL	0.165	0	01:26	0.55	0.01	0.14
C5	CONDUIT	0.155	0	01:29	1.16	0.19	0.41
C5-S	CHANNEL	0.265	0	01:26	0.49	0.03	0.25
C6	CONDUIT	0.415	0	01:32	1.78	0.51	0.52
C6-S	CHANNEL	0.012	0	01:27	0.03	0.00	0.21
C7	CONDUIT	0.417	0	01:33	1.65	0.23	0.33
C7-S	CHANNEL	0.000	0	00:00	0.00	0.00	0.03
C8	CONDUIT	0.417	0	01:33	1.71	0.21	0.32
C9	CONDUIT	0.103	0	01:29	2.20	0.24	0.34
J-S7minor-IC	WEIR	0.061	0	01:28			0.16
J1_COM-IC	DUMMY	0.009	0	01:25			
J2_COM-IC	DUMMY	0.020	0	01:27			
J3_COM-IC	DUMMY	0.006	0	01:28			
J4_COM-IC	DUMMY	0.018	0	01:26			
J5_COM-IC	DUMMY	0.041	0	01:26			
J6_COM-IC	DUMMY	0.267	0	01:31			
J7_COM-IC	DUMMY	0.004	0	01:27			
J8_COM-IC	DUMMY	0.000	0	00:00			

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Flow Classification Summary
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Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.81	0.00	0.17	0.02	0.00	0.00	0.96	0.00
C1-S	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	0.99	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.04	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.97	0.00
C3	1.00	0.04	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.01	0.99	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.50	0.49	0.00	0.00	1.00	0.00
C5	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.97	0.00
C5-S	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.98	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.99	0.00
C7	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C7-S	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C8	1.00	0.01	0.00	0.00	0.82	0.17	0.00	0.00	0.73	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Upstream	Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.17	0.01	0.01	0.01

Analysis begun on: Tue Nov 10 09:55:13 2020
Analysis ended on: Tue Nov 10 09:55:15 2020

Existing - Chicago 4h 5yr Storm

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
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WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

*************
Element Count
*************
Number of rain gages ...... 10
Number of subcatchments ... 13
Number of nodes ........... 19
Number of links ........... 26
Number of pollutants ...... 0
Number of land uses ....... 0


****************
Raingage Summary
****************
                                                 Data       Recording
Name                 Data Source                 Type       Interval
------------------------------------------------------------------------
25mm                 25mm                        INTENSITY   10 min.
Chicago_24h_100yr    Chicago_24h_100yr_COM       INTENSITY    5 min.
Chicago_24h_10yr     Chicago_24h_10yr_COM        INTENSITY    5 min.
Chicago_24h_2yr      Chicago_24h_2yr_COM         INTENSITY    5 min.
Chicago_4h_100year_COM Chicago_4h_100year_COM      INTENSITY    5 min.
Chicago_4h_10year_COM Chicago_4h_10year_COM       INTENSITY    5 min.
Chicago_4h_25year_COM Chicago_4h_25year_COM       INTENSITY    5 min.
Chicago_4h_2yr_COM   Chicago_4h_2yr_COM          INTENSITY    5 min.
Chicago_4h_50year_COM Chicago_4h_50year_COM       INTENSITY    5 min.
Chicago_4h_5year_COM Chicago_4h_5year_COM         INTENSITY    5 min.


*********************
Subcatchment Summary
*********************
Name                         Area     Width   %Imperv    %Slope Rain Gage            Outlet
-------------------------------------------------------------------------------------------------
S1                          10.25    208.76      5.00    2.5000 Chicago_4h_5year_COM EX_MH1-S
S2                           0.35     35.00     75.00    1.5000 Chicago_4h_5year_COM EX_STM_MH4-S
S3                           0.29     29.00     50.00    1.5000 Chicago_4h_5year_COM EX_STM_MH4-S
S4                           2.04    102.00     20.00    1.5000 Chicago_4h_5year_COM EX_STM_MH5-S
S5                           8.59    859.00     10.00    1.5000 Chicago_4h_5year_COM J9_COM
S6_ROW1                      0.50    100.22     70.00    1.8000 Chicago_4h_5year_COM EX_STM_MH1-S
S6_ROW2                      0.36     72.87     70.00    1.8000 Chicago_4h_5year_COM EX_STM_MH2-S
S6_ROW3                      0.37     73.14     70.00    1.8000 Chicago_4h_5year_COM EX_STM_MH3-S
S6_ROW4                      0.36     72.06     70.00    1.8000 Chicago_4h_5year_COM EX_STM_MH4-S
S6_ROW5                      0.37     74.56     70.00    1.8000 Chicago_4h_5year_COM EX_MH1-S
S6_ROW6                      0.42     84.54     25.00    1.0000 Chicago_4h_5year_COM EX_STM_MH5-S
S6_ROW7                      0.45     89.84     25.00    1.0000 Chicago_4h_5year_COM EX_STM_MH6-S
S7                           2.51    100.40      3.00    1.0000 Chicago_4h_5year_COM J-S7minor


************
Node Summary
************
                                    Invert      Max.    Ponded    External
Name                 Type            Elev.     Depth      Area    Inflow
------------------------------------------------------------------------
EX_MH1               JUNCTION       185.47      3.17       0.0
EX_MH1-S             JUNCTION       188.64      0.30       0.0
EX_STM_MH1           JUNCTION       191.70      2.25       0.0
EX_STM_MH1-S         JUNCTION       193.95      0.30       0.0
EX_STM_MH2           JUNCTION       191.00      2.00       0.0
EX_STM_MH2-S         JUNCTION       193.00      0.30       0.0
EX_STM_MH3           JUNCTION       190.09      2.41       0.0
EX_STM_MH3-S         JUNCTION       192.50      0.30       0.0
EX_STM_MH4           JUNCTION       187.61      3.20       0.0
EX_STM_MH4-S         JUNCTION       190.81      0.30       0.0
EX_STM_MH5           JUNCTION       184.77      2.53       0.0
EX_STM_MH5-S         JUNCTION       187.30      0.30       0.0
EX_STM_MH6           JUNCTION       184.03      3.57       0.0
EX_STM_MH6-S         JUNCTION       187.60      0.30       0.0
EX_STM_MH7           JUNCTION       183.40      4.22       0.0
EX_STM_MH7-S         JUNCTION       187.62      0.30       0.0
J-S7                 JUNCTION       189.40      2.60       0.0
J-S7minor            JUNCTION       191.55      1.10     200.0
J9_COM               OUTFALL        183.10      1.05       0.0


************
Link Summary
************
Name              From Node        To Node          Type            Length    %Slope Roughness
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C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5022	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5464	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.7	0.5013	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6286	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX_MH1	CONDUIT	120.3	1.5966	0.0130
C4-S	EX_STM_MH4-S	EX_MH1-S	CONDUIT	126.1	1.7218	0.0140
C5	EX_MH1	EX_STM_MH5	CONDUIT	129.5	0.5404	0.0130
C5-S	EX_MH1-S	EX_STM_MH5-S	CONDUIT	138.9	0.9646	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	120.0	0.5250	0.0130
C6-S	EX_STM_MH5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.7	0.4390	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5163	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.5	2.3352	0.0130
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.54
C4-S	full-11m	0.30	4.26	0.20	26.00	1	13.78
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.31
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.81
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44

****
Transect Summary
****

Transect full-11m
Area:

	0.0015	0.0062	0.0139	0.0248	0.0387
	0.0542	0.0697	0.0852	0.1007	0.1162
	0.1317	0.1472	0.1627	0.1782	0.1937
	0.2092	0.2246	0.2401	0.2556	0.2711
	0.2866	0.3021	0.3176	0.3331	0.3486
	0.3645	0.3813	0.3989	0.4173	0.4366
	0.4568	0.4777	0.4996	0.5223	0.5458
	0.5701	0.5954	0.6214	0.6483	0.6761
	0.7046	0.7341	0.7644	0.7955	0.8275
	0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

	0.0147	0.0293	0.0440	0.0587	0.0733
	0.1026	0.1317	0.1608	0.1898	0.2188
	0.2477	0.2766	0.3053	0.3341	0.3627
	0.3913	0.4198	0.4483	0.4767	0.5051
	0.5334	0.5616	0.5898	0.6179	0.6459
	0.6735	0.6991	0.7228	0.7447	0.7651
	0.7841	0.8017	0.8182	0.8337	0.8482
	0.8618	0.8747	0.8869	0.8985	0.9095
	0.9200	0.9301	0.9398	0.9492	0.9582
	0.9670	0.9755	0.9839	0.9920	1.0000

Width:

	0.0846	0.1692	0.2538	0.3385	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4462	0.4692	0.4923	0.5154	0.5385
	0.5615	0.5846	0.6077	0.6308	0.6538
	0.6769	0.7000	0.7231	0.7462	0.7692

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            0.7923     0.8154     0.8385     0.8615     0.8846
            0.9077     0.9308     0.9538     0.9769     1.0000

Transect Full7m
Area:
            0.0006     0.0024     0.0054     0.0097     0.0151
            0.0217     0.0296     0.0387     0.0489     0.0604
            0.0731     0.0869     0.1010     0.1151     0.1292
            0.1433     0.1574     0.1715     0.1856     0.1997
            0.2138     0.2279     0.2419     0.2560     0.2701
            0.2848     0.3007     0.3179     0.3362     0.3557
            0.3764     0.3984     0.4215     0.4459     0.4715
            0.4983     0.5262     0.5554     0.5858     0.6174
            0.6503     0.6843     0.7195     0.7560     0.7936
            0.8325     0.8726     0.9138     0.9563     1.0000
Hrad:
            0.0185     0.0370     0.0555     0.0740     0.0925
            0.1111     0.1296     0.1481     0.1666     0.1851
            0.2036     0.2282     0.2647     0.3011     0.3374
            0.3736     0.4097     0.4456     0.4815     0.5172
            0.5528     0.5883     0.6236     0.6588     0.6940
            0.7280     0.7580     0.7844     0.8076     0.8279
            0.8459     0.8617     0.8756     0.8880     0.8991
            0.9091     0.9182     0.9265     0.9341     0.9412
            0.9480     0.9543     0.9605     0.9664     0.9721
            0.9778     0.9834     0.9889     0.9945     1.0000
Width:
            0.0273     0.0545     0.0818     0.1091     0.1364
            0.1636     0.1909     0.2182     0.2455     0.2727
            0.3000     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3455     0.3727     0.4000     0.4273     0.4545
            0.4818     0.5091     0.5364     0.5636     0.5909
            0.6182     0.6455     0.6727     0.7000     0.7273
            0.7545     0.7818     0.8091     0.8364     0.8636
            0.8909     0.9182     0.9455     0.9727     1.0000

Transect overflow
Area:
            0.0151     0.0304     0.0459     0.0616     0.0775
            0.0936     0.1099     0.1264     0.1431     0.1600
            0.1771     0.1944     0.2119     0.2296     0.2475
            0.2656     0.2839     0.3024     0.3211     0.3400
            0.3591     0.3784     0.3979     0.4176     0.4375
            0.4576     0.4779     0.4984     0.5191     0.5400
            0.5611     0.5824     0.6039     0.6256     0.6475
            0.6696     0.6919     0.7144     0.7371     0.7600
            0.7831     0.8064     0.8299     0.8536     0.8775
            0.9016     0.9259     0.9504     0.9751     1.0000
Hrad:
            0.0250     0.0496     0.0740     0.0982     0.1221
            0.1457     0.1691     0.1922     0.2152     0.2378
            0.2603     0.2825     0.3045     0.3263     0.3479
            0.3693     0.3905     0.4115     0.4323     0.4530
            0.4734     0.4937     0.5137     0.5336     0.5534
            0.5730     0.5924     0.6116     0.6307     0.6496
            0.6684     0.6871     0.7056     0.7239     0.7421
            0.7602     0.7781     0.7959     0.8136     0.8311
            0.8486     0.8658     0.8830     0.9001     0.9170
            0.9338     0.9505     0.9671     0.9836     1.0000
Width:
            0.6080     0.6160     0.6240     0.6320     0.6400
            0.6480     0.6560     0.6640     0.6720     0.6800
            0.6880     0.6960     0.7040     0.7120     0.7200
            0.7280     0.7360     0.7440     0.7520     0.7600
            0.7680     0.7760     0.7840     0.7920     0.8000
            0.8080     0.8160     0.8240     0.8320     0.8400
            0.8480     0.8560     0.8640     0.8720     0.8800
            0.8880     0.8960     0.9040     0.9120     0.9200
            0.9280     0.9360     0.9440     0.9520     0.9600
            0.9680     0.9760     0.9840     0.9920     1.0000


************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

***************
Analysis Options
***************
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
```

```
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 04/30/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:00:30
Dry Time Step ............ 00:01:00
Routing Time Step ........ 2.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m
```

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	1.208	44.965
Evaporation Loss	0.000	0.000
Infiltration Loss	0.858	31.953
Surface Runoff	0.313	11.642
Final Storage	0.037	1.373
Continuity Error (%)	-0.006	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.313	3.128
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.312	3.124
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.002
Continuity Error (%)	0.029	

Time-Step Critical Elements

None

Highest Flow Instability Indexes

Link C1-S7 (3)

Routing Time Step Summary

Minimum Time Step	:	1.50 sec
Average Time Step	:	2.00 sec
Maximum Time Step	:	2.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	2.00
Percent Not Converging	:	0.00

Subcatchment Runoff Summary

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
S1	44.96	0.00	0.00	37.15	2.06	4.36	6.42	0.66	0.20	0.143
S2	44.97	0.00	0.00	8.71	30.92	2.21	33.13	0.12	0.09	0.737
S3	44.97	0.00	0.00	17.77	21.74	4.07	25.81	0.07	0.05	0.574
S4	44.96	0.00	0.00	25.91	8.70	9.04	17.74	0.36	0.16	0.395
S5	44.97	0.00	0.00	32.75	4.35	6.58	10.93	0.94	0.34	0.243
S6_ROW1	44.96	0.00	0.00	10.34	30.44	2.77	33.21	0.17	0.14	0.738
S6_ROW2	44.97	0.00	0.00	10.34	30.44	2.77	33.21	0.12	0.10	0.738
S6_ROW3	44.96	0.00	0.00	10.34	30.44	2.77	33.21	0.12	0.10	0.738
S6_ROW4	44.96	0.00	0.00	10.34	30.44	2.77	33.21	0.12	0.10	0.738
S6_ROW5	44.96	0.00	0.00	10.34	30.44	2.77	33.21	0.12	0.10	0.738
S6_ROW6	44.97	0.00	0.00	23.87	10.87	8.90	19.77	0.08	0.04	0.440
S6_ROW7	44.96	0.00	0.00	23.87	10.87	8.90	19.77	0.09	0.04	0.440

S7	44.96	0.00	0.00	37.53	1.24	4.86	6.10	0.15	0.03	0.136

****
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
EX_MH1	JUNCTION	0.03	0.26	185.73	0 01:28	0.26
EX_MH1-S	JUNCTION	0.01	0.06	188.70	0 01:25	0.06
EX_STM_MH1	JUNCTION	0.00	0.07	191.77	0 01:26	0.07
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0 01:25	0.04
EX_STM_MH2	JUNCTION	0.01	0.12	191.12	0 01:28	0.12
EX_STM_MH2-S	JUNCTION	0.00	0.05	193.05	0 01:26	0.05
EX_STM_MH3	JUNCTION	0.01	0.11	190.20	0 01:28	0.11
EX_STM_MH3-S	JUNCTION	0.00	0.03	192.53	0 01:27	0.03
EX_STM_MH4	JUNCTION	0.02	0.20	187.81	0 01:28	0.20
EX_STM_MH4-S	JUNCTION	0.00	0.04	190.85	0 01:25	0.04
EX_STM_MH5	JUNCTION	0.05	0.51	185.28	0 01:31	0.51
EX_STM_MH5-S	JUNCTION	0.02	0.13	187.43	0 01:30	0.13
EX_STM_MH6	JUNCTION	0.04	0.44	184.47	0 01:32	0.44
EX_STM_MH6-S	JUNCTION	0.00	0.02	187.62	0 01:26	0.02
EX_STM_MH7	JUNCTION	0.04	0.43	183.83	0 01:32	0.43
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0 01:33	0.00
J-S7	JUNCTION	0.02	0.18	189.58	0 01:28	0.18
J-S7minor	JUNCTION	0.03	0.49	192.04	0 01:25	0.48
J9_COM	OUTFALL	0.04	0.40	183.50	0 01:32	0.40

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
EX_MH1	JUNCTION	0.000	0.212	0 01:27	0	0.725	-0.056
EX_MH1-S	JUNCTION	0.300	0.537	0 01:25	0.782	1.15	0.033
EX_STM_MH1	JUNCTION	0.000	0.012	0 01:25	0	0.0193	-0.012
EX_STM_MH1-S	JUNCTION	0.135	0.135	0 01:25	0.166	0.166	-0.338
EX_STM_MH2	JUNCTION	0.000	0.037	0 01:26	0	0.09	-0.006
EX_STM_MH2-S	JUNCTION	0.098	0.212	0 01:25	0.121	0.269	0.341
EX_STM_MH3	JUNCTION	0.000	0.043	0 01:28	0	0.0992	-0.005
EX_STM_MH3-S	JUNCTION	0.099	0.205	0 01:25	0.121	0.319	0.013
EX_STM_MH4	JUNCTION	0.000	0.158	0 01:28	0	0.506	-0.002
EX_STM_MH4-S	JUNCTION	0.245	0.315	0 01:25	0.31	0.415	-0.228
EX_STM_MH5	JUNCTION	0.000	0.603	0 01:30	0	2.17	0.017
EX_STM_MH5-S	JUNCTION	0.197	0.590	0 01:25	0.445	1.45	0.298
EX_STM_MH6	JUNCTION	0.000	0.601	0 01:31	0	2.19	-0.005
EX_STM_MH6-S	JUNCTION	0.044	0.044	0 01:25	0.0888	0.0888	-0.642
EX_STM_MH7	JUNCTION	0.000	0.601	0 01:32	0	2.19	-0.001
EX_STM_MH7-S	JUNCTION	0.000	0.000	0 01:27	0	9.84e-05	11.966
J-S7	JUNCTION	0.000	0.137	0 01:28	0	0.457	0.038
J-S7minor	JUNCTION	0.029	0.101	0 01:25	0.153	0.358	-0.049
J9_COM	OUTFALL	0.335	0.711	0 01:30	0.939	3.12	0.000

****
Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

No nodes were flooded.

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	58.26	0.062	0.711	3.124
System	58.26	0.062	0.711	3.124

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.043	0	01:28	0.99	0.12	0.32
C1-S	CHANNEL	0.089	0	01:27	0.40	0.01	0.12
C1-S7	CONDUIT	0.098	0	01:25	1.88	0.31	0.69
C2	CONDUIT	0.010	0	01:26	0.66	0.05	0.15
C2-S	CHANNEL	0.115	0	01:25	0.43	0.01	0.13
C3	CONDUIT	0.035	0	01:28	1.02	0.16	0.27
C3-S	CHANNEL	0.127	0	01:26	0.52	0.02	0.12
C4	CONDUIT	0.158	0	01:28	2.14	0.29	0.37
C4-S	CHANNEL	0.251	0	01:25	0.65	0.02	0.17
C5	CONDUIT	0.211	0	01:28	1.15	0.26	0.51
C5-S	CHANNEL	0.399	0	01:25	0.55	0.04	0.31
C6	CONDUIT	0.596	0	01:31	1.93	0.74	0.66
C6-S	CHANNEL	0.018	0	01:26	0.03	0.00	0.26
C7	CONDUIT	0.600	0	01:32	1.81	0.33	0.41
C7-S	CHANNEL	0.000	0	01:27	0.01	0.00	0.04
C8	CONDUIT	0.601	0	01:32	1.88	0.31	0.40
C9	CONDUIT	0.137	0	01:28	2.37	0.31	0.39
J-S7minor-IC	WEIR	0.082	0	01:27			0.20
J1_COM-IC	DUMMY	0.012	0	01:25			
J2_COM-IC	DUMMY	0.027	0	01:26			
J3_COM-IC	DUMMY	0.008	0	01:27			
J4_COM-IC	DUMMY	0.024	0	01:25			
J5_COM-IC	DUMMY	0.063	0	01:25			
J6_COM-IC	DUMMY	0.398	0	01:30			
J7_COM-IC	DUMMY	0.005	0	01:26			
J8_COM-IC	DUMMY	0.000	0	01:33			

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Flow Classification Summary
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Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.80	0.00	0.20	0.00	0.00	0.00	0.97	0.00
C1-S	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.97	0.00
C3	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.01	0.99	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.62	0.38	0.00	0.00	1.00	0.00
C5	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.97	0.00
C5-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.98	0.00	0.02	0.00	0.00	0.00	0.93	0.00
C8	1.00	0.01	0.00	0.00	0.76	0.23	0.00	0.00	0.66	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Upstream	Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.26	0.01	0.01	0.01

Analysis begun on: Tue Nov 10 10:46:23 2020
Analysis ended on: Tue Nov 10 10:46:26 2020

Existing - Chicago 4h 10yr Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

****
Element Count
****
Number of rain gages 10
Number of subcatchments ... 13
Number of nodes 19
Number of links 26
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_10yr	Chicago_24h_10yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
S1	10.25	208.76	5.00	2.5000	Chicago_4h_10year_COM	EX_MH1-S
S2	0.35	35.00	75.00	1.5000	Chicago_4h_10year_COM	EX_STM_MH4-S
S3	0.29	29.00	50.00	1.5000	Chicago_4h_10year_COM	EX_STM_MH4-S
S4	2.04	102.00	20.00	1.5000	Chicago_4h_10year_COM	EX_STM_MH5-S
S5	8.59	859.00	10.00	1.5000	Chicago_4h_10year_COM	J9_COM
S6_ROW1	0.50	100.22	70.00	1.8000	Chicago_4h_10year_COM	EX_STM_MH1-S
S6_ROW2	0.36	72.87	70.00	1.8000	Chicago_4h_10year_COM	EX_STM_MH2-S
S6_ROW3	0.37	73.14	70.00	1.8000	Chicago_4h_10year_COM	EX_STM_MH3-S
S6_ROW4	0.36	72.06	70.00	1.8000	Chicago_4h_10year_COM	EX_STM_MH4-S
S6_ROW5	0.37	74.56	70.00	1.8000	Chicago_4h_10year_COM	EX_MH1-S
S6_ROW6	0.42	84.54	25.00	1.0000	Chicago_4h_10year_COM	EX_STM_MH5-S
S6_ROW7	0.45	89.84	25.00	1.0000	Chicago_4h_10year_COM	EX_STM_MH6-S
S7	2.51	100.40	3.00	1.0000	Chicago_4h_10year_COM	J-S7minor

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	
EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0	
EX_STM_MH2	JUNCTION	191.00	2.00	0.0	
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0	
EX_STM_MH3	JUNCTION	190.09	2.41	0.0	
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0	
EX_STM_MH4	JUNCTION	187.61	3.20	0.0	
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0	
EX_STM_MH5	JUNCTION	184.77	2.53	0.0	
EX_STM_MH5-S	JUNCTION	187.30	0.30	0.0	
EX_STM_MH6	JUNCTION	184.03	3.57	0.0	
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0	
EX_STM_MH7	JUNCTION	183.40	4.22	0.0	
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0	
J-S7	JUNCTION	189.40	2.60	0.0	
J-S7minor	JUNCTION	191.55	1.10	200.0	
J9_COM	OUTFALL	183.10	1.05	0.0	

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness

C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5022	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5464	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.7	0.5013	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6286	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX_MH1	CONDUIT	120.3	1.5966	0.0130
C4-S	EX_STM_MH4-S	EX_MH1-S	CONDUIT	126.1	1.7218	0.0140
C5	EX_MH1	EX_STM_MH5	CONDUIT	129.5	0.5404	0.0130
C5-S	EX_MH1-S	EX_STM_MH5-S	CONDUIT	138.9	0.9646	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	120.0	0.5250	0.0130
C6-S	EX_STM_MH5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.7	0.4390	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5163	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.5	2.3352	0.0130
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.54
C4-S	full-11m	0.30	4.26	0.20	26.00	1	13.78
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.31
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.81
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44

****
Transect Summary
****

Transect full-11m
Area:

	0.0015	0.0062	0.0139	0.0248	0.0387
	0.0542	0.0697	0.0852	0.1007	0.1162
	0.1317	0.1472	0.1627	0.1782	0.1937
	0.2092	0.2246	0.2401	0.2556	0.2711
	0.2866	0.3021	0.3176	0.3331	0.3486
	0.3645	0.3813	0.3989	0.4173	0.4366
	0.4568	0.4777	0.4996	0.5223	0.5458
	0.5701	0.5954	0.6214	0.6483	0.6761
	0.7046	0.7341	0.7644	0.7955	0.8275
	0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

	0.0147	0.0293	0.0440	0.0587	0.0733
	0.1026	0.1317	0.1608	0.1898	0.2188
	0.2477	0.2766	0.3053	0.3341	0.3627
	0.3913	0.4198	0.4483	0.4767	0.5051
	0.5334	0.5616	0.5898	0.6179	0.6459
	0.6735	0.6991	0.7228	0.7447	0.7651
	0.7841	0.8017	0.8182	0.8337	0.8482
	0.8618	0.8747	0.8869	0.8985	0.9095
	0.9200	0.9301	0.9398	0.9492	0.9582
	0.9670	0.9755	0.9839	0.9920	1.0000

Width:

	0.0846	0.1692	0.2538	0.3385	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4462	0.4692	0.4923	0.5154	0.5385
	0.5615	0.5846	0.6077	0.6308	0.6538
	0.6769	0.7000	0.7231	0.7462	0.7692

```
            0.7923     0.8154     0.8385     0.8615     0.8846
            0.9077     0.9308     0.9538     0.9769     1.0000

Transect Full7m
Area:
            0.0006     0.0024     0.0054     0.0097     0.0151
            0.0217     0.0296     0.0387     0.0489     0.0604
            0.0731     0.0869     0.1010     0.1151     0.1292
            0.1433     0.1574     0.1715     0.1856     0.1997
            0.2138     0.2279     0.2419     0.2560     0.2701
            0.2848     0.3007     0.3179     0.3362     0.3557
            0.3764     0.3984     0.4215     0.4459     0.4715
            0.4983     0.5262     0.5554     0.5858     0.6174
            0.6503     0.6843     0.7195     0.7560     0.7936
            0.8325     0.8726     0.9138     0.9563     1.0000
Hrad:
            0.0185     0.0370     0.0555     0.0740     0.0925
            0.1111     0.1296     0.1481     0.1666     0.1851
            0.2036     0.2282     0.2647     0.3011     0.3374
            0.3736     0.4097     0.4456     0.4815     0.5172
            0.5528     0.5883     0.6236     0.6588     0.6940
            0.7280     0.7580     0.7844     0.8076     0.8279
            0.8459     0.8617     0.8756     0.8880     0.8991
            0.9091     0.9182     0.9265     0.9341     0.9412
            0.9480     0.9543     0.9605     0.9664     0.9721
            0.9778     0.9834     0.9889     0.9945     1.0000
Width:
            0.0273     0.0545     0.0818     0.1091     0.1364
            0.1636     0.1909     0.2182     0.2455     0.2727
            0.3000     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3455     0.3727     0.4000     0.4273     0.4545
            0.4818     0.5091     0.5364     0.5636     0.5909
            0.6182     0.6455     0.6727     0.7000     0.7273
            0.7545     0.7818     0.8091     0.8364     0.8636
            0.8909     0.9182     0.9455     0.9727     1.0000

Transect overflow
Area:
            0.0151     0.0304     0.0459     0.0616     0.0775
            0.0936     0.1099     0.1264     0.1431     0.1600
            0.1771     0.1944     0.2119     0.2296     0.2475
            0.2656     0.2839     0.3024     0.3211     0.3400
            0.3591     0.3784     0.3979     0.4176     0.4375
            0.4576     0.4779     0.4984     0.5191     0.5400
            0.5611     0.5824     0.6039     0.6256     0.6475
            0.6696     0.6919     0.7144     0.7371     0.7600
            0.7831     0.8064     0.8299     0.8536     0.8775
            0.9016     0.9259     0.9504     0.9751     1.0000
Hrad:
            0.0250     0.0496     0.0740     0.0982     0.1221
            0.1457     0.1691     0.1922     0.2152     0.2378
            0.2603     0.2825     0.3045     0.3263     0.3479
            0.3693     0.3905     0.4115     0.4323     0.4530
            0.4734     0.4937     0.5137     0.5336     0.5534
            0.5730     0.5924     0.6116     0.6307     0.6496
            0.6684     0.6871     0.7056     0.7239     0.7421
            0.7602     0.7781     0.7959     0.8136     0.8311
            0.8486     0.8658     0.8830     0.9001     0.9170
            0.9338     0.9505     0.9671     0.9836     1.0000
Width:
            0.6080     0.6160     0.6240     0.6320     0.6400
            0.6480     0.6560     0.6640     0.6720     0.6800
            0.6880     0.6960     0.7040     0.7120     0.7200
            0.7280     0.7360     0.7440     0.7520     0.7600
            0.7680     0.7760     0.7840     0.7920     0.8000
            0.8080     0.8160     0.8240     0.8320     0.8400
            0.8480     0.8560     0.8640     0.8720     0.8800
            0.8880     0.8960     0.9040     0.9120     0.9200
            0.9280     0.9360     0.9440     0.9520     0.9600
            0.9680     0.9760     0.9840     0.9920     1.0000


*********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
*********************************************************

***************
Analysis Options
***************
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
```

```
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 04/30/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:00:30
Dry Time Step ............ 00:01:00
Routing Time Step ........ 2.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m
```

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	1.488	55.384
Evaporation Loss	0.000	0.000
Infiltration Loss	0.973	36.233
Surface Runoff	0.478	17.784
Final Storage	0.037	1.370
Continuity Error (%)	-0.006	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.478	4.778
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.477	4.775
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.002
Continuity Error (%)	0.020	

Time-Step Critical Elements

None

Highest Flow Instability Indexes

Link C1-S7 (3)

Routing Time Step Summary

Minimum Time Step	:	1.50 sec
Average Time Step	:	2.00 sec
Maximum Time Step	:	2.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	2.00
Percent Not Converging	:	0.00

Subcatchment Runoff Summary

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
S1	55.38	0.00	0.00	42.48	2.58	8.93	11.51	1.18	0.25	0.208
S2	55.38	0.00	0.00	9.82	38.73	3.71	42.44	0.15	0.12	0.766
S3	55.38	0.00	0.00	20.03	26.95	7.03	33.98	0.10	0.07	0.614
S4	55.38	0.00	0.00	28.51	10.78	14.79	25.57	0.52	0.20	0.462
S5	55.38	0.00	0.00	36.94	5.39	11.77	17.16	1.47	0.42	0.310
S6_ROW1	55.38	0.00	0.00	11.65	37.73	4.58	42.32	0.21	0.17	0.764
S6_ROW2	55.38	0.00	0.00	11.65	37.73	4.58	42.32	0.15	0.12	0.764
S6_ROW3	55.38	0.00	0.00	11.65	37.73	4.58	42.32	0.15	0.12	0.764
S6_ROW4	55.38	0.00	0.00	11.65	37.73	4.58	42.32	0.15	0.12	0.764
S6_ROW5	55.38	0.00	0.00	11.65	37.73	4.58	42.32	0.16	0.12	0.764
S6_ROW6	55.38	0.00	0.00	26.43	13.48	14.16	27.64	0.12	0.05	0.499
S6_ROW7	55.38	0.00	0.00	26.43	13.48	14.16	27.64	0.12	0.06	0.499

S7	55.38	0.00	0.00	42.78	1.55	9.72	11.27	0.28	0.04	0.203

****
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
EX_MH1	JUNCTION	0.03	0.30	185.77	0 01:27	0.30
EX_MH1-S	JUNCTION	0.01	0.07	188.71	0 01:25	0.07
EX_STM_MH1	JUNCTION	0.00	0.07	191.77	0 01:26	0.07
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0 01:25	0.04
EX_STM_MH2	JUNCTION	0.01	0.14	191.14	0 01:27	0.14
EX_STM_MH2-S	JUNCTION	0.00	0.05	193.05	0 01:26	0.05
EX_STM_MH3	JUNCTION	0.01	0.12	190.21	0 01:27	0.12
EX_STM_MH3-S	JUNCTION	0.00	0.03	192.53	0 01:26	0.03
EX_STM_MH4	JUNCTION	0.02	0.22	187.83	0 01:28	0.22
EX_STM_MH4-S	JUNCTION	0.00	0.05	190.86	0 01:25	0.05
EX_STM_MH5	JUNCTION	0.06	0.63	185.40	0 01:31	0.63
EX_STM_MH5-S	JUNCTION	0.02	0.16	187.46	0 01:31	0.16
EX_STM_MH6	JUNCTION	0.06	0.50	184.53	0 01:32	0.50
EX_STM_MH6-S	JUNCTION	0.00	0.03	187.63	0 01:26	0.03
EX_STM_MH7	JUNCTION	0.05	0.50	183.90	0 01:32	0.50
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0 01:37	0.00
J-S7	JUNCTION	0.02	0.20	189.60	0 01:27	0.20
J-S7minor	JUNCTION	0.04	0.68	192.23	0 01:25	0.66
J9_COM	OUTFALL	0.05	0.45	183.55	0 01:32	0.45

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
EX_MH1	JUNCTION	0.000	0.270	0 01:27	0	1.04	-0.038
EX_MH1-S	JUNCTION	0.372	0.691	0 01:25	1.34	1.82	0.058
EX_STM_MH1	JUNCTION	0.000	0.014	0 01:25	0	0.0252	-0.011
EX_STM_MH1-S	JUNCTION	0.168	0.168	0 01:25	0.212	0.212	-0.233
EX_STM_MH2	JUNCTION	0.000	0.046	0 01:26	0	0.111	-0.006
EX_STM_MH2-S	JUNCTION	0.122	0.267	0 01:25	0.154	0.342	0.245
EX_STM_MH3	JUNCTION	0.000	0.053	0 01:27	0	0.124	-0.013
EX_STM_MH3-S	JUNCTION	0.122	0.271	0 01:25	0.155	0.409	0.009
EX_STM_MH4	JUNCTION	0.000	0.196	0 01:27	0	0.72	-0.001
EX_STM_MH4-S	JUNCTION	0.306	0.413	0 01:25	0.4	0.547	-0.274
EX_STM_MH5	JUNCTION	0.000	0.761	0 01:29	0	3.27	0.012
EX_STM_MH5-S	JUNCTION	0.249	0.775	0 01:25	0.638	2.23	0.197
EX_STM_MH6	JUNCTION	0.000	0.759	0 01:31	0	3.3	-0.004
EX_STM_MH6-S	JUNCTION	0.056	0.056	0 01:25	0.124	0.124	-0.642
EX_STM_MH7	JUNCTION	0.000	0.758	0 01:32	0	3.3	-0.001
EX_STM_MH7-S	JUNCTION	0.000	0.000	0 01:27	0	0.000407	6.273
J-S7	JUNCTION	0.000	0.169	0 01:27	0	0.656	0.029
J-S7minor	JUNCTION	0.037	0.126	0 01:25	0.283	0.532	-0.033
J9_COM	OUTFALL	0.416	0.943	0 01:30	1.47	4.77	0.000

****
Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

No nodes were flooded.

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	59.94	0.092	0.943	4.775
System	59.94	0.092	0.943	4.775

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.053	0	01:28	1.04	0.15	0.36
C1-S	CHANNEL	0.131	0	01:26	0.48	0.01	0.13
C1-S7	CONDUIT	0.121	0	01:25	2.24	0.39	0.72
C2	CONDUIT	0.012	0	01:26	0.69	0.06	0.16
C2-S	CHANNEL	0.146	0	01:25	0.47	0.02	0.15
C3	CONDUIT	0.043	0	01:27	1.08	0.19	0.30
C3-S	CHANNEL	0.170	0	01:26	0.57	0.03	0.14
C4	CONDUIT	0.195	0	01:28	2.26	0.36	0.42
C4-S	CHANNEL	0.337	0	01:25	0.74	0.02	0.19
C5	CONDUIT	0.268	0	01:27	1.14	0.33	0.61
C5-S	CHANNEL	0.525	0	01:25	0.59	0.05	0.36
C6	CONDUIT	0.753	0	01:31	2.04	0.93	0.78
C6-S	CHANNEL	0.024	0	01:26	0.03	0.00	0.31
C7	CONDUIT	0.758	0	01:32	1.92	0.42	0.47
C7-S	CHANNEL	0.000	0	01:27	0.01	0.00	0.04
C8	CONDUIT	0.759	0	01:32	1.99	0.39	0.45
C9	CONDUIT	0.169	0	01:27	2.50	0.39	0.44
J-S7minor-IC	WEIR	0.099	0	01:26			0.22
J1_COM-IC	DUMMY	0.014	0	01:25			
J2_COM-IC	DUMMY	0.034	0	01:26			
J3_COM-IC	DUMMY	0.010	0	01:26			
J4_COM-IC	DUMMY	0.030	0	01:25			
J5_COM-IC	DUMMY	0.085	0	01:25			
J6_COM-IC	DUMMY	0.508	0	01:31			
J7_COM-IC	DUMMY	0.006	0	01:26			
J8_COM-IC	DUMMY	0.000	0	01:37			

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.78	0.00	0.21	0.00	0.00	0.00	0.97	0.00
C1-S	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.98	0.02	0.00	0.00	0.98	0.00
C3	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.68	0.32	0.00	0.00	1.00	0.00
C5	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C5-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.97	0.00	0.03	0.00	0.00	0.00	0.92	0.00
C8	1.00	0.01	0.00	0.00	0.72	0.27	0.00	0.00	0.63	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Upstream	Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.39	0.01	0.01	0.01

Analysis begun on: Tue Nov 10 10:51:17 2020
Analysis ended on: Tue Nov 10 10:51:20 2020

Existing - Chicago 4h 25yr Storm

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
  ---------------------------------------------------------------

  WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
  WARNING 02: maximum depth increased for Node J-S7minor

  *************
  Element Count
  *************
  Number of rain gages ...... 10
  Number of subcatchments ... 13
  Number of nodes ........... 19
  Number of links ........... 26
  Number of pollutants ...... 0
  Number of land uses ....... 0


  ****************
  Raingage Summary
  ****************
                                                  Data       Recording
  Name                 Data Source                Type       Interval
  ----------------------------------------------------------------------
  25mm                 25mm                       INTENSITY   10 min.
  Chicago_24h_100yr    Chicago_24h_100yr_COM      INTENSITY    5 min.
  Chicago_24h_10yr     Chicago_24h_10yr_COM       INTENSITY    5 min.
  Chicago_24h_2yr      Chicago_24h_2yr_COM        INTENSITY    5 min.
  Chicago_4h_100year_COM Chicago_4h_100year_COM     INTENSITY    5 min.
  Chicago_4h_10year_COM Chicago_4h_10year_COM      INTENSITY    5 min.
  Chicago_4h_25year_COM Chicago_4h_25year_COM      INTENSITY    5 min.
  Chicago_4h_2yr_COM   Chicago_4h_2yr_COM         INTENSITY    5 min.
  Chicago_4h_50year_COM Chicago_4h_50year_COM      INTENSITY    5 min.
  Chicago_4h_5year_COM Chicago_4h_5year_COM        INTENSITY    5 min.


  ********************
  Subcatchment Summary
  ********************
  Name                         Area     Width   %Imperv    %Slope Rain Gage            Outlet
  ------------------------------------------------------------------------------------------------
  S1                          10.25    208.76      5.00    2.5000 Chicago_4h_25year_COM EX_MH1-S
  S2                           0.35     35.00     75.00    1.5000 Chicago_4h_25year_COM EX_STM_MH4-S
  S3                           0.29     29.00     50.00    1.5000 Chicago_4h_25year_COM EX_STM_MH4-S
  S4                           2.04    102.00     20.00    1.5000 Chicago_4h_25year_COM EX_STM_MH5-S
  S5                           8.59    859.00     10.00    1.5000 Chicago_4h_25year_COM J9_COM
  S6_ROW1                      0.50    100.22     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH1-S
  S6_ROW2                      0.36     72.87     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH2-S
  S6_ROW3                      0.37     73.14     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH3-S
  S6_ROW4                      0.36     72.06     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH4-S
  S6_ROW5                      0.37     74.56     70.00    1.8000 Chicago_4h_25year_COM EX_MH1-S
  S6_ROW6                      0.42     84.54     25.00    1.0000 Chicago_4h_25year_COM EX_STM_MH5-S
  S6_ROW7                      0.45     89.84     25.00    1.0000 Chicago_4h_25year_COM EX_STM_MH6-S
  S7                           2.51    100.40      3.00    1.0000 Chicago_4h_25year_COM J-S7minor


  ************
  Node Summary
  ************
                                        Invert      Max.    Ponded    External
  Name                 Type              Elev.     Depth      Area    Inflow
  ----------------------------------------------------------------------------
  EX_MH1               JUNCTION         185.47      3.17       0.0
  EX_MH1-S             JUNCTION         188.64      0.30       0.0
  EX_STM_MH1           JUNCTION         191.70      2.25       0.0
  EX_STM_MH1-S         JUNCTION         193.95      0.30       0.0
  EX_STM_MH2           JUNCTION         191.00      2.00       0.0
  EX_STM_MH2-S         JUNCTION         193.00      0.30       0.0
  EX_STM_MH3           JUNCTION         190.09      2.41       0.0
  EX_STM_MH3-S         JUNCTION         192.50      0.30       0.0
  EX_STM_MH4           JUNCTION         187.61      3.20       0.0
  EX_STM_MH4-S         JUNCTION         190.81      0.30       0.0
  EX_STM_MH5           JUNCTION         184.77      2.53       0.0
  EX_STM_MH5-S         JUNCTION         187.30      0.30       0.0
  EX_STM_MH6           JUNCTION         184.03      3.57       0.0
  EX_STM_MH6-S         JUNCTION         187.60      0.30       0.0
  EX_STM_MH7           JUNCTION         183.40      4.22       0.0
  EX_STM_MH7-S         JUNCTION         187.62      0.30       0.0
  J-S7                 JUNCTION         189.40      2.60       0.0
  J-S7minor            JUNCTION         191.55      1.10     200.0
  J9_COM               OUTFALL          183.10      1.05       0.0


  ************
  Link Summary
  ************
  Name             From Node        To Node          Type            Length    %Slope Roughness
  ---------------------------------------------------------------------------------------------
```

C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5022	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5464	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.7	0.5013	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6286	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX_MH1	CONDUIT	120.3	1.5966	0.0130
C4-S	EX_STM_MH4-S	EX_MH1-S	CONDUIT	126.1	1.7218	0.0140
C5	EX_MH1	EX_STM_MH5	CONDUIT	129.5	0.5404	0.0130
C5-S	EX_MH1-S	EX_STM_MH5-S	CONDUIT	138.9	0.9646	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	120.0	0.5250	0.0130
C6-S	EX_STM_MH5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.7	0.4390	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5163	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.5	2.3352	0.0130
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			

****
Cross Section Summary
****

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.54
C4-S	full-11m	0.30	4.26	0.20	26.00	1	13.78
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.31
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.81
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44

****
Transect Summary
****

Transect full-11m
Area:

	0.0015	0.0062	0.0139	0.0248	0.0387
	0.0542	0.0697	0.0852	0.1007	0.1162
	0.1317	0.1472	0.1627	0.1782	0.1937
	0.2092	0.2246	0.2401	0.2556	0.2711
	0.2866	0.3021	0.3176	0.3331	0.3486
	0.3645	0.3813	0.3989	0.4173	0.4366
	0.4568	0.4777	0.4996	0.5223	0.5458
	0.5701	0.5954	0.6214	0.6483	0.6761
	0.7046	0.7341	0.7644	0.7955	0.8275
	0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

	0.0147	0.0293	0.0440	0.0587	0.0733
	0.1026	0.1317	0.1608	0.1898	0.2188
	0.2477	0.2766	0.3053	0.3341	0.3627
	0.3913	0.4198	0.4483	0.4767	0.5051
	0.5334	0.5616	0.5898	0.6179	0.6459
	0.6735	0.6991	0.7228	0.7447	0.7651
	0.7841	0.8017	0.8182	0.8337	0.8482
	0.8618	0.8747	0.8869	0.8985	0.9095
	0.9200	0.9301	0.9398	0.9492	0.9582
	0.9670	0.9755	0.9839	0.9920	1.0000

Width:

	0.0846	0.1692	0.2538	0.3385	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4462	0.4692	0.4923	0.5154	0.5385
	0.5615	0.5846	0.6077	0.6308	0.6538
	0.6769	0.7000	0.7231	0.7462	0.7692

```
            0.7923     0.8154     0.8385     0.8615     0.8846
            0.9077     0.9308     0.9538     0.9769     1.0000

Transect Full7m
Area:
            0.0006     0.0024     0.0054     0.0097     0.0151
            0.0217     0.0296     0.0387     0.0489     0.0604
            0.0731     0.0869     0.1010     0.1151     0.1292
            0.1433     0.1574     0.1715     0.1856     0.1997
            0.2138     0.2279     0.2419     0.2560     0.2701
            0.2848     0.3007     0.3179     0.3362     0.3557
            0.3764     0.3984     0.4215     0.4459     0.4715
            0.4983     0.5262     0.5554     0.5858     0.6174
            0.6503     0.6843     0.7195     0.7560     0.7936
            0.8325     0.8726     0.9138     0.9563     1.0000
Hrad:
            0.0185     0.0370     0.0555     0.0740     0.0925
            0.1111     0.1296     0.1481     0.1666     0.1851
            0.2036     0.2282     0.2647     0.3011     0.3374
            0.3736     0.4097     0.4456     0.4815     0.5172
            0.5528     0.5883     0.6236     0.6588     0.6940
            0.7280     0.7580     0.7844     0.8076     0.8279
            0.8459     0.8617     0.8756     0.8880     0.8991
            0.9091     0.9182     0.9265     0.9341     0.9412
            0.9480     0.9543     0.9605     0.9664     0.9721
            0.9778     0.9834     0.9889     0.9945     1.0000
Width:
            0.0273     0.0545     0.0818     0.1091     0.1364
            0.1636     0.1909     0.2182     0.2455     0.2727
            0.3000     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3455     0.3727     0.4000     0.4273     0.4545
            0.4818     0.5091     0.5364     0.5636     0.5909
            0.6182     0.6455     0.6727     0.7000     0.7273
            0.7545     0.7818     0.8091     0.8364     0.8636
            0.8909     0.9182     0.9455     0.9727     1.0000

Transect overflow
Area:
            0.0151     0.0304     0.0459     0.0616     0.0775
            0.0936     0.1099     0.1264     0.1431     0.1600
            0.1771     0.1944     0.2119     0.2296     0.2475
            0.2656     0.2839     0.3024     0.3211     0.3400
            0.3591     0.3784     0.3979     0.4176     0.4375
            0.4576     0.4779     0.4984     0.5191     0.5400
            0.5611     0.5824     0.6039     0.6256     0.6475
            0.6696     0.6919     0.7144     0.7371     0.7600
            0.7831     0.8064     0.8299     0.8536     0.8775
            0.9016     0.9259     0.9504     0.9751     1.0000
Hrad:
            0.0250     0.0496     0.0740     0.0982     0.1221
            0.1457     0.1691     0.1922     0.2152     0.2378
            0.2603     0.2825     0.3045     0.3263     0.3479
            0.3693     0.3905     0.4115     0.4323     0.4530
            0.4734     0.4937     0.5137     0.5336     0.5534
            0.5730     0.5924     0.6116     0.6307     0.6496
            0.6684     0.6871     0.7056     0.7239     0.7421
            0.7602     0.7781     0.7959     0.8136     0.8311
            0.8486     0.8658     0.8830     0.9001     0.9170
            0.9338     0.9505     0.9671     0.9836     1.0000
Width:
            0.6080     0.6160     0.6240     0.6320     0.6400
            0.6480     0.6560     0.6640     0.6720     0.6800
            0.6880     0.6960     0.7040     0.7120     0.7200
            0.7280     0.7360     0.7440     0.7520     0.7600
            0.7680     0.7760     0.7840     0.7920     0.8000
            0.8080     0.8160     0.8240     0.8320     0.8400
            0.8480     0.8560     0.8640     0.8720     0.8800
            0.8880     0.8960     0.9040     0.9120     0.9200
            0.9280     0.9360     0.9440     0.9520     0.9600
            0.9680     0.9760     0.9840     0.9920     1.0000


*********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
*********************************************************

***************
Analysis Options
***************
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
```

```
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 04/30/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:00:30
Dry Time Step ............ 00:01:00
Routing Time Step ........ 2.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m
```

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	1.709	63.609
Evaporation Loss	0.000	0.000
Infiltration Loss	1.050	39.095
Surface Runoff	0.622	23.147
Final Storage	0.037	1.371
Continuity Error (%)	-0.007	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.622	6.219
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.622	6.217
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.002
Continuity Error (%)	-0.005	

Time-Step Critical Elements

None

Highest Flow Instability Indexes

Link C1-S7 (3)

Routing Time Step Summary

Minimum Time Step	:	1.50 sec
Average Time Step	:	2.00 sec
Maximum Time Step	:	2.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	2.00
Percent Not Converging	:	0.01

Subcatchment Runoff Summary

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
S1	63.61	0.00	0.00	46.01	2.99	13.21	16.21	1.66	0.29	0.255
S2	63.61	0.00	0.00	10.58	44.90	5.00	49.91	0.17	0.14	0.785
S3	63.61	0.00	0.00	21.58	31.06	9.59	40.66	0.12	0.08	0.639
S4	63.61	0.00	0.00	30.18	12.43	19.70	32.12	0.66	0.23	0.505
S5	63.61	0.00	0.00	39.80	6.22	16.31	22.53	1.93	0.49	0.354
S6_ROW1	63.61	0.00	0.00	12.56	43.49	6.14	49.64	0.25	0.19	0.780
S6_ROW2	63.61	0.00	0.00	12.56	43.49	6.14	49.64	0.18	0.14	0.780
S6_ROW3	63.61	0.00	0.00	12.56	43.49	6.14	49.64	0.18	0.14	0.780
S6_ROW4	63.61	0.00	0.00	12.56	43.49	6.14	49.64	0.18	0.14	0.780
S6_ROW5	63.61	0.00	0.00	12.56	43.49	6.14	49.64	0.19	0.14	0.780
S6_ROW6	63.61	0.00	0.00	28.13	15.54	18.62	34.16	0.14	0.06	0.537
S6_ROW7	63.61	0.00	0.00	28.13	15.54	18.62	34.16	0.15	0.07	0.537

S7	63.61	0.00	0.00	46.27	1.80	14.21	16.00	0.40	0.04	0.252

****
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
EX_MH1	JUNCTION	0.04	0.33	185.80	0 01:27	0.32
EX_MH1-S	JUNCTION	0.01	0.07	188.71	0 01:25	0.07
EX_STM_MH1	JUNCTION	0.00	0.08	191.78	0 01:26	0.08
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0 01:25	0.04
EX_STM_MH2	JUNCTION	0.01	0.15	191.15	0 01:27	0.15
EX_STM_MH2-S	JUNCTION	0.01	0.05	193.05	0 01:26	0.05
EX_STM_MH3	JUNCTION	0.01	0.13	190.22	0 01:27	0.13
EX_STM_MH3-S	JUNCTION	0.00	0.04	192.54	0 01:26	0.04
EX_STM_MH4	JUNCTION	0.03	0.24	187.85	0 01:27	0.24
EX_STM_MH4-S	JUNCTION	0.00	0.05	190.86	0 01:25	0.05
EX_STM_MH5	JUNCTION	0.07	1.13	185.90	0 01:29	0.88
EX_STM_MH5-S	JUNCTION	0.03	0.19	187.49	0 01:31	0.19
EX_STM_MH6	JUNCTION	0.06	0.56	184.59	0 01:31	0.56
EX_STM_MH6-S	JUNCTION	0.00	0.03	187.63	0 01:30	0.03
EX_STM_MH7	JUNCTION	0.06	0.55	183.95	0 01:31	0.55
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0 01:39	0.00
J-S7	JUNCTION	0.02	0.22	189.62	0 01:27	0.22
J-S7minor	JUNCTION	0.05	0.86	192.41	0 01:25	0.84
J9_COM	OUTFALL	0.06	0.50	183.60	0 01:31	0.50

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
EX_MH1	JUNCTION	0.000	0.320	0 01:26	0	1.31	-0.022
EX_MH1-S	JUNCTION	0.434	0.826	0 01:25	1.85	2.43	0.060
EX_STM_MH1	JUNCTION	0.000	0.015	0 01:25	0	0.0296	-0.010
EX_STM_MH1-S	JUNCTION	0.195	0.195	0 01:25	0.249	0.249	-0.182
EX_STM_MH2	JUNCTION	0.000	0.055	0 01:26	0	0.128	-0.006
EX_STM_MH2-S	JUNCTION	0.142	0.313	0 01:25	0.181	0.4	0.197
EX_STM_MH3	JUNCTION	0.000	0.063	0 01:27	0	0.143	-0.018
EX_STM_MH3-S	JUNCTION	0.142	0.326	0 01:25	0.182	0.483	0.005
EX_STM_MH4	JUNCTION	0.000	0.229	0 01:27	0	0.903	-0.001
EX_STM_MH4-S	JUNCTION	0.356	0.499	0 01:25	0.471	0.656	-0.284
EX_STM_MH5	JUNCTION	0.000	0.887	0 01:29	0	4.25	-0.022
EX_STM_MH5-S	JUNCTION	0.293	0.930	0 01:25	0.8	2.94	0.153
EX_STM_MH6	JUNCTION	0.000	0.896	0 01:30	0	4.28	-0.003
EX_STM_MH6-S	JUNCTION	0.066	0.066	0 01:25	0.153	0.153	-0.602
EX_STM_MH7	JUNCTION	0.000	0.889	0 01:31	0	4.28	-0.000
EX_STM_MH7-S	JUNCTION	0.000	0.001	0 01:30	0	0.000907	5.191
J-S7	JUNCTION	0.000	0.197	0 01:27	0	0.828	0.009
J-S7minor	JUNCTION	0.043	0.147	0 01:25	0.402	0.685	-0.007
J9_COM	OUTFALL	0.494	1.120	0 01:31	1.93	6.22	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
EX_STM_MH5	JUNCTION	0.08	0.379	1.401

****
Node Flooding Summary
****

No nodes were flooded.

****
Outfall Loading Summary
****

	Flow	Avg	Max	Total

Outfall Node	Freq Pcnt	Flow CMS	Flow CMS	Volume 10^6 ltr
J9_COM	61.01	0.118	1.120	6.217
System	61.01	0.118	1.120	6.217

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.063	0	01:27	1.10	0.18	0.39
C1-S	CHANNEL	0.167	0	01:26	0.53	0.01	0.15
C1-S7	CONDUIT	0.140	0	01:25	2.52	0.45	0.73
C2	CONDUIT	0.013	0	01:26	0.72	0.07	0.17
C2-S	CHANNEL	0.172	0	01:25	0.50	0.02	0.16
C3	CONDUIT	0.051	0	01:27	1.14	0.23	0.33
C3-S	CHANNEL	0.205	0	01:26	0.61	0.03	0.15
C4	CONDUIT	0.228	0	01:27	2.35	0.42	0.46
C4-S	CHANNEL	0.412	0	01:25	0.81	0.03	0.20
C5	CONDUIT	0.319	0	01:27	1.15	0.39	0.71
C5-S	CHANNEL	0.633	0	01:25	0.62	0.06	0.42
C6	CONDUIT	0.889	0	01:30	2.14	1.10	0.89
C6-S	CHANNEL	0.029	0	01:30	0.04	0.01	0.36
C7	CONDUIT	0.888	0	01:31	2.00	0.49	0.51
C7-S	CHANNEL	0.001	0	01:30	0.02	0.00	0.05
C8	CONDUIT	0.890	0	01:31	2.07	0.45	0.50
C9	CONDUIT	0.197	0	01:27	2.60	0.45	0.48
J-S7minor-IC	WEIR	0.112	0	01:26			0.24
J1_COM-IC	DUMMY	0.015	0	01:25			
J2_COM-IC	DUMMY	0.042	0	01:26			
J3_COM-IC	DUMMY	0.012	0	01:26			
J4_COM-IC	DUMMY	0.036	0	01:25			
J5_COM-IC	DUMMY	0.106	0	01:25			
J6_COM-IC	DUMMY	0.591	0	01:31			
J7_COM-IC	DUMMY	0.007	0	01:30			
J8_COM-IC	DUMMY	0.000	0	01:39			

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.78	0.00	0.22	0.00	0.00	0.00	0.97	0.00
C1-S	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C3	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.71	0.29	0.00	0.00	1.00	0.00
C5	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C5-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.95	0.00	0.04	0.00	0.00	0.00	0.91	0.00
C8	1.00	0.01	0.00	0.00	0.70	0.29	0.00	0.00	0.61	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Upstream	Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.60	0.01	0.01	0.01
C5	0.01	0.01	0.08	0.01	0.01
C6	0.01	0.08	0.01	0.14	0.01

Analysis begun on: Tue Nov 10 10:53:55 2020
Analysis ended on: Tue Nov 10 10:53:58 2020

Existing - Chicago 4h 50yr Storm

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
  --------------------------------------------------------------

  WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
  WARNING 02: maximum depth increased for Node J-S7minor

  *************
  Element Count
  *************
  Number of rain gages ...... 10
  Number of subcatchments ... 13
  Number of nodes ........... 19
  Number of links ........... 26
  Number of pollutants ...... 0
  Number of land uses ....... 0


  ****************
  Raingage Summary
  ****************
                                                  Data       Recording
  Name                 Data Source                Type       Interval
  ----------------------------------------------------------------------
  25mm                 25mm                       INTENSITY   10 min.
  Chicago_24h_100yr    Chicago_24h_100yr_COM      INTENSITY    5 min.
  Chicago_24h_10yr     Chicago_24h_10yr_COM       INTENSITY    5 min.
  Chicago_24h_2yr      Chicago_24h_2yr_COM        INTENSITY    5 min.
  Chicago_4h_100year_COM Chicago_4h_100year_COM      INTENSITY    5 min.
  Chicago_4h_10year_COM Chicago_4h_10year_COM       INTENSITY    5 min.
  Chicago_4h_25year_COM Chicago_4h_25year_COM       INTENSITY    5 min.
  Chicago_4h_2yr_COM   Chicago_4h_2yr_COM         INTENSITY    5 min.
  Chicago_4h_50year_COM Chicago_4h_50year_COM       INTENSITY    5 min.
  Chicago_4h_5year_COM Chicago_4h_5year_COM        INTENSITY    5 min.


  ********************
  Subcatchment Summary
  ********************
  Name                         Area     Width   %Imperv    %Slope Rain Gage            Outlet
  ------------------------------------------------------------------------------------------------
  S1                          10.25    208.76      5.00    2.5000 Chicago_4h_50year_COM EX_MH1-S
  S2                           0.35     35.00     75.00    1.5000 Chicago_4h_50year_COM EX_STM_MH4-S
  S3                           0.29     29.00     50.00    1.5000 Chicago_4h_50year_COM EX_STM_MH4-S
  S4                           2.04    102.00     20.00    1.5000 Chicago_4h_50year_COM EX_STM_MH5-S
  S5                           8.59    859.00     10.00    1.5000 Chicago_4h_50year_COM J9_COM
  S6_ROW1                      0.50    100.22     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH1-S
  S6_ROW2                      0.36     72.87     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH2-S
  S6_ROW3                      0.37     73.14     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH3-S
  S6_ROW4                      0.36     72.06     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH4-S
  S6_ROW5                      0.37     74.56     70.00    1.8000 Chicago_4h_50year_COM EX_MH1-S
  S6_ROW6                      0.42     84.54     25.00    1.0000 Chicago_4h_50year_COM EX_STM_MH5-S
  S6_ROW7                      0.45     89.84     25.00    1.0000 Chicago_4h_50year_COM EX_STM_MH6-S
  S7                           2.51    100.40      3.00    1.0000 Chicago_4h_50year_COM J-S7minor


  ************
  Node Summary
  ************
                                        Invert      Max.    Ponded    External
  Name                 Type              Elev.     Depth      Area    Inflow
  ------------------------------------------------------------------------
  EX_MH1               JUNCTION         185.47      3.17       0.0
  EX_MH1-S             JUNCTION         188.64      0.30       0.0
  EX_STM_MH1           JUNCTION         191.70      2.25       0.0
  EX_STM_MH1-S         JUNCTION         193.95      0.30       0.0
  EX_STM_MH2           JUNCTION         191.00      2.00       0.0
  EX_STM_MH2-S         JUNCTION         193.00      0.30       0.0
  EX_STM_MH3           JUNCTION         190.09      2.41       0.0
  EX_STM_MH3-S         JUNCTION         192.50      0.30       0.0
  EX_STM_MH4           JUNCTION         187.61      3.20       0.0
  EX_STM_MH4-S         JUNCTION         190.81      0.30       0.0
  EX_STM_MH5           JUNCTION         184.77      2.53       0.0
  EX_STM_MH5-S         JUNCTION         187.30      0.30       0.0
  EX_STM_MH6           JUNCTION         184.03      3.57       0.0
  EX_STM_MH6-S         JUNCTION         187.60      0.30       0.0
  EX_STM_MH7           JUNCTION         183.40      4.22       0.0
  EX_STM_MH7-S         JUNCTION         187.62      0.30       0.0
  J-S7                 JUNCTION         189.40      2.60       0.0
  J-S7minor            JUNCTION         191.55      1.10     200.0
  J9_COM               OUTFALL          183.10      1.05       0.0


  ************
  Link Summary
  ************
  Name              From Node        To Node          Type            Length    %Slope Roughness
  ---------------------------------------------------------------------------------------------
  C1                EX_STM_MH3       J-S7             CONDUIT           45.9    1.5022    0.0130
```

C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5464	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.7	0.5013	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6286	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX_MH1	CONDUIT	120.3	1.5966	0.0130
C4-S	EX_STM_MH4-S	EX_MH1-S	CONDUIT	126.1	1.7218	0.0140
C5	EX_MH1	EX_STM_MH5	CONDUIT	129.5	0.5404	0.0130
C5-S	EX_MH1-S	EX_STM_MH5-S	CONDUIT	138.9	0.9646	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	120.0	0.5250	0.0130
C6-S	EX_STM_MH5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.7	0.4390	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5163	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.5	2.3352	0.0130
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			

****
Cross Section Summary
****

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.54
C4-S	full-11m	0.30	4.26	0.20	26.00	1	13.78
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.31
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.81
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44

****
Transect Summary
****

Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761
0.7046	0.7341	0.7644	0.7955	0.8275
0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

0.0147	0.0293	0.0440	0.0587	0.0733
0.1026	0.1317	0.1608	0.1898	0.2188
0.2477	0.2766	0.3053	0.3341	0.3627
0.3913	0.4198	0.4483	0.4767	0.5051
0.5334	0.5616	0.5898	0.6179	0.6459
0.6735	0.6991	0.7228	0.7447	0.7651
0.7841	0.8017	0.8182	0.8337	0.8482
0.8618	0.8747	0.8869	0.8985	0.9095
0.9200	0.9301	0.9398	0.9492	0.9582
0.9670	0.9755	0.9839	0.9920	1.0000

Width:

0.0846	0.1692	0.2538	0.3385	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4462	0.4692	0.4923	0.5154	0.5385
0.5615	0.5846	0.6077	0.6308	0.6538
0.6769	0.7000	0.7231	0.7462	0.7692
0.7923	0.8154	0.8385	0.8615	0.8846

```
            0.9077     0.9308     0.9538     0.9769     1.0000

Transect Full7m
Area:
            0.0006     0.0024     0.0054     0.0097     0.0151
            0.0217     0.0296     0.0387     0.0489     0.0604
            0.0731     0.0869     0.1010     0.1151     0.1292
            0.1433     0.1574     0.1715     0.1856     0.1997
            0.2138     0.2279     0.2419     0.2560     0.2701
            0.2848     0.3007     0.3179     0.3362     0.3557
            0.3764     0.3984     0.4215     0.4459     0.4715
            0.4983     0.5262     0.5554     0.5858     0.6174
            0.6503     0.6843     0.7195     0.7560     0.7936
            0.8325     0.8726     0.9138     0.9563     1.0000
Hrad:
            0.0185     0.0370     0.0555     0.0740     0.0925
            0.1111     0.1296     0.1481     0.1666     0.1851
            0.2036     0.2282     0.2647     0.3011     0.3374
            0.3736     0.4097     0.4456     0.4815     0.5172
            0.5528     0.5883     0.6236     0.6588     0.6940
            0.7280     0.7580     0.7844     0.8076     0.8279
            0.8459     0.8617     0.8756     0.8880     0.8991
            0.9091     0.9182     0.9265     0.9341     0.9412
            0.9480     0.9543     0.9605     0.9664     0.9721
            0.9778     0.9834     0.9889     0.9945     1.0000
Width:
            0.0273     0.0545     0.0818     0.1091     0.1364
            0.1636     0.1909     0.2182     0.2455     0.2727
            0.3000     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3455     0.3727     0.4000     0.4273     0.4545
            0.4818     0.5091     0.5364     0.5636     0.5909
            0.6182     0.6455     0.6727     0.7000     0.7273
            0.7545     0.7818     0.8091     0.8364     0.8636
            0.8909     0.9182     0.9455     0.9727     1.0000

Transect overflow
Area:
            0.0151     0.0304     0.0459     0.0616     0.0775
            0.0936     0.1099     0.1264     0.1431     0.1600
            0.1771     0.1944     0.2119     0.2296     0.2475
            0.2656     0.2839     0.3024     0.3211     0.3400
            0.3591     0.3784     0.3979     0.4176     0.4375
            0.4576     0.4779     0.4984     0.5191     0.5400
            0.5611     0.5824     0.6039     0.6256     0.6475
            0.6696     0.6919     0.7144     0.7371     0.7600
            0.7831     0.8064     0.8299     0.8536     0.8775
            0.9016     0.9259     0.9504     0.9751     1.0000
Hrad:
            0.0250     0.0496     0.0740     0.0982     0.1221
            0.1457     0.1691     0.1922     0.2152     0.2378
            0.2603     0.2825     0.3045     0.3263     0.3479
            0.3693     0.3905     0.4115     0.4323     0.4530
            0.4734     0.4937     0.5137     0.5336     0.5534
            0.5730     0.5924     0.6116     0.6307     0.6496
            0.6684     0.6871     0.7056     0.7239     0.7421
            0.7602     0.7781     0.7959     0.8136     0.8311
            0.8486     0.8658     0.8830     0.9001     0.9170
            0.9338     0.9505     0.9671     0.9836     1.0000
Width:
            0.6080     0.6160     0.6240     0.6320     0.6400
            0.6480     0.6560     0.6640     0.6720     0.6800
            0.6880     0.6960     0.7040     0.7120     0.7200
            0.7280     0.7360     0.7440     0.7520     0.7600
            0.7680     0.7760     0.7840     0.7920     0.8000
            0.8080     0.8160     0.8240     0.8320     0.8400
            0.8480     0.8560     0.8640     0.8720     0.8800
            0.8880     0.8960     0.9040     0.9120     0.9200
            0.9280     0.9360     0.9440     0.9520     0.9600
            0.9680     0.9760     0.9840     0.9920     1.0000


************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

***************
Analysis Options
***************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
```

```
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date ..... 04/29/2020 00:00:00
Ending Date ..... 04/30/2020 00:00:00
Antecedent Dry Days ..... 0.0
Report Time Step ..... 00:01:00
Wet Time Step ..... 00:00:30
Dry Time Step ..... 00:01:00
Routing Time Step ..... 2.00 sec
Variable Time Step ..... YES
Maximum Trials ..... 8
Number of Threads ..... 6
Head Tolerance ..... 0.001500 m
```

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	1.915	71.264
Evaporation Loss	0.000	0.000
Infiltration Loss	1.114	41.448
Surface Runoff	0.764	28.452
Final Storage	0.037	1.369
Continuity Error (%)	-0.007	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.764	7.644
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.764	7.642
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.002
Continuity Error (%)	-0.004	

```
**************************
Time-Step Critical Elements
**************************
None
```

```
*********************************
Highest Flow Instability Indexes
*********************************
Link C1-S7 (3)
```

```
************************
Routing Time Step Summary
************************
Minimum Time Step           :     1.50 sec
Average Time Step           :     2.00 sec
Maximum Time Step           :     2.00 sec
Percent in Steady State     :     0.00
Average Iterations per Step :     2.01
Percent Not Converging      :     0.01
```

```
**************************
Subcatchment Runoff Summary
**************************
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
S1	71.26	0.00	0.00	48.89	3.38	17.61	20.99	2.15	0.33	0.294
S2	71.26	0.00	0.00	11.22	50.65	6.28	56.93	0.20	0.15	0.799
S3	71.26	0.00	0.00	22.87	34.89	12.13	47.02	0.14	0.09	0.660
S4	71.26	0.00	0.00	31.52	13.96	24.48	38.43	0.78	0.26	0.539
S5	71.26	0.00	0.00	42.18	6.98	20.82	27.80	2.39	0.57	0.390
S6_ROW1	71.26	0.00	0.00	13.32	48.85	7.68	56.53	0.28	0.22	0.793
S6_ROW2	71.26	0.00	0.00	13.32	48.85	7.68	56.53	0.21	0.16	0.793
S6_ROW3	71.26	0.00	0.00	13.32	48.85	7.68	56.53	0.21	0.16	0.793
S6_ROW4	71.26	0.00	0.00	13.32	48.85	7.68	56.53	0.20	0.16	0.793
S6_ROW5	71.26	0.00	0.00	13.32	48.85	7.68	56.53	0.21	0.16	0.793
S6_ROW6	71.26	0.00	0.00	29.53	17.45	22.97	40.42	0.17	0.07	0.567
S6_ROW7	71.26	0.00	0.00	29.53	17.45	22.97	40.42	0.18	0.08	0.567
S7	71.26	0.00	0.00	49.11	2.03	18.78	20.81	0.52	0.05	0.292

****
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
EX_MH1	JUNCTION	0.04	0.47	185.94	0 01:30	0.47
EX_MH1-S	JUNCTION	0.01	0.08	188.72	0 01:25	0.08
EX_STM_MH1	JUNCTION	0.01	0.08	191.78	0 01:26	0.08
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0 01:25	0.04
EX_STM_MH2	JUNCTION	0.01	0.16	191.16	0 01:27	0.16
EX_STM_MH2-S	JUNCTION	0.01	0.06	193.06	0 01:25	0.06
EX_STM_MH3	JUNCTION	0.01	0.14	190.23	0 01:27	0.14
EX_STM_MH3-S	JUNCTION	0.00	0.04	192.54	0 01:26	0.04
EX_STM_MH4	JUNCTION	0.03	0.26	187.87	0 01:27	0.26
EX_STM_MH4-S	JUNCTION	0.00	0.06	190.87	0 01:25	0.05
EX_STM_MH5	JUNCTION	0.08	1.77	186.54	0 01:27	1.06
EX_STM_MH5-S	JUNCTION	0.03	0.21	187.51	0 01:32	0.21
EX_STM_MH6	JUNCTION	0.07	0.59	184.62	0 01:31	0.59
EX_STM_MH6-S	JUNCTION	0.00	0.03	187.63	0 01:30	0.03
EX_STM_MH7	JUNCTION	0.07	0.58	183.98	0 01:31	0.58
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0 01:41	0.00
J-S7	JUNCTION	0.03	0.24	189.64	0 01:27	0.24
J-S7minor	JUNCTION	0.06	0.99	192.54	0 01:25	0.98
J9_COM	OUTFALL	0.07	0.53	183.63	0 01:32	0.53

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
EX_MH1	JUNCTION	0.000	0.367	0 01:26	0	1.57	-0.046
EX_MH1-S	JUNCTION	0.491	0.952	0 01:25	2.36	3.04	0.057
EX_STM_MH1	JUNCTION	0.000	0.017	0 01:25	0	0.0337	-0.009
EX_STM_MH1-S	JUNCTION	0.219	0.219	0 01:25	0.283	0.283	-0.152
EX_STM_MH2	JUNCTION	0.000	0.063	0 01:26	0	0.143	-0.005
EX_STM_MH2-S	JUNCTION	0.159	0.353	0 01:25	0.206	0.456	0.165
EX_STM_MH3	JUNCTION	0.000	0.072	0 01:27	0	0.161	-0.022
EX_STM_MH3-S	JUNCTION	0.160	0.377	0 01:25	0.207	0.553	0.001
EX_STM_MH4	JUNCTION	0.000	0.259	0 01:27	0	1.08	0.052
EX_STM_MH4-S	JUNCTION	0.401	0.579	0 01:25	0.539	0.76	-0.280
EX_STM_MH5	JUNCTION	0.000	0.976	0 01:31	0	5.21	-0.021
EX_STM_MH5-S	JUNCTION	0.334	1.074	0 01:25	0.955	3.64	0.126
EX_STM_MH6	JUNCTION	0.000	0.984	0 01:31	0	5.25	-0.002
EX_STM_MH6-S	JUNCTION	0.077	0.077	0 01:25	0.182	0.182	-0.563
EX_STM_MH7	JUNCTION	0.000	0.984	0 01:31	0	5.25	-0.000
EX_STM_MH7-S	JUNCTION	0.000	0.001	0 01:30	0	0.00154	5.163
J-S7	JUNCTION	0.000	0.223	0 01:27	0	0.997	0.010
J-S7minor	JUNCTION	0.050	0.163	0 01:24	0.522	0.836	-0.008
J9_COM	OUTFALL	0.571	1.337	0 01:30	2.39	7.64	0.000

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Node Surcharge Summary
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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
EX_STM_MH5	JUNCTION	0.21	1.021	0.759

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Node Flooding Summary
****

No nodes were flooded.

****
Outfall Loading Summary
****

	Flow Freq	Avg Flow	Max Flow	Total Volume

Outfall Node	Pcnt	CMS	CMS	10^6 ltr
J9_COM	61.83	0.143	1.337	7.642
System	61.83	0.143	1.337	7.642

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.072	0	01:27	1.13	0.21	0.42
C1-S	CHANNEL	0.204	0	01:26	0.58	0.02	0.16
C1-S7	CONDUIT	0.152	0	01:25	2.69	0.48	0.75
C2	CONDUIT	0.015	0	01:26	0.74	0.07	0.18
C2-S	CHANNEL	0.195	0	01:25	0.52	0.02	0.17
C3	CONDUIT	0.059	0	01:27	1.18	0.26	0.35
C3-S	CHANNEL	0.238	0	01:26	0.64	0.04	0.16
C4	CONDUIT	0.258	0	01:28	2.43	0.48	0.49
C4-S	CHANNEL	0.482	0	01:25	0.86	0.03	0.22
C5	CONDUIT	0.366	0	01:27	1.18	0.45	0.81
C5-S	CHANNEL	0.733	0	01:25	0.64	0.07	0.46
C6	CONDUIT	0.976	0	01:31	2.32	1.21	0.91
C6-S	CHANNEL	0.035	0	01:30	0.04	0.01	0.41
C7	CONDUIT	0.983	0	01:31	2.04	0.54	0.54
C7-S	CHANNEL	0.001	0	01:30	0.02	0.00	0.05
C8	CONDUIT	0.984	0	01:32	2.12	0.50	0.53
C9	CONDUIT	0.222	0	01:27	2.67	0.51	0.52
J-S7minor-IC	WEIR	0.123	0	01:26			0.26
J1_COM-IC	DUMMY	0.017	0	01:25			
J2_COM-IC	DUMMY	0.048	0	01:25			
J3_COM-IC	DUMMY	0.014	0	01:26			
J4_COM-IC	DUMMY	0.042	0	01:25			
J5_COM-IC	DUMMY	0.126	0	01:25			
J6_COM-IC	DUMMY	0.656	0	01:32			
J7_COM-IC	DUMMY	0.008	0	01:30			
J8_COM-IC	DUMMY	0.001	0	01:41			

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Flow Classification Summary
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Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.78	0.00	0.22	0.00	0.00	0.00	0.98	0.00
C1-S	1.00	0.00	0.01	0.00	0.99	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C3	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.73	0.26	0.00	0.00	1.00	0.00
C5	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.97	0.00
C5-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.95	0.00	0.05	0.00	0.00	0.00	0.91	0.00
C8	1.00	0.01	0.00	0.00	0.68	0.31	0.00	0.00	0.59	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

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Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Upstream	Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	1.24	0.01	0.01	0.01
C5	0.01	0.01	0.21	0.01	0.01
C6	0.01	0.21	0.01	0.26	0.01

Analysis begun on: Tue Nov 10 10:57:36 2020
Analysis ended on: Tue Nov 10 10:57:39 2020

Existing - Chicago 4h 100yr Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

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Element Count
****
Number of rain gages 10
Number of subcatchments ... 13
Number of nodes 19
Number of links 26
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_10yr	Chicago_24h_10yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

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Subcatchment Summary
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Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
S1	10.25	208.76	7.00	2.5000	Chicago_4h_100year_COM	EX_MH1-S
S2	0.35	35.00	16.00	1.5000	Chicago_4h_100year_COM	EX_STM_MH4-S
S3	0.29	29.00	70.00	1.5000	Chicago_4h_100year_COM	EX_STM_MH4-S
S4	2.04	102.00	20.00	1.5000	Chicago_4h_100year_COM	EX_STM_MH5-S
S5	8.59	859.00	7.00	1.5000	Chicago_4h_100year_COM	J9_COM
S6_ROW1	0.50	100.22	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH1-S
S6_ROW2	0.36	72.87	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH2-S
S6_ROW3	0.37	73.14	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH3-S
S6_ROW4	0.36	72.06	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH4-S
S6_ROW5	0.37	74.56	95.00	1.8000	Chicago_4h_100year_COM	EX_MH1-S
S6_ROW6	0.42	84.54	95.00	1.0000	Chicago_4h_100year_COM	EX_STM_MH5-S
S6_ROW7	0.45	89.84	95.00	1.0000	Chicago_4h_100year_COM	EX_STM_MH6-S
S7	2.51	100.40	7.00	1.0000	Chicago_4h_100year_COM	J-S7minor

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	
EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0	
EX_STM_MH2	JUNCTION	191.00	2.00	0.0	
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0	
EX_STM_MH3	JUNCTION	190.09	2.41	0.0	
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0	
EX_STM_MH4	JUNCTION	187.61	3.20	0.0	
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0	
EX_STM_MH5	JUNCTION	184.77	2.88	0.0	
EX_STM_MH5-S	JUNCTION	187.30	0.30	0.0	
EX_STM_MH6	JUNCTION	184.03	3.57	0.0	
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0	
EX_STM_MH7	JUNCTION	183.40	4.22	0.0	
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0	
J-S7	JUNCTION	189.40	2.60	0.0	
J-S7minor	JUNCTION	191.55	1.10	200.0	
J9_COM	OUTFALL	183.10	1.05	0.0	

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness

C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5022	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5464	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.7	0.5013	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6286	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX_MH1	CONDUIT	120.3	1.5966	0.0130
C4-S	EX_STM_MH4-S	EX_MH1-S	CONDUIT	126.1	1.7218	0.0140
C5	EX_MH1	EX_STM_MH5	CONDUIT	129.5	0.5404	0.0130
C5-S	EX_MH1-S	EX_STM_MH5-S	CONDUIT	138.9	0.9646	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	120.0	0.5250	0.0130
C6-S	EX_STM_MH5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.7	0.4390	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5163	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.5	2.3352	0.0130
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.54
C4-S	full-11m	0.30	4.26	0.20	26.00	1	13.78
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.31
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.81
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44

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Transect Summary
****

Transect full-11m
Area:

	0.0015	0.0062	0.0139	0.0248	0.0387
	0.0542	0.0697	0.0852	0.1007	0.1162
	0.1317	0.1472	0.1627	0.1782	0.1937
	0.2092	0.2246	0.2401	0.2556	0.2711
	0.2866	0.3021	0.3176	0.3331	0.3486
	0.3645	0.3813	0.3989	0.4173	0.4366
	0.4568	0.4777	0.4996	0.5223	0.5458
	0.5701	0.5954	0.6214	0.6483	0.6761
	0.7046	0.7341	0.7644	0.7955	0.8275
	0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

	0.0147	0.0293	0.0440	0.0587	0.0733
	0.1026	0.1317	0.1608	0.1898	0.2188
	0.2477	0.2766	0.3053	0.3341	0.3627
	0.3913	0.4198	0.4483	0.4767	0.5051
	0.5334	0.5616	0.5898	0.6179	0.6459
	0.6735	0.6991	0.7228	0.7447	0.7651
	0.7841	0.8017	0.8182	0.8337	0.8482
	0.8618	0.8747	0.8869	0.8985	0.9095
	0.9200	0.9301	0.9398	0.9492	0.9582
	0.9670	0.9755	0.9839	0.9920	1.0000

Width:

	0.0846	0.1692	0.2538	0.3385	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4231	0.4231	0.4231	0.4231	0.4231
	0.4462	0.4692	0.4923	0.5154	0.5385
	0.5615	0.5846	0.6077	0.6308	0.6538
	0.6769	0.7000	0.7231	0.7462	0.7692

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            0.7923     0.8154     0.8385     0.8615     0.8846
            0.9077     0.9308     0.9538     0.9769     1.0000

Transect Full7m
Area:
            0.0006     0.0024     0.0054     0.0097     0.0151
            0.0217     0.0296     0.0387     0.0489     0.0604
            0.0731     0.0869     0.1010     0.1151     0.1292
            0.1433     0.1574     0.1715     0.1856     0.1997
            0.2138     0.2279     0.2419     0.2560     0.2701
            0.2848     0.3007     0.3179     0.3362     0.3557
            0.3764     0.3984     0.4215     0.4459     0.4715
            0.4983     0.5262     0.5554     0.5858     0.6174
            0.6503     0.6843     0.7195     0.7560     0.7936
            0.8325     0.8726     0.9138     0.9563     1.0000
Hrad:
            0.0185     0.0370     0.0555     0.0740     0.0925
            0.1111     0.1296     0.1481     0.1666     0.1851
            0.2036     0.2282     0.2647     0.3011     0.3374
            0.3736     0.4097     0.4456     0.4815     0.5172
            0.5528     0.5883     0.6236     0.6588     0.6940
            0.7280     0.7580     0.7844     0.8076     0.8279
            0.8459     0.8617     0.8756     0.8880     0.8991
            0.9091     0.9182     0.9265     0.9341     0.9412
            0.9480     0.9543     0.9605     0.9664     0.9721
            0.9778     0.9834     0.9889     0.9945     1.0000
Width:
            0.0273     0.0545     0.0818     0.1091     0.1364
            0.1636     0.1909     0.2182     0.2455     0.2727
            0.3000     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3455     0.3727     0.4000     0.4273     0.4545
            0.4818     0.5091     0.5364     0.5636     0.5909
            0.6182     0.6455     0.6727     0.7000     0.7273
            0.7545     0.7818     0.8091     0.8364     0.8636
            0.8909     0.9182     0.9455     0.9727     1.0000

Transect overflow
Area:
            0.0151     0.0304     0.0459     0.0616     0.0775
            0.0936     0.1099     0.1264     0.1431     0.1600
            0.1771     0.1944     0.2119     0.2296     0.2475
            0.2656     0.2839     0.3024     0.3211     0.3400
            0.3591     0.3784     0.3979     0.4176     0.4375
            0.4576     0.4779     0.4984     0.5191     0.5400
            0.5611     0.5824     0.6039     0.6256     0.6475
            0.6696     0.6919     0.7144     0.7371     0.7600
            0.7831     0.8064     0.8299     0.8536     0.8775
            0.9016     0.9259     0.9504     0.9751     1.0000
Hrad:
            0.0250     0.0496     0.0740     0.0982     0.1221
            0.1457     0.1691     0.1922     0.2152     0.2378
            0.2603     0.2825     0.3045     0.3263     0.3479
            0.3693     0.3905     0.4115     0.4323     0.4530
            0.4734     0.4937     0.5137     0.5336     0.5534
            0.5730     0.5924     0.6116     0.6307     0.6496
            0.6684     0.6871     0.7056     0.7239     0.7421
            0.7602     0.7781     0.7959     0.8136     0.8311
            0.8486     0.8658     0.8830     0.9001     0.9170
            0.9338     0.9505     0.9671     0.9836     1.0000
Width:
            0.6080     0.6160     0.6240     0.6320     0.6400
            0.6480     0.6560     0.6640     0.6720     0.6800
            0.6880     0.6960     0.7040     0.7120     0.7200
            0.7280     0.7360     0.7440     0.7520     0.7600
            0.7680     0.7760     0.7840     0.7920     0.8000
            0.8080     0.8160     0.8240     0.8320     0.8400
            0.8480     0.8560     0.8640     0.8720     0.8800
            0.8880     0.8960     0.9040     0.9120     0.9200
            0.9280     0.9360     0.9440     0.9520     0.9600
            0.9680     0.9760     0.9840     0.9920     1.0000


*********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
*********************************************************

***************
Analysis Options
***************
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
```

```
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 04/30/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:00:30
Dry Time Step ............ 00:01:00
Routing Time Step ........ 2.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m
```

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	2.134	79.436
Evaporation Loss	0.000	0.000
Infiltration Loss	1.128	41.996
Surface Runoff	0.967	36.009
Final Storage	0.039	1.437
Continuity Error (%)	-0.008	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	0.967	9.674
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	0.955	9.546
Flooding Loss	0.013	0.131
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.002
Continuity Error (%)	-0.050	

```
************************
Highest Continuity Errors
************************
Node EX_STM_MH6-S (-1.30%)

***************************
Time-Step Critical Elements
***************************
None

*********************************
Highest Flow Instability Indexes
*********************************
Link C1-S7 (4)
Link J-S7minor-IC (1)

************************
Routing Time Step Summary
************************
Minimum Time Step           :     0.09 sec
Average Time Step           :     2.00 sec
Maximum Time Step           :     2.00 sec
Percent in Steady State     :     0.00
Average Iterations per Step :     2.06
Percent Not Converging      :     0.64

***************************
Subcatchment Runoff Summary
***************************
```

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
S1	79.44	0.00	0.00	50.43	5.30	22.27	27.57	2.83	0.51	0.347
S2	79.44	0.00	0.00	41.37	12.12	24.29	36.41	0.13	0.04	0.458
S3	79.44	0.00	0.00	14.26	54.57	9.19	63.75	0.18	0.13	0.803
S4	79.44	0.00	0.00	32.77	15.59	29.77	45.36	0.93	0.29	0.571
S5	79.44	0.00	0.00	46.02	5.30	26.68	31.98	2.75	0.48	0.403

S6_ROW1	79.44	0.00	0.00	2.31	74.06	1.60	75.67	0.38	0.32	0.953
S6_ROW2	79.44	0.00	0.00	2.31	74.06	1.60	75.67	0.28	0.23	0.953
S6_ROW3	79.44	0.00	0.00	2.31	74.06	1.60	75.67	0.28	0.24	0.953
S6_ROW4	79.44	0.00	0.00	2.31	74.06	1.60	75.67	0.27	0.23	0.953
S6_ROW5	79.44	0.00	0.00	2.31	74.06	1.60	75.67	0.28	0.24	0.953
S6_ROW6	79.44	0.00	0.00	1.97	74.06	1.94	76.00	0.32	0.27	0.957
S6_ROW7	79.44	0.00	0.00	1.97	74.06	1.94	76.00	0.34	0.29	0.957
S7	79.44	0.00	0.00	49.52	5.30	23.18	28.48	0.71	0.13	0.359

****
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
EX_MH1	JUNCTION	0.05	3.14	188.61	0 01:26	1.39
EX_MH1-S	JUNCTION	0.01	0.09	188.73	0 01:25	0.09
EX_STM_MH1	JUNCTION	0.01	0.10	191.80	0 01:26	0.10
EX_STM_MH1-S	JUNCTION	0.00	0.05	194.00	0 01:25	0.05
EX_STM_MH2	JUNCTION	0.01	0.20	191.20	0 01:26	0.20
EX_STM_MH2-S	JUNCTION	0.01	0.07	193.07	0 01:25	0.07
EX_STM_MH3	JUNCTION	0.01	0.18	190.27	0 01:26	0.18
EX_STM_MH3-S	JUNCTION	0.00	0.05	192.55	0 01:25	0.05
EX_STM_MH4	JUNCTION	0.03	0.30	187.91	0 01:26	0.30
EX_STM_MH4-S	JUNCTION	0.00	0.07	190.88	0 01:25	0.07
EX_STM_MH5	JUNCTION	0.10	3.18	187.95	0 01:27	1.91
EX_STM_MH5-S	JUNCTION	0.03	0.30	187.60	0 01:28	0.30
EX_STM_MH6	JUNCTION	0.08	0.71	184.74	0 01:30	0.71
EX_STM_MH6-S	JUNCTION	0.00	0.06	187.66	0 01:25	0.05
EX_STM_MH7	JUNCTION	0.08	0.70	184.10	0 01:30	0.70
EX_STM_MH7-S	JUNCTION	0.00	0.01	187.63	0 01:36	0.01
J-S7	JUNCTION	0.03	0.27	189.67	0 01:27	0.27
J-S7minor	JUNCTION	0.07	1.02	192.57	0 01:25	1.00
J9_COM	OUTFALL	0.08	0.62	183.72	0 01:30	0.62

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent
EX_MH1	JUNCTION	0.000	0.522	0 01:26	0	1.99	-0.177
EX_MH1-S	JUNCTION	0.747	1.400	0 01:25	3.11	3.97	-0.066
EX_STM_MH1	JUNCTION	0.000	0.024	0 01:25	0	0.0433	0.828
EX_STM_MH1-S	JUNCTION	0.322	0.322	0 01:25	0.379	0.379	-0.104
EX_STM_MH2	JUNCTION	0.000	0.098	0 01:25	0	0.181	-0.190
EX_STM_MH2-S	JUNCTION	0.234	0.524	0 01:25	0.276	0.612	0.116
EX_STM_MH3	JUNCTION	0.000	0.116	0 01:26	0	0.21	-0.017
EX_STM_MH3-S	JUNCTION	0.235	0.701	0 01:24	0.277	0.751	-0.469
EX_STM_MH4	JUNCTION	0.000	0.327	0 01:26	0	1.37	0.214
EX_STM_MH4-S	JUNCTION	0.407	0.835	0 01:25	0.585	0.969	-0.186
EX_STM_MH5	JUNCTION	0.000	1.332	0 01:27	0	6.72	-0.118
EX_STM_MH5-S	JUNCTION	0.564	1.780	0 01:25	1.25	4.88	0.279
EX_STM_MH6	JUNCTION	0.000	1.294	0 01:29	0	6.79	0.002
EX_STM_MH6-S	JUNCTION	0.287	0.287	0 01:25	0.341	0.341	-1.287
EX_STM_MH7	JUNCTION	0.000	1.281	0 01:30	0	6.8	-0.000
EX_STM_MH7-S	JUNCTION	0.000	0.011	0 01:26	0	0.00807	19.223
J-S7	JUNCTION	0.000	0.269	0 01:26	0	1.26	0.005
J-S7minor	JUNCTION	0.126	0.306	0 01:24	0.715	1.06	0.315
J9_COM	OUTFALL	0.484	1.637	0 01:30	2.75	9.55	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
EX_MH1	JUNCTION	0.20	2.392	0.028
EX_STM_MH5	JUNCTION	0.47	2.430	0.000
EX_STM_MH5-S	JUNCTION	0.13	0.000	0.000

****
Node Flooding Summary
****

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CMS	Time of Max Occurrence days	hr:min	Total Flood Volume 10^6 ltr	Maximum Ponded Depth Meters
EX_STM_MH5	0.01	0.295	0	01:27	0.001	0.300
EX_STM_MH5-S	0.13	1.356	0	01:28	0.130	0.000

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	63.74	0.173	1.637	9.546
System	63.74	0.173	1.637	9.546

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.116	0	01:26	1.47	0.33	0.50
C1-S	CHANNEL	0.462	0	01:25	0.93	0.03	0.20
C1-S7	CONDUIT	0.154	0	01:23	2.73	0.49	0.75
C2	CONDUIT	0.021	0	01:26	0.81	0.10	0.22
C2-S	CHANNEL	0.290	0	01:25	0.59	0.03	0.20
C3	CONDUIT	0.090	0	01:27	1.32	0.40	0.45
C3-S	CHANNEL	0.377	0	01:25	0.72	0.06	0.21
C4	CONDUIT	0.342	0	01:27	2.46	0.63	0.79
C4-S	CHANNEL	0.702	0	01:25	1.00	0.05	0.26
C5	CONDUIT	0.563	0	01:27	1.27	0.69	1.00
C5-S	CHANNEL	1.081	0	01:25	0.67	0.10	0.64
C6	CONDUIT	1.272	0	01:29	2.93	1.58	0.95
C6-S	CHANNEL	0.183	0	01:25	0.13	0.03	0.59
C7	CONDUIT	1.278	0	01:30	2.18	0.71	0.64
C7-S	CHANNEL	0.011	0	01:26	0.07	0.01	0.10
C8	CONDUIT	1.284	0	01:30	2.24	0.65	0.63
C9	CONDUIT	0.268	0	01:27	2.79	0.62	0.58
J-S7minor-IC	WEIR	0.204	0	01:26			0.49
J1_COM-IC	DUMMY	0.024	0	01:25			
J2_COM-IC	DUMMY	0.077	0	01:25			
J3_COM-IC	DUMMY	0.028	0	01:25			
J4_COM-IC	DUMMY	0.064	0	01:25			
J5_COM-IC	DUMMY	0.200	0	01:25			
J6_COM-IC	DUMMY	0.812	0	01:28			
J7_COM-IC	DUMMY	0.028	0	01:25			
J8_COM-IC	DUMMY	0.004	0	01:36			

****
Flow Classification Summary
****

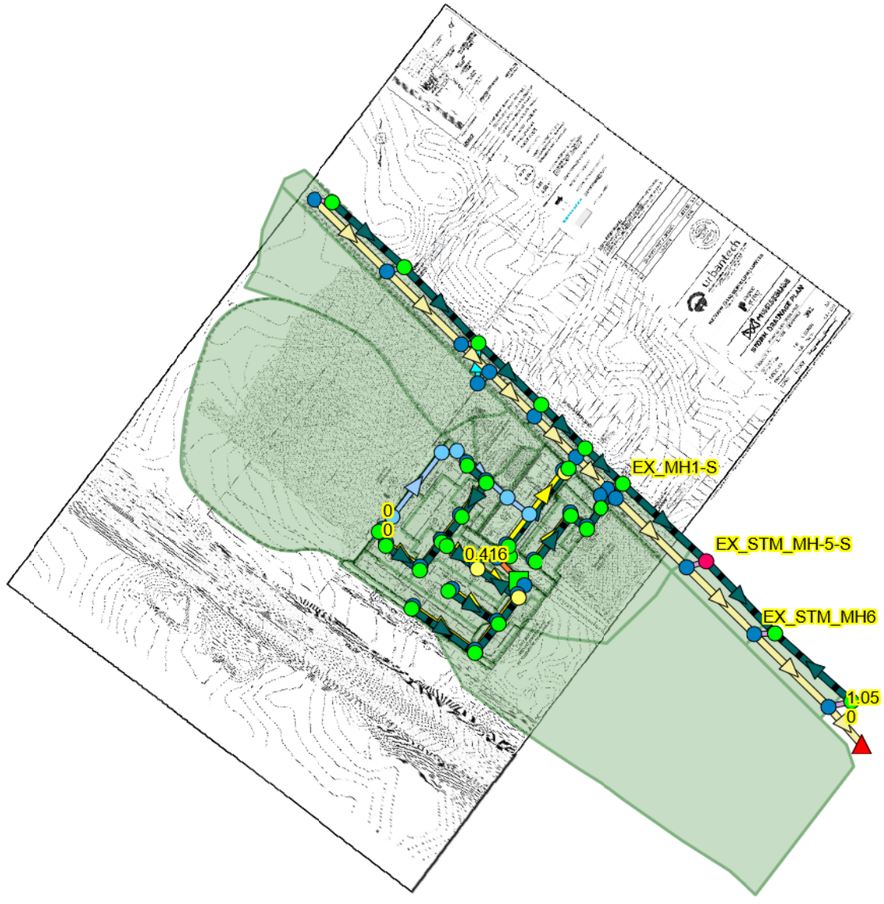
Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.77	0.00	0.22	0.00	0.00	0.00	0.98	0.00
C1-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.98	0.00
C3	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.98	0.01	0.00
C4-S	1.00	0.00	0.00	0.00	0.78	0.22	0.00	0.00	1.00	0.00
C5	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.96	0.00
C5-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.94	0.00	0.06	0.00	0.00	0.00	0.91	0.00
C8	1.00	0.01	0.00	0.00	0.68	0.31	0.00	0.00	0.58	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	2.10	0.01	0.01	0.01
C4	0.01	0.01	0.20	0.01	0.01
C5	0.18	0.19	0.47	0.01	0.01
C5-S	0.01	0.01	0.13	0.01	0.01
C6	0.01	0.47	0.01	0.53	0.01
C6-S	0.01	0.01	0.13	0.01	0.01

Analysis begun on: Mon Nov 9 13:26:55 2020
Analysis ended on: Mon Nov 9 13:26:58 2020

Proposed Model Schematic



Legend

Junctions
- Visible
- Major>0.2
- Major>0.3
- Major>0.1
- Major<0.1
- CWS

- Outfalls
- Storages

Conduits
- Visible
- Sewer
- Visible
- major_system

- Pumps
- Orifices
- Weirs
- Outlets
- Subcatchments
- STM_Node - Copy

N

400 m

Proposed - 25mm Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 03: negative offset ignored for Link C12
WARNING 03: negative offset ignored for Link C4-S
WARNING 03: negative offset ignored for Link Pipe_-_(70)
WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

****
Element Count
****
Number of rain gages 9
Number of subcatchments ... 30
Number of nodes 74
Number of links 101
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
Ext.1_1	2.51	100.40	3.00	1.0000	25mm	J-S7minor
Ext.1_2	0.37	46.75	75.00	1.0000	25mm	EX_STM_MH4-S
Ext.2	6.47	258.62	0.00	0.5000	25mm	MH_C1
Ext.4	8.59	818.53	7.00	1.5000	25mm	J9_COM
Ext.5	1.49	99.55	20.00	1.5000	25mm	EX_STM_MH-5-S
S1	0.16	16.10	10.00	0.5000	25mm	MH11-S
S10	0.20	42.08	65.00	0.5000	25mm	MH6-S
S11	0.12	38.25	65.00	0.5000	25mm	MH13-S
S12	0.16	37.93	65.00	0.5000	25mm	MH13-S
S13	0.06	35.94	65.00	0.5000	25mm	MH10-S
S14	0.29	41.87	65.00	0.5000	25mm	MH21-S
S15	0.14	29.73	65.00	0.5000	25mm	MH22-S
S16	0.09	17.51	65.00	0.5000	25mm	MH24-S
S17	0.79	78.53	25.00	0.5000	25mm	MH18-S
S18	0.11	10.70	25.00	0.5000	25mm	MH17-S
S2	0.39	22.67	65.00	0.5000	25mm	CBMH12-S
S3	0.11	40.00	10.00	1.5000	25mm	MH5-S
S4	0.12	64.00	50.00	1.5000	25mm	MH6-S
S5	0.34	39.91	65.00	0.5000	25mm	MH1-S
S6	0.25	21.45	65.00	0.5000	25mm	MH5-S
S6_ROW1	0.50	135.26	70.00	1.8000	25mm	EX_STM_MH1-S
S6_ROW2	0.36	36.43	70.00	1.8000	25mm	EX_STM_MH2-S
S6_ROW3	0.37	36.57	70.00	1.8000	25mm	EX_STM_MH3-S
S6_ROW4	0.36	36.03	70.00	1.8000	25mm	EX_STM_MH4-S
S6_ROW5	0.37	37.28	70.00	1.8000	25mm	EX_MH1-S
S6_ROW6	0.42	84.54	25.00	1.0000	25mm	EX_STM_MH-5-S
S6_ROW7	0.45	89.84	25.00	1.0000	25mm	EX_STM_MH6-S
S7	0.33	82.08	25.00	0.5000	25mm	MH7-S
S8	0.42	33.23	65.00	0.5000	25mm	MH8-S
S9	0.39	39.12	65.00	0.5000	25mm	MH14-S

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
CBMH12	JUNCTION	187.61	3.19	0.0	
CBMH12-S	JUNCTION	190.80	0.30	0.0	
Dummy	JUNCTION	189.90	0.30	0.0	
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	

EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0
EX_STM_MH2	JUNCTION	191.00	2.00	0.0
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0
EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.30	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.52	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.17	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH16	JUNCTION	188.50	2.05	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.83	0.0
MH19-S	JUNCTION	189.63	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	1.43	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	4.4665	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140

C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130
C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130
C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	MH16	MH17	CONDUIT	13.0	1.5386	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.5366	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
PUMP	STM_TANK	MH16	TYPE4 PUMP			
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

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Cross Section Summary

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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	22.19
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.07
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.20
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	RECT_CLOSED	1.20	2.16	0.36	1.80	1	3.59
Pipe_-_(77)_2	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.58
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.69
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

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Transect Summary
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Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761

0.7046 0.7341 0.7644 0.7955 0.8275
0.8603 0.8939 0.9285 0.9638 1.0000
Hrad:
0.0147 0.0293 0.0440 0.0587 0.0733
0.1026 0.1317 0.1608 0.1898 0.2188
0.2477 0.2766 0.3053 0.3341 0.3627
0.3913 0.4198 0.4483 0.4767 0.5051
0.5334 0.5616 0.5898 0.6179 0.6459
0.6735 0.6991 0.7228 0.7447 0.7651
0.7841 0.8017 0.8182 0.8337 0.8482
0.8618 0.8747 0.8869 0.8985 0.9095
0.9200 0.9301 0.9398 0.9492 0.9582
0.9670 0.9755 0.9839 0.9920 1.0000
Width:
0.0846 0.1692 0.2538 0.3385 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4462 0.4692 0.4923 0.5154 0.5385
0.5615 0.5846 0.6077 0.6308 0.6538
0.6769 0.7000 0.7231 0.7462 0.7692
0.7923 0.8154 0.8385 0.8615 0.8846
0.9077 0.9308 0.9538 0.9769 1.0000

Transect full-7m
Area:
0.0006 0.0024 0.0054 0.0097 0.0151
0.0217 0.0296 0.0387 0.0489 0.0604
0.0731 0.0869 0.1010 0.1151 0.1292
0.1433 0.1574 0.1715 0.1856 0.1997
0.2138 0.2279 0.2419 0.2560 0.2701
0.2848 0.3007 0.3179 0.3362 0.3557
0.3764 0.3984 0.4215 0.4459 0.4715
0.4983 0.5262 0.5554 0.5858 0.6174
0.6503 0.6843 0.7195 0.7560 0.7936
0.8325 0.8726 0.9138 0.9563 1.0000
Hrad:
0.0182 0.0364 0.0546 0.0728 0.0910
0.1092 0.1274 0.1456 0.1638 0.1820
0.2002 0.2243 0.2602 0.2960 0.3317
0.3673 0.4028 0.4381 0.4733 0.5084
0.5434 0.5783 0.6131 0.6477 0.6822
0.7157 0.7452 0.7713 0.7942 0.8145
0.8325 0.8484 0.8626 0.8754 0.8869
0.8974 0.9070 0.9160 0.9243 0.9322
0.9397 0.9469 0.9539 0.9607 0.9673
0.9739 0.9805 0.9870 0.9935 1.0000
Width:
0.0273 0.0545 0.0818 0.1091 0.1364
0.1636 0.1909 0.2182 0.2455 0.2727
0.3000 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3455 0.3727 0.4000 0.4273 0.4545
0.4818 0.5091 0.5364 0.5636 0.5909
0.6182 0.6455 0.6727 0.7000 0.7273
0.7545 0.7818 0.8091 0.8364 0.8636
0.8909 0.9182 0.9455 0.9727 1.0000

Transect full-8.5m
Area:
0.0021 0.0086 0.0192 0.0333 0.0475
0.0618 0.0760 0.0903 0.1046 0.1188
0.1331 0.1473 0.1616 0.1758 0.1901
0.2044 0.2186 0.2329 0.2471 0.2614
0.2757 0.2899 0.3042 0.3184 0.3327
0.3474 0.3632 0.3799 0.3977 0.4164
0.4361 0.4569 0.4786 0.5013 0.5250
0.5497 0.5754 0.6021 0.6298 0.6585
0.6881 0.7188 0.7505 0.7831 0.8168
0.8515 0.8871 0.9237 0.9614 1.0000
Hrad:
0.0157 0.0314 0.0470 0.0731 0.1043
0.1354 0.1664 0.1974 0.2282 0.2590
0.2897 0.3202 0.3508 0.3812 0.4115
0.4418 0.4720 0.5021 0.5321 0.5620
0.5918 0.6216 0.6513 0.6809 0.7104
0.7394 0.7655 0.7890 0.8102 0.8293
0.8465 0.8620 0.8760 0.8886 0.9000
0.9104 0.9199 0.9286 0.9366 0.9440
0.9509 0.9574 0.9635 0.9693 0.9748
0.9801 0.9853 0.9903 0.9952 1.0000
Width:
0.1093 0.2186 0.3280 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3898 0.4153 0.4407 0.4661 0.4915

```
           0.5169     0.5424     0.5678     0.5932     0.6186
           0.6441     0.6695     0.6949     0.7203     0.7458
           0.7712     0.7966     0.8220     0.8475     0.8729
           0.8983     0.9237     0.9492     0.9746     1.0000


************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

***************
Analysis Options
***************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 05/02/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
Dry Time Step ............ 00:01:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m


**************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
**************************     ---------       -------
Total Precipitation ......         0.677        25.342
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         0.520        19.449
Surface Runoff ...........         0.124         4.656
Final Storage ............         0.033         1.240
Continuity Error (%) .....        -0.011


**************************        Volume         Volume
Flow Routing Continuity        hectare-m      10^6 ltr
**************************     ---------      ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         0.124         1.243
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         0.124         1.239
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.003
Continuity Error (%) .....         0.039


************************
Highest Continuity Errors
************************
Node MH19-S (10.74%)
Node MH18-S (-2.38%)
Node MH9-S (1.66%)
Node EX_STM_MH-5-S (1.29%)
Node MH23-S (1.15%)


**************************
Time-Step Critical Elements
**************************
Link Pipe_-_(70) (6.87%)


*******************************
Highest Flow Instability Indexes
*******************************
Link C1-S7 (2)
```

****
Routing Time Step Summary
****
Minimum Time Step   :   1.79 sec
Average Time Step   :   4.90 sec
Maximum Time Step   :   5.00 sec
Percent in Steady State   :   0.00
Average Iterations per Step :   2.00
Percent Not Converging   :   0.00

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	25.34	0.00	0.00	23.35	0.65	0.01	0.66	0.02	0.01	0.026
Ext.1_2	25.34	0.00	0.00	5.99	18.45	0.03	18.48	0.07	0.04	0.729
Ext.2	25.34	0.00	0.00	24.07	0.00	0.01	0.01	0.00	0.00	0.000
Ext.4	25.34	0.00	0.00	22.37	1.51	0.03	1.55	0.13	0.08	0.061
Ext.5	25.34	0.00	0.00	19.24	4.92	0.02	4.94	0.07	0.04	0.195
S1	25.34	0.00	0.00	21.66	2.46	0.02	2.48	0.00	0.00	0.098
S10	25.34	0.00	0.00	8.40	15.99	0.03	16.03	0.03	0.02	0.632
S11	25.34	0.00	0.00	8.38	15.99	0.05	16.04	0.02	0.01	0.633
S12	25.34	0.00	0.00	8.39	15.99	0.04	16.03	0.02	0.01	0.633
S13	25.34	0.00	0.00	8.35	16.00	0.07	16.07	0.01	0.01	0.634
S14	25.34	0.00	0.00	8.40	15.99	0.03	16.02	0.05	0.03	0.632
S15	25.34	0.00	0.00	8.40	15.99	0.03	16.03	0.02	0.01	0.632
S16	25.34	0.00	0.00	8.40	15.99	0.03	16.02	0.01	0.01	0.632
S17	25.34	0.00	0.00	18.04	6.15	0.02	6.17	0.05	0.03	0.243
S18	25.34	0.00	0.00	18.04	6.15	0.02	6.17	0.01	0.00	0.243
S2	25.34	0.00	0.00	8.42	15.99	0.01	16.00	0.06	0.03	0.631
S3	25.34	0.00	0.00	21.57	2.46	0.10	2.56	0.00	0.00	0.101
S4	25.34	0.00	0.00	11.20	12.31	0.85	13.16	0.02	0.01	0.519
S5	25.34	0.00	0.00	8.41	15.99	0.02	16.01	0.05	0.03	0.632
S6	25.34	0.00	0.00	8.41	15.99	0.02	16.00	0.04	0.02	0.632
S6_ROW1	25.34	0.00	0.00	7.17	17.23	0.06	17.29	0.09	0.05	0.682
S6_ROW2	25.34	0.00	0.00	7.20	17.22	0.03	17.25	0.06	0.03	0.681
S6_ROW3	25.34	0.00	0.00	7.20	17.22	0.03	17.25	0.06	0.03	0.681
S6_ROW4	25.34	0.00	0.00	7.20	17.22	0.03	17.25	0.06	0.03	0.681
S6_ROW5	25.34	0.00	0.00	7.20	17.22	0.03	17.25	0.06	0.04	0.681
S6_ROW6	25.34	0.00	0.00	17.30	6.15	0.76	6.92	0.03	0.01	0.273
S6_ROW7	25.34	0.00	0.00	17.30	6.15	0.76	6.92	0.03	0.02	0.273
S7	25.34	0.00	0.00	18.02	6.15	0.04	6.20	0.02	0.01	0.245
S8	25.34	0.00	0.00	8.42	15.99	0.01	16.00	0.07	0.03	0.631
S9	25.34	0.00	0.00	8.41	15.99	0.02	16.01	0.06	0.03	0.632

****
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
CBMH12	JUNCTION	0.00	0.05	187.66	0	01:32	0.05
CBMH12-S	JUNCTION	0.00	0.02	190.82	0	01:31	0.02
Dummy	JUNCTION	0.00	0.00	189.90	0	00:00	0.00
EX_MH1	JUNCTION	0.02	0.23	185.70	0	01:33	0.23
EX_MH1-S	JUNCTION	0.00	0.03	188.67	0	01:33	0.03
EX_STM_MH1	JUNCTION	0.00	0.05	191.75	0	01:31	0.05
EX_STM_MH1-S	JUNCTION	0.00	0.03	193.98	0	01:30	0.03
EX_STM_MH2	JUNCTION	0.00	0.09	191.09	0	01:32	0.09
EX_STM_MH2-S	JUNCTION	0.00	0.03	193.03	0	01:31	0.03
EX_STM_MH3	JUNCTION	0.00	0.08	190.17	0	01:32	0.08
EX_STM_MH3-S	JUNCTION	0.00	0.02	192.52	0	01:31	0.02
EX_STM_MH4	JUNCTION	0.00	0.13	187.74	0	01:31	0.13
EX_STM_MH4-S	JUNCTION	0.00	0.03	190.84	0	01:30	0.03
EX_STM_MH5	JUNCTION	0.02	0.27	185.04	0	01:36	0.27
EX_STM_MH-5-S	JUNCTION	0.01	0.07	187.37	0	01:38	0.07
EX_STM_MH6	JUNCTION	0.02	0.25	184.28	0	01:37	0.25
EX_STM_MH6-S	JUNCTION	0.00	0.02	187.62	0	01:30	0.02
EX_STM_MH7	JUNCTION	0.02	0.25	183.65	0	01:38	0.25
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0	00:00	0.00
EX-MH20	JUNCTION	0.02	0.18	186.41	0	01:33	0.18
EX-MH20-S	JUNCTION	0.00	0.03	189.78	0	01:32	0.03
J-S1	JUNCTION	0.02	0.21	185.60	0	01:34	0.21
J-S7	JUNCTION	0.00	0.12	189.52	0	01:31	0.12
J-S7minor	JUNCTION	0.01	0.26	191.81	0	01:30	0.26
MH_C1	JUNCTION	0.00	0.01	188.62	0	04:12	0.01
MH_C2	JUNCTION	0.00	0.01	188.09	0	04:13	0.01
MH_C3	JUNCTION	0.00	0.01	187.94	0	04:18	0.01
MH_C4	JUNCTION	0.00	0.01	187.51	0	04:20	0.01
MH1	JUNCTION	0.00	0.05	188.61	0	01:30	0.05

MH10	JUNCTION	0.01	0.21	187.11	0	01:36	0.21
MH10-S	JUNCTION	0.00	0.03	190.65	0	01:36	0.03
MH11	JUNCTION	0.00	0.03	188.59	0	01:31	0.03
MH11-S	JUNCTION	0.00	0.00	191.57	0	01:30	0.00
MH13	JUNCTION	0.01	0.11	187.43	0	01:31	0.11
MH13-S	JUNCTION	0.00	0.03	190.73	0	01:31	0.03
MH14	JUNCTION	0.00	0.08	187.88	0	01:31	0.08
MH14-S	JUNCTION	0.00	0.02	190.99	0	01:30	0.02
MH15	JUNCTION	0.01	0.18	186.96	0	01:36	0.18
MH16	JUNCTION	0.01	0.06	188.56	0	01:31	0.06
MH17	JUNCTION	0.00	0.02	187.19	0	01:31	0.02
MH17-S	JUNCTION	0.00	0.01	190.36	0	01:30	0.01
MH18	JUNCTION	0.00	0.03	187.11	0	01:31	0.03
MH18-S	JUNCTION	0.00	0.02	190.23	0	01:30	0.02
MH19	JUNCTION	0.02	0.17	186.98	0	01:42	0.17
MH19-S	JUNCTION	0.01	0.03	189.66	0	01:37	0.03
MH1-S	JUNCTION	0.00	0.02	192.10	0	01:30	0.02
MH2	JUNCTION	0.00	0.08	188.49	0	01:30	0.08
MH21	JUNCTION	0.00	0.04	186.63	0	01:31	0.04
MH21-S	JUNCTION	0.00	0.02	190.59	0	01:30	0.02
MH22	JUNCTION	0.00	0.08	186.30	0	01:31	0.08
MH22-S	JUNCTION	0.00	0.03	189.46	0	01:31	0.03
MH23	JUNCTION	0.00	0.11	186.14	0	01:33	0.11
MH23-S	JUNCTION	0.00	0.02	189.42	0	01:33	0.02
MH24	JUNCTION	0.00	0.12	185.98	0	01:33	0.12
MH24-S	JUNCTION	0.00	0.02	189.02	0	01:33	0.02
MH25	JUNCTION	0.00	0.12	185.86	0	01:33	0.12
MH2-S	JUNCTION	0.00	0.02	191.97	0	01:30	0.02
MH3	JUNCTION	0.00	0.08	188.16	0	01:31	0.08
MH3-S	JUNCTION	0.00	0.02	191.34	0	01:31	0.02
MH4	JUNCTION	0.01	0.12	187.70	0	01:31	0.12
MH4-S	JUNCTION	0.00	0.02	190.95	0	01:32	0.02
MH5	JUNCTION	0.00	0.05	188.79	0	01:30	0.05
MH5-S	JUNCTION	0.00	0.02	191.77	0	01:30	0.02
MH6	JUNCTION	0.00	0.08	188.36	0	01:30	0.08
MH6-S	JUNCTION	0.00	0.03	191.35	0	01:30	0.03
MH7	JUNCTION	0.00	0.10	188.09	0	01:31	0.10
MH7-S	JUNCTION	0.00	0.03	191.14	0	01:30	0.03
MH8	JUNCTION	0.01	0.13	187.65	0	01:31	0.13
MH8-S	JUNCTION	0.00	0.03	190.85	0	01:31	0.03
MH9	JUNCTION	0.01	0.18	187.44	0	01:36	0.18
MH9-S	JUNCTION	0.00	0.06	190.65	0	01:37	0.06
TEE1	JUNCTION	0.00	0.03	187.02	0	01:33	0.03
J9_COM	OUTFALL	0.02	0.24	183.34	0	01:38	0.24
STM_TANK	STORAGE	0.05	0.45	186.45	0	04:15	0.45

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min		Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.006	0	01:31	0	0.0287	0.021	
CBMH12-S	JUNCTION	0.029	0.029	0	01:30	0.0616	0.0618	0.038	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.140	0	01:33	0	0.8	0.001	
EX_MH1-S	JUNCTION	0.036	0.110	0	01:30	0.0643	0.219	-0.275	
EX_STM_MH1	JUNCTION	0.000	0.006	0	01:30	0	0.00833	-0.013	
EX_STM_MH1-S	JUNCTION	0.049	0.049	0	01:30	0.0865	0.0865	-0.789	
EX_STM_MH2	JUNCTION	0.000	0.020	0	01:31	0	0.0505	-0.004	
EX_STM_MH2-S	JUNCTION	0.035	0.077	0	01:30	0.0628	0.142	0.588	
EX_STM_MH3	JUNCTION	0.000	0.023	0	01:32	0	0.0536	0.015	
EX_STM_MH3-S	JUNCTION	0.035	0.080	0	01:30	0.0631	0.162	0.089	
EX_STM_MH4	JUNCTION	0.000	0.081	0	01:31	0	0.213	-0.035	
EX_STM_MH4-S	JUNCTION	0.072	0.097	0	01:30	0.131	0.167	-0.239	
EX_STM_MH5	JUNCTION	0.000	0.220	0	01:35	0	1.1	0.006	
EX_STM_MH-5-S	JUNCTION	0.056	0.132	0	01:30	0.103	0.307	1.306	
EX_STM_MH6	JUNCTION	0.000	0.221	0	01:37	0	1.11	-0.003	
EX_STM_MH6-S	JUNCTION	0.016	0.016	0	01:30	0.0311	0.0311	-1.021	
EX_STM_MH7	JUNCTION	0.000	0.220	0	01:38	0	1.11	-0.000	
EX_STM_MH7-S	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX-MH20	JUNCTION	0.000	0.096	0	01:32	0	0.681	0.012	
EX-MH20-S	JUNCTION	0.000	0.079	0	01:30	0	0.147	0.122	
J-S1	JUNCTION	0.000	0.140	0	01:33	0	0.8	-0.010	
J-S7	JUNCTION	0.000	0.070	0	01:30	0	0.193	0.036	
J-S7minor	JUNCTION	0.011	0.050	0	01:30	0.0166	0.139	-0.065	
MH_C1	JUNCTION	0.000	0.000	0	04:10	0.000514	0.000514	0.041	
MH_C2	JUNCTION	0.000	0.000	0	04:12	0	0.000514	0.049	
MH_C3	JUNCTION	0.000	0.000	0	04:13	0	0.000513	0.040	
MH_C4	JUNCTION	0.000	0.000	0	04:18	0	0.000513	0.047	
MH1	JUNCTION	0.000	0.005	0	01:30	0	0.0166	0.027	
MH10	JUNCTION	0.000	0.132	0	01:36	0	0.414	0.002	
MH10-S	JUNCTION	0.005	0.044	0	01:33	0.00924	0.0607	-0.158	
MH11	JUNCTION	0.000	0.002	0	01:30	0	0.00388	0.055	
MH11-S	JUNCTION	0.002	0.002	0	01:30	0.00394	0.00394	-2.074	

MH13	JUNCTION	0.000	0.031	0	01:31	0	0.122	0.000
MH13-S	JUNCTION	0.025	0.060	0	01:30	0.0448	0.0979	-0.186
MH14	JUNCTION	0.000	0.014	0	01:30	0	0.0469	0.031
MH14-S	JUNCTION	0.033	0.033	0	01:30	0.0626	0.0626	-0.719
MH15	JUNCTION	0.000	0.132	0	01:36	0	0.414	-0.003
MH16	JUNCTION	0.000	0.010	0	01:30	0	0.414	-0.003
MH17	JUNCTION	0.000	0.011	0	01:31	0	0.418	0.001
MH17-S	JUNCTION	0.004	0.004	0	01:30	0.0066	0.0066	-0.260
MH18	JUNCTION	0.000	0.018	0	01:31	0	0.447	0.001
MH18-S	JUNCTION	0.027	0.030	0	01:30	0.0484	0.0505	-2.321
MH19	JUNCTION	0.000	0.026	0	01:34	0	0.468	0.001
MH19-S	JUNCTION	0.000	0.021	0	01:30	0	0.0229	12.028
MH1-S	JUNCTION	0.029	0.029	0	01:30	0.0542	0.0542	-0.073
MH2	JUNCTION	0.000	0.011	0	01:30	0	0.0374	-0.000
MH21	JUNCTION	0.000	0.003	0	01:30	0	0.0154	0.028
MH21-S	JUNCTION	0.025	0.025	0	01:30	0.0462	0.0462	-0.616
MH22	JUNCTION	0.000	0.014	0	01:31	0	0.0523	0.003
MH22-S	JUNCTION	0.012	0.034	0	01:30	0.0221	0.0531	0.169
MH23	JUNCTION	0.000	0.023	0	01:32	0	0.0637	-0.003
MH23-S	JUNCTION	0.000	0.019	0	01:32	0	0.0161	1.160
MH24	JUNCTION	0.000	0.027	0	01:33	0	0.0752	0.005
MH24-S	JUNCTION	0.008	0.012	0	01:30	0.015	0.0195	-0.421
MH25	JUNCTION	0.000	0.027	0	01:33	0	0.0752	-0.000
MH2-S	JUNCTION	0.000	0.023	0	01:30	0	0.0376	-0.236
MH3	JUNCTION	0.000	0.014	0	01:30	0	0.0433	-0.001
MH3-S	JUNCTION	0.000	0.017	0	01:30	0	0.0169	0.506
MH4	JUNCTION	0.000	0.039	0	01:31	0	0.128	0.003
MH4-S	JUNCTION	0.000	0.045	0	01:31	0	0.0383	0.586
MH5	JUNCTION	0.000	0.005	0	01:30	0	0.0236	0.045
MH5-S	JUNCTION	0.022	0.022	0	01:30	0.0427	0.0427	-0.148
MH6	JUNCTION	0.000	0.014	0	01:30	0	0.0585	0.001
MH6-S	JUNCTION	0.026	0.042	0	01:30	0.0475	0.0666	-0.212
MH7	JUNCTION	0.000	0.023	0	01:30	0	0.0833	0.002
MH7-S	JUNCTION	0.011	0.044	0	01:30	0.0203	0.0521	-0.051
MH8	JUNCTION	0.000	0.049	0	01:31	0	0.17	0.364
MH8-S	JUNCTION	0.034	0.069	0	01:30	0.0666	0.103	-1.020
MH9	JUNCTION	0.000	0.092	0	01:36	0	0.26	-0.243
MH9-S	JUNCTION	0.000	0.073	0	01:32	0	0.0925	1.689
TEE1	JUNCTION	0.000	0.018	0	01:32	0	0.448	0.000
J9_COM	OUTFALL	0.084	0.242	0	01:38	0.133	1.24	0.000
STM_TANK	STORAGE	0.000	0.132	0	01:36	0	0.414	0.003

****
Node Surcharge Summary
****

No nodes were surcharged.

****
Node Flooding Summary
****

No nodes were flooded.

****
Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	0.031	1	0	0	0.291	10	0 04:15	0.010

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	35.40	0.020	0.242	1.239
System	35.40	0.020	0.242	1.239

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Link Flow Summary
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	Maximum |Flow|	Time of Max Occurrence	Maximum |Veloc|	Max/ Full	Max/ Full

Link	Type	CMS	days	hr:min	m/sec	Flow	Depth
C1	CONDUIT	0.023	0	01:32	0.87	0.07	0.22
C10	CHANNEL	0.008	0	01:33	0.23	0.00	0.09
C11	CHANNEL	0.075	0	01:32	0.48	0.01	0.10
C12	CHANNEL	0.000	0	00:00	0.00	0.00	0.05
C13	CONDUIT	0.140	0	01:34	1.21	0.17	0.32
C14	CHANNEL	0.000	0	00:00	0.00	0.00	0.05
C17	CONDUIT	0.096	0	01:33	1.56	0.22	0.33
C1-S	CHANNEL	0.027	0	01:31	0.26	0.00	0.08
C1-S7	CONDUIT	0.050	0	01:30	1.26	0.16	0.58
C2	CONDUIT	0.006	0	01:31	0.57	0.03	0.11
C2-S	CHANNEL	0.042	0	01:30	0.31	0.00	0.10
C3	CONDUIT	0.019	0	01:32	0.86	0.09	0.20
C3-S	CHANNEL	0.048	0	01:31	0.39	0.01	0.09
C4	CONDUIT	0.081	0	01:31	1.59	0.13	0.29
C4-S	CHANNEL	0.079	0	01:30	0.54	0.01	0.09
C5	CONDUIT	0.140	0	01:33	1.28	0.17	0.30
C5-S	CHANNEL	0.082	0	01:33	0.24	0.01	0.16
C6	CONDUIT	0.219	0	01:37	1.56	0.26	0.35
C6-S	CHANNEL	0.008	0	01:30	0.04	0.00	0.13
C7	CONDUIT	0.220	0	01:38	1.38	0.12	0.24
C7-S	CHANNEL	0.000	0	00:00	0.00	0.00	0.03
C8	CONDUIT	0.220	0	01:38	1.44	0.11	0.23
C9	CONDUIT	0.069	0	01:31	1.98	0.16	0.27
Pipe_-_(116)	CONDUIT	0.000	0	04:12	0.31	0.00	0.01
Pipe_-_(117)	CONDUIT	0.000	0	04:13	0.32	0.00	0.01
Pipe_-_(119)	CONDUIT	0.000	0	04:18	0.30	0.00	0.01
Pipe_-_(120)	CONDUIT	0.000	0	04:20	0.31	0.00	0.01
Pipe_-_(125)	CONDUIT	0.014	0	01:31	0.70	0.08	0.18
Pipe_-_(125)-S	CHANNEL	0.019	0	01:32	0.16	0.01	0.09
Pipe_-_(126)	CONDUIT	0.010	0	01:31	1.05	0.14	0.25
Pipe_-_(127)	CONDUIT	0.023	0	01:33	0.81	0.13	0.24
Pipe_-_(127)-S	CHANNEL	0.008	0	01:33	0.35	0.00	0.07
Pipe_-_(128)	CONDUIT	0.027	0	01:33	0.85	0.15	0.25
Pipe_-_(129)	CONDUIT	0.027	0	01:33	0.86	0.15	0.25
Pipe_-_(64)	CONDUIT	0.005	0	01:30	0.58	0.04	0.14
Pipe_-_(64)-S	CHANNEL	0.023	0	01:30	0.35	0.00	0.06
Pipe_-_(65)	CONDUIT	0.011	0	01:30	0.70	0.09	0.20
Pipe_-_(65)-S	CHANNEL	0.017	0	01:30	0.37	0.00	0.05
Pipe_-_(66)_(1)	CONDUIT	0.014	0	01:31	0.75	0.11	0.22
Pipe_-_(66)_(1)-S	CHANNEL	0.017	0	01:30	0.13	0.00	0.09
Pipe_-_(67)	CONDUIT	0.031	0	01:32	0.90	0.10	0.21
Pipe_-_(67)-S	CHANNEL	0.042	0	01:33	0.22	0.01	0.11
Pipe_-_(69)	CONDUIT	0.132	0	01:36	1.32	0.17	0.28
Pipe_-_(70)	CONDUIT	0.132	0	01:36	1.57	0.13	0.24
Pipe_-_(71)	CONDUIT	0.014	0	01:31	0.75	0.11	0.22
Pipe_-_(71)-S	CHANNEL	0.013	0	01:31	0.20	0.00	0.06
Pipe_-_(72)	CONDUIT	0.039	0	01:31	0.93	0.07	0.17
Pipe_-_(72)-S	CHANNEL	0.041	0	01:32	0.31	0.00	0.09
Pipe_-_(73)	CONDUIT	0.049	0	01:31	1.00	0.08	0.20
Pipe_-_(73)_(1)	CONDUIT	0.092	0	01:37	1.20	0.15	0.27
Pipe_-_(73)_(1)-S	CHANNEL	0.023	0	01:35	0.07	0.01	0.16
Pipe_-_(73)-S	CHANNEL	0.057	0	01:31	0.29	0.01	0.15
Pipe_-_(74)	CONDUIT	0.005	0	01:30	0.73	0.05	0.16
Pipe_-_(74)-S	CHANNEL	0.016	0	01:30	0.19	0.00	0.07
Pipe_-_(75)	CONDUIT	0.014	0	01:30	0.73	0.07	0.18
Pipe_-_(75)_(1)	CONDUIT	0.023	0	01:31	0.84	0.11	0.23
Pipe_-_(75)_(1)-S	CHANNEL	0.032	0	01:30	0.30	0.00	0.08
Pipe_-_(75)-S	CHANNEL	0.032	0	01:30	0.25	0.00	0.09
Pipe_-_(76)	CONDUIT	0.011	0	01:31	0.32	0.00	0.02
Pipe_-_(76)-S	CHANNEL	0.002	0	01:30	0.07	0.00	0.05
Pipe_-_(77)_1	CONDUIT	0.018	0	01:32	0.33	0.01	0.03
Pipe_-_(77)_2	CONDUIT	0.018	0	01:33	0.13	0.00	0.08
Pipe_-_(77)-S	CHANNEL	0.021	0	01:30	0.24	0.00	0.08
Pipe_-_(79)	CONDUIT	0.003	0	01:31	0.44	0.02	0.08
Pipe_-_(79)-S	CHANNEL	0.022	0	01:30	0.24	0.00	0.08
Pipe_-_(85)	CONDUIT	0.002	0	01:31	0.51	0.01	0.07
Pipe_-_(85)-S	CHANNEL	0.000	0	01:30	0.01	0.00	0.05
Pipe_-_(86)	CONDUIT	0.006	0	01:32	0.57	0.03	0.11
Pipe_-_(86)-S	CHANNEL	0.020	0	01:31	0.13	0.00	0.10
PUMP	PUMP	0.010	0	01:30		1.00	
OR2	ORIFICE	0.023	0	01:42			0.87
J-S7minor-IC	WEIR	0.041	0	01:31			0.13
CBMH12-IC	DUMMY	0.004	0	01:31			
J1_COM-IC	DUMMY	0.006	0	01:30			
J2_COM-IC	DUMMY	0.014	0	01:31			
J3_COM-IC	DUMMY	0.004	0	01:31			
J4_COM-IC	DUMMY	0.012	0	01:30			
J5_COM-IC	DUMMY	0.018	0	01:33			
J6_COM-IC	DUMMY	0.086	0	01:38			
J7_COM-IC	DUMMY	0.003	0	01:30			
J8_COM-IC	DUMMY	0.000	0	00:00			
MH10-IC	DUMMY	0.014	0	01:36			
MH11-IC	DUMMY	0.002	0	01:30			
MH13-IC	DUMMY	0.011	0	01:31			
MH14-IC	DUMMY	0.014	0	01:30			
MH17-IC	DUMMY	0.001	0	01:30			
MH18-IC	DUMMY	0.007	0	01:30			
MH19-IC	DUMMY	0.009	0	01:37			

MH1-IC	DUMMY	0.005	0	01:30
MH21-IC	DUMMY	0.003	0	01:30
MH22-IC	DUMMY	0.011	0	01:31
MH23-IC	DUMMY	0.010	0	01:33
MH24-IC	DUMMY	0.004	0	01:33
MH2-IC	DUMMY	0.006	0	01:30
MH3-IC	DUMMY	0.003	0	01:31
MH4-IC	DUMMY	0.002	0	01:32
MH5-IC	DUMMY	0.005	0	01:30
MH6-IC	DUMMY	0.009	0	01:30
MH7-IC	DUMMY	0.009	0	01:30
MH8-IC	DUMMY	0.010	0	01:31
MH9-IC	DUMMY	0.054	0	01:37

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Flow Classification Summary
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	Adjusted	Fraction of Time in Flow Class								
Conduit	/Actual Length	Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.91	0.00	0.08	0.01	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.07	0.93	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.92	0.08	0.00	0.00	0.89	0.00
C14	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C1-S	1.00	0.00	0.38	0.00	0.62	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.95	0.05	0.00	0.00	1.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.19	0.81	0.00	0.00	0.95	0.00
C5	1.00	0.00	0.00	0.00	0.93	0.07	0.00	0.00	0.40	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C8	1.00	0.00	0.00	0.00	0.92	0.07	0.00	0.00	0.79	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.07	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00
Pipe_-_(117)	1.00	0.07	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00
Pipe_-_(119)	1.00	0.07	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00
Pipe_-_(120)	1.00	0.07	0.00	0.00	0.00	0.00	0.00	0.93	0.00	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(125)-S	1.00	0.89	0.00	0.00	0.10	0.02	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)-S	1.00	0.87	0.06	0.00	0.06	0.00	0.00	0.00	0.99	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)-S	1.00	0.77	0.00	0.00	0.14	0.09	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(65)-S	1.00	0.91	0.00	0.00	0.02	0.07	0.00	0.00	0.00	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(66)_(1)-S	1.00	0.83	0.01	0.00	0.16	0.00	0.00	0.00	1.00	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(67)-S	1.00	0.87	0.00	0.00	0.11	0.01	0.00	0.00	0.01	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(71)-S	1.00	0.01	0.92	0.00	0.07	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(72)-S	1.00	0.00	0.01	0.00	0.87	0.12	0.00	0.00	0.87	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.99	0.01	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(73)_(1)-S	1.00	0.90	0.00	0.00	0.09	0.00	0.00	0.00	0.03	0.00
Pipe_-_(73)-S	1.00	0.79	0.00	0.00	0.16	0.04	0.00	0.00	0.02	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(74)-S	1.00	0.81	0.01	0.00	0.16	0.01	0.00	0.00	0.06	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)-S	1.00	0.00	0.90	0.00	0.08	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.87	0.00	0.00	0.10	0.03	0.00	0.00	0.00	0.00
Pipe_-_(76)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(76)-S	1.00	0.87	0.03	0.00	0.10	0.00	0.00	0.00	1.00	0.00
Pipe_-_(77)_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Pipe_-_(77)_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.99	0.00
Pipe_-_(77)-S	1.00	0.00	0.88	0.00	0.11	0.01	0.00	0.00	0.98	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(79)-S	1.00	0.81	0.01	0.00	0.14	0.05	0.00	0.00	0.02	0.00
Pipe_-_(85)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

Pipe_-_(85)-S	1.00	0.70	0.22	0.00	0.08	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(86)-S	1.00	0.69	0.00	0.00	0.28	0.02	0.00	0.00	0.02	0.00

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Conduit Surcharge Summary
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No conduits were surcharged.

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Pumping Summary
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Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve Low	% Time Off Pump Curve High
PUMP	29.80	1	0.00	0.01	0.01	0.413	2.58	0.0	0.0

Analysis begun on: Tue Nov 10 11:03:15 2020
Analysis ended on: Tue Nov 10 11:03:21 2020

Proposed - Chicago 4h 2year Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 03: negative offset ignored for Link C12
WARNING 03: negative offset ignored for Link C4-S
WARNING 03: negative offset ignored for Link Pipe_-_(70)
WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

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Element Count
****
Number of rain gages 9
Number of subcatchments ... 30
Number of nodes 74
Number of links 101
Number of pollutants 0
Number of land uses 0

****
Raingage Summary
****

Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

****
Subcatchment Summary
****

Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
Ext.1_1	2.51	100.40	3.00	1.0000	Chicago_4h_2yr_COM	J-S7minor
Ext.1_2	0.37	46.75	75.00	1.0000	Chicago_4h_2yr_COM	EX_STM_MH4-S
Ext.2	6.47	258.62	0.00	0.5000	Chicago_4h_2yr_COM	MH_C1
Ext.4	8.59	818.53	7.00	1.5000	Chicago_4h_2yr_COM	J9_COM
Ext.5	1.49	99.55	20.00	1.5000	Chicago_4h_2yr_COM	EX_STM_MH-5-S
S1	0.16	16.10	10.00	0.5000	Chicago_4h_2yr_COM	MH11-S
S10	0.20	42.08	65.00	0.5000	Chicago_4h_2yr_COM	MH6-S
S11	0.12	38.25	65.00	0.5000	Chicago_4h_2yr_COM	MH13-S
S12	0.16	37.93	65.00	0.5000	Chicago_4h_2yr_COM	MH13-S
S13	0.06	35.94	65.00	0.5000	Chicago_4h_2yr_COM	MH10-S
S14	0.29	41.87	65.00	0.5000	Chicago_4h_2yr_COM	MH21-S
S15	0.14	29.73	65.00	0.5000	Chicago_4h_2yr_COM	MH22-S
S16	0.09	17.51	65.00	0.5000	Chicago_4h_2yr_COM	MH24-S
S17	0.79	78.53	25.00	0.5000	Chicago_4h_2yr_COM	MH18-S
S18	0.11	10.70	25.00	0.5000	Chicago_4h_2yr_COM	MH17-S
S2	0.39	22.67	65.00	0.5000	Chicago_4h_2yr_COM	CBMH12-S
S3	0.11	40.00	10.00	1.5000	Chicago_4h_2yr_COM	MH5-S
S4	0.12	64.00	50.00	1.5000	Chicago_4h_2yr_COM	MH6-S
S5	0.34	39.91	65.00	0.5000	Chicago_4h_2yr_COM	MH1-S
S6	0.25	21.45	65.00	0.5000	Chicago_4h_2yr_COM	MH5-S
S6_ROW1	0.50	135.26	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH1-S
S6_ROW2	0.36	36.43	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH2-S
S6_ROW3	0.37	36.57	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH3-S
S6_ROW4	0.36	36.03	70.00	1.8000	Chicago_4h_2yr_COM	EX_STM_MH4-S
S6_ROW5	0.37	37.28	70.00	1.8000	Chicago_4h_2yr_COM	EX_MH1-S
S6_ROW6	0.42	84.54	25.00	1.0000	Chicago_4h_2yr_COM	EX_STM_MH-5-S
S6_ROW7	0.45	89.84	25.00	1.0000	Chicago_4h_2yr_COM	EX_STM_MH6-S
S7	0.33	82.08	25.00	0.5000	Chicago_4h_2yr_COM	MH7-S
S8	0.42	33.23	65.00	0.5000	Chicago_4h_2yr_COM	MH8-S
S9	0.39	39.12	65.00	0.5000	Chicago_4h_2yr_COM	MH14-S

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
CBMH12	JUNCTION	187.61	3.19	0.0	
CBMH12-S	JUNCTION	190.80	0.30	0.0	
Dummy	JUNCTION	189.90	0.30	0.0	
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	

EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0
EX_STM_MH2	JUNCTION	191.00	2.00	0.0
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0
EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.30	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.52	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.17	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH16	JUNCTION	188.50	2.05	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.83	0.0
MH19-S	JUNCTION	189.63	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	1.43	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	4.4665	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140

C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130
C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130
C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	MH16	MH17	CONDUIT	13.0	1.5386	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.5366	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
PUMP	STM_TANK	MH16	TYPE4 PUMP			
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

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Cross Section Summary

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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	22.19
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.07
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.20
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	RECT_CLOSED	1.20	2.16	0.36	1.80	1	3.59
Pipe_-_(77)_2	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.58
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.69
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

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Transect Summary
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Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761

0.7046 0.7341 0.7644 0.7955 0.8275
0.8603 0.8939 0.9285 0.9638 1.0000
Hrad:
0.0147 0.0293 0.0440 0.0587 0.0733
0.1026 0.1317 0.1608 0.1898 0.2188
0.2477 0.2766 0.3053 0.3341 0.3627
0.3913 0.4198 0.4483 0.4767 0.5051
0.5334 0.5616 0.5898 0.6179 0.6459
0.6735 0.6991 0.7228 0.7447 0.7651
0.7841 0.8017 0.8182 0.8337 0.8482
0.8618 0.8747 0.8869 0.8985 0.9095
0.9200 0.9301 0.9398 0.9492 0.9582
0.9670 0.9755 0.9839 0.9920 1.0000
Width:
0.0846 0.1692 0.2538 0.3385 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4462 0.4692 0.4923 0.5154 0.5385
0.5615 0.5846 0.6077 0.6308 0.6538
0.6769 0.7000 0.7231 0.7462 0.7692
0.7923 0.8154 0.8385 0.8615 0.8846
0.9077 0.9308 0.9538 0.9769 1.0000

Transect full-7m
Area:
0.0006 0.0024 0.0054 0.0097 0.0151
0.0217 0.0296 0.0387 0.0489 0.0604
0.0731 0.0869 0.1010 0.1151 0.1292
0.1433 0.1574 0.1715 0.1856 0.1997
0.2138 0.2279 0.2419 0.2560 0.2701
0.2848 0.3007 0.3179 0.3362 0.3557
0.3764 0.3984 0.4215 0.4459 0.4715
0.4983 0.5262 0.5554 0.5858 0.6174
0.6503 0.6843 0.7195 0.7560 0.7936
0.8325 0.8726 0.9138 0.9563 1.0000
Hrad:
0.0182 0.0364 0.0546 0.0728 0.0910
0.1092 0.1274 0.1456 0.1638 0.1820
0.2002 0.2243 0.2602 0.2960 0.3317
0.3673 0.4028 0.4381 0.4733 0.5084
0.5434 0.5783 0.6131 0.6477 0.6822
0.7157 0.7452 0.7713 0.7942 0.8145
0.8325 0.8484 0.8626 0.8754 0.8869
0.8974 0.9070 0.9160 0.9243 0.9322
0.9397 0.9469 0.9539 0.9607 0.9673
0.9739 0.9805 0.9870 0.9935 1.0000
Width:
0.0273 0.0545 0.0818 0.1091 0.1364
0.1636 0.1909 0.2182 0.2455 0.2727
0.3000 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3455 0.3727 0.4000 0.4273 0.4545
0.4818 0.5091 0.5364 0.5636 0.5909
0.6182 0.6455 0.6727 0.7000 0.7273
0.7545 0.7818 0.8091 0.8364 0.8636
0.8909 0.9182 0.9455 0.9727 1.0000

Transect full-8.5m
Area:
0.0021 0.0086 0.0192 0.0333 0.0475
0.0618 0.0760 0.0903 0.1046 0.1188
0.1331 0.1473 0.1616 0.1758 0.1901
0.2044 0.2186 0.2329 0.2471 0.2614
0.2757 0.2899 0.3042 0.3184 0.3327
0.3474 0.3632 0.3799 0.3977 0.4164
0.4361 0.4569 0.4786 0.5013 0.5250
0.5497 0.5754 0.6021 0.6298 0.6585
0.6881 0.7188 0.7505 0.7831 0.8168
0.8515 0.8871 0.9237 0.9614 1.0000
Hrad:
0.0157 0.0314 0.0470 0.0731 0.1043
0.1354 0.1664 0.1974 0.2282 0.2590
0.2897 0.3202 0.3508 0.3812 0.4115
0.4418 0.4720 0.5021 0.5321 0.5620
0.5918 0.6216 0.6513 0.6809 0.7104
0.7394 0.7655 0.7890 0.8102 0.8293
0.8465 0.8620 0.8760 0.8886 0.9000
0.9104 0.9199 0.9286 0.9366 0.9440
0.9509 0.9574 0.9635 0.9693 0.9748
0.9801 0.9853 0.9903 0.9952 1.0000
Width:
0.1093 0.2186 0.3280 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3898 0.4153 0.4407 0.4661 0.4915

```
           0.5169     0.5424     0.5678     0.5932     0.6186
           0.6441     0.6695     0.6949     0.7203     0.7458
           0.7712     0.7966     0.8220     0.8475     0.8729
           0.8983     0.9237     0.9492     0.9746     1.0000


***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

***************
Analysis Options
***************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 05/02/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
Dry Time Step ............ 00:01:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m


**************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
**************************     ---------       -------
Total Precipitation ......         0.894        33.450
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         0.659        24.660
Surface Runoff ...........         0.202         7.556
Final Storage ............         0.033         1.241
Continuity Error (%) .....        -0.020


**************************        Volume        Volume
Flow Routing Continuity        hectare-m      10^6 ltr
**************************     ---------     ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         0.202         2.018
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         0.201         2.014
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.003
Continuity Error (%) .....         0.021


************************
Highest Continuity Errors
************************
Node MH19-S (8.13%)
Node MH18-S (-2.71%)
Node MH23-S (1.03%)


**************************
Time-Step Critical Elements
**************************
Link Pipe_-_(70) (7.36%)


********************************
Highest Flow Instability Indexes
********************************
All links are stable.


************************
Routing Time Step Summary
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****
Minimum Time Step   :   1.90 sec
Average Time Step   :   4.87 sec
Maximum Time Step   :   5.00 sec
Percent in Steady State   :   0.00
Average Iterations per Step :   2.00
Percent Not Converging   :   0.00

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	33.45	0.00	0.00	30.15	0.89	1.07	1.96	0.05	0.02	0.059
Ext.1_2	33.45	0.00	0.00	7.26	24.54	0.78	25.33	0.09	0.07	0.757
Ext.2	33.45	0.00	0.00	31.35	0.00	0.84	0.84	0.05	0.01	0.025
Ext.4	33.45	0.00	0.00	28.03	2.08	1.91	3.99	0.34	0.17	0.119
Ext.5	33.45	0.00	0.00	24.26	6.55	1.49	8.04	0.12	0.09	0.240
S1	33.45	0.00	0.00	27.49	3.27	1.48	4.75	0.01	0.00	0.142
S10	33.45	0.00	0.00	10.20	21.27	1.06	22.34	0.04	0.03	0.668
S11	33.45	0.00	0.00	10.12	21.28	1.14	22.42	0.03	0.02	0.670
S12	33.45	0.00	0.00	10.17	21.28	1.09	22.37	0.03	0.03	0.669
S13	33.45	0.00	0.00	10.01	21.29	1.25	22.54	0.01	0.01	0.674
S14	33.45	0.00	0.00	10.30	21.27	0.97	22.24	0.06	0.05	0.665
S15	33.45	0.00	0.00	10.20	21.27	1.07	22.34	0.03	0.02	0.668
S16	33.45	0.00	0.00	10.23	21.27	1.03	22.31	0.02	0.02	0.667
S17	33.45	0.00	0.00	22.80	8.18	1.34	9.53	0.07	0.05	0.285
S18	33.45	0.00	0.00	22.80	8.18	1.34	9.53	0.01	0.01	0.285
S2	33.45	0.00	0.00	10.57	21.26	0.70	21.96	0.08	0.05	0.657
S3	33.45	0.00	0.00	26.16	3.28	2.81	6.08	0.01	0.00	0.182
S4	33.45	0.00	0.00	13.10	16.38	3.00	19.38	0.02	0.02	0.579
S5	33.45	0.00	0.00	10.36	21.27	0.91	22.18	0.08	0.05	0.663
S6	33.45	0.00	0.00	10.45	21.27	0.82	22.08	0.05	0.04	0.660
S6_ROW1	33.45	0.00	0.00	8.59	22.92	1.07	23.99	0.12	0.10	0.717
S6_ROW2	33.45	0.00	0.00	8.74	22.91	0.92	23.83	0.09	0.07	0.712
S6_ROW3	33.45	0.00	0.00	8.74	22.91	0.92	23.83	0.09	0.07	0.712
S6_ROW4	33.45	0.00	0.00	8.74	22.91	0.92	23.83	0.09	0.07	0.712
S6_ROW5	33.45	0.00	0.00	8.74	22.91	0.92	23.83	0.09	0.07	0.712
S6_ROW6	33.45	0.00	0.00	20.37	8.19	3.77	11.96	0.05	0.03	0.358
S6_ROW7	33.45	0.00	0.00	20.37	8.19	3.77	11.96	0.05	0.03	0.358
S7	33.45	0.00	0.00	22.20	8.19	1.95	10.13	0.03	0.02	0.303
S8	33.45	0.00	0.00	10.47	21.27	0.80	22.06	0.09	0.06	0.660
S9	33.45	0.00	0.00	10.40	21.27	0.86	22.13	0.09	0.06	0.662

****
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
CBMH12	JUNCTION	0.00	0.06	187.67	0	01:29	0.06
CBMH12-S	JUNCTION	0.00	0.03	190.83	0	01:30	0.03
Dummy	JUNCTION	0.00	0.00	189.90	0	00:00	0.00
EX_MH1	JUNCTION	0.02	0.29	185.76	0	01:31	0.29
EX_MH1-S	JUNCTION	0.00	0.04	188.68	0	01:30	0.04
EX_STM_MH1	JUNCTION	0.00	0.06	191.76	0	01:27	0.06
EX_STM_MH1-S	JUNCTION	0.00	0.03	193.98	0	01:25	0.03
EX_STM_MH2	JUNCTION	0.00	0.11	191.11	0	01:29	0.11
EX_STM_MH2-S	JUNCTION	0.00	0.04	193.04	0	01:27	0.04
EX_STM_MH3	JUNCTION	0.00	0.09	190.18	0	01:29	0.09
EX_STM_MH3-S	JUNCTION	0.00	0.02	192.52	0	01:28	0.02
EX_STM_MH4	JUNCTION	0.01	0.16	187.77	0	01:29	0.16
EX_STM_MH4-S	JUNCTION	0.00	0.04	190.85	0	01:26	0.04
EX_STM_MH5	JUNCTION	0.03	0.36	185.13	0	01:34	0.36
EX_STM_MH-5-S	JUNCTION	0.01	0.09	187.39	0	01:34	0.09
EX_STM_MH6	JUNCTION	0.03	0.33	184.36	0	01:35	0.33
EX_STM_MH6-S	JUNCTION	0.00	0.02	187.62	0	01:27	0.02
EX_STM_MH7	JUNCTION	0.02	0.33	183.73	0	01:35	0.33
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0	00:00	0.00
EX-MH20	JUNCTION	0.02	0.22	186.45	0	01:31	0.22
EX-MH20-S	JUNCTION	0.00	0.03	189.78	0	01:28	0.03
J-S1	JUNCTION	0.02	0.25	185.64	0	01:31	0.25
J-S7	JUNCTION	0.01	0.15	189.55	0	01:29	0.15
J-S7minor	JUNCTION	0.01	0.35	191.90	0	01:29	0.35
MH_C1	JUNCTION	0.00	0.05	188.65	0	04:00	0.05
MH_C2	JUNCTION	0.00	0.05	188.12	0	04:01	0.05
MH_C3	JUNCTION	0.00	0.05	187.97	0	04:02	0.05
MH_C4	JUNCTION	0.00	0.05	187.54	0	04:03	0.05
MH1	JUNCTION	0.00	0.06	188.62	0	01:25	0.06
MH10	JUNCTION	0.01	0.28	187.18	0	01:33	0.28
MH10-S	JUNCTION	0.00	0.05	190.67	0	01:33	0.05

MH11	JUNCTION	0.00	0.03	188.60	0	01:27	0.03
MH11-S	JUNCTION	0.00	0.01	191.58	0	01:25	0.01
MH13	JUNCTION	0.01	0.13	187.45	0	01:28	0.13
MH13-S	JUNCTION	0.00	0.04	190.74	0	01:28	0.04
MH14	JUNCTION	0.00	0.10	187.89	0	01:27	0.10
MH14-S	JUNCTION	0.00	0.03	191.00	0	01:26	0.03
MH15	JUNCTION	0.01	0.24	187.02	0	01:33	0.24
MH16	JUNCTION	0.02	0.06	188.56	0	01:27	0.06
MH17	JUNCTION	0.01	0.02	187.19	0	01:28	0.02
MH17-S	JUNCTION	0.00	0.01	190.36	0	01:25	0.01
MH18	JUNCTION	0.01	0.04	187.11	0	01:28	0.04
MH18-S	JUNCTION	0.00	0.03	190.24	0	01:25	0.03
MH19	JUNCTION	0.03	0.21	187.02	0	01:41	0.21
MH19-S	JUNCTION	0.01	0.04	189.67	0	01:36	0.04
MH1-S	JUNCTION	0.00	0.03	192.11	0	01:25	0.03
MH2	JUNCTION	0.00	0.09	188.50	0	01:26	0.09
MH21	JUNCTION	0.00	0.04	186.63	0	01:27	0.04
MH21-S	JUNCTION	0.00	0.02	190.59	0	01:25	0.02
MH22	JUNCTION	0.00	0.09	186.31	0	01:27	0.09
MH22-S	JUNCTION	0.00	0.04	189.47	0	01:27	0.04
MH23	JUNCTION	0.01	0.13	186.16	0	01:29	0.13
MH23-S	JUNCTION	0.00	0.03	189.43	0	01:30	0.03
MH24	JUNCTION	0.01	0.14	186.00	0	01:30	0.14
MH24-S	JUNCTION	0.00	0.03	189.03	0	01:30	0.03
MH25	JUNCTION	0.01	0.13	185.88	0	01:30	0.13
MH2-S	JUNCTION	0.00	0.02	191.97	0	01:25	0.02
MH3	JUNCTION	0.00	0.10	188.18	0	01:26	0.10
MH3-S	JUNCTION	0.00	0.02	191.34	0	01:27	0.02
MH4	JUNCTION	0.01	0.13	187.72	0	01:27	0.13
MH4-S	JUNCTION	0.00	0.03	190.96	0	01:28	0.03
MH5	JUNCTION	0.00	0.05	188.79	0	01:25	0.05
MH5-S	JUNCTION	0.00	0.02	191.77	0	01:25	0.02
MH6	JUNCTION	0.00	0.09	188.37	0	01:26	0.09
MH6-S	JUNCTION	0.00	0.03	191.35	0	01:25	0.03
MH7	JUNCTION	0.01	0.11	188.10	0	01:26	0.11
MH7-S	JUNCTION	0.00	0.03	191.14	0	01:26	0.03
MH8	JUNCTION	0.01	0.15	187.67	0	01:27	0.15
MH8-S	JUNCTION	0.00	0.04	190.86	0	01:28	0.04
MH9	JUNCTION	0.01	0.24	187.50	0	01:33	0.24
MH9-S	JUNCTION	0.00	0.08	190.67	0	01:34	0.08
TEE1	JUNCTION	0.01	0.03	187.02	0	01:30	0.03
J9_COM	OUTFALL	0.02	0.31	183.41	0	01:35	0.31
STM_TANK	STORAGE	0.10	0.71	186.71	0	04:12	0.71

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.007	0	01:28	0	0.0346	0.018	
CBMH12-S	JUNCTION	0.048	0.049	0	01:25	0.0846	0.085	0.112	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.201	0	01:31	0	1.19	0.001	
EX_MH1-S	JUNCTION	0.069	0.191	0	01:28	0.0888	0.323	-0.247	
EX_STM_MH1	JUNCTION	0.000	0.009	0	01:25	0	0.0128	-0.012	
EX_STM_MH1-S	JUNCTION	0.101	0.101	0	01:25	0.12	0.12	-0.725	
EX_STM_MH2	JUNCTION	0.000	0.028	0	01:27	0	0.0666	-0.005	
EX_STM_MH2-S	JUNCTION	0.067	0.149	0	01:25	0.0868	0.195	0.508	
EX_STM_MH3	JUNCTION	0.000	0.033	0	01:29	0	0.0726	0.006	
EX_STM_MH3-S	JUNCTION	0.067	0.129	0	01:26	0.0871	0.227	0.139	
EX_STM_MH4	JUNCTION	0.000	0.118	0	01:29	0	0.309	-0.031	
EX_STM_MH4-S	JUNCTION	0.138	0.173	0	01:25	0.18	0.245	-0.274	
EX_STM_MH5	JUNCTION	0.000	0.363	0	01:33	0	1.66	0.005	
EX_STM_MH-5-S	JUNCTION	0.116	0.222	0	01:30	0.17	0.479	0.843	
EX_STM_MH6	JUNCTION	0.000	0.363	0	01:34	0	1.67	-0.004	
EX_STM_MH6-S	JUNCTION	0.033	0.033	0	01:25	0.0537	0.0537	-0.256	
EX_STM_MH7	JUNCTION	0.000	0.363	0	01:35	0	1.67	-0.001	
EX_STM_MH7-S	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX-MH20	JUNCTION	0.000	0.139	0	01:30	0	1.03	0.010	
EX-MH20-S	JUNCTION	0.000	0.140	0	01:26	0	0.215	0.142	
J-S1	JUNCTION	0.000	0.201	0	01:31	0	1.19	-0.009	
J-S7	JUNCTION	0.000	0.103	0	01:29	0	0.278	-0.001	
J-S7minor	JUNCTION	0.022	0.071	0	01:28	0.0492	0.206	-0.006	
MH_C1	JUNCTION	0.006	0.006	0	04:00	0.0545	0.0545	0.001	
MH_C2	JUNCTION	0.000	0.006	0	04:00	0	0.0545	0.000	
MH_C3	JUNCTION	0.000	0.006	0	04:01	0	0.0545	-0.000	
MH_C4	JUNCTION	0.000	0.006	0	04:02	0	0.0545	0.000	
MH1	JUNCTION	0.000	0.008	0	01:25	0	0.0199	0.023	
MH10	JUNCTION	0.000	0.228	0	01:33	0	0.584	0.001	
MH10-S	JUNCTION	0.011	0.087	0	01:29	0.0129	0.108	-0.094	
MH11	JUNCTION	0.000	0.003	0	01:25	0	0.00727	0.012	
MH11-S	JUNCTION	0.005	0.005	0	01:25	0.00755	0.00755	-1.964	
MH13	JUNCTION	0.000	0.038	0	01:28	0	0.147	0.000	
MH13-S	JUNCTION	0.051	0.103	0	01:25	0.0626	0.151	-0.047	

MH14	JUNCTION	0.000	0.018	0	01:26	0	0.0567	0.026
MH14-S	JUNCTION	0.059	0.059	0	01:25	0.0865	0.0865	-0.676
MH15	JUNCTION	0.000	0.228	0	01:33	0	0.584	-0.002
MH16	JUNCTION	0.000	0.010	0	01:27	0	0.584	-0.002
MH17	JUNCTION	0.000	0.011	0	01:27	0	0.59	0.000
MH17-S	JUNCTION	0.007	0.007	0	01:25	0.0102	0.0102	-0.281
MH18	JUNCTION	0.000	0.020	0	01:27	0	0.629	0.001
MH18-S	JUNCTION	0.055	0.060	0	01:25	0.0748	0.0787	-2.634
MH19	JUNCTION	0.000	0.033	0	01:33	0	0.722	0.001
MH19-S	JUNCTION	0.000	0.041	0	01:26	0	0.0418	8.855
MH1-S	JUNCTION	0.053	0.053	0	01:25	0.075	0.075	-0.080
MH2	JUNCTION	0.000	0.015	0	01:25	0	0.0449	-0.001
MH21	JUNCTION	0.000	0.004	0	01:25	0	0.0172	0.024
MH21-S	JUNCTION	0.048	0.048	0	01:25	0.0641	0.0641	-0.634
MH22	JUNCTION	0.000	0.017	0	01:27	0	0.0624	0.002
MH22-S	JUNCTION	0.024	0.063	0	01:25	0.0307	0.0781	0.106
MH23	JUNCTION	0.000	0.031	0	01:29	0	0.081	-0.001
MH23-S	JUNCTION	0.000	0.040	0	01:28	0	0.0328	1.038
MH24	JUNCTION	0.000	0.036	0	01:30	0	0.0958	0.004
MH24-S	JUNCTION	0.016	0.031	0	01:30	0.0208	0.0347	-0.371
MH25	JUNCTION	0.000	0.037	0	01:30	0	0.0958	-0.000
MH2-S	JUNCTION	0.000	0.045	0	01:25	0	0.0552	-0.287
MH3	JUNCTION	0.000	0.018	0	01:26	0	0.053	-0.001
MH3-S	JUNCTION	0.000	0.035	0	01:26	0	0.0304	0.499
MH4	JUNCTION	0.000	0.050	0	01:27	0	0.164	0.003
MH4-S	JUNCTION	0.000	0.089	0	01:26	0	0.0778	0.436
MH5	JUNCTION	0.000	0.007	0	01:25	0	0.0287	0.039
MH5-S	JUNCTION	0.039	0.039	0	01:25	0.0617	0.0617	-0.131
MH6	JUNCTION	0.000	0.018	0	01:25	0	0.0707	0.000
MH6-S	JUNCTION	0.052	0.082	0	01:25	0.0674	0.101	-0.190
MH7	JUNCTION	0.000	0.029	0	01:26	0	0.107	0.001
MH7-S	JUNCTION	0.024	0.084	0	01:25	0.0332	0.0919	-0.049
MH8	JUNCTION	0.000	0.063	0	01:27	0	0.213	0.365
MH8-S	JUNCTION	0.058	0.126	0	01:27	0.0917	0.166	-0.646
MH9	JUNCTION	0.000	0.157	0	01:32	0	0.38	-0.211
MH9-S	JUNCTION	0.000	0.141	0	01:28	0	0.169	0.942
TEE1	JUNCTION	0.000	0.020	0	01:28	0	0.684	0.000
J9_COM	OUTFALL	0.175	0.409	0	01:35	0.343	2.01	0.000
STM_TANK	STORAGE	0.000	0.228	0	01:33	0	0.584	0.002

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Node Surcharge Summary
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No nodes were surcharged.

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	0.065	2	0	0	0.459	16	0 04:12	0.010

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	41.51	0.029	0.409	2.014
System	41.51	0.029	0.409	2.014

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth

C1	CONDUIT	0.033	0	01:29	0.93	0.09	0.27
C10	CHANNEL	0.024	0	01:30	0.38	0.00	0.12
C11	CHANNEL	0.132	0	01:28	0.59	0.01	0.12
C12	CHANNEL	0.000	0	00:00	0.00	0.00	0.06
C13	CONDUIT	0.201	0	01:31	1.29	0.25	0.41
C14	CHANNEL	0.000	0	00:00	0.00	0.00	0.07
C17	CONDUIT	0.138	0	01:31	1.71	0.32	0.40
C1-S	CHANNEL	0.053	0	01:28	0.34	0.00	0.10
C1-S7	CONDUIT	0.071	0	01:29	1.42	0.22	0.66
C2	CONDUIT	0.008	0	01:27	0.62	0.04	0.13
C2-S	CHANNEL	0.083	0	01:25	0.41	0.01	0.12
C3	CONDUIT	0.027	0	01:29	0.95	0.12	0.23
C3-S	CHANNEL	0.083	0	01:27	0.46	0.01	0.11
C4	CONDUIT	0.118	0	01:29	1.76	0.19	0.35
C4-S	CHANNEL	0.140	0	01:26	0.70	0.01	0.11
C5	CONDUIT	0.201	0	01:31	1.41	0.25	0.36
C5-S	CHANNEL	0.157	0	01:30	0.33	0.01	0.21
C6	CONDUIT	0.360	0	01:34	1.77	0.43	0.47
C6-S	CHANNEL	0.013	0	01:27	0.05	0.00	0.18
C7	CONDUIT	0.363	0	01:35	1.59	0.20	0.31
C7-S	CHANNEL	0.000	0	00:00	0.00	0.00	0.03
C8	CONDUIT	0.363	0	01:35	1.65	0.18	0.30
C9	CONDUIT	0.103	0	01:30	2.20	0.24	0.34
Pipe_-_(116)	CONDUIT	0.006	0	04:00	0.56	0.01	0.07
Pipe_-_(117)	CONDUIT	0.006	0	04:01	0.56	0.01	0.07
Pipe_-_(119)	CONDUIT	0.006	0	04:02	0.56	0.01	0.07
Pipe_-_(120)	CONDUIT	0.006	0	04:03	0.56	0.01	0.07
Pipe_-_(125)	CONDUIT	0.017	0	01:27	0.74	0.09	0.20
Pipe_-_(125)-S	CHANNEL	0.040	0	01:28	0.20	0.01	0.11
Pipe_-_(126)	CONDUIT	0.010	0	01:27	1.05	0.14	0.25
Pipe_-_(127)	CONDUIT	0.031	0	01:29	0.88	0.17	0.27
Pipe_-_(127)-S	CHANNEL	0.023	0	01:30	0.45	0.00	0.11
Pipe_-_(128)	CONDUIT	0.037	0	01:30	0.93	0.20	0.29
Pipe_-_(129)	CONDUIT	0.037	0	01:30	0.94	0.20	0.29
Pipe_-_(64)	CONDUIT	0.008	0	01:25	0.64	0.06	0.17
Pipe_-_(64)-S	CHANNEL	0.045	0	01:25	0.40	0.00	0.08
Pipe_-_(65)	CONDUIT	0.015	0	01:26	0.77	0.12	0.23
Pipe_-_(65)-S	CHANNEL	0.035	0	01:26	0.45	0.00	0.07
Pipe_-_(66)_(1)	CONDUIT	0.017	0	01:27	0.80	0.14	0.25
Pipe_-_(66)_(1)-S	CHANNEL	0.034	0	01:26	0.18	0.00	0.11
Pipe_-_(67)	CONDUIT	0.038	0	01:28	0.96	0.13	0.24
Pipe_-_(67)-S	CHANNEL	0.082	0	01:29	0.28	0.02	0.15
Pipe_-_(69)	CONDUIT	0.228	0	01:33	1.54	0.29	0.37
Pipe_-_(70)	CONDUIT	0.228	0	01:33	1.84	0.23	0.32
Pipe_-_(71)	CONDUIT	0.018	0	01:27	0.81	0.15	0.26
Pipe_-_(71)-S	CHANNEL	0.027	0	01:27	0.24	0.00	0.08
Pipe_-_(72)	CONDUIT	0.050	0	01:27	1.01	0.09	0.20
Pipe_-_(72)-S	CHANNEL	0.081	0	01:28	0.39	0.01	0.11
Pipe_-_(73)	CONDUIT	0.063	0	01:27	1.08	0.11	0.26
Pipe_-_(73)_(1)	CONDUIT	0.157	0	01:33	1.40	0.26	0.35
Pipe_-_(73)_(1)-S	CHANNEL	0.032	0	01:34	0.08	0.01	0.22
Pipe_-_(73)-S	CHANNEL	0.111	0	01:28	0.37	0.01	0.19
Pipe_-_(74)	CONDUIT	0.007	0	01:25	0.79	0.07	0.18
Pipe_-_(74)-S	CHANNEL	0.031	0	01:25	0.23	0.00	0.09
Pipe_-_(75)	CONDUIT	0.018	0	01:26	0.78	0.09	0.20
Pipe_-_(75)_(1)	CONDUIT	0.029	0	01:26	0.90	0.14	0.26
Pipe_-_(75)_(1)-S	CHANNEL	0.064	0	01:26	0.39	0.01	0.10
Pipe_-_(75)-S	CHANNEL	0.064	0	01:25	0.32	0.01	0.11
Pipe_-_(76)	CONDUIT	0.011	0	01:28	0.33	0.00	0.02
Pipe_-_(76)-S	CHANNEL	0.006	0	01:25	0.09	0.00	0.06
Pipe_-_(77)_1	CONDUIT	0.020	0	01:28	0.35	0.01	0.03
Pipe_-_(77)_2	CONDUIT	0.020	0	01:30	0.13	0.00	0.10
Pipe_-_(77)-S	CHANNEL	0.041	0	01:26	0.30	0.01	0.10
Pipe_-_(79)	CONDUIT	0.003	0	01:27	0.47	0.02	0.09
Pipe_-_(79)-S	CHANNEL	0.040	0	01:25	0.28	0.00	0.10
Pipe_-_(85)	CONDUIT	0.003	0	01:27	0.57	0.01	0.08
Pipe_-_(85)-S	CHANNEL	0.001	0	01:25	0.02	0.00	0.06
Pipe_-_(86)	CONDUIT	0.007	0	01:29	0.61	0.04	0.13
Pipe_-_(86)-S	CHANNEL	0.033	0	01:30	0.15	0.01	0.12
PUMP	PUMP	0.010	0	01:27		1.00	
OR2	ORIFICE	0.030	0	01:41			1.00
J-S7minor-IC	WEIR	0.061	0	01:28			0.16
CBMH12-IC	DUMMY	0.005	0	01:30			
J1_COM-IC	DUMMY	0.009	0	01:25			
J2_COM-IC	DUMMY	0.020	0	01:27			
J3_COM-IC	DUMMY	0.006	0	01:28			
J4_COM-IC	DUMMY	0.017	0	01:26			
J5_COM-IC	DUMMY	0.027	0	01:30			
J6_COM-IC	DUMMY	0.169	0	01:34			
J7_COM-IC	DUMMY	0.004	0	01:27			
J8_COM-IC	DUMMY	0.000	0	00:00			
MH10-IC	DUMMY	0.036	0	01:33			
MH11-IC	DUMMY	0.003	0	01:25			
MH13-IC	DUMMY	0.014	0	01:28			
MH14-IC	DUMMY	0.018	0	01:26			
MH17-IC	DUMMY	0.002	0	01:25			
MH18-IC	DUMMY	0.009	0	01:25			
MH19-IC	DUMMY	0.015	0	01:36			
MH1-IC	DUMMY	0.008	0	01:25			
MH21-IC	DUMMY	0.004	0	01:25			

MH22-IC	DUMMY	0.013	0	01:27
MH23-IC	DUMMY	0.015	0	01:30
MH24-IC	DUMMY	0.006	0	01:30
MH2-IC	DUMMY	0.007	0	01:25
MH3-IC	DUMMY	0.003	0	01:27
MH4-IC	DUMMY	0.004	0	01:28
MH5-IC	DUMMY	0.007	0	01:25
MH6-IC	DUMMY	0.011	0	01:25
MH7-IC	DUMMY	0.011	0	01:26
MH8-IC	DUMMY	0.013	0	01:28
MH9-IC	DUMMY	0.105	0	01:34

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Flow Classification Summary
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	Adjusted	Fraction of Time in Flow Class								
Conduit	/Actual Length	Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.91	0.00	0.08	0.01	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.06	0.94	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.86	0.14	0.00	0.00	0.83	0.00
C14	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C1-S	1.00	0.00	0.38	0.00	0.62	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.94	0.06	0.00	0.00	1.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.19	0.81	0.00	0.00	0.95	0.00
C5	1.00	0.00	0.00	0.00	0.92	0.08	0.00	0.00	0.35	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C8	1.00	0.00	0.00	0.00	0.91	0.09	0.00	0.00	0.72	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(117)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(119)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(120)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(125)-S	1.00	0.88	0.00	0.00	0.10	0.01	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)-S	1.00	0.87	0.06	0.00	0.07	0.01	0.00	0.00	0.99	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)-S	1.00	0.77	0.00	0.00	0.13	0.10	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(65)-S	1.00	0.91	0.00	0.00	0.01	0.08	0.00	0.00	0.00	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(66)_(1)-S	1.00	0.82	0.01	0.00	0.16	0.00	0.00	0.00	0.06	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(67)-S	1.00	0.87	0.00	0.00	0.11	0.01	0.00	0.00	0.01	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(71)-S	1.00	0.01	0.91	0.00	0.08	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(72)-S	1.00	0.00	0.01	0.00	0.86	0.13	0.00	0.00	0.86	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.01	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(73)_(1)-S	1.00	0.90	0.00	0.00	0.10	0.00	0.00	0.00	0.98	0.00
Pipe_-_(73)-S	1.00	0.79	0.00	0.00	0.17	0.04	0.00	0.00	0.03	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(74)-S	1.00	0.81	0.01	0.00	0.16	0.02	0.00	0.00	0.06	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)-S	1.00	0.00	0.90	0.00	0.09	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.87	0.00	0.00	0.12	0.01	0.00	0.00	0.95	0.00
Pipe_-_(76)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(76)-S	1.00	0.86	0.02	0.00	0.12	0.00	0.00	0.00	1.00	0.00
Pipe_-_(77)_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.13	0.00
Pipe_-_(77)_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.99	0.00
Pipe_-_(77)-S	1.00	0.00	0.87	0.00	0.12	0.01	0.00	0.00	0.98	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(79)-S	1.00	0.80	0.01	0.00	0.15	0.05	0.00	0.00	0.03	0.00
Pipe_-_(85)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(85)-S	1.00	0.69	0.20	0.00	0.11	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

Pipe_-_(86)-S	1.00	0.69	0.00	0.00	0.28	0.02	0.00	0.00	0.03	0.00

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Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.17	0.01	0.01	0.01

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Pumping Summary
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Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve: Low	% Time Off Pump Curve: High
PUMP	36.08	1	0.00	0.01	0.01	0.583	3.43	0.0	0.0

Analysis begun on: Tue Nov 10 11:05:15 2020
Analysis ended on: Tue Nov 10 11:05:20 2020

Proposed - Chicago 4h 5year Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 03: negative offset ignored for Link C12
WARNING 03: negative offset ignored for Link C4-S
WARNING 03: negative offset ignored for Link Pipe_-_(70)
WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

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Element Count
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Number of rain gages 9
Number of subcatchments ... 30
Number of nodes 74
Number of links 101
Number of pollutants 0
Number of land uses 0

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Raingage Summary
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Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

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Subcatchment Summary
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Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
Ext.1_1	2.51	100.40	3.00	1.0000	Chicago_4h_5year_COM	J-S7minor
Ext.1_2	0.37	46.75	75.00	1.0000	Chicago_4h_5year_COM	EX_STM_MH4-S
Ext.2	6.47	258.62	0.00	0.5000	Chicago_4h_5year_COM	MH_C1
Ext.4	8.59	818.53	7.00	1.5000	Chicago_4h_5year_COM	J9_COM
Ext.5	1.49	99.55	20.00	1.5000	Chicago_4h_5year_COM	EX_STM_MH-5-S
S1	0.16	16.10	10.00	0.5000	Chicago_4h_5year_COM	MH11-S
S10	0.20	42.08	65.00	0.5000	Chicago_4h_5year_COM	MH6-S
S11	0.12	38.25	65.00	0.5000	Chicago_4h_5year_COM	MH13-S
S12	0.16	37.93	65.00	0.5000	Chicago_4h_5year_COM	MH13-S
S13	0.06	35.94	65.00	0.5000	Chicago_4h_5year_COM	MH10-S
S14	0.29	41.87	65.00	0.5000	Chicago_4h_5year_COM	MH21-S
S15	0.14	29.73	65.00	0.5000	Chicago_4h_5year_COM	MH22-S
S16	0.09	17.51	65.00	0.5000	Chicago_4h_5year_COM	MH24-S
S17	0.79	78.53	25.00	0.5000	Chicago_4h_5year_COM	MH18-S
S18	0.11	10.70	25.00	0.5000	Chicago_4h_5year_COM	MH17-S
S2	0.39	22.67	65.00	0.5000	Chicago_4h_5year_COM	CBMH12-S
S3	0.11	40.00	10.00	1.5000	Chicago_4h_5year_COM	MH5-S
S4	0.12	64.00	50.00	1.5000	Chicago_4h_5year_COM	MH6-S
S5	0.34	39.91	65.00	0.5000	Chicago_4h_5year_COM	MH1-S
S6	0.25	21.45	65.00	0.5000	Chicago_4h_5year_COM	MH5-S
S6_ROW1	0.50	135.26	70.00	1.8000	Chicago_4h_5year_COM	EX_STM_MH1-S
S6_ROW2	0.36	36.43	70.00	1.8000	Chicago_4h_5year_COM	EX_STM_MH2-S
S6_ROW3	0.37	36.57	70.00	1.8000	Chicago_4h_5year_COM	EX_STM_MH3-S
S6_ROW4	0.36	36.03	70.00	1.8000	Chicago_4h_5year_COM	EX_STM_MH4-S
S6_ROW5	0.37	37.28	70.00	1.8000	Chicago_4h_5year_COM	EX_MH1-S
S6_ROW6	0.42	84.54	25.00	1.0000	Chicago_4h_5year_COM	EX_STM_MH-5-S
S6_ROW7	0.45	89.84	25.00	1.0000	Chicago_4h_5year_COM	EX_STM_MH6-S
S7	0.33	82.08	25.00	0.5000	Chicago_4h_5year_COM	MH7-S
S8	0.42	33.23	65.00	0.5000	Chicago_4h_5year_COM	MH8-S
S9	0.39	39.12	65.00	0.5000	Chicago_4h_5year_COM	MH14-S

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
CBMH12	JUNCTION	187.61	3.19	0.0	
CBMH12-S	JUNCTION	190.80	0.30	0.0	
Dummy	JUNCTION	189.90	0.30	0.0	
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	

EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0
EX_STM_MH2	JUNCTION	191.00	2.00	0.0
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0
EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.30	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.52	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.17	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH16	JUNCTION	188.50	2.05	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.83	0.0
MH19-S	JUNCTION	189.63	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	1.43	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	4.4665	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140

C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130
C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130
C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	MH16	MH17	CONDUIT	13.0	1.5386	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.5366	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
PUMP	STM_TANK	MH16	TYPE4 PUMP			
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

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Cross Section Summary

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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	22.19
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.07
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.20
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	RECT_CLOSED	1.20	2.16	0.36	1.80	1	3.59
Pipe_-_(77)_2	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.58
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.69
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

****
Transect Summary
****

Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761

0.7046 0.7341 0.7644 0.7955 0.8275
0.8603 0.8939 0.9285 0.9638 1.0000
Hrad:
0.0147 0.0293 0.0440 0.0587 0.0733
0.1026 0.1317 0.1608 0.1898 0.2188
0.2477 0.2766 0.3053 0.3341 0.3627
0.3913 0.4198 0.4483 0.4767 0.5051
0.5334 0.5616 0.5898 0.6179 0.6459
0.6735 0.6991 0.7228 0.7447 0.7651
0.7841 0.8017 0.8182 0.8337 0.8482
0.8618 0.8747 0.8869 0.8985 0.9095
0.9200 0.9301 0.9398 0.9492 0.9582
0.9670 0.9755 0.9839 0.9920 1.0000
Width:
0.0846 0.1692 0.2538 0.3385 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4462 0.4692 0.4923 0.5154 0.5385
0.5615 0.5846 0.6077 0.6308 0.6538
0.6769 0.7000 0.7231 0.7462 0.7692
0.7923 0.8154 0.8385 0.8615 0.8846
0.9077 0.9308 0.9538 0.9769 1.0000

Transect full-7m
Area:
0.0006 0.0024 0.0054 0.0097 0.0151
0.0217 0.0296 0.0387 0.0489 0.0604
0.0731 0.0869 0.1010 0.1151 0.1292
0.1433 0.1574 0.1715 0.1856 0.1997
0.2138 0.2279 0.2419 0.2560 0.2701
0.2848 0.3007 0.3179 0.3362 0.3557
0.3764 0.3984 0.4215 0.4459 0.4715
0.4983 0.5262 0.5554 0.5858 0.6174
0.6503 0.6843 0.7195 0.7560 0.7936
0.8325 0.8726 0.9138 0.9563 1.0000
Hrad:
0.0182 0.0364 0.0546 0.0728 0.0910
0.1092 0.1274 0.1456 0.1638 0.1820
0.2002 0.2243 0.2602 0.2960 0.3317
0.3673 0.4028 0.4381 0.4733 0.5084
0.5434 0.5783 0.6131 0.6477 0.6822
0.7157 0.7452 0.7713 0.7942 0.8145
0.8325 0.8484 0.8626 0.8754 0.8869
0.8974 0.9070 0.9160 0.9243 0.9322
0.9397 0.9469 0.9539 0.9607 0.9673
0.9739 0.9805 0.9870 0.9935 1.0000
Width:
0.0273 0.0545 0.0818 0.1091 0.1364
0.1636 0.1909 0.2182 0.2455 0.2727
0.3000 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3455 0.3727 0.4000 0.4273 0.4545
0.4818 0.5091 0.5364 0.5636 0.5909
0.6182 0.6455 0.6727 0.7000 0.7273
0.7545 0.7818 0.8091 0.8364 0.8636
0.8909 0.9182 0.9455 0.9727 1.0000

Transect full-8.5m
Area:
0.0021 0.0086 0.0192 0.0333 0.0475
0.0618 0.0760 0.0903 0.1046 0.1188
0.1331 0.1473 0.1616 0.1758 0.1901
0.2044 0.2186 0.2329 0.2471 0.2614
0.2757 0.2899 0.3042 0.3184 0.3327
0.3474 0.3632 0.3799 0.3977 0.4164
0.4361 0.4569 0.4786 0.5013 0.5250
0.5497 0.5754 0.6021 0.6298 0.6585
0.6881 0.7188 0.7505 0.7831 0.8168
0.8515 0.8871 0.9237 0.9614 1.0000
Hrad:
0.0157 0.0314 0.0470 0.0731 0.1043
0.1354 0.1664 0.1974 0.2282 0.2590
0.2897 0.3202 0.3508 0.3812 0.4115
0.4418 0.4720 0.5021 0.5321 0.5620
0.5918 0.6216 0.6513 0.6809 0.7104
0.7394 0.7655 0.7890 0.8102 0.8293
0.8465 0.8620 0.8760 0.8886 0.9000
0.9104 0.9199 0.9286 0.9366 0.9440
0.9509 0.9574 0.9635 0.9693 0.9748
0.9801 0.9853 0.9903 0.9952 1.0000
Width:
0.1093 0.2186 0.3280 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3898 0.4153 0.4407 0.4661 0.4915

```
           0.5169     0.5424     0.5678     0.5932     0.6186
           0.6441     0.6695     0.6949     0.7203     0.7458
           0.7712     0.7966     0.8220     0.8475     0.8729
           0.8983     0.9237     0.9492     0.9746     1.0000


************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

***************
Analysis Options
***************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 05/02/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
Dry Time Step ............ 00:01:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m


**************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
**************************     ---------       -------
Total Precipitation ......         1.201        44.965
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         0.810        30.306
Surface Runoff ...........         0.359        13.429
Final Storage ............         0.033         1.239
Continuity Error (%) .....        -0.021


**************************        Volume        Volume
Flow Routing Continuity        hectare-m      10^6 ltr
**************************     ---------     ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         0.359         3.586
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         0.358         3.582
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.003
Continuity Error (%) .....         0.017


************************
Highest Continuity Errors
************************
Node MH19-S (4.02%)
Node MH18-S (-1.38%)


**************************
Time-Step Critical Elements
**************************
Link Pipe_-_(70) (7.45%)
Link Pipe_-_(72) (1.31%)


********************************
Highest Flow Instability Indexes
********************************
Link C1-S7 (2)
Link Pipe_-_(70) (1)
Link Pipe_-_(69) (1)
```

****
Routing Time Step Summary
****
Minimum Time Step   :   0.20 sec
Average Time Step   :   4.84 sec
Maximum Time Step   :   5.00 sec
Percent in Steady State   :   0.00
Average Iterations per Step :   2.00
Percent Not Converging   :   0.00

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	44.96	0.00	0.00	37.53	1.24	4.86	6.10	0.15	0.03	0.136
Ext.1_2	44.96	0.00	0.00	8.71	33.19	2.22	35.40	0.13	0.10	0.787
Ext.2	44.96	0.00	0.00	39.50	0.00	4.21	4.21	0.27	0.02	0.094
Ext.4	44.96	0.00	0.00	33.97	2.89	6.68	9.57	0.82	0.23	0.213
Ext.5	44.96	0.00	0.00	29.50	8.85	5.46	14.31	0.21	0.12	0.318
S1	44.96	0.00	0.00	33.62	4.43	5.72	10.15	0.02	0.01	0.226
S10	44.97	0.00	0.00	12.24	28.77	3.06	31.82	0.06	0.05	0.708
S11	44.97	0.00	0.00	12.14	28.77	3.16	31.93	0.04	0.03	0.710
S12	44.97	0.00	0.00	12.20	28.77	3.10	31.87	0.05	0.04	0.709
S13	44.97	0.00	0.00	12.01	28.78	3.29	32.08	0.02	0.01	0.713
S14	44.96	0.00	0.00	12.37	28.76	2.93	31.69	0.09	0.07	0.705
S15	44.96	0.00	0.00	12.24	28.77	3.06	31.83	0.04	0.03	0.708
S16	44.96	0.00	0.00	12.28	28.77	3.02	31.78	0.03	0.02	0.707
S17	44.97	0.00	0.00	27.78	11.07	5.01	16.07	0.13	0.07	0.357
S18	44.96	0.00	0.00	27.78	11.07	5.01	16.07	0.02	0.01	0.357
S2	44.97	0.00	0.00	12.82	28.75	2.48	31.23	0.12	0.07	0.695
S3	44.96	0.00	0.00	31.38	4.43	7.96	12.39	0.01	0.00	0.275
S4	44.97	0.00	0.00	15.36	22.15	6.50	28.65	0.03	0.02	0.637
S5	44.97	0.00	0.00	12.46	28.76	2.84	31.60	0.11	0.07	0.703
S6	44.97	0.00	0.00	12.60	28.76	2.69	31.45	0.08	0.05	0.699
S6_ROW1	44.97	0.00	0.00	10.29	30.99	2.81	33.81	0.17	0.14	0.752
S6_ROW2	44.97	0.00	0.00	10.48	30.98	2.63	33.61	0.12	0.09	0.747
S6_ROW3	44.97	0.00	0.00	10.48	30.98	2.63	33.61	0.12	0.09	0.747
S6_ROW4	44.96	0.00	0.00	10.48	30.98	2.63	33.61	0.12	0.09	0.747
S6_ROW5	44.97	0.00	0.00	10.48	30.98	2.63	33.61	0.13	0.10	0.747
S6_ROW6	44.96	0.00	0.00	23.88	11.07	8.90	19.97	0.08	0.04	0.444
S6_ROW7	44.96	0.00	0.00	23.88	11.07	8.90	19.97	0.09	0.04	0.444
S7	44.97	0.00	0.00	26.70	11.07	6.08	17.15	0.06	0.03	0.381
S8	44.96	0.00	0.00	12.65	28.76	2.65	31.41	0.13	0.08	0.699
S9	44.96	0.00	0.00	12.53	28.76	2.77	31.52	0.12	0.08	0.701

****
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
CBMH12	JUNCTION	0.00	0.06	187.67	0	01:28	0.06
CBMH12-S	JUNCTION	0.00	0.03	190.83	0	01:28	0.03
Dummy	JUNCTION	0.00	0.00	189.90	0	00:00	0.00
EX_MH1	JUNCTION	0.03	0.33	185.80	0	01:30	0.33
EX_MH1-S	JUNCTION	0.00	0.05	188.69	0	01:29	0.05
EX_STM_MH1	JUNCTION	0.00	0.07	191.77	0	01:26	0.07
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0	01:25	0.04
EX_STM_MH2	JUNCTION	0.00	0.12	191.12	0	01:28	0.12
EX_STM_MH2-S	JUNCTION	0.00	0.05	193.05	0	01:26	0.05
EX_STM_MH3	JUNCTION	0.00	0.11	190.20	0	01:28	0.11
EX_STM_MH3-S	JUNCTION	0.00	0.03	192.53	0	01:27	0.03
EX_STM_MH4	JUNCTION	0.01	0.18	187.79	0	01:29	0.18
EX_STM_MH4-S	JUNCTION	0.00	0.04	190.85	0	01:25	0.04
EX_STM_MH5	JUNCTION	0.04	0.46	185.23	0	01:32	0.46
EX_STM_MH-5-S	JUNCTION	0.01	0.11	187.41	0	01:33	0.11
EX_STM_MH6	JUNCTION	0.04	0.41	184.44	0	01:33	0.41
EX_STM_MH6-S	JUNCTION	0.00	0.02	187.62	0	01:26	0.02
EX_STM_MH7	JUNCTION	0.03	0.40	183.80	0	01:33	0.40
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0	01:33	0.00
EX-MH20	JUNCTION	0.03	0.25	186.48	0	01:30	0.25
EX-MH20-S	JUNCTION	0.00	0.04	189.79	0	01:27	0.04
J-S1	JUNCTION	0.03	0.29	185.68	0	01:30	0.29
J-S7	JUNCTION	0.01	0.18	189.58	0	01:28	0.18
J-S7minor	JUNCTION	0.02	0.47	192.02	0	01:28	0.47
MH_C1	JUNCTION	0.01	0.09	188.69	0	04:00	0.09
MH_C2	JUNCTION	0.01	0.09	188.16	0	04:00	0.09
MH_C3	JUNCTION	0.01	0.09	188.01	0	04:01	0.09
MH_C4	JUNCTION	0.01	0.09	187.58	0	04:01	0.09
MH1	JUNCTION	0.00	0.07	188.62	0	01:25	0.07

MH10	JUNCTION	0.02	0.34	187.25	0	01:31	0.34
MH10-S	JUNCTION	0.00	0.07	190.69	0	01:31	0.07
MH11	JUNCTION	0.00	0.03	188.60	0	01:27	0.03
MH11-S	JUNCTION	0.00	0.01	191.58	0	01:25	0.01
MH13	JUNCTION	0.01	0.14	187.46	0	01:27	0.14
MH13-S	JUNCTION	0.00	0.05	190.75	0	01:27	0.05
MH14	JUNCTION	0.01	0.10	187.90	0	01:26	0.10
MH14-S	JUNCTION	0.00	0.03	191.00	0	01:25	0.03
MH15	JUNCTION	0.03	0.33	187.11	0	04:11	0.33
MH16	JUNCTION	0.02	0.06	188.56	0	01:23	0.06
MH17	JUNCTION	0.01	0.02	187.19	0	01:25	0.02
MH17-S	JUNCTION	0.00	0.01	190.36	0	01:25	0.01
MH18	JUNCTION	0.01	0.04	187.11	0	01:25	0.04
MH18-S	JUNCTION	0.00	0.03	190.24	0	01:25	0.03
MH19	JUNCTION	0.05	0.28	187.08	0	04:03	0.28
MH19-S	JUNCTION	0.01	0.05	189.68	0	01:34	0.05
MH1-S	JUNCTION	0.00	0.03	192.11	0	01:25	0.03
MH2	JUNCTION	0.00	0.10	188.51	0	01:25	0.10
MH21	JUNCTION	0.00	0.05	186.63	0	01:27	0.05
MH21-S	JUNCTION	0.00	0.03	190.60	0	01:25	0.02
MH22	JUNCTION	0.01	0.10	186.32	0	01:26	0.10
MH22-S	JUNCTION	0.00	0.05	189.48	0	01:26	0.05
MH23	JUNCTION	0.01	0.14	186.17	0	01:28	0.14
MH23-S	JUNCTION	0.00	0.04	189.44	0	01:28	0.04
MH24	JUNCTION	0.01	0.15	186.01	0	01:28	0.15
MH24-S	JUNCTION	0.00	0.04	189.04	0	01:29	0.04
MH25	JUNCTION	0.01	0.15	185.89	0	01:28	0.15
MH2-S	JUNCTION	0.00	0.03	191.98	0	01:25	0.03
MH3	JUNCTION	0.01	0.11	188.19	0	01:26	0.11
MH3-S	JUNCTION	0.00	0.02	191.34	0	01:27	0.02
MH4	JUNCTION	0.01	0.15	187.73	0	01:26	0.15
MH4-S	JUNCTION	0.00	0.03	190.96	0	01:27	0.03
MH5	JUNCTION	0.00	0.06	188.80	0	01:25	0.06
MH5-S	JUNCTION	0.00	0.02	191.77	0	01:25	0.02
MH6	JUNCTION	0.01	0.10	188.38	0	01:26	0.10
MH6-S	JUNCTION	0.00	0.04	191.36	0	01:25	0.04
MH7	JUNCTION	0.01	0.12	188.11	0	01:26	0.12
MH7-S	JUNCTION	0.00	0.04	191.15	0	01:25	0.04
MH8	JUNCTION	0.01	0.16	187.68	0	01:27	0.16
MH8-S	JUNCTION	0.00	0.05	190.87	0	01:27	0.05
MH9	JUNCTION	0.01	0.29	187.56	0	01:32	0.29
MH9-S	JUNCTION	0.00	0.10	190.69	0	01:32	0.10
TEE1	JUNCTION	0.01	0.09	187.08	0	04:03	0.09
J9_COM	OUTFALL	0.03	0.37	183.47	0	01:34	0.37
STM_TANK	STORAGE	0.21	1.09	187.09	0	04:20	1.09

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.009	0	01:27	0	0.0486	-0.026	
CBMH12-S	JUNCTION	0.070	0.071	0	01:25	0.12	0.122	0.050	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.266	0	01:29	0	1.99	0.000	
EX_MH1-S	JUNCTION	0.095	0.297	0	01:27	0.125	0.474	-0.220	
EX_STM_MH1	JUNCTION	0.000	0.012	0	01:25	0	0.0194	-0.008	
EX_STM_MH1-S	JUNCTION	0.136	0.136	0	01:25	0.169	0.169	-0.454	
EX_STM_MH2	JUNCTION	0.000	0.037	0	01:26	0	0.0917	-0.004	
EX_STM_MH2-S	JUNCTION	0.093	0.210	0	01:25	0.122	0.273	0.323	
EX_STM_MH3	JUNCTION	0.000	0.043	0	01:28	0	0.101	-0.008	
EX_STM_MH3-S	JUNCTION	0.093	0.195	0	01:25	0.123	0.323	0.099	
EX_STM_MH4	JUNCTION	0.000	0.157	0	01:28	0	0.509	-0.024	
EX_STM_MH4-S	JUNCTION	0.192	0.253	0	01:25	0.253	0.358	-0.180	
EX_STM_MH5	JUNCTION	0.000	0.532	0	01:31	0	2.74	0.002	
EX_STM_MH-5-S	JUNCTION	0.156	0.339	0	01:29	0.298	0.757	0.555	
EX_STM_MH6	JUNCTION	0.000	0.532	0	01:33	0	2.76	-0.003	
EX_STM_MH6-S	JUNCTION	0.044	0.044	0	01:25	0.0897	0.0897	-0.095	
EX_STM_MH7	JUNCTION	0.000	0.531	0	01:34	0	2.76	-0.001	
EX_STM_MH7-S	JUNCTION	0.000	0.000	0	01:27	0	0.000104	11.779	
EX-MH20	JUNCTION	0.000	0.184	0	01:29	0	1.77	0.007	
EX-MH20-S	JUNCTION	0.000	0.211	0	01:26	0	0.312	0.090	
J-S1	JUNCTION	0.000	0.266	0	01:30	0	1.99	-0.004	
J-S7	JUNCTION	0.000	0.137	0	01:28	0	0.463	0.037	
J-S7minor	JUNCTION	0.029	0.095	0	01:25	0.153	0.362	-0.048	
MH_C1	JUNCTION	0.022	0.022	0	04:00	0.272	0.272	0.000	
MH_C2	JUNCTION	0.000	0.022	0	04:00	0	0.272	-0.000	
MH_C3	JUNCTION	0.000	0.022	0	04:00	0	0.272	-0.001	
MH_C4	JUNCTION	0.000	0.022	0	04:01	0	0.272	-0.000	
MH1	JUNCTION	0.000	0.010	0	01:25	0	0.0255	0.018	
MH10	JUNCTION	0.000	0.339	0	01:31	0	0.85	-0.017	
MH10-S	JUNCTION	0.015	0.133	0	01:27	0.0184	0.174	-0.066	
MH11	JUNCTION	0.000	0.003	0	01:25	0	0.0151	0.005	
MH11-S	JUNCTION	0.006	0.006	0	01:25	0.0161	0.0161	-0.760	

MH13	JUNCTION	0.000	0.046	0	01:27	0	0.194	0.009
MH13-S	JUNCTION	0.069	0.155	0	01:25	0.0892	0.226	-0.019
MH14	JUNCTION	0.000	0.021	0	01:25	0	0.0744	0.020
MH14-S	JUNCTION	0.083	0.083	0	01:25	0.123	0.123	-0.429
MH15	JUNCTION	0.000	0.339	0	01:32	0	0.851	0.027
MH16	JUNCTION	0.000	0.010	0	01:23	0	0.851	-0.001
MH17	JUNCTION	0.000	0.012	0	01:25	0	0.86	-0.000
MH17-S	JUNCTION	0.010	0.010	0	01:25	0.0172	0.0172	-0.192
MH18	JUNCTION	0.000	0.023	0	01:25	0	0.918	0.001
MH18-S	JUNCTION	0.075	0.083	0	01:25	0.126	0.134	-1.364
MH19	JUNCTION	0.000	0.042	0	01:34	0	1.26	-0.000
MH19-S	JUNCTION	0.000	0.060	0	01:25	0	0.0778	4.185
MH1-S	JUNCTION	0.075	0.075	0	01:25	0.107	0.107	-0.068
MH2	JUNCTION	0.000	0.018	0	01:25	0	0.0582	-0.001
MH21	JUNCTION	0.000	0.004	0	01:25	0	0.0207	0.020
MH21-S	JUNCTION	0.066	0.066	0	01:25	0.0914	0.0914	-0.378
MH22	JUNCTION	0.000	0.019	0	01:26	0	0.0809	0.002
MH22-S	JUNCTION	0.033	0.089	0	01:25	0.0438	0.115	0.029
MH23	JUNCTION	0.000	0.038	0	01:28	0	0.109	-0.001
MH23-S	JUNCTION	0.000	0.066	0	01:27	0	0.0546	0.605
MH24	JUNCTION	0.000	0.045	0	01:28	0	0.129	0.003
MH24-S	JUNCTION	0.022	0.055	0	01:28	0.0297	0.0559	-0.247
MH25	JUNCTION	0.000	0.045	0	01:28	0	0.129	-0.000
MH2-S	JUNCTION	0.000	0.065	0	01:25	0	0.0815	-0.230
MH3	JUNCTION	0.000	0.022	0	01:26	0	0.07	-0.001
MH3-S	JUNCTION	0.000	0.053	0	01:25	0	0.049	0.339
MH4	JUNCTION	0.000	0.060	0	01:26	0	0.219	0.002
MH4-S	JUNCTION	0.000	0.141	0	01:26	0	0.139	0.227
MH5	JUNCTION	0.000	0.008	0	01:25	0	0.0371	0.029
MH5-S	JUNCTION	0.055	0.055	0	01:25	0.092	0.092	-0.085
MH6	JUNCTION	0.000	0.021	0	01:25	0	0.0905	-0.000
MH6-S	JUNCTION	0.071	0.116	0	01:25	0.0973	0.152	-0.145
MH7	JUNCTION	0.000	0.033	0	01:26	0	0.144	0.001
MH7-S	JUNCTION	0.032	0.125	0	01:25	0.0563	0.155	0.017
MH8	JUNCTION	0.000	0.076	0	01:26	0	0.285	0.267
MH8-S	JUNCTION	0.084	0.197	0	01:26	0.131	0.264	-0.285
MH9	JUNCTION	0.000	0.231	0	01:31	0	0.559	-0.056
MH9-S	JUNCTION	0.000	0.210	0	01:26	0	0.276	0.433
TEE1	JUNCTION	0.000	0.036	0	04:00	0	1.19	0.001
J9_COM	OUTFALL	0.235	0.608	0	01:34	0.822	3.58	0.000
STM_TANK	STORAGE	0.000	0.339	0	01:32	0	0.851	-0.042

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Node Surcharge Summary
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No nodes were surcharged.

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	0.137	5	0	0	0.710	24	0 04:20	0.018

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	51.37	0.043	0.608	3.582
System	51.37	0.043	0.608	3.582

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Link Flow Summary
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	Maximum |Flow|	Time of Max Occurrence	Maximum |Veloc|	Max/ Full	Max/ Full

Link	Type	CMS	days	hr:min	m/sec	Flow	Depth
C1	CONDUIT	0.043	0	01:28	0.99	0.12	0.32
C10	CHANNEL	0.046	0	01:29	0.47	0.01	0.15
C11	CHANNEL	0.202	0	01:27	0.69	0.01	0.14
C12	CHANNEL	0.000	0	00:00	0.00	0.00	0.06
C13	CONDUIT	0.265	0	01:30	1.35	0.32	0.50
C14	CHANNEL	0.000	0	00:00	0.00	0.00	0.08
C17	CONDUIT	0.184	0	01:30	1.84	0.43	0.47
C1-S	CHANNEL	0.088	0	01:27	0.41	0.01	0.12
C1-S7	CONDUIT	0.094	0	01:28	1.82	0.30	0.69
C2	CONDUIT	0.010	0	01:26	0.67	0.05	0.15
C2-S	CHANNEL	0.118	0	01:25	0.46	0.01	0.13
C3	CONDUIT	0.035	0	01:28	1.03	0.16	0.27
C3-S	CHANNEL	0.126	0	01:26	0.52	0.02	0.12
C4	CONDUIT	0.157	0	01:29	1.89	0.26	0.41
C4-S	CHANNEL	0.211	0	01:26	0.80	0.02	0.13
C5	CONDUIT	0.266	0	01:30	1.52	0.32	0.42
C5-S	CHANNEL	0.248	0	01:29	0.40	0.02	0.25
C6	CONDUIT	0.527	0	01:33	1.94	0.63	0.59
C6-S	CHANNEL	0.018	0	01:26	0.05	0.00	0.21
C7	CONDUIT	0.531	0	01:34	1.76	0.29	0.38
C7-S	CHANNEL	0.000	0	01:27	0.01	0.00	0.04
C8	CONDUIT	0.531	0	01:34	1.82	0.27	0.37
C9	CONDUIT	0.137	0	01:29	2.37	0.31	0.39
Pipe_-_(116)	CONDUIT	0.022	0	04:00	0.80	0.04	0.13
Pipe_-_(117)	CONDUIT	0.022	0	04:00	0.80	0.04	0.13
Pipe_-_(119)	CONDUIT	0.022	0	04:01	0.80	0.04	0.13
Pipe_-_(120)	CONDUIT	0.022	0	04:01	0.79	0.04	0.13
Pipe_-_(125)	CONDUIT	0.019	0	01:26	0.77	0.11	0.21
Pipe_-_(125)-S	CHANNEL	0.066	0	01:27	0.24	0.02	0.14
Pipe_-_(126)	CONDUIT	0.010	0	01:23	1.05	0.14	0.25
Pipe_-_(127)	CONDUIT	0.038	0	01:28	0.93	0.21	0.30
Pipe_-_(127)-S	CHANNEL	0.043	0	01:28	0.54	0.01	0.13
Pipe_-_(128)	CONDUIT	0.045	0	01:28	0.99	0.25	0.33
Pipe_-_(129)	CONDUIT	0.045	0	01:28	0.99	0.25	0.33
Pipe_-_(64)	CONDUIT	0.010	0	01:25	0.68	0.08	0.18
Pipe_-_(64)-S	CHANNEL	0.065	0	01:25	0.44	0.01	0.09
Pipe_-_(65)	CONDUIT	0.018	0	01:25	0.81	0.14	0.25
Pipe_-_(65)-S	CHANNEL	0.053	0	01:25	0.49	0.00	0.08
Pipe_-_(66)_(1)	CONDUIT	0.021	0	01:26	0.84	0.17	0.27
Pipe_-_(66)_(1)-S	CHANNEL	0.054	0	01:25	0.21	0.01	0.13
Pipe_-_(67)	CONDUIT	0.045	0	01:27	1.01	0.15	0.26
Pipe_-_(67)-S	CHANNEL	0.126	0	01:27	0.33	0.03	0.19
Pipe_-_(69)	CONDUIT	0.339	0	01:32	1.71	0.43	0.46
Pipe_-_(70)	CONDUIT	0.339	0	01:32	2.05	0.34	0.48
Pipe_-_(71)	CONDUIT	0.022	0	01:26	0.85	0.17	0.28
Pipe_-_(71)-S	CHANNEL	0.042	0	01:27	0.27	0.00	0.10
Pipe_-_(72)	CONDUIT	0.060	0	01:26	1.06	0.10	0.22
Pipe_-_(72)-S	CHANNEL	0.131	0	01:27	0.47	0.01	0.13
Pipe_-_(73)	CONDUIT	0.076	0	01:27	1.09	0.13	0.30
Pipe_-_(73)_(1)	CONDUIT	0.230	0	01:32	1.55	0.39	0.43
Pipe_-_(73)_(1)-S	CHANNEL	0.046	0	01:31	0.09	0.02	0.27
Pipe_-_(73)-S	CHANNEL	0.179	0	01:27	0.39	0.02	0.23
Pipe_-_(74)	CONDUIT	0.008	0	01:25	0.82	0.08	0.19
Pipe_-_(74)-S	CHANNEL	0.045	0	01:25	0.26	0.00	0.10
Pipe_-_(75)	CONDUIT	0.020	0	01:26	0.82	0.10	0.21
Pipe_-_(75)_(1)	CONDUIT	0.033	0	01:26	0.94	0.17	0.28
Pipe_-_(75)_(1)-S	CHANNEL	0.103	0	01:26	0.46	0.01	0.12
Pipe_-_(75)-S	CHANNEL	0.097	0	01:25	0.37	0.01	0.13
Pipe_-_(76)	CONDUIT	0.012	0	01:25	0.33	0.00	0.02
Pipe_-_(76)-S	CHANNEL	0.008	0	01:25	0.11	0.00	0.07
Pipe_-_(77)_1	CONDUIT	0.023	0	01:26	0.37	0.01	0.05
Pipe_-_(77)_2	CONDUIT	0.036	0	04:01	0.15	0.01	0.15
Pipe_-_(77)-S	CHANNEL	0.060	0	01:25	0.33	0.01	0.12
Pipe_-_(79)	CONDUIT	0.004	0	01:27	0.49	0.02	0.10
Pipe_-_(79)-S	CHANNEL	0.057	0	01:25	0.29	0.00	0.12
Pipe_-_(85)	CONDUIT	0.003	0	01:27	0.61	0.02	0.09
Pipe_-_(85)-S	CHANNEL	0.001	0	01:25	0.02	0.00	0.07
Pipe_-_(86)	CONDUIT	0.009	0	01:28	0.64	0.04	0.14
Pipe_-_(86)-S	CHANNEL	0.050	0	01:28	0.18	0.01	0.14
PUMP	PUMP	0.010	0	01:23		1.00	
OR2	ORIFICE	0.038	0	04:03			1.00
J-S7minor-IC	WEIR	0.081	0	01:27			0.20
CBMH12-IC	DUMMY	0.006	0	01:28			
J1_COM-IC	DUMMY	0.012	0	01:25			
J2_COM-IC	DUMMY	0.027	0	01:26			
J3_COM-IC	DUMMY	0.008	0	01:27			
J4_COM-IC	DUMMY	0.022	0	01:25			
J5_COM-IC	DUMMY	0.039	0	01:29			
J6_COM-IC	DUMMY	0.275	0	01:33			
J7_COM-IC	DUMMY	0.005	0	01:26			
J8_COM-IC	DUMMY	0.000	0	01:33			
MH10-IC	DUMMY	0.070	0	01:31			
MH11-IC	DUMMY	0.003	0	01:25			
MH13-IC	DUMMY	0.016	0	01:27			
MH14-IC	DUMMY	0.021	0	01:25			
MH17-IC	DUMMY	0.002	0	01:25			
MH18-IC	DUMMY	0.010	0	01:25			
MH19-IC	DUMMY	0.023	0	01:34			

MH1-IC	DUMMY	0.010	0	01:25
MH21-IC	DUMMY	0.004	0	01:25
MH22-IC	DUMMY	0.015	0	01:26
MH23-IC	DUMMY	0.019	0	01:28
MH24-IC	DUMMY	0.007	0	01:29
MH2-IC	DUMMY	0.009	0	01:25
MH3-IC	DUMMY	0.004	0	01:27
MH4-IC	DUMMY	0.005	0	01:27
MH5-IC	DUMMY	0.008	0	01:25
MH6-IC	DUMMY	0.013	0	01:25
MH7-IC	DUMMY	0.013	0	01:25
MH8-IC	DUMMY	0.016	0	01:27
MH9-IC	DUMMY	0.167	0	01:32

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Flow Classification Summary
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	Adjusted	Fraction of Time in Flow Class								
Conduit	/Actual Length	Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Norm Ltd	Inlet Ctrl
C1	1.00	0.00	0.90	0.00	0.10	0.00	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.86	0.00	0.14	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.05	0.94	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.75	0.25	0.00	0.00	0.73	0.00
C14	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C1-S	1.00	0.00	0.38	0.00	0.62	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.94	0.06	0.00	0.00	1.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.19	0.81	0.00	0.00	0.95	0.00
C5	1.00	0.00	0.00	0.00	0.90	0.10	0.00	0.00	0.31	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.98	0.00	0.02	0.00	0.00	0.00	0.98	0.00
C8	1.00	0.00	0.00	0.00	0.88	0.12	0.00	0.00	0.62	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(117)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(119)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(120)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(125)-S	1.00	0.88	0.00	0.00	0.11	0.02	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)-S	1.00	0.86	0.06	0.00	0.07	0.01	0.00	0.00	0.99	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)-S	1.00	0.76	0.00	0.00	0.13	0.11	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(65)-S	1.00	0.90	0.00	0.00	0.01	0.09	0.00	0.00	0.00	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(66)_(1)-S	1.00	0.82	0.01	0.00	0.17	0.00	0.00	0.00	0.07	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(67)-S	1.00	0.86	0.00	0.00	0.12	0.01	0.00	0.00	0.02	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.10	0.00	0.00	0.90	0.02	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.14	0.00	0.00	0.86	0.02	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(71)-S	1.00	0.01	0.91	0.00	0.09	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(72)-S	1.00	0.00	0.01	0.00	0.86	0.13	0.00	0.00	0.86	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.01	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.05	0.00
Pipe_-_(73)_(1)-S	1.00	0.89	0.00	0.00	0.10	0.00	0.00	0.00	0.98	0.00
Pipe_-_(73)-S	1.00	0.78	0.00	0.00	0.19	0.03	0.00	0.00	0.04	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(74)-S	1.00	0.81	0.01	0.00	0.17	0.02	0.00	0.00	0.06	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)-S	1.00	0.00	0.89	0.00	0.10	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.86	0.00	0.00	0.13	0.01	0.00	0.00	0.98	0.00
Pipe_-_(76)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(76)-S	1.00	0.85	0.02	0.00	0.13	0.00	0.00	0.00	1.00	0.00
Pipe_-_(77)_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.24	0.00
Pipe_-_(77)_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.95	0.00
Pipe_-_(77)-S	1.00	0.00	0.86	0.00	0.13	0.01	0.00	0.00	0.98	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(79)-S	1.00	0.80	0.01	0.00	0.17	0.03	0.00	0.00	0.05	0.00
Pipe_-_(85)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00

Pipe_-_(85)-S	1.00	0.69	0.19	0.00	0.12	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(86)-S	1.00	0.69	0.00	0.00	0.29	0.02	0.00	0.00	0.05	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.27	0.01	0.01	0.01

****
Pumping Summary
****

Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve: Low	% Time Off Pump Curve: High
PUMP	46.16	1	0.00	0.01	0.01	0.850	4.55	0.0	0.0

Analysis begun on: Tue Nov 10 11:10:38 2020
Analysis ended on: Tue Nov 10 11:10:44 2020

Proposed - Chicago 4h 10year Storm

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
  ----------------------------------------------------------------

  WARNING 03: negative offset ignored for Link C12
  WARNING 03: negative offset ignored for Link C4-S
  WARNING 03: negative offset ignored for Link Pipe_-_(70)
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
  WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
  WARNING 02: maximum depth increased for Node J-S7minor

  *************
  Element Count
  *************
  Number of rain gages ...... 9
  Number of subcatchments ... 30
  Number of nodes ........... 74
  Number of links ........... 101
  Number of pollutants ...... 0
  Number of land uses ....... 0


  ****************
  Raingage Summary
  ****************
                                                  Data       Recording
  Name                 Data Source                Type       Interval
  ----------------------------------------------------------------------
  25mm                 25mm                       INTENSITY   10 min.
  Chicago_24h_100yr    Chicago_24h_100yr_COM      INTENSITY    5 min.
  Chicago_24h_2yr      Chicago_24h_2yr_COM        INTENSITY    5 min.
  Chicago_4h_100year_COM Chicago_4h_100year_COM      INTENSITY    5 min.
  Chicago_4h_10year_COM Chicago_4h_10year_COM       INTENSITY    5 min.
  Chicago_4h_25year_COM Chicago_4h_25year_COM       INTENSITY    5 min.
  Chicago_4h_2yr_COM   Chicago_4h_2yr_COM         INTENSITY    5 min.
  Chicago_4h_50year_COM Chicago_4h_50year_COM       INTENSITY    5 min.
  Chicago_4h_5year_COM Chicago_4h_5year_COM        INTENSITY    5 min.


  ********************
  Subcatchment Summary
  ********************
  Name                         Area     Width   %Imperv    %Slope Rain Gage            Outlet
  ------------------------------------------------------------------------------------------------
  Ext.1_1                      2.51    100.40      3.00    1.0000 Chicago_4h_10year_COM J-S7minor
  Ext.1_2                      0.37     46.75     75.00    1.0000 Chicago_4h_10year_COM EX_STM_MH4-S
  Ext.2                        6.47    258.62      0.00    0.5000 Chicago_4h_10year_COM MH_C1
  Ext.4                        8.59    818.53      7.00    1.5000 Chicago_4h_10year_COM J9_COM
  Ext.5                        1.49     99.55     20.00    1.5000 Chicago_4h_10year_COM EX_STM_MH-5-S
  S1                           0.16     16.10     10.00    0.5000 Chicago_4h_10year_COM MH11-S
  S10                          0.20     42.08     65.00    0.5000 Chicago_4h_10year_COM MH6-S
  S11                          0.12     38.25     65.00    0.5000 Chicago_4h_10year_COM MH13-S
  S12                          0.16     37.93     65.00    0.5000 Chicago_4h_10year_COM MH13-S
  S13                          0.06     35.94     65.00    0.5000 Chicago_4h_10year_COM MH10-S
  S14                          0.29     41.87     65.00    0.5000 Chicago_4h_10year_COM MH21-S
  S15                          0.14     29.73     65.00    0.5000 Chicago_4h_10year_COM MH22-S
  S16                          0.09     17.51     65.00    0.5000 Chicago_4h_10year_COM MH24-S
  S17                          0.79     78.53     25.00    0.5000 Chicago_4h_10year_COM MH18-S
  S18                          0.11     10.70     25.00    0.5000 Chicago_4h_10year_COM MH17-S
  S2                           0.39     22.67     65.00    0.5000 Chicago_4h_10year_COM CBMH12-S
  S3                           0.11     40.00     10.00    1.5000 Chicago_4h_10year_COM MH5-S
  S4                           0.12     64.00     50.00    1.5000 Chicago_4h_10year_COM MH6-S
  S5                           0.34     39.91     65.00    0.5000 Chicago_4h_10year_COM MH1-S
  S6                           0.25     21.45     65.00    0.5000 Chicago_4h_10year_COM MH5-S
  S6_ROW1                      0.50    135.26     70.00    1.8000 Chicago_4h_10year_COM EX_STM_MH1-S
  S6_ROW2                      0.36     36.43     70.00    1.8000 Chicago_4h_10year_COM EX_STM_MH2-S
  S6_ROW3                      0.37     36.57     70.00    1.8000 Chicago_4h_10year_COM EX_STM_MH3-S
  S6_ROW4                      0.36     36.03     70.00    1.8000 Chicago_4h_10year_COM EX_STM_MH4-S
  S6_ROW5                      0.37     37.28     70.00    1.8000 Chicago_4h_10year_COM EX_MH1-S
  S6_ROW6                      0.42     84.54     25.00    1.0000 Chicago_4h_10year_COM EX_STM_MH-5-S
  S6_ROW7                      0.45     89.84     25.00    1.0000 Chicago_4h_10year_COM EX_STM_MH6-S
  S7                           0.33     82.08     25.00    0.5000 Chicago_4h_10year_COM MH7-S
  S8                           0.42     33.23     65.00    0.5000 Chicago_4h_10year_COM MH8-S
  S9                           0.39     39.12     65.00    0.5000 Chicago_4h_10year_COM MH14-S


  ************
  Node Summary
  ************
                                        Invert      Max.    Ponded    External
  Name                 Type              Elev.     Depth      Area    Inflow
  ----------------------------------------------------------------------------
  CBMH12               JUNCTION         187.61      3.19       0.0
  CBMH12-S             JUNCTION         190.80      0.30       0.0
  Dummy                JUNCTION         189.90      0.30       0.0
  EX_MH1               JUNCTION         185.47      3.17       0.0
  EX_MH1-S             JUNCTION         188.64      0.30       0.0
  EX_STM_MH1           JUNCTION         191.70      2.25       0.0
  EX_STM_MH1-S         JUNCTION         193.95      0.30       0.0
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EX_STM_MH2	JUNCTION	191.00	2.00	0.0
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0
EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.30	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.52	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.17	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH16	JUNCTION	188.50	2.05	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.83	0.0
MH19-S	JUNCTION	189.63	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	1.43	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	4.4665	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140
C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130

C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130
C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	MH16	MH17	CONDUIT	13.0	1.5386	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.5366	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
PUMP	STM_TANK	MH16	TYPE4 PUMP			
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

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Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	22.19
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.07
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.20
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	RECT_CLOSED	1.20	2.16	0.36	1.80	1	3.59
Pipe_-_(77)_2	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.58
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.69
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

****
Transect Summary
****

Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761
0.7046	0.7341	0.7644	0.7955	0.8275

```
            0.8603     0.8939     0.9285     0.9638     1.0000
Hrad:
            0.0147     0.0293     0.0440     0.0587     0.0733
            0.1026     0.1317     0.1608     0.1898     0.2188
            0.2477     0.2766     0.3053     0.3341     0.3627
            0.3913     0.4198     0.4483     0.4767     0.5051
            0.5334     0.5616     0.5898     0.6179     0.6459
            0.6735     0.6991     0.7228     0.7447     0.7651
            0.7841     0.8017     0.8182     0.8337     0.8482
            0.8618     0.8747     0.8869     0.8985     0.9095
            0.9200     0.9301     0.9398     0.9492     0.9582
            0.9670     0.9755     0.9839     0.9920     1.0000
Width:
            0.0846     0.1692     0.2538     0.3385     0.4231
            0.4231     0.4231     0.4231     0.4231     0.4231
            0.4231     0.4231     0.4231     0.4231     0.4231
            0.4231     0.4231     0.4231     0.4231     0.4231
            0.4231     0.4231     0.4231     0.4231     0.4231
            0.4462     0.4692     0.4923     0.5154     0.5385
            0.5615     0.5846     0.6077     0.6308     0.6538
            0.6769     0.7000     0.7231     0.7462     0.7692
            0.7923     0.8154     0.8385     0.8615     0.8846
            0.9077     0.9308     0.9538     0.9769     1.0000

Transect full-7m
Area:
            0.0006     0.0024     0.0054     0.0097     0.0151
            0.0217     0.0296     0.0387     0.0489     0.0604
            0.0731     0.0869     0.1010     0.1151     0.1292
            0.1433     0.1574     0.1715     0.1856     0.1997
            0.2138     0.2279     0.2419     0.2560     0.2701
            0.2848     0.3007     0.3179     0.3362     0.3557
            0.3764     0.3984     0.4215     0.4459     0.4715
            0.4983     0.5262     0.5554     0.5858     0.6174
            0.6503     0.6843     0.7195     0.7560     0.7936
            0.8325     0.8726     0.9138     0.9563     1.0000
Hrad:
            0.0182     0.0364     0.0546     0.0728     0.0910
            0.1092     0.1274     0.1456     0.1638     0.1820
            0.2002     0.2243     0.2602     0.2960     0.3317
            0.3673     0.4028     0.4381     0.4733     0.5084
            0.5434     0.5783     0.6131     0.6477     0.6822
            0.7157     0.7452     0.7713     0.7942     0.8145
            0.8325     0.8484     0.8626     0.8754     0.8869
            0.8974     0.9070     0.9160     0.9243     0.9322
            0.9397     0.9469     0.9539     0.9607     0.9673
            0.9739     0.9805     0.9870     0.9935     1.0000
Width:
            0.0273     0.0545     0.0818     0.1091     0.1364
            0.1636     0.1909     0.2182     0.2455     0.2727
            0.3000     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3182     0.3182     0.3182     0.3182     0.3182
            0.3455     0.3727     0.4000     0.4273     0.4545
            0.4818     0.5091     0.5364     0.5636     0.5909
            0.6182     0.6455     0.6727     0.7000     0.7273
            0.7545     0.7818     0.8091     0.8364     0.8636
            0.8909     0.9182     0.9455     0.9727     1.0000

Transect full-8.5m
Area:
            0.0021     0.0086     0.0192     0.0333     0.0475
            0.0618     0.0760     0.0903     0.1046     0.1188
            0.1331     0.1473     0.1616     0.1758     0.1901
            0.2044     0.2186     0.2329     0.2471     0.2614
            0.2757     0.2899     0.3042     0.3184     0.3327
            0.3474     0.3632     0.3799     0.3977     0.4164
            0.4361     0.4569     0.4786     0.5013     0.5250
            0.5497     0.5754     0.6021     0.6298     0.6585
            0.6881     0.7188     0.7505     0.7831     0.8168
            0.8515     0.8871     0.9237     0.9614     1.0000
Hrad:
            0.0157     0.0314     0.0470     0.0731     0.1043
            0.1354     0.1664     0.1974     0.2282     0.2590
            0.2897     0.3202     0.3508     0.3812     0.4115
            0.4418     0.4720     0.5021     0.5321     0.5620
            0.5918     0.6216     0.6513     0.6809     0.7104
            0.7394     0.7655     0.7890     0.8102     0.8293
            0.8465     0.8620     0.8760     0.8886     0.9000
            0.9104     0.9199     0.9286     0.9366     0.9440
            0.9509     0.9574     0.9635     0.9693     0.9748
            0.9801     0.9853     0.9903     0.9952     1.0000
Width:
            0.1093     0.2186     0.3280     0.3644     0.3644
            0.3644     0.3644     0.3644     0.3644     0.3644
            0.3644     0.3644     0.3644     0.3644     0.3644
            0.3644     0.3644     0.3644     0.3644     0.3644
            0.3644     0.3644     0.3644     0.3644     0.3644
            0.3898     0.4153     0.4407     0.4661     0.4915
            0.5169     0.5424     0.5678     0.5932     0.6186
```

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            0.6441     0.6695     0.6949     0.7203     0.7458
            0.7712     0.7966     0.8220     0.8475     0.8729
            0.8983     0.9237     0.9492     0.9746     1.0000


***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

****************
Analysis Options
****************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 05/02/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
Dry Time Step ............ 00:01:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m


**************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
**************************     ---------       -------
Total Precipitation ......         1.479        55.384
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         0.919        34.402
Surface Runoff ...........         0.528        19.759
Final Storage ............         0.033         1.236
Continuity Error (%) .....        -0.023


**************************        Volume        Volume
Flow Routing Continuity        hectare-m      10^6 ltr
**************************     ---------     ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         0.528         5.277
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         0.527         5.273
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.003
Continuity Error (%) .....         0.004


*************************
Highest Continuity Errors
*************************
Node MH19-S (2.33%)


***************************
Time-Step Critical Elements
***************************
Link Pipe_-_(70) (10.25%)


*********************************
Highest Flow Instability Indexes
*********************************
Link C1-S7 (2)
Link Pipe_-_(70) (1)
Link Pipe_-_(69) (1)


************************
Routing Time Step Summary
************************
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Minimum Time Step : 1.56 sec
Average Time Step : 4.73 sec
Maximum Time Step : 5.00 sec
Percent in Steady State : 0.00
Average Iterations per Step : 2.00
Percent Not Converging : 0.00

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	55.38	0.00	0.00	42.78	1.55	9.72	11.27	0.28	0.04	0.203
Ext.1_2	55.38	0.00	0.00	9.81	41.01	3.72	44.73	0.17	0.13	0.808
Ext.2	55.38	0.00	0.00	45.32	0.00	8.81	8.81	0.57	0.04	0.159
Ext.4	55.38	0.00	0.00	38.33	3.62	12.01	15.63	1.34	0.29	0.282
Ext.5	55.38	0.00	0.00	33.33	10.94	9.97	20.91	0.31	0.14	0.378
S1	55.38	0.00	0.00	38.02	5.47	10.68	16.16	0.03	0.01	0.292
S10	55.38	0.00	0.00	13.79	35.55	5.15	40.70	0.08	0.06	0.735
S11	55.38	0.00	0.00	13.68	35.56	5.26	40.82	0.05	0.04	0.737
S12	55.38	0.00	0.00	13.75	35.55	5.20	40.75	0.06	0.05	0.736
S13	55.38	0.00	0.00	13.53	35.57	5.41	40.98	0.02	0.02	0.740
S14	55.38	0.00	0.00	13.94	35.54	5.01	40.55	0.12	0.08	0.732
S15	55.38	0.00	0.00	13.78	35.55	5.16	40.71	0.06	0.04	0.735
S16	55.38	0.00	0.00	13.83	35.55	5.11	40.66	0.04	0.03	0.734
S17	55.38	0.00	0.00	31.39	13.67	9.21	22.89	0.18	0.09	0.413
S18	55.38	0.00	0.00	31.39	13.67	9.21	22.89	0.02	0.01	0.413
S2	55.38	0.00	0.00	14.46	35.53	4.48	40.01	0.15	0.09	0.722
S3	55.38	0.00	0.00	35.35	5.47	13.36	18.83	0.02	0.01	0.340
S4	55.38	0.00	0.00	17.01	27.37	10.06	37.43	0.04	0.03	0.676
S5	55.38	0.00	0.00	14.03	35.54	4.91	40.45	0.14	0.09	0.730
S6	55.38	0.00	0.00	14.21	35.53	4.74	40.27	0.10	0.07	0.727
S6_ROW1	55.38	0.00	0.00	11.61	38.30	4.63	42.93	0.21	0.17	0.775
S6_ROW2	55.38	0.00	0.00	11.81	38.28	4.43	42.71	0.16	0.12	0.771
S6_ROW3	55.38	0.00	0.00	11.81	38.28	4.43	42.71	0.16	0.12	0.771
S6_ROW4	55.38	0.00	0.00	11.81	38.28	4.43	42.71	0.15	0.12	0.771
S6_ROW5	55.38	0.00	0.00	11.81	38.28	4.43	42.71	0.16	0.12	0.771
S6_ROW6	55.38	0.00	0.00	26.43	13.68	14.16	27.85	0.12	0.05	0.503
S6_ROW7	55.38	0.00	0.00	26.43	13.68	14.16	27.85	0.13	0.06	0.503
S7	55.38	0.00	0.00	30.08	13.68	10.51	24.19	0.08	0.04	0.437
S8	55.38	0.00	0.00	14.25	35.53	4.69	40.22	0.17	0.11	0.726
S9	55.38	0.00	0.00	14.12	35.54	4.82	40.36	0.16	0.11	0.729

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Node Depth Summary
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Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days	hr:min	Reported Max Depth Meters
CBMH12	JUNCTION	0.01	0.07	187.67	0	01:28	0.07
CBMH12-S	JUNCTION	0.00	0.04	190.84	0	01:27	0.04
Dummy	JUNCTION	0.00	0.00	189.90	0	00:00	0.00
EX_MH1	JUNCTION	0.05	0.38	185.85	0	01:29	0.38
EX_MH1-S	JUNCTION	0.00	0.05	188.69	0	01:28	0.05
EX_STM_MH1	JUNCTION	0.00	0.07	191.77	0	01:26	0.07
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0	01:25	0.04
EX_STM_MH2	JUNCTION	0.01	0.14	191.14	0	01:27	0.14
EX_STM_MH2-S	JUNCTION	0.00	0.05	193.05	0	01:26	0.05
EX_STM_MH3	JUNCTION	0.00	0.12	190.21	0	01:28	0.12
EX_STM_MH3-S	JUNCTION	0.00	0.03	192.53	0	01:27	0.03
EX_STM_MH4	JUNCTION	0.01	0.20	187.81	0	01:28	0.20
EX_STM_MH4-S	JUNCTION	0.00	0.05	190.86	0	01:25	0.05
EX_STM_MH5	JUNCTION	0.05	0.55	185.32	0	01:32	0.55
EX_STM_MH-5-S	JUNCTION	0.02	0.13	187.43	0	01:32	0.13
EX_STM_MH6	JUNCTION	0.05	0.47	184.50	0	01:33	0.47
EX_STM_MH6-S	JUNCTION	0.00	0.03	187.63	0	01:26	0.03
EX_STM_MH7	JUNCTION	0.05	0.47	183.87	0	01:33	0.47
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0	01:37	0.00
EX-MH20	JUNCTION	0.04	0.29	186.52	0	01:29	0.29
EX-MH20-S	JUNCTION	0.00	0.04	189.79	0	01:27	0.04
J-S1	JUNCTION	0.04	0.33	185.72	0	01:29	0.33
J-S7	JUNCTION	0.01	0.20	189.60	0	01:28	0.20
J-S7minor	JUNCTION	0.03	0.64	192.19	0	01:25	0.64
MH_C1	JUNCTION	0.01	0.12	188.73	0	03:32	0.12
MH_C2	JUNCTION	0.01	0.12	188.20	0	03:32	0.12
MH_C3	JUNCTION	0.01	0.12	188.05	0	03:33	0.12
MH_C4	JUNCTION	0.01	0.12	187.62	0	03:34	0.12
MH1	JUNCTION	0.00	0.08	188.63	0	01:25	0.08
MH10	JUNCTION	0.08	0.54	187.44	0	04:27	0.54
MH10-S	JUNCTION	0.00	0.08	190.70	0	01:29	0.08
MH11	JUNCTION	0.00	0.04	188.60	0	01:27	0.04

MH11-S	JUNCTION	0.00	0.01	191.58	0	01:25	0.01
MH13	JUNCTION	0.01	0.15	187.47	0	01:27	0.15
MH13-S	JUNCTION	0.00	0.06	190.76	0	01:26	0.06
MH14	JUNCTION	0.01	0.11	187.90	0	01:26	0.11
MH14-S	JUNCTION	0.00	0.04	191.01	0	01:25	0.03
MH15	JUNCTION	0.11	0.67	187.44	0	04:26	0.67
MH16	JUNCTION	0.03	0.06	188.56	0	01:18	0.06
MH17	JUNCTION	0.02	0.19	187.35	0	03:53	0.19
MH17-S	JUNCTION	0.00	0.01	190.36	0	01:25	0.01
MH18	JUNCTION	0.03	0.28	187.35	0	03:53	0.28
MH18-S	JUNCTION	0.00	0.03	190.24	0	01:25	0.03
MH19	JUNCTION	0.09	0.55	187.35	0	03:52	0.55
MH19-S	JUNCTION	0.01	0.06	189.69	0	01:33	0.06
MH1-S	JUNCTION	0.00	0.03	192.11	0	01:25	0.03
MH2	JUNCTION	0.01	0.10	188.52	0	01:25	0.10
MH21	JUNCTION	0.00	0.05	186.64	0	01:26	0.05
MH21-S	JUNCTION	0.00	0.03	190.60	0	01:25	0.03
MH22	JUNCTION	0.01	0.10	186.32	0	01:26	0.10
MH22-S	JUNCTION	0.00	0.05	189.48	0	01:26	0.05
MH23	JUNCTION	0.01	0.15	186.18	0	01:27	0.15
MH23-S	JUNCTION	0.00	0.04	189.44	0	01:27	0.04
MH24	JUNCTION	0.01	0.16	186.02	0	01:27	0.16
MH24-S	JUNCTION	0.00	0.05	189.05	0	01:28	0.05
MH25	JUNCTION	0.01	0.16	185.90	0	01:27	0.16
MH2-S	JUNCTION	0.00	0.03	191.98	0	01:25	0.03
MH3	JUNCTION	0.01	0.11	188.19	0	01:26	0.11
MH3-S	JUNCTION	0.00	0.03	191.35	0	01:26	0.03
MH4	JUNCTION	0.01	0.16	187.74	0	01:26	0.15
MH4-S	JUNCTION	0.00	0.04	190.97	0	01:26	0.04
MH5	JUNCTION	0.00	0.06	188.80	0	01:25	0.06
MH5-S	JUNCTION	0.00	0.03	191.78	0	01:25	0.03
MH6	JUNCTION	0.01	0.10	188.38	0	01:25	0.10
MH6-S	JUNCTION	0.00	0.04	191.36	0	01:25	0.04
MH7	JUNCTION	0.01	0.13	188.12	0	01:26	0.13
MH7-S	JUNCTION	0.00	0.04	191.15	0	01:25	0.04
MH8	JUNCTION	0.01	0.17	187.69	0	01:26	0.17
MH8-S	JUNCTION	0.00	0.05	190.87	0	01:26	0.05
MH9	JUNCTION	0.02	0.34	187.60	0	01:31	0.34
MH9-S	JUNCTION	0.00	0.11	190.70	0	01:31	0.11
TEE1	JUNCTION	0.03	0.36	187.35	0	03:52	0.36
J9_COM	OUTFALL	0.05	0.43	183.53	0	01:33	0.43
STM_TANK	STORAGE	0.37	1.44	187.44	0	04:26	1.44

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Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min		Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.010	0	01:27	0	0.0614	0.075	
CBMH12-S	JUNCTION	0.091	0.092	0	01:25	0.154	0.157	-0.015	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.326	0	01:29	0	2.87	0.000	
EX_MH1-S	JUNCTION	0.119	0.408	0	01:27	0.159	0.623	-0.192	
EX_STM_MH1	JUNCTION	0.000	0.014	0	01:25	0	0.0254	-0.007	
EX_STM_MH1-S	JUNCTION	0.168	0.168	0	01:25	0.215	0.215	-0.324	
EX_STM_MH2	JUNCTION	0.000	0.046	0	01:26	0	0.113	-0.004	
EX_STM_MH2-S	JUNCTION	0.117	0.265	0	01:25	0.156	0.346	0.234	
EX_STM_MH3	JUNCTION	0.000	0.053	0	01:27	0	0.126	-0.016	
EX_STM_MH3-S	JUNCTION	0.117	0.259	0	01:25	0.156	0.413	0.071	
EX_STM_MH4	JUNCTION	0.000	0.194	0	01:28	0	0.721	-0.019	
EX_STM_MH4-S	JUNCTION	0.241	0.333	0	01:25	0.321	0.468	-0.126	
EX_STM_MH5	JUNCTION	0.000	0.684	0	01:31	0	3.9	0.001	
EX_STM_MH-5-S	JUNCTION	0.195	0.462	0	01:28	0.43	1.04	0.420	
EX_STM_MH6	JUNCTION	0.000	0.683	0	01:32	0	3.93	-0.002	
EX_STM_MH6-S	JUNCTION	0.056	0.056	0	01:25	0.125	0.125	-0.101	
EX_STM_MH7	JUNCTION	0.000	0.682	0	01:33	0	3.93	-0.000	
EX_STM_MH7-S	JUNCTION	0.000	0.000	0	01:27	0	0.000412	6.324	
EX-MH20	JUNCTION	0.000	0.225	0	01:28	0	2.6	0.005	
EX-MH20-S	JUNCTION	0.000	0.283	0	01:26	0	0.409	0.062	
J-S1	JUNCTION	0.000	0.325	0	01:29	0	2.87	-0.002	
J-S7	JUNCTION	0.000	0.169	0	01:27	0	0.662	0.025	
J-S7minor	JUNCTION	0.037	0.120	0	01:25	0.283	0.536	-0.029	
MH_C1	JUNCTION	0.042	0.042	0	03:30	0.57	0.57	0.000	
MH_C2	JUNCTION	0.000	0.042	0	03:32	0	0.57	-0.000	
MH_C3	JUNCTION	0.000	0.042	0	03:32	0	0.57	-0.001	
MH_C4	JUNCTION	0.000	0.042	0	03:33	0	0.57	-0.000	
MH1	JUNCTION	0.000	0.011	0	01:25	0	0.0306	0.015	
MH10	JUNCTION	0.000	0.448	0	01:31	0	1.1	-0.106	
MH10-S	JUNCTION	0.018	0.178	0	01:26	0.0236	0.242	-0.048	
MH11	JUNCTION	0.000	0.004	0	01:25	0	0.0228	0.003	
MH11-S	JUNCTION	0.008	0.008	0	01:25	0.0257	0.0257	-0.141	
MH13	JUNCTION	0.000	0.051	0	01:26	0	0.234	0.159	
MH13-S	JUNCTION	0.086	0.210	0	01:25	0.114	0.302	-0.019	
MH14	JUNCTION	0.000	0.023	0	01:25	0	0.0885	0.016	

MH14-S	JUNCTION	0.106	0.106	0	01:25	0.158	0.158	-0.299
MH15	JUNCTION	0.000	0.448	0	01:31	0	1.11	-0.000
MH16	JUNCTION	0.000	0.010	0	01:18	0	1.11	-0.001
MH17	JUNCTION	0.000	0.012	0	01:25	0	1.12	0.002
MH17-S	JUNCTION	0.013	0.013	0	01:25	0.0245	0.0245	-0.145
MH18	JUNCTION	0.000	0.024	0	01:25	0	1.19	-0.000
MH18-S	JUNCTION	0.093	0.103	0	01:25	0.18	0.192	-0.807
MH19	JUNCTION	0.000	0.061	0	03:28	0	1.88	-0.001
MH19-S	JUNCTION	0.000	0.079	0	01:25	0	0.122	2.388
MH1-S	JUNCTION	0.095	0.095	0	01:25	0.137	0.137	-0.059
MH2	JUNCTION	0.000	0.021	0	01:25	0	0.069	-0.001
MH21	JUNCTION	0.000	0.005	0	01:25	0	0.0234	0.017
MH21-S	JUNCTION	0.084	0.084	0	01:25	0.117	0.117	-0.257
MH22	JUNCTION	0.000	0.021	0	01:26	0	0.0951	0.002
MH22-S	JUNCTION	0.042	0.115	0	01:25	0.056	0.15	0.014
MH23	JUNCTION	0.000	0.043	0	01:27	0	0.133	-0.000
MH23-S	JUNCTION	0.000	0.090	0	01:26	0	0.0781	0.377
MH24	JUNCTION	0.000	0.051	0	01:27	0	0.156	0.002
MH24-S	JUNCTION	0.028	0.079	0	01:27	0.038	0.0782	-0.178
MH25	JUNCTION	0.000	0.051	0	01:27	0	0.156	-0.000
MH2-S	JUNCTION	0.000	0.083	0	01:25	0	0.106	-0.198
MH3	JUNCTION	0.000	0.025	0	01:25	0	0.0839	-0.001
MH3-S	JUNCTION	0.000	0.070	0	01:25	0	0.0681	0.255
MH4	JUNCTION	0.000	0.068	0	01:26	0	0.264	0.002
MH4-S	JUNCTION	0.000	0.193	0	01:26	0	0.208	0.142
MH5	JUNCTION	0.000	0.009	0	01:25	0	0.0434	0.026
MH5-S	JUNCTION	0.071	0.071	0	01:25	0.121	0.121	-0.064
MH6	JUNCTION	0.000	0.023	0	01:25	0	0.106	0.001
MH6-S	JUNCTION	0.090	0.149	0	01:25	0.125	0.203	-0.117
MH7	JUNCTION	0.000	0.037	0	01:25	0	0.171	0.001
MH7-S	JUNCTION	0.040	0.164	0	01:25	0.0794	0.22	0.037
MH8	JUNCTION	0.000	0.086	0	01:26	0	0.342	0.309
MH8-S	JUNCTION	0.107	0.267	0	01:26	0.167	0.366	-0.165
MH9	JUNCTION	0.000	0.294	0	01:30	0	0.726	-0.010
MH9-S	JUNCTION	0.000	0.268	0	01:26	0	0.386	0.258
TEE1	JUNCTION	0.000	0.057	0	03:35	0	1.76	0.002
J9_COM	OUTFALL	0.292	0.816	0	01:34	1.34	5.27	0.000
STM_TANK	STORAGE	0.000	0.448	0	01:31	0	1.11	-0.038

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Node Surcharge Summary
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No nodes were surcharged.

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	0.241	8	0	0	0.939	32	0 04:26	0.010

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	61.49	0.059	0.816	5.273
System	61.49	0.059	0.816	5.273

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.053	0 01:28	1.05	0.15	0.36

C10	CHANNEL	0.068	0	01:28	0.52	0.01	0.17
C11	CHANNEL	0.273	0	01:27	0.77	0.02	0.16
C12	CHANNEL	0.000	0	00:00	0.00	0.00	0.07
C13	CONDUIT	0.325	0	01:29	1.38	0.40	0.58
C14	CHANNEL	0.000	0	00:00	0.00	0.00	0.10
C17	CONDUIT	0.224	0	01:29	1.92	0.52	0.53
C1-S	CHANNEL	0.129	0	01:27	0.49	0.01	0.13
C1-S7	CONDUIT	0.117	0	01:25	2.17	0.37	0.71
C2	CONDUIT	0.012	0	01:26	0.70	0.06	0.16
C2-S	CHANNEL	0.149	0	01:25	0.50	0.02	0.15
C3	CONDUIT	0.043	0	01:28	1.09	0.19	0.30
C3-S	CHANNEL	0.168	0	01:26	0.57	0.03	0.14
C4	CONDUIT	0.194	0	01:28	2.00	0.32	0.47
C4-S	CHANNEL	0.283	0	01:26	0.89	0.02	0.15
C5	CONDUIT	0.325	0	01:29	1.60	0.40	0.47
C5-S	CHANNEL	0.341	0	01:28	0.46	0.03	0.30
C6	CONDUIT	0.677	0	01:32	2.03	0.80	0.71
C6-S	CHANNEL	0.024	0	01:26	0.05	0.00	0.25
C7	CONDUIT	0.682	0	01:33	1.87	0.38	0.44
C7-S	CHANNEL	0.000	0	01:27	0.01	0.00	0.04
C8	CONDUIT	0.682	0	01:33	1.94	0.35	0.43
C9	CONDUIT	0.169	0	01:28	2.50	0.39	0.44
Pipe_-_(116)	CONDUIT	0.042	0	03:32	0.96	0.07	0.18
Pipe_-_(117)	CONDUIT	0.042	0	03:32	0.96	0.07	0.18
Pipe_-_(119)	CONDUIT	0.042	0	03:33	0.96	0.07	0.18
Pipe_-_(120)	CONDUIT	0.042	0	03:34	0.96	0.07	0.18
Pipe_-_(125)	CONDUIT	0.021	0	01:26	0.79	0.12	0.22
Pipe_-_(125)-S	CHANNEL	0.090	0	01:26	0.27	0.02	0.15
Pipe_-_(126)	CONDUIT	0.010	0	01:18	1.05	0.14	0.25
Pipe_-_(127)	CONDUIT	0.043	0	01:27	0.97	0.24	0.32
Pipe_-_(127)-S	CHANNEL	0.062	0	01:27	0.59	0.01	0.15
Pipe_-_(128)	CONDUIT	0.051	0	01:27	1.03	0.28	0.35
Pipe_-_(129)	CONDUIT	0.051	0	01:28	1.03	0.28	0.35
Pipe_-_(64)	CONDUIT	0.011	0	01:25	0.71	0.09	0.20
Pipe_-_(64)-S	CHANNEL	0.083	0	01:25	0.47	0.01	0.10
Pipe_-_(65)	CONDUIT	0.021	0	01:25	0.84	0.17	0.27
Pipe_-_(65)-S	CHANNEL	0.070	0	01:25	0.52	0.01	0.09
Pipe_-_(66)_(1)	CONDUIT	0.023	0	01:26	0.86	0.18	0.29
Pipe_-_(66)_(1)-S	CHANNEL	0.074	0	01:25	0.24	0.01	0.15
Pipe_-_(67)	CONDUIT	0.051	0	01:27	1.04	0.17	0.42
Pipe_-_(67)-S	CHANNEL	0.168	0	01:26	0.37	0.04	0.22
Pipe_-_(69)	CONDUIT	0.448	0	01:31	1.83	0.57	0.77
Pipe_-_(70)	CONDUIT	0.448	0	01:31	2.21	0.45	0.94
Pipe_-_(71)	CONDUIT	0.025	0	01:26	0.89	0.20	0.30
Pipe_-_(71)-S	CHANNEL	0.057	0	01:26	0.30	0.01	0.11
Pipe_-_(72)	CONDUIT	0.068	0	01:26	1.10	0.12	0.23
Pipe_-_(72)-S	CHANNEL	0.181	0	01:26	0.54	0.01	0.15
Pipe_-_(73)	CONDUIT	0.086	0	01:26	1.08	0.14	0.34
Pipe_-_(73)_(1)	CONDUIT	0.293	0	01:31	1.66	0.49	0.50
Pipe_-_(73)_(1)-S	CHANNEL	0.049	0	01:30	0.09	0.02	0.32
Pipe_-_(73)-S	CHANNEL	0.246	0	01:26	0.42	0.03	0.26
Pipe_-_(74)	CONDUIT	0.009	0	01:25	0.85	0.09	0.20
Pipe_-_(74)-S	CHANNEL	0.060	0	01:25	0.28	0.00	0.11
Pipe_-_(75)	CONDUIT	0.023	0	01:26	0.84	0.11	0.23
Pipe_-_(75)_(1)	CONDUIT	0.037	0	01:26	0.97	0.18	0.29
Pipe_-_(75)_(1)-S	CHANNEL	0.139	0	01:25	0.51	0.02	0.13
Pipe_-_(75)-S	CHANNEL	0.127	0	01:25	0.41	0.02	0.14
Pipe_-_(76)	CONDUIT	0.012	0	01:25	0.34	0.00	0.17
Pipe_-_(76)-S	CHANNEL	0.010	0	01:25	0.12	0.00	0.08
Pipe_-_(77)_1	CONDUIT	0.024	0	01:26	0.37	0.01	0.27
Pipe_-_(77)_2	CONDUIT	0.057	0	04:00	0.16	0.01	0.38
Pipe_-_(77)-S	CHANNEL	0.079	0	01:25	0.36	0.01	0.14
Pipe_-_(79)	CONDUIT	0.004	0	01:26	0.50	0.02	0.10
Pipe_-_(79)-S	CHANNEL	0.074	0	01:25	0.30	0.01	0.13
Pipe_-_(85)	CONDUIT	0.004	0	01:27	0.64	0.02	0.10
Pipe_-_(85)-S	CHANNEL	0.002	0	01:25	0.02	0.00	0.07
Pipe_-_(86)	CONDUIT	0.010	0	01:28	0.66	0.05	0.15
Pipe_-_(86)-S	CHANNEL	0.067	0	01:27	0.20	0.01	0.15
PUMP	PUMP	0.010	0	01:18		1.00	
OR2	ORIFICE	0.061	0	03:52			1.00
J-S7minor-IC	WEIR	0.098	0	01:27			0.22
CBMH12-IC	DUMMY	0.006	0	01:27			
J1_COM-IC	DUMMY	0.014	0	01:25			
J2_COM-IC	DUMMY	0.034	0	01:26			
J3_COM-IC	DUMMY	0.010	0	01:27			
J4_COM-IC	DUMMY	0.028	0	01:25			
J5_COM-IC	DUMMY	0.052	0	01:28			
J6_COM-IC	DUMMY	0.374	0	01:32			
J7_COM-IC	DUMMY	0.006	0	01:26			
J8_COM-IC	DUMMY	0.000	0	01:37			
MH10-IC	DUMMY	0.111	0	01:29			
MH11-IC	DUMMY	0.004	0	01:25			
MH13-IC	DUMMY	0.018	0	01:26			
MH14-IC	DUMMY	0.023	0	01:25			
MH17-IC	DUMMY	0.002	0	01:25			
MH18-IC	DUMMY	0.011	0	01:25			
MH19-IC	DUMMY	0.033	0	01:33			
MH1-IC	DUMMY	0.011	0	01:25			
MH21-IC	DUMMY	0.005	0	01:25			
MH22-IC	DUMMY	0.017	0	01:26			

MH23-IC	DUMMY	0.022	0	01:27
MH24-IC	DUMMY	0.008	0	01:28
MH2-IC	DUMMY	0.010	0	01:25
MH3-IC	DUMMY	0.005	0	01:26
MH4-IC	DUMMY	0.006	0	01:26
MH5-IC	DUMMY	0.009	0	01:25
MH6-IC	DUMMY	0.014	0	01:25
MH7-IC	DUMMY	0.015	0	01:25
MH8-IC	DUMMY	0.018	0	01:26
MH9-IC	DUMMY	0.221	0	01:31

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Flow Classification Summary
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	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
C1	1.00	0.00	0.88	0.00	0.12	0.00	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.84	0.00	0.15	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.05	0.94	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.66	0.34	0.00	0.00	0.62	0.00
C14	1.00	0.01	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C1-S	1.00	0.00	0.37	0.00	0.63	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.94	0.06	0.00	0.00	1.00	0.00
C4-S	1.00	0.00	0.00	0.00	0.18	0.82	0.00	0.00	0.95	0.00
C5	1.00	0.00	0.00	0.00	0.87	0.13	0.00	0.00	0.28	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.97	0.00	0.03	0.00	0.00	0.00	0.97	0.00
C8	1.00	0.00	0.00	0.00	0.84	0.15	0.00	0.00	0.52	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(117)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(119)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(120)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(125)-S	1.00	0.86	0.00	0.00	0.13	0.01	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)-S	1.00	0.84	0.05	0.00	0.09	0.01	0.00	0.00	0.99	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)-S	1.00	0.74	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(65)-S	1.00	0.88	0.00	0.00	0.01	0.11	0.00	0.00	0.01	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(66)_(1)-S	1.00	0.80	0.01	0.00	0.19	0.00	0.00	0.00	0.07	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.15	0.00	0.00	0.85	0.07	0.00
Pipe_-_(67)-S	1.00	0.85	0.00	0.00	0.14	0.01	0.00	0.00	0.02	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.22	0.00	0.00	0.78	0.02	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.26	0.00	0.00	0.74	0.02	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(71)-S	1.00	0.01	0.88	0.00	0.11	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(72)-S	1.00	0.00	0.01	0.00	0.87	0.13	0.00	0.00	0.86	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.11	0.00	0.00	0.89	0.08	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.19	0.00	0.00	0.81	0.09	0.00
Pipe_-_(73)_(1)-S	1.00	0.87	0.00	0.00	0.13	0.00	0.00	0.00	0.98	0.00
Pipe_-_(73)-S	1.00	0.76	0.00	0.00	0.21	0.03	0.00	0.00	0.05	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(74)-S	1.00	0.79	0.01	0.00	0.18	0.02	0.00	0.00	0.06	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)-S	1.00	0.00	0.87	0.00	0.12	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.84	0.00	0.00	0.15	0.00	0.00	0.00	0.98	0.00
Pipe_-_(76)	1.00	0.01	0.00	0.00	0.08	0.00	0.00	0.90	0.00	0.00
Pipe_-_(76)-S	1.00	0.83	0.02	0.00	0.15	0.00	0.00	0.00	1.00	0.00
Pipe_-_(77)_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.21	0.00
Pipe_-_(77)_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.93	0.00
Pipe_-_(77)-S	1.00	0.00	0.84	0.00	0.16	0.01	0.00	0.00	0.99	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(79)-S	1.00	0.78	0.01	0.00	0.19	0.03	0.00	0.00	0.05	0.00
Pipe_-_(85)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(85)-S	1.00	0.67	0.18	0.00	0.15	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.03	0.00	0.00	0.97	0.02	0.00
Pipe_-_(86)-S	1.00	0.67	0.00	0.00	0.30	0.02	0.00	0.00	0.05	0.00

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.39	0.01	0.01	0.01

****
Pumping Summary
****

Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve: Low	% Time Off Pump Curve: High
PUMP	55.86	1	0.00	0.01	0.01	1.105	5.36	0.0	0.0

Analysis begun on: Tue Nov 10 11:12:35 2020
Analysis ended on: Tue Nov 10 11:12:40 2020

Proposed - Chicago 4h 25year Storm

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
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  WARNING 03: negative offset ignored for Link C12
  WARNING 03: negative offset ignored for Link C4-S
  WARNING 03: negative offset ignored for Link Pipe_-_(70)
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
  WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
  WARNING 02: maximum depth increased for Node J-S7minor

  *************
  Element Count
  *************
  Number of rain gages ...... 9
  Number of subcatchments ... 30
  Number of nodes ........... 74
  Number of links ........... 101
  Number of pollutants ...... 0
  Number of land uses ....... 0


  ****************
  Raingage Summary
  ****************
                                                  Data       Recording
  Name                 Data Source                Type       Interval
  ----------------------------------------------------------------------
  25mm                 25mm                       INTENSITY   10 min.
  Chicago_24h_100yr    Chicago_24h_100yr_COM      INTENSITY    5 min.
  Chicago_24h_2yr      Chicago_24h_2yr_COM        INTENSITY    5 min.
  Chicago_4h_100year_COM Chicago_4h_100year_COM      INTENSITY    5 min.
  Chicago_4h_10year_COM Chicago_4h_10year_COM      INTENSITY    5 min.
  Chicago_4h_25year_COM Chicago_4h_25year_COM      INTENSITY    5 min.
  Chicago_4h_2yr_COM   Chicago_4h_2yr_COM         INTENSITY    5 min.
  Chicago_4h_50year_COM Chicago_4h_50year_COM      INTENSITY    5 min.
  Chicago_4h_5year_COM Chicago_4h_5year_COM        INTENSITY    5 min.


  ********************
  Subcatchment Summary
  ********************
  Name                         Area     Width   %Imperv    %Slope Rain Gage            Outlet
  ------------------------------------------------------------------------------------------------
  Ext.1_1                      2.51    100.40      3.00    1.0000 Chicago_4h_25year_COM J-S7minor
  Ext.1_2                      0.37     46.75     75.00    1.0000 Chicago_4h_25year_COM EX_STM_MH4-S
  Ext.2                        6.47    258.62      0.00    0.5000 Chicago_4h_25year_COM MH_C1
  Ext.4                        8.59    818.53      7.00    1.5000 Chicago_4h_25year_COM J9_COM
  Ext.5                        1.49     99.55     20.00    1.5000 Chicago_4h_25year_COM EX_STM_MH-5-S
  S1                           0.16     16.10     10.00    0.5000 Chicago_4h_25year_COM MH11-S
  S10                          0.20     42.08     65.00    0.5000 Chicago_4h_25year_COM MH6-S
  S11                          0.12     38.25     65.00    0.5000 Chicago_4h_25year_COM MH13-S
  S12                          0.16     37.93     65.00    0.5000 Chicago_4h_25year_COM MH13-S
  S13                          0.06     35.94     65.00    0.5000 Chicago_4h_25year_COM MH10-S
  S14                          0.29     41.87     65.00    0.5000 Chicago_4h_25year_COM MH21-S
  S15                          0.14     29.73     65.00    0.5000 Chicago_4h_25year_COM MH22-S
  S16                          0.09     17.51     65.00    0.5000 Chicago_4h_25year_COM MH24-S
  S17                          0.79     78.53     25.00    0.5000 Chicago_4h_25year_COM MH18-S
  S18                          0.11     10.70     25.00    0.5000 Chicago_4h_25year_COM MH17-S
  S2                           0.39     22.67     65.00    0.5000 Chicago_4h_25year_COM CBMH12-S
  S3                           0.11     40.00     10.00    1.5000 Chicago_4h_25year_COM MH5-S
  S4                           0.12     64.00     50.00    1.5000 Chicago_4h_25year_COM MH6-S
  S5                           0.34     39.91     65.00    0.5000 Chicago_4h_25year_COM MH1-S
  S6                           0.25     21.45     65.00    0.5000 Chicago_4h_25year_COM MH5-S
  S6_ROW1                      0.50    135.26     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH1-S
  S6_ROW2                      0.36     36.43     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH2-S
  S6_ROW3                      0.37     36.57     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH3-S
  S6_ROW4                      0.36     36.03     70.00    1.8000 Chicago_4h_25year_COM EX_STM_MH4-S
  S6_ROW5                      0.37     37.28     70.00    1.8000 Chicago_4h_25year_COM EX_MH1-S
  S6_ROW6                      0.42     84.54     25.00    1.0000 Chicago_4h_25year_COM EX_STM_MH-5-S
  S6_ROW7                      0.45     89.84     25.00    1.0000 Chicago_4h_25year_COM EX_STM_MH6-S
  S7                           0.33     82.08     25.00    0.5000 Chicago_4h_25year_COM MH7-S
  S8                           0.42     33.23     65.00    0.5000 Chicago_4h_25year_COM MH8-S
  S9                           0.39     39.12     65.00    0.5000 Chicago_4h_25year_COM MH14-S


  ************
  Node Summary
  ************
                                        Invert      Max.    Ponded    External
  Name                 Type              Elev.     Depth      Area    Inflow
  ------------------------------------------------------------------------
  CBMH12               JUNCTION         187.61      3.19       0.0
  CBMH12-S             JUNCTION         190.80      0.30       0.0
  Dummy                JUNCTION         189.90      0.30       0.0
  EX_MH1               JUNCTION         185.47      3.17       0.0
  EX_MH1-S             JUNCTION         188.64      0.30       0.0
  EX_STM_MH1           JUNCTION         191.70      2.25       0.0
  EX_STM_MH1-S         JUNCTION         193.95      0.30       0.0
  EX_STM_MH2           JUNCTION         191.00      2.00       0.0
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EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0
EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.30	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.52	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.17	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH16	JUNCTION	188.50	2.05	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.83	0.0
MH19-S	JUNCTION	189.63	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	1.43	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	4.4665	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140
C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130
C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140

C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130
C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	MH16	MH17	CONDUIT	13.0	1.5386	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.5366	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
PUMP	STM_TANK	MH16	TYPE4 PUMP			
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

****
Cross Section Summary
****

	Full	Full	Hyd.	Max.	No. of	Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	22.19
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.07
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.20
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	RECT_CLOSED	1.20	2.16	0.36	1.80	1	3.59
Pipe_-_(77)_2	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.58
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.69
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

****
Transect Summary
****

Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761
0.7046	0.7341	0.7644	0.7955	0.8275
0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

0.0147	0.0293	0.0440	0.0587	0.0733
0.1026	0.1317	0.1608	0.1898	0.2188
0.2477	0.2766	0.3053	0.3341	0.3627
0.3913	0.4198	0.4483	0.4767	0.5051
0.5334	0.5616	0.5898	0.6179	0.6459
0.6735	0.6991	0.7228	0.7447	0.7651
0.7841	0.8017	0.8182	0.8337	0.8482
0.8618	0.8747	0.8869	0.8985	0.9095
0.9200	0.9301	0.9398	0.9492	0.9582
0.9670	0.9755	0.9839	0.9920	1.0000

Width:

0.0846	0.1692	0.2538	0.3385	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4462	0.4692	0.4923	0.5154	0.5385
0.5615	0.5846	0.6077	0.6308	0.6538
0.6769	0.7000	0.7231	0.7462	0.7692
0.7923	0.8154	0.8385	0.8615	0.8846
0.9077	0.9308	0.9538	0.9769	1.0000

Transect full-7m

Area:

0.0006	0.0024	0.0054	0.0097	0.0151
0.0217	0.0296	0.0387	0.0489	0.0604
0.0731	0.0869	0.1010	0.1151	0.1292
0.1433	0.1574	0.1715	0.1856	0.1997
0.2138	0.2279	0.2419	0.2560	0.2701
0.2848	0.3007	0.3179	0.3362	0.3557
0.3764	0.3984	0.4215	0.4459	0.4715
0.4983	0.5262	0.5554	0.5858	0.6174
0.6503	0.6843	0.7195	0.7560	0.7936
0.8325	0.8726	0.9138	0.9563	1.0000

Hrad:

0.0182	0.0364	0.0546	0.0728	0.0910
0.1092	0.1274	0.1456	0.1638	0.1820
0.2002	0.2243	0.2602	0.2960	0.3317
0.3673	0.4028	0.4381	0.4733	0.5084
0.5434	0.5783	0.6131	0.6477	0.6822
0.7157	0.7452	0.7713	0.7942	0.8145
0.8325	0.8484	0.8626	0.8754	0.8869
0.8974	0.9070	0.9160	0.9243	0.9322
0.9397	0.9469	0.9539	0.9607	0.9673
0.9739	0.9805	0.9870	0.9935	1.0000

Width:

0.0273	0.0545	0.0818	0.1091	0.1364
0.1636	0.1909	0.2182	0.2455	0.2727
0.3000	0.3182	0.3182	0.3182	0.3182
0.3182	0.3182	0.3182	0.3182	0.3182
0.3182	0.3182	0.3182	0.3182	0.3182
0.3455	0.3727	0.4000	0.4273	0.4545
0.4818	0.5091	0.5364	0.5636	0.5909
0.6182	0.6455	0.6727	0.7000	0.7273
0.7545	0.7818	0.8091	0.8364	0.8636
0.8909	0.9182	0.9455	0.9727	1.0000

Transect full-8.5m

Area:

0.0021	0.0086	0.0192	0.0333	0.0475
0.0618	0.0760	0.0903	0.1046	0.1188
0.1331	0.1473	0.1616	0.1758	0.1901
0.2044	0.2186	0.2329	0.2471	0.2614
0.2757	0.2899	0.3042	0.3184	0.3327
0.3474	0.3632	0.3799	0.3977	0.4164
0.4361	0.4569	0.4786	0.5013	0.5250
0.5497	0.5754	0.6021	0.6298	0.6585
0.6881	0.7188	0.7505	0.7831	0.8168
0.8515	0.8871	0.9237	0.9614	1.0000

Hrad:

0.0157	0.0314	0.0470	0.0731	0.1043
0.1354	0.1664	0.1974	0.2282	0.2590
0.2897	0.3202	0.3508	0.3812	0.4115
0.4418	0.4720	0.5021	0.5321	0.5620
0.5918	0.6216	0.6513	0.6809	0.7104
0.7394	0.7655	0.7890	0.8102	0.8293
0.8465	0.8620	0.8760	0.8886	0.9000
0.9104	0.9199	0.9286	0.9366	0.9440
0.9509	0.9574	0.9635	0.9693	0.9748
0.9801	0.9853	0.9903	0.9952	1.0000

Width:

0.1093	0.2186	0.3280	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3898	0.4153	0.4407	0.4661	0.4915
0.5169	0.5424	0.5678	0.5932	0.6186
0.6441	0.6695	0.6949	0.7203	0.7458

```
            0.7712     0.7966     0.8220     0.8475     0.8729
            0.8983     0.9237     0.9492     0.9746     1.0000

***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

***************
Analysis Options
***************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 05/02/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
Dry Time Step ............ 00:01:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m


**************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
**************************     ---------       -------
Total Precipitation ......         1.699        63.609
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         0.992        37.151
Surface Runoff ...........         0.674        25.235
Final Storage ............         0.033         1.238
Continuity Error (%) .....        -0.024


**************************        Volume        Volume
Flow Routing Continuity        hectare-m      10^6 ltr
**************************     ---------      ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         0.674         6.740
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         0.674         6.737
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.003
Continuity Error (%) .....        -0.009


************************
Highest Continuity Errors
************************
Node MH19-S (1.68%)


***************************
Time-Step Critical Elements
***************************
Link Pipe_-_(70) (7.49%)
Link Pipe_-_(72) (1.94%)
Link Pipe_-_(69) (1.92%)


*******************************
Highest Flow Instability Indexes
*******************************
Link Pipe_-_(70) (5)
Link Pipe_-_(69) (5)
Link C1-S7 (1)


************************
Routing Time Step Summary
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****
Minimum Time Step : 0.51 sec
Average Time Step : 4.73 sec
Maximum Time Step : 5.00 sec
Percent in Steady State : 0.00
Average Iterations per Step : 2.03
Percent Not Converging : 0.01

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Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	63.61	0.00	0.00	46.28	1.80	14.21	16.01	0.40	0.04	0.252
Ext.1_2	63.61	0.00	0.00	10.58	47.19	5.01	52.20	0.20	0.15	0.821
Ext.2	63.61	0.00	0.00	49.15	0.00	13.20	13.20	0.85	0.06	0.207
Ext.4	63.61	0.00	0.00	41.30	4.20	16.69	20.89	1.79	0.35	0.328
Ext.5	63.61	0.00	0.00	35.92	12.59	13.96	26.55	0.40	0.17	0.417
S1	63.61	0.00	0.00	41.01	6.30	15.11	21.40	0.03	0.01	0.336
S10	63.61	0.00	0.00	14.86	40.90	6.96	47.87	0.09	0.07	0.752
S11	63.61	0.00	0.00	14.74	40.91	7.08	47.99	0.06	0.04	0.754
S12	63.61	0.00	0.00	14.81	40.91	7.01	47.92	0.07	0.06	0.753
S13	63.61	0.00	0.00	14.59	40.93	7.24	48.17	0.03	0.02	0.757
S14	63.61	0.00	0.00	15.01	40.89	6.81	47.70	0.14	0.10	0.750
S15	63.61	0.00	0.00	14.86	40.90	6.97	47.87	0.07	0.05	0.753
S16	63.61	0.00	0.00	14.91	40.90	6.91	47.81	0.04	0.03	0.752
S17	63.61	0.00	0.00	33.84	15.73	12.94	28.67	0.23	0.11	0.451
S18	63.61	0.00	0.00	33.84	15.73	12.94	28.67	0.03	0.01	0.451
S2	63.61	0.00	0.00	15.59	40.88	6.24	47.12	0.18	0.11	0.741
S3	63.61	0.00	0.00	38.11	6.29	18.02	24.31	0.03	0.01	0.382
S4	63.61	0.00	0.00	18.12	31.49	13.06	44.55	0.05	0.04	0.700
S5	63.61	0.00	0.00	15.12	40.89	6.70	47.59	0.16	0.11	0.748
S6	63.61	0.00	0.00	15.31	40.89	6.52	47.40	0.12	0.08	0.745
S6_ROW1	63.61	0.00	0.00	12.51	44.07	6.20	50.27	0.25	0.20	0.790
S6_ROW2	63.61	0.00	0.00	12.73	44.04	5.98	50.02	0.18	0.14	0.786
S6_ROW3	63.61	0.00	0.00	12.73	44.04	5.98	50.02	0.18	0.14	0.786
S6_ROW4	63.61	0.00	0.00	12.73	44.04	5.98	50.02	0.18	0.13	0.786
S6_ROW5	63.61	0.00	0.00	12.73	44.04	5.98	50.02	0.19	0.14	0.786
S6_ROW6	63.61	0.00	0.00	28.14	15.74	18.62	34.37	0.15	0.06	0.540
S6_ROW7	63.61	0.00	0.00	28.14	15.74	18.62	34.37	0.15	0.07	0.540
S7	63.61	0.00	0.00	32.42	15.74	14.35	30.09	0.10	0.05	0.473
S8	63.61	0.00	0.00	15.36	40.88	6.47	47.35	0.20	0.13	0.744
S9	63.61	0.00	0.00	15.22	40.89	6.61	47.50	0.19	0.12	0.747

****
Node Depth Summary
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Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days	hr:min	Reported Max Depth Meters
CBMH12	JUNCTION	0.01	0.11	187.71	0	04:30	0.11
CBMH12-S	JUNCTION	0.00	0.04	190.84	0	01:27	0.04
Dummy	JUNCTION	0.00	0.00	189.90	0	00:00	0.00
EX_MH1	JUNCTION	0.06	0.41	185.88	0	01:28	0.41
EX_MH1-S	JUNCTION	0.00	0.06	188.70	0	01:28	0.06
EX_STM_MH1	JUNCTION	0.00	0.08	191.78	0	01:26	0.08
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0	01:25	0.04
EX_STM_MH2	JUNCTION	0.01	0.15	191.15	0	01:27	0.15
EX_STM_MH2-S	JUNCTION	0.00	0.05	193.05	0	01:26	0.05
EX_STM_MH3	JUNCTION	0.01	0.13	190.22	0	01:27	0.13
EX_STM_MH3-S	JUNCTION	0.00	0.04	192.54	0	01:26	0.04
EX_STM_MH4	JUNCTION	0.01	0.22	187.83	0	01:27	0.22
EX_STM_MH4-S	JUNCTION	0.00	0.05	190.86	0	01:25	0.05
EX_STM_MH5	JUNCTION	0.06	0.65	185.42	0	01:32	0.65
EX_STM_MH-5-S	JUNCTION	0.02	0.15	187.45	0	01:32	0.15
EX_STM_MH6	JUNCTION	0.06	0.52	184.55	0	01:32	0.52
EX_STM_MH6-S	JUNCTION	0.00	0.03	187.63	0	01:26	0.03
EX_STM_MH7	JUNCTION	0.06	0.52	183.92	0	01:33	0.52
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0	01:39	0.00
EX-MH20	JUNCTION	0.05	0.32	186.55	0	01:28	0.32
EX-MH20-S	JUNCTION	0.00	0.05	189.80	0	01:27	0.05
J-S1	JUNCTION	0.05	0.36	185.75	0	01:29	0.36
J-S7	JUNCTION	0.01	0.22	189.62	0	01:27	0.22
J-S7minor	JUNCTION	0.03	0.82	192.37	0	01:25	0.82
MH_C1	JUNCTION	0.02	0.15	188.75	0	03:05	0.15
MH_C2	JUNCTION	0.02	0.15	188.22	0	03:05	0.15
MH_C3	JUNCTION	0.02	0.15	188.07	0	03:06	0.15
MH_C4	JUNCTION	0.02	0.20	187.69	0	03:55	0.20
MH1	JUNCTION	0.00	0.08	188.63	0	01:25	0.08
MH10	JUNCTION	0.14	0.81	187.71	0	04:30	0.81
MH10-S	JUNCTION	0.00	0.09	190.71	0	01:29	0.09

MH11	JUNCTION	0.00	0.04	188.61	0	01:27	0.04
MH11-S	JUNCTION	0.00	0.01	191.58	0	01:25	0.01
MH13	JUNCTION	0.04	0.39	187.71	0	04:31	0.39
MH13-S	JUNCTION	0.00	0.06	190.76	0	01:26	0.06
MH14	JUNCTION	0.01	0.11	187.91	0	01:26	0.11
MH14-S	JUNCTION	0.00	0.04	191.01	0	01:25	0.04
MH15	JUNCTION	0.18	0.94	187.71	0	04:30	0.94
MH16	JUNCTION	0.03	0.06	188.56	0	01:14	0.06
MH17	JUNCTION	0.04	0.53	187.69	0	03:54	0.53
MH17-S	JUNCTION	0.00	0.01	190.36	0	01:25	0.01
MH18	JUNCTION	0.05	0.62	187.69	0	03:54	0.62
MH18-S	JUNCTION	0.00	0.04	190.25	0	01:25	0.04
MH19	JUNCTION	0.12	0.89	187.69	0	03:55	0.89
MH19-S	JUNCTION	0.01	0.07	189.70	0	01:32	0.07
MH1-S	JUNCTION	0.00	0.03	192.11	0	01:25	0.03
MH2	JUNCTION	0.01	0.11	188.52	0	01:25	0.11
MH21	JUNCTION	0.00	0.05	186.64	0	01:26	0.05
MH21-S	JUNCTION	0.00	0.03	190.60	0	01:25	0.03
MH22	JUNCTION	0.01	0.11	186.33	0	01:26	0.11
MH22-S	JUNCTION	0.00	0.05	189.48	0	01:25	0.05
MH23	JUNCTION	0.01	0.15	186.18	0	01:27	0.15
MH23-S	JUNCTION	0.00	0.05	189.45	0	01:27	0.05
MH24	JUNCTION	0.01	0.17	186.03	0	01:27	0.17
MH24-S	JUNCTION	0.00	0.05	189.05	0	01:27	0.05
MH25	JUNCTION	0.01	0.17	185.92	0	01:28	0.17
MH2-S	JUNCTION	0.00	0.03	191.98	0	01:25	0.03
MH3	JUNCTION	0.01	0.12	188.20	0	01:26	0.12
MH3-S	JUNCTION	0.00	0.03	191.35	0	01:26	0.03
MH4	JUNCTION	0.01	0.16	187.75	0	01:26	0.16
MH4-S	JUNCTION	0.00	0.04	190.97	0	01:26	0.04
MH5	JUNCTION	0.00	0.06	188.80	0	01:25	0.06
MH5-S	JUNCTION	0.00	0.03	191.78	0	01:25	0.03
MH6	JUNCTION	0.01	0.11	188.39	0	01:25	0.11
MH6-S	JUNCTION	0.00	0.05	191.37	0	01:25	0.05
MH7	JUNCTION	0.01	0.14	188.13	0	01:26	0.14
MH7-S	JUNCTION	0.00	0.05	191.16	0	01:25	0.05
MH8	JUNCTION	0.02	0.19	187.71	0	04:31	0.19
MH8-S	JUNCTION	0.00	0.06	190.88	0	01:26	0.06
MH9	JUNCTION	0.06	0.45	187.71	0	04:30	0.45
MH9-S	JUNCTION	0.00	0.12	190.71	0	01:30	0.12
TEE1	JUNCTION	0.06	0.70	187.69	0	03:55	0.70
J9_COM	OUTFALL	0.05	0.47	183.57	0	01:33	0.47
STM_TANK	STORAGE	0.51	1.71	187.71	0	04:29	1.71

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Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.011	0	01:27	0	0.0709	-0.047	
CBMH12-S	JUNCTION	0.107	0.110	0	01:25	0.182	0.187	-0.052	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.376	0	01:28	0	3.63	-0.001	
EX_MH1-S	JUNCTION	0.139	0.505	0	01:26	0.186	0.747	-0.172	
EX_STM_MH1	JUNCTION	0.000	0.016	0	01:25	0	0.0299	-0.007	
EX_STM_MH1-S	JUNCTION	0.196	0.196	0	01:25	0.251	0.251	-0.261	
EX_STM_MH2	JUNCTION	0.000	0.055	0	01:26	0	0.13	-0.005	
EX_STM_MH2-S	JUNCTION	0.136	0.310	0	01:25	0.182	0.404	0.190	
EX_STM_MH3	JUNCTION	0.000	0.063	0	01:27	0	0.145	-0.020	
EX_STM_MH3-S	JUNCTION	0.136	0.313	0	01:25	0.183	0.487	0.056	
EX_STM_MH4	JUNCTION	0.000	0.227	0	01:27	0	0.904	-0.016	
EX_STM_MH4-S	JUNCTION	0.281	0.408	0	01:25	0.375	0.559	-0.098	
EX_STM_MH5	JUNCTION	0.000	0.808	0	01:30	0	4.91	0.000	
EX_STM_MH-5-S	JUNCTION	0.229	0.569	0	01:28	0.542	1.28	0.351	
EX_STM_MH6	JUNCTION	0.000	0.804	0	01:32	0	4.94	-0.002	
EX_STM_MH6-S	JUNCTION	0.066	0.066	0	01:25	0.154	0.154	-0.110	
EX_STM_MH7	JUNCTION	0.000	0.804	0	01:33	0	4.94	-0.000	
EX_STM_MH7-S	JUNCTION	0.000	0.001	0	01:30	0	0.000914	5.246	
EX-MH20	JUNCTION	0.000	0.260	0	01:28	0	3.33	0.004	
EX-MH20-S	JUNCTION	0.000	0.349	0	01:26	0	0.49	0.048	
J-S1	JUNCTION	0.000	0.376	0	01:28	0	3.63	0.000	
J-S7	JUNCTION	0.000	0.197	0	01:27	0	0.834	0.009	
J-S7minor	JUNCTION	0.043	0.141	0	01:25	0.402	0.689	-0.008	
MH_C1	JUNCTION	0.062	0.062	0	03:05	0.853	0.853	-0.000	
MH_C2	JUNCTION	0.000	0.062	0	03:05	0	0.853	-0.000	
MH_C3	JUNCTION	0.000	0.062	0	03:06	0	0.853	0.041	
MH_C4	JUNCTION	0.000	0.062	0	03:06	0	0.853	-0.010	
MH1	JUNCTION	0.000	0.013	0	01:25	0	0.0347	0.014	
MH10	JUNCTION	0.000	0.542	0	01:30	0	1.31	-0.137	
MH10-S	JUNCTION	0.021	0.222	0	01:27	0.0277	0.302	-0.038	
MH11	JUNCTION	0.000	0.004	0	01:25	0	0.0288	0.224	
MH11-S	JUNCTION	0.009	0.009	0	01:25	0.034	0.034	0.158	
MH13	JUNCTION	0.000	0.055	0	01:26	0	0.264	0.142	
MH13-S	JUNCTION	0.100	0.255	0	01:25	0.134	0.366	-0.021	

MH14	JUNCTION	0.000	0.025	0	01:25	0	0.0987	0.181
MH14-S	JUNCTION	0.125	0.125	0	01:25	0.186	0.186	-0.222
MH15	JUNCTION	0.000	0.542	0	01:30	0	1.32	0.008
MH16	JUNCTION	0.000	0.010	0	01:14	0	1.31	-0.000
MH17	JUNCTION	0.000	0.012	0	01:25	0	1.33	0.003
MH17-S	JUNCTION	0.015	0.015	0	01:25	0.0307	0.0307	-0.121
MH18	JUNCTION	0.000	0.025	0	01:25	0	1.41	-0.001
MH18-S	JUNCTION	0.108	0.120	0	01:25	0.225	0.242	-0.591
MH19	JUNCTION	0.000	0.089	0	03:41	0	2.42	-0.002
MH19-S	JUNCTION	0.000	0.095	0	01:25	0	0.162	1.711
MH1-S	JUNCTION	0.111	0.111	0	01:25	0.161	0.161	-0.051
MH2	JUNCTION	0.000	0.023	0	01:25	0	0.0769	-0.001
MH21	JUNCTION	0.000	0.005	0	01:25	0	0.0252	0.016
MH21-S	JUNCTION	0.098	0.098	0	01:25	0.138	0.138	-0.196
MH22	JUNCTION	0.000	0.022	0	01:26	0	0.105	0.002
MH22-S	JUNCTION	0.048	0.135	0	01:25	0.0659	0.178	0.010
MH23	JUNCTION	0.000	0.046	0	01:26	0	0.15	-0.000
MH23-S	JUNCTION	0.000	0.108	0	01:26	0	0.0987	0.268
MH24	JUNCTION	0.000	0.055	0	01:27	0	0.177	0.002
MH24-S	JUNCTION	0.033	0.098	0	01:27	0.0447	0.0978	-0.141
MH25	JUNCTION	0.000	0.055	0	01:27	0	0.177	0.020
MH2-S	JUNCTION	0.000	0.097	0	01:25	0	0.126	-0.184
MH3	JUNCTION	0.000	0.028	0	01:25	0	0.094	-0.001
MH3-S	JUNCTION	0.000	0.085	0	01:25	0	0.0844	0.216
MH4	JUNCTION	0.000	0.075	0	01:26	0	0.295	0.014
MH4-S	JUNCTION	0.000	0.237	0	01:26	0	0.269	0.105
MH5	JUNCTION	0.000	0.009	0	01:25	0	0.0477	0.024
MH5-S	JUNCTION	0.084	0.084	0	01:25	0.145	0.145	-0.046
MH6	JUNCTION	0.000	0.025	0	01:25	0	0.117	-0.000
MH6-S	JUNCTION	0.106	0.178	0	01:25	0.148	0.245	-0.101
MH7	JUNCTION	0.000	0.040	0	01:25	0	0.19	0.000
MH7-S	JUNCTION	0.046	0.197	0	01:25	0.0988	0.275	0.042
MH8	JUNCTION	0.000	0.094	0	01:26	0	0.384	0.249
MH8-S	JUNCTION	0.126	0.325	0	01:26	0.197	0.454	-0.121
MH9	JUNCTION	0.000	0.341	0	01:30	0	0.861	0.095
MH9-S	JUNCTION	0.000	0.311	0	01:25	0	0.479	0.191
TEE1	JUNCTION	0.000	0.085	0	03:39	0	2.26	-0.010
J9_COM	OUTFALL	0.351	1.004	0	01:34	1.79	6.74	0.000
STM_TANK	STORAGE	0.000	0.542	0	01:30	0	1.31	-0.134

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Node Surcharge Summary
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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
MH10	JUNCTION	2.65	0.064	2.905
MH15	JUNCTION	4.51	0.129	2.965
STM_TANK	STORAGE	7.68	0.255	2.785

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	0.330	11	0	0	1.115	38	0 04:29	0.044

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	68.98	0.070	1.004	6.737
System	68.98	0.070	1.004	6.737

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.063	0	01:27	1.10	0.18	0.39
C10	CHANNEL	0.086	0	01:27	0.55	0.01	0.19
C11	CHANNEL	0.337	0	01:27	0.84	0.02	0.17
C12	CHANNEL	0.000	0	00:00	0.00	0.00	0.08
C13	CONDUIT	0.375	0	01:29	1.40	0.46	0.66
C14	CHANNEL	0.000	0	00:00	0.00	0.00	0.11
C17	CONDUIT	0.259	0	01:28	1.99	0.60	0.58
C1-S	CHANNEL	0.165	0	01:26	0.54	0.01	0.14
C1-S7	CONDUIT	0.136	0	01:25	2.46	0.43	0.73
C2	CONDUIT	0.014	0	01:26	0.72	0.07	0.17
C2-S	CHANNEL	0.174	0	01:25	0.52	0.02	0.16
C3	CONDUIT	0.051	0	01:27	1.14	0.23	0.33
C3-S	CHANNEL	0.203	0	01:26	0.61	0.03	0.15
C4	CONDUIT	0.227	0	01:27	2.09	0.37	0.51
C4-S	CHANNEL	0.349	0	01:26	0.96	0.03	0.16
C5	CONDUIT	0.376	0	01:28	1.66	0.46	0.51
C5-S	CHANNEL	0.421	0	01:28	0.50	0.04	0.33
C6	CONDUIT	0.797	0	01:32	2.11	0.95	0.80
C6-S	CHANNEL	0.029	0	01:26	0.05	0.01	0.29
C7	CONDUIT	0.803	0	01:33	1.95	0.44	0.48
C7-S	CHANNEL	0.001	0	01:30	0.02	0.00	0.05
C8	CONDUIT	0.804	0	01:33	2.02	0.41	0.47
C9	CONDUIT	0.196	0	01:28	2.60	0.45	0.48
Pipe_-_(116)	CONDUIT	0.062	0	03:05	1.07	0.10	0.22
Pipe_-_(117)	CONDUIT	0.062	0	03:06	1.07	0.10	0.22
Pipe_-_(119)	CONDUIT	0.062	0	03:06	1.07	0.10	0.23
Pipe_-_(120)	CONDUIT	0.062	0	03:17	1.05	0.11	0.41
Pipe_-_(125)	CONDUIT	0.022	0	01:26	0.81	0.12	0.23
Pipe_-_(125)-S	CHANNEL	0.108	0	01:26	0.29	0.03	0.17
Pipe_-_(126)	CONDUIT	0.010	0	01:14	1.05	0.14	0.25
Pipe_-_(127)	CONDUIT	0.046	0	01:27	0.99	0.26	0.33
Pipe_-_(127)-S	CHANNEL	0.078	0	01:27	0.62	0.01	0.17
Pipe_-_(128)	CONDUIT	0.055	0	01:27	1.05	0.30	0.36
Pipe_-_(129)	CONDUIT	0.055	0	01:27	1.03	0.30	0.40
Pipe_-_(64)	CONDUIT	0.013	0	01:25	0.74	0.10	0.22
Pipe_-_(64)-S	CHANNEL	0.097	0	01:25	0.50	0.01	0.11
Pipe_-_(65)	CONDUIT	0.023	0	01:25	0.86	0.18	0.29
Pipe_-_(65)-S	CHANNEL	0.085	0	01:25	0.53	0.01	0.10
Pipe_-_(66)_(1)	CONDUIT	0.025	0	01:26	0.88	0.20	0.36
Pipe_-_(66)_(1)-S	CHANNEL	0.091	0	01:25	0.25	0.01	0.16
Pipe_-_(67)	CONDUIT	0.055	0	01:27	1.06	0.18	0.87
Pipe_-_(67)-S	CHANNEL	0.203	0	01:26	0.40	0.04	0.25
Pipe_-_(69)	CONDUIT	0.542	0	01:30	1.93	0.69	1.00
Pipe_-_(70)	CONDUIT	0.542	0	01:30	2.31	0.54	1.00
Pipe_-_(71)	CONDUIT	0.027	0	01:26	0.91	0.22	0.32
Pipe_-_(71)-S	CHANNEL	0.069	0	01:26	0.31	0.01	0.12
Pipe_-_(72)	CONDUIT	0.075	0	01:26	1.13	0.13	0.24
Pipe_-_(72)-S	CHANNEL	0.223	0	01:26	0.58	0.02	0.17
Pipe_-_(73)	CONDUIT	0.094	0	01:26	1.08	0.16	0.45
Pipe_-_(73)_(1)	CONDUIT	0.342	0	01:30	1.67	0.57	0.83
Pipe_-_(73)_(1)-S	CHANNEL	0.045	0	01:33	0.09	0.02	0.36
Pipe_-_(73)-S	CHANNEL	0.303	0	01:26	0.44	0.04	0.29
Pipe_-_(74)	CONDUIT	0.009	0	01:25	0.87	0.10	0.21
Pipe_-_(74)-S	CHANNEL	0.072	0	01:25	0.30	0.01	0.12
Pipe_-_(75)	CONDUIT	0.024	0	01:26	0.86	0.12	0.23
Pipe_-_(75)_(1)	CONDUIT	0.040	0	01:26	0.99	0.20	0.30
Pipe_-_(75)_(1)-S	CHANNEL	0.171	0	01:25	0.55	0.02	0.15
Pipe_-_(75)-S	CHANNEL	0.153	0	01:25	0.44	0.02	0.15
Pipe_-_(76)	CONDUIT	0.013	0	04:21	0.34	0.00	0.45
Pipe_-_(76)-S	CHANNEL	0.012	0	01:25	0.12	0.00	0.09
Pipe_-_(77)_1	CONDUIT	0.025	0	04:21	0.38	0.01	0.55
Pipe_-_(77)_2	CONDUIT	0.082	0	03:44	0.17	0.02	0.66
Pipe_-_(77)-S	CHANNEL	0.095	0	01:25	0.37	0.01	0.16
Pipe_-_(79)	CONDUIT	0.005	0	01:26	0.51	0.03	0.11
Pipe_-_(79)-S	CHANNEL	0.087	0	01:25	0.31	0.01	0.14
Pipe_-_(85)	CONDUIT	0.004	0	01:27	0.66	0.02	0.10
Pipe_-_(85)-S	CHANNEL	0.002	0	01:25	0.02	0.00	0.08
Pipe_-_(86)	CONDUIT	0.011	0	01:27	0.67	0.05	0.47
Pipe_-_(86)-S	CHANNEL	0.081	0	01:27	0.21	0.02	0.17
PUMP	PUMP	0.010	0	01:14		1.00	
OR2	ORIFICE	0.080	0	03:55			1.00
J-S7minor-IC	WEIR	0.111	0	01:26			0.24
CBMH12-IC	DUMMY	0.007	0	01:27			
J1_COM-IC	DUMMY	0.016	0	01:25			
J2_COM-IC	DUMMY	0.041	0	01:26			
J3_COM-IC	DUMMY	0.012	0	01:26			
J4_COM-IC	DUMMY	0.034	0	01:25			
J5_COM-IC	DUMMY	0.064	0	01:28			
J6_COM-IC	DUMMY	0.453	0	01:32			
J7_COM-IC	DUMMY	0.007	0	01:26			
J8_COM-IC	DUMMY	0.000	0	01:39			
MH10-IC	DUMMY	0.151	0	01:29			

MH11-IC	DUMMY	0.004	0	01:25
MH13-IC	DUMMY	0.020	0	01:26
MH14-IC	DUMMY	0.025	0	01:25
MH17-IC	DUMMY	0.002	0	01:25
MH18-IC	DUMMY	0.012	0	01:25
MH19-IC	DUMMY	0.042	0	01:32
MH1-IC	DUMMY	0.013	0	01:25
MH21-IC	DUMMY	0.005	0	01:25
MH22-IC	DUMMY	0.018	0	01:25
MH23-IC	DUMMY	0.024	0	01:27
MH24-IC	DUMMY	0.009	0	01:27
MH2-IC	DUMMY	0.010	0	01:25
MH3-IC	DUMMY	0.005	0	01:26
MH4-IC	DUMMY	0.007	0	01:26
MH5-IC	DUMMY	0.009	0	01:25
MH6-IC	DUMMY	0.015	0	01:25
MH7-IC	DUMMY	0.016	0	01:25
MH8-IC	DUMMY	0.020	0	01:26
MH9-IC	DUMMY	0.261	0	01:30

****
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
C1	1.00	0.00	0.87	0.00	0.13	0.00	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.84	0.00	0.16	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.05	0.95	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.58	0.42	0.00	0.00	0.52	0.00
C14	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C1-S	1.00	0.00	0.37	0.00	0.63	0.00	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.01	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.93	0.06	0.00	0.00	0.99	0.00
C4-S	1.00	0.00	0.00	0.00	0.18	0.82	0.00	0.00	0.95	0.00
C5	1.00	0.00	0.00	0.00	0.87	0.13	0.00	0.00	0.27	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.96	0.00	0.03	0.00	0.00	0.00	0.97	0.00
C8	1.00	0.00	0.00	0.00	0.83	0.16	0.00	0.00	0.44	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(117)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(119)	1.00	0.02	0.00	0.00	0.01	0.00	0.00	0.96	0.01	0.00
Pipe_-_(120)	1.00	0.03	0.00	0.00	0.06	0.00	0.00	0.91	0.02	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(125)-S	1.00	0.86	0.00	0.00	0.13	0.01	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)-S	1.00	0.84	0.05	0.00	0.09	0.01	0.00	0.00	0.99	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.99	0.00	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)-S	1.00	0.74	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(65)-S	1.00	0.88	0.00	0.00	0.01	0.11	0.00	0.00	0.01	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.11	0.00	0.00	0.89	0.10	0.00
Pipe_-_(66)_(1)-S	1.00	0.80	0.01	0.00	0.19	0.00	0.00	0.00	0.07	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.24	0.00	0.00	0.76	0.06	0.00
Pipe_-_(67)-S	1.00	0.84	0.00	0.00	0.14	0.01	0.00	0.00	0.02	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.30	0.00	0.00	0.70	0.02	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.34	0.00	0.00	0.66	0.02	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(71)-S	1.00	0.00	0.88	0.00	0.11	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.07	0.00	0.00	0.93	0.01	0.00
Pipe_-_(72)-S	1.00	0.00	0.00	0.00	0.87	0.13	0.00	0.00	0.86	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.21	0.00	0.00	0.79	0.09	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.27	0.00	0.00	0.73	0.09	0.00
Pipe_-_(73)_(1)-S	1.00	0.87	0.00	0.00	0.13	0.00	0.00	0.00	0.98	0.00
Pipe_-_(73)-S	1.00	0.76	0.00	0.00	0.21	0.02	0.00	0.00	0.05	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(74)-S	1.00	0.79	0.01	0.00	0.19	0.02	0.00	0.00	0.06	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)-S	1.00	0.00	0.86	0.00	0.12	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.84	0.00	0.00	0.15	0.00	0.00	0.00	0.98	0.00
Pipe_-_(76)	1.00	0.01	0.00	0.00	0.10	0.00	0.00	0.89	0.00	0.00
Pipe_-_(76)-S	1.00	0.83	0.02	0.00	0.15	0.00	0.00	0.00	1.00	0.00

Pipe_-_(77)_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.19	0.00
Pipe_-_(77)_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.92	0.00
Pipe_-_(77)-S	1.00	0.00	0.83	0.00	0.16	0.01	0.00	0.00	0.99	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(79)-S	1.00	0.78	0.00	0.00	0.19	0.02	0.00	0.00	0.05	0.00
Pipe_-_(85)	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.98	0.02	0.00
Pipe_-_(85)-S	1.00	0.67	0.18	0.00	0.15	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.15	0.00	0.00	0.85	0.08	0.00
Pipe_-_(86)-S	1.00	0.67	0.00	0.00	0.30	0.02	0.00	0.00	0.05	0.00

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Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C1-S7	0.01	0.61	0.01	0.01	0.01
Pipe_-_(67)	0.01	0.01	2.65	0.01	0.01
Pipe_-_(69)	2.65	2.65	4.49	0.01	0.01
Pipe_-_(70)	6.08	6.08	7.68	0.01	0.01
Pipe_-_(73)_(1)	0.01	0.01	2.65	0.01	0.01

****
Pumping Summary
****

Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve Low	% Time Off Pump Curve High
PUMP	63.82	1	0.00	0.01	0.01	1.314	5.85	0.0	0.0

Analysis begun on: Tue Nov 10 11:14:46 2020
Analysis ended on: Tue Nov 10 11:14:52 2020

Proposed - Chicago 4h 50year Storm

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
  ---------------------------------------------------------------

  WARNING 03: negative offset ignored for Link C12
  WARNING 03: negative offset ignored for Link C4-S
  WARNING 03: negative offset ignored for Link Pipe_-_(70)
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
  WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
  WARNING 02: maximum depth increased for Node J-S7minor

  *************
  Element Count
  *************
  Number of rain gages ...... 9
  Number of subcatchments ... 30
  Number of nodes ........... 74
  Number of links ........... 101
  Number of pollutants ...... 0
  Number of land uses ....... 0


  ****************
  Raingage Summary
  ****************
                                                  Data       Recording
  Name                 Data Source                Type       Interval
  ----------------------------------------------------------------------
  25mm                 25mm                       INTENSITY   10 min.
  Chicago_24h_100yr    Chicago_24h_100yr_COM      INTENSITY    5 min.
  Chicago_24h_2yr      Chicago_24h_2yr_COM        INTENSITY    5 min.
  Chicago_4h_100year_COM Chicago_4h_100year_COM      INTENSITY    5 min.
  Chicago_4h_10year_COM Chicago_4h_10year_COM      INTENSITY    5 min.
  Chicago_4h_25year_COM Chicago_4h_25year_COM      INTENSITY    5 min.
  Chicago_4h_2yr_COM   Chicago_4h_2yr_COM         INTENSITY    5 min.
  Chicago_4h_50year_COM Chicago_4h_50year_COM      INTENSITY    5 min.
  Chicago_4h_5year_COM Chicago_4h_5year_COM        INTENSITY    5 min.


  ********************
  Subcatchment Summary
  ********************
  Name                         Area     Width   %Imperv    %Slope Rain Gage            Outlet
  ------------------------------------------------------------------------------------------------
  Ext.1_1                      2.51    100.40      3.00    1.0000 Chicago_4h_50year_COM J-S7minor
  Ext.1_2                      0.37     46.75     75.00    1.0000 Chicago_4h_50year_COM EX_STM_MH4-S
  Ext.2                        6.47    258.62      0.00    0.5000 Chicago_4h_50year_COM MH_C1
  Ext.4                        8.59    818.53      7.00    1.5000 Chicago_4h_50year_COM J9_COM
  Ext.5                        1.49     99.55     20.00    1.5000 Chicago_4h_50year_COM EX_STM_MH-5-S
  S1                           0.16     16.10     10.00    0.5000 Chicago_4h_50year_COM MH11-S
  S10                          0.20     42.08     65.00    0.5000 Chicago_4h_50year_COM MH6-S
  S11                          0.12     38.25     65.00    0.5000 Chicago_4h_50year_COM MH13-S
  S12                          0.16     37.93     65.00    0.5000 Chicago_4h_50year_COM MH13-S
  S13                          0.06     35.94     65.00    0.5000 Chicago_4h_50year_COM MH10-S
  S14                          0.29     41.87     65.00    0.5000 Chicago_4h_50year_COM MH21-S
  S15                          0.14     29.73     65.00    0.5000 Chicago_4h_50year_COM MH22-S
  S16                          0.09     17.51     65.00    0.5000 Chicago_4h_50year_COM MH24-S
  S17                          0.79     78.53     25.00    0.5000 Chicago_4h_50year_COM MH18-S
  S18                          0.11     10.70     25.00    0.5000 Chicago_4h_50year_COM MH17-S
  S2                           0.39     22.67     65.00    0.5000 Chicago_4h_50year_COM CBMH12-S
  S3                           0.11     40.00     10.00    1.5000 Chicago_4h_50year_COM MH5-S
  S4                           0.12     64.00     50.00    1.5000 Chicago_4h_50year_COM MH6-S
  S5                           0.34     39.91     65.00    0.5000 Chicago_4h_50year_COM MH1-S
  S6                           0.25     21.45     65.00    0.5000 Chicago_4h_50year_COM MH5-S
  S6_ROW1                      0.50    135.26     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH1-S
  S6_ROW2                      0.36     36.43     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH2-S
  S6_ROW3                      0.37     36.57     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH3-S
  S6_ROW4                      0.36     36.03     70.00    1.8000 Chicago_4h_50year_COM EX_STM_MH4-S
  S6_ROW5                      0.37     37.28     70.00    1.8000 Chicago_4h_50year_COM EX_MH1-S
  S6_ROW6                      0.42     84.54     25.00    1.0000 Chicago_4h_50year_COM EX_STM_MH-5-S
  S6_ROW7                      0.45     89.84     25.00    1.0000 Chicago_4h_50year_COM EX_STM_MH6-S
  S7                           0.33     82.08     25.00    0.5000 Chicago_4h_50year_COM MH7-S
  S8                           0.42     33.23     65.00    0.5000 Chicago_4h_50year_COM MH8-S
  S9                           0.39     39.12     65.00    0.5000 Chicago_4h_50year_COM MH14-S


  ************
  Node Summary
  ************
                                        Invert      Max.    Ponded    External
  Name                 Type              Elev.     Depth      Area    Inflow
  ------------------------------------------------------------------------
  CBMH12               JUNCTION         187.61      3.19       0.0
  CBMH12-S             JUNCTION         190.80      0.30       0.0
  Dummy                JUNCTION         189.90      0.30       0.0
  EX_MH1               JUNCTION         185.47      3.17       0.0
  EX_MH1-S             JUNCTION         188.64      0.30       0.0
  EX_STM_MH1           JUNCTION         191.70      2.25       0.0
  EX_STM_MH1-S         JUNCTION         193.95      0.30       0.0
  EX_STM_MH2           JUNCTION         191.00      2.00       0.0
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EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0
EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.30	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.52	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.17	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH16	JUNCTION	188.50	2.05	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.83	0.0
MH19-S	JUNCTION	189.63	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	1.43	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	4.4665	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140
C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130
C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140

C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130
C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	MH16	MH17	CONDUIT	13.0	1.5386	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.5366	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
PUMP	STM_TANK	MH16	TYPE4 PUMP			
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

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Cross Section Summary
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	Full	Full	Hyd.	Max.	No. of	Full

Conduit	Shape	Depth	Area	Rad.	Width	Barrels	Flow
C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	22.19
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.07
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.20
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	RECT_CLOSED	1.20	2.16	0.36	1.80	1	3.59
Pipe_-_(77)_2	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.58
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.69
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

****
Transect Summary
****

Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761
0.7046	0.7341	0.7644	0.7955	0.8275
0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

0.0147	0.0293	0.0440	0.0587	0.0733
0.1026	0.1317	0.1608	0.1898	0.2188
0.2477	0.2766	0.3053	0.3341	0.3627
0.3913	0.4198	0.4483	0.4767	0.5051
0.5334	0.5616	0.5898	0.6179	0.6459
0.6735	0.6991	0.7228	0.7447	0.7651
0.7841	0.8017	0.8182	0.8337	0.8482
0.8618	0.8747	0.8869	0.8985	0.9095
0.9200	0.9301	0.9398	0.9492	0.9582
0.9670	0.9755	0.9839	0.9920	1.0000

Width:

0.0846	0.1692	0.2538	0.3385	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4231	0.4231	0.4231	0.4231	0.4231
0.4462	0.4692	0.4923	0.5154	0.5385
0.5615	0.5846	0.6077	0.6308	0.6538
0.6769	0.7000	0.7231	0.7462	0.7692
0.7923	0.8154	0.8385	0.8615	0.8846
0.9077	0.9308	0.9538	0.9769	1.0000

Transect full-7m

Area:

0.0006	0.0024	0.0054	0.0097	0.0151
0.0217	0.0296	0.0387	0.0489	0.0604
0.0731	0.0869	0.1010	0.1151	0.1292
0.1433	0.1574	0.1715	0.1856	0.1997
0.2138	0.2279	0.2419	0.2560	0.2701
0.2848	0.3007	0.3179	0.3362	0.3557
0.3764	0.3984	0.4215	0.4459	0.4715
0.4983	0.5262	0.5554	0.5858	0.6174
0.6503	0.6843	0.7195	0.7560	0.7936
0.8325	0.8726	0.9138	0.9563	1.0000

Hrad:

0.0182	0.0364	0.0546	0.0728	0.0910
0.1092	0.1274	0.1456	0.1638	0.1820
0.2002	0.2243	0.2602	0.2960	0.3317
0.3673	0.4028	0.4381	0.4733	0.5084
0.5434	0.5783	0.6131	0.6477	0.6822
0.7157	0.7452	0.7713	0.7942	0.8145
0.8325	0.8484	0.8626	0.8754	0.8869
0.8974	0.9070	0.9160	0.9243	0.9322
0.9397	0.9469	0.9539	0.9607	0.9673
0.9739	0.9805	0.9870	0.9935	1.0000

Width:

0.0273	0.0545	0.0818	0.1091	0.1364
0.1636	0.1909	0.2182	0.2455	0.2727
0.3000	0.3182	0.3182	0.3182	0.3182
0.3182	0.3182	0.3182	0.3182	0.3182
0.3182	0.3182	0.3182	0.3182	0.3182
0.3455	0.3727	0.4000	0.4273	0.4545
0.4818	0.5091	0.5364	0.5636	0.5909
0.6182	0.6455	0.6727	0.7000	0.7273
0.7545	0.7818	0.8091	0.8364	0.8636
0.8909	0.9182	0.9455	0.9727	1.0000

Transect full-8.5m

Area:

0.0021	0.0086	0.0192	0.0333	0.0475
0.0618	0.0760	0.0903	0.1046	0.1188
0.1331	0.1473	0.1616	0.1758	0.1901
0.2044	0.2186	0.2329	0.2471	0.2614
0.2757	0.2899	0.3042	0.3184	0.3327
0.3474	0.3632	0.3799	0.3977	0.4164
0.4361	0.4569	0.4786	0.5013	0.5250
0.5497	0.5754	0.6021	0.6298	0.6585
0.6881	0.7188	0.7505	0.7831	0.8168
0.8515	0.8871	0.9237	0.9614	1.0000

Hrad:

0.0157	0.0314	0.0470	0.0731	0.1043
0.1354	0.1664	0.1974	0.2282	0.2590
0.2897	0.3202	0.3508	0.3812	0.4115
0.4418	0.4720	0.5021	0.5321	0.5620
0.5918	0.6216	0.6513	0.6809	0.7104
0.7394	0.7655	0.7890	0.8102	0.8293
0.8465	0.8620	0.8760	0.8886	0.9000
0.9104	0.9199	0.9286	0.9366	0.9440
0.9509	0.9574	0.9635	0.9693	0.9748
0.9801	0.9853	0.9903	0.9952	1.0000

Width:

0.1093	0.2186	0.3280	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3644	0.3644	0.3644	0.3644	0.3644
0.3898	0.4153	0.4407	0.4661	0.4915
0.5169	0.5424	0.5678	0.5932	0.6186
0.6441	0.6695	0.6949	0.7203	0.7458

```
            0.7712     0.7966     0.8220     0.8475     0.8729
            0.8983     0.9237     0.9492     0.9746     1.0000

***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

***************
Analysis Options
***************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 05/02/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
Dry Time Step ............ 00:01:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m


*************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
*************************     ---------       -------
Total Precipitation ......         1.904        71.264
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         1.053        39.418
Surface Runoff ...........         0.818        30.627
Final Storage ............         0.033         1.237
Continuity Error (%) .....        -0.025


*************************        Volume        Volume
Flow Routing Continuity        hectare-m      10^6 ltr
*************************     ---------      ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         0.818         8.180
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         0.818         8.181
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.000         0.003
Continuity Error (%) .....        -0.056


************************
Highest Continuity Errors
************************
Node MH19-S (1.31%)


***************************
Time-Step Critical Elements
***************************
Link Pipe_-_(70) (5.58%)
Link Pipe_-_(72) (3.93%)
Link C5 (1.57%)


*******************************
Highest Flow Instability Indexes
*******************************
Link Pipe_-_(70) (6)
Link Pipe_-_(69) (5)
Link C1-S7 (1)


************************
Routing Time Step Summary
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****
Minimum Time Step   :   0.50 sec
Average Time Step   :   4.74 sec
Maximum Time Step   :   5.00 sec
Percent in Steady State   :   0.00
Average Iterations per Step :   2.04
Percent Not Converging   :   0.05

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Subcatchment Runoff Summary
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Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	71.26	0.00	0.00	49.13	2.03	18.78	20.81	0.52	0.05	0.292
Ext.1_2	71.26	0.00	0.00	11.22	52.93	6.29	59.22	0.22	0.17	0.831
Ext.2	71.26	0.00	0.00	52.29	0.00	17.73	17.73	1.15	0.08	0.249
Ext.4	71.26	0.00	0.00	43.77	4.74	21.34	26.07	2.24	0.41	0.366
Ext.5	71.26	0.00	0.00	38.07	14.12	17.94	32.06	0.48	0.19	0.450
S1	71.26	0.00	0.00	43.48	7.06	19.54	26.60	0.04	0.01	0.373
S10	71.26	0.00	0.00	15.76	45.88	8.75	54.63	0.11	0.08	0.767
S11	71.26	0.00	0.00	15.64	45.89	8.87	54.76	0.07	0.05	0.768
S12	71.26	0.00	0.00	15.71	45.89	8.79	54.68	0.09	0.06	0.767
S13	71.26	0.00	0.00	15.48	45.91	9.03	54.95	0.03	0.02	0.771
S14	71.26	0.00	0.00	15.92	45.88	8.58	54.46	0.16	0.11	0.764
S15	71.26	0.00	0.00	15.75	45.88	8.75	54.64	0.08	0.05	0.767
S16	71.26	0.00	0.00	15.80	45.88	8.70	54.58	0.05	0.04	0.766
S17	71.26	0.00	0.00	35.85	17.65	16.65	34.30	0.27	0.12	0.481
S18	71.26	0.00	0.00	35.85	17.65	16.65	34.30	0.04	0.02	0.481
S2	71.26	0.00	0.00	16.52	45.86	7.98	53.84	0.21	0.12	0.756
S3	71.26	0.00	0.00	40.40	7.06	22.61	29.67	0.03	0.01	0.416
S4	71.26	0.00	0.00	19.04	35.32	15.97	51.30	0.06	0.04	0.720
S5	71.26	0.00	0.00	16.03	45.87	8.47	54.35	0.18	0.13	0.763
S6	71.26	0.00	0.00	16.23	45.87	8.28	54.14	0.13	0.09	0.760
S6_ROW1	71.26	0.00	0.00	13.27	49.44	7.74	57.17	0.29	0.22	0.802
S6_ROW2	71.26	0.00	0.00	13.49	49.41	7.51	56.92	0.21	0.15	0.799
S6_ROW3	71.26	0.00	0.00	13.49	49.41	7.51	56.92	0.21	0.15	0.799
S6_ROW4	71.26	0.00	0.00	13.49	49.41	7.51	56.92	0.21	0.15	0.799
S6_ROW5	71.26	0.00	0.00	13.49	49.41	7.51	56.92	0.21	0.16	0.799
S6_ROW6	71.26	0.00	0.00	29.53	17.66	22.97	40.63	0.17	0.07	0.570
S6_ROW7	71.26	0.00	0.00	29.53	17.66	22.97	40.63	0.18	0.08	0.570
S7	71.26	0.00	0.00	34.36	17.66	18.15	35.80	0.12	0.05	0.502
S8	71.26	0.00	0.00	16.28	45.86	8.23	54.09	0.23	0.14	0.759
S9	71.26	0.00	0.00	16.13	45.87	8.38	54.24	0.21	0.14	0.761

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Node Depth Summary
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Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min	Reported Max Depth Meters
CBMH12	JUNCTION	0.04	0.37	187.97	0 04:33	0.37
CBMH12-S	JUNCTION	0.00	0.04	190.84	0 01:26	0.04
Dummy	JUNCTION	0.00	0.00	189.90	0 00:00	0.00
EX_MH1	JUNCTION	0.06	0.45	185.92	0 01:28	0.45
EX_MH1-S	JUNCTION	0.00	0.06	188.70	0 01:27	0.06
EX_STM_MH1	JUNCTION	0.00	0.08	191.78	0 01:26	0.08
EX_STM_MH1-S	JUNCTION	0.00	0.04	193.99	0 01:25	0.04
EX_STM_MH2	JUNCTION	0.01	0.16	191.16	0 01:27	0.16
EX_STM_MH2-S	JUNCTION	0.00	0.06	193.06	0 01:26	0.06
EX_STM_MH3	JUNCTION	0.01	0.14	190.23	0 01:27	0.14
EX_STM_MH3-S	JUNCTION	0.00	0.04	192.54	0 01:26	0.04
EX_STM_MH4	JUNCTION	0.02	0.24	187.85	0 01:27	0.24
EX_STM_MH4-S	JUNCTION	0.00	0.05	190.86	0 01:25	0.05
EX_STM_MH5	JUNCTION	0.07	1.45	186.22	0 01:30	0.85
EX_STM_MH-5-S	JUNCTION	0.02	0.16	187.46	0 01:32	0.16
EX_STM_MH6	JUNCTION	0.07	0.57	184.60	0 01:32	0.56
EX_STM_MH6-S	JUNCTION	0.00	0.03	187.63	0 01:30	0.03
EX_STM_MH7	JUNCTION	0.06	0.56	183.96	0 01:32	0.56
EX_STM_MH7-S	JUNCTION	0.00	0.00	187.62	0 01:41	0.00
EX-MH20	JUNCTION	0.06	0.34	186.57	0 01:28	0.34
EX-MH20-S	JUNCTION	0.00	0.05	189.80	0 01:26	0.05
J-S1	JUNCTION	0.06	0.38	185.77	0 01:28	0.38
J-S7	JUNCTION	0.02	0.24	189.64	0 01:27	0.24
J-S7minor	JUNCTION	0.04	0.98	192.53	0 01:25	0.98
MH_C1	JUNCTION	0.02	0.17	188.78	0 02:50	0.17
MH_C2	JUNCTION	0.02	0.17	188.25	0 02:50	0.17
MH_C3	JUNCTION	0.02	0.18	188.10	0 03:58	0.18
MH_C4	JUNCTION	0.04	0.60	188.10	0 03:58	0.60
MH1	JUNCTION	0.00	0.09	188.64	0 01:25	0.09
MH10	JUNCTION	0.23	1.07	187.97	0 04:33	1.07
MH10-S	JUNCTION	0.00	0.10	190.72	0 01:30	0.10

MH11	JUNCTION	0.00	0.04	188.61	0	01:27	0.04
MH11-S	JUNCTION	0.00	0.01	191.58	0	01:25	0.01
MH13	JUNCTION	0.09	0.65	187.97	0	04:33	0.65
MH13-S	JUNCTION	0.00	0.06	190.76	0	01:26	0.06
MH14	JUNCTION	0.02	0.18	187.97	0	04:33	0.18
MH14-S	JUNCTION	0.00	0.04	191.01	0	01:25	0.04
MH15	JUNCTION	0.27	1.20	187.97	0	04:33	1.20
MH16	JUNCTION	0.04	0.06	188.56	0	01:10	0.06
MH17	JUNCTION	0.07	0.93	188.10	0	03:57	0.93
MH17-S	JUNCTION	0.00	0.02	190.37	0	01:25	0.02
MH18	JUNCTION	0.08	1.02	188.10	0	03:57	1.02
MH18-S	JUNCTION	0.00	0.04	190.25	0	01:25	0.04
MH19	JUNCTION	0.15	1.29	188.10	0	03:57	1.29
MH19-S	JUNCTION	0.01	0.07	189.70	0	01:32	0.07
MH1-S	JUNCTION	0.00	0.04	192.12	0	01:25	0.04
MH2	JUNCTION	0.01	0.11	188.53	0	01:25	0.11
MH21	JUNCTION	0.00	0.05	186.64	0	01:26	0.05
MH21-S	JUNCTION	0.00	0.03	190.60	0	01:25	0.03
MH22	JUNCTION	0.01	0.11	186.33	0	01:26	0.11
MH22-S	JUNCTION	0.00	0.06	189.49	0	01:25	0.06
MH23	JUNCTION	0.01	0.16	186.19	0	01:26	0.16
MH23-S	JUNCTION	0.00	0.05	189.45	0	01:27	0.05
MH24	JUNCTION	0.01	0.17	186.03	0	01:27	0.17
MH24-S	JUNCTION	0.00	0.06	189.06	0	01:27	0.06
MH25	JUNCTION	0.01	0.19	185.93	0	01:28	0.19
MH2-S	JUNCTION	0.00	0.03	191.98	0	01:25	0.03
MH3	JUNCTION	0.01	0.12	188.20	0	01:26	0.12
MH3-S	JUNCTION	0.00	0.03	191.35	0	01:26	0.03
MH4	JUNCTION	0.04	0.39	187.97	0	04:34	0.39
MH4-S	JUNCTION	0.00	0.04	190.97	0	01:26	0.04
MH5	JUNCTION	0.01	0.06	188.80	0	01:25	0.06
MH5-S	JUNCTION	0.00	0.03	191.78	0	01:25	0.03
MH6	JUNCTION	0.01	0.11	188.39	0	01:25	0.11
MH6-S	JUNCTION	0.00	0.05	191.37	0	01:25	0.05
MH7	JUNCTION	0.01	0.14	188.13	0	01:26	0.14
MH7-S	JUNCTION	0.00	0.05	191.16	0	01:25	0.05
MH8	JUNCTION	0.05	0.45	187.97	0	04:34	0.45
MH8-S	JUNCTION	0.00	0.06	190.88	0	01:26	0.06
MH9	JUNCTION	0.11	0.71	187.97	0	04:34	0.71
MH9-S	JUNCTION	0.01	0.13	190.72	0	01:29	0.13
TEE1	JUNCTION	0.09	1.10	188.10	0	03:57	1.10
J9_COM	OUTFALL	0.06	0.50	183.60	0	01:32	0.50
STM_TANK	STORAGE	0.66	1.97	187.97	0	04:33	1.97

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Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.011	0	01:27	0	0.0794	-0.019	
CBMH12-S	JUNCTION	0.122	0.125	0	01:25	0.207	0.215	-0.084	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.425	0	01:28	0	4.39	-0.001	
EX_MH1-S	JUNCTION	0.156	0.596	0	01:26	0.212	0.867	-0.157	
EX_STM_MH1	JUNCTION	0.000	0.017	0	01:25	0	0.034	-0.007	
EX_STM_MH1-S	JUNCTION	0.222	0.222	0	01:25	0.286	0.286	-0.221	
EX_STM_MH2	JUNCTION	0.000	0.063	0	01:26	0	0.145	-0.005	
EX_STM_MH2-S	JUNCTION	0.153	0.350	0	01:25	0.207	0.46	0.159	
EX_STM_MH3	JUNCTION	0.000	0.072	0	01:27	0	0.163	-0.023	
EX_STM_MH3-S	JUNCTION	0.153	0.362	0	01:25	0.208	0.556	0.046	
EX_STM_MH4	JUNCTION	0.000	0.257	0	01:27	0	1.08	-0.014	
EX_STM_MH4-S	JUNCTION	0.317	0.476	0	01:25	0.426	0.646	-0.079	
EX_STM_MH5	JUNCTION	0.000	0.911	0	01:30	0	5.9	-0.014	
EX_STM_MH-5-S	JUNCTION	0.260	0.671	0	01:27	0.65	1.51	0.304	
EX_STM_MH6	JUNCTION	0.000	0.918	0	01:31	0	5.94	-0.002	
EX_STM_MH6-S	JUNCTION	0.077	0.077	0	01:25	0.182	0.182	-0.121	
EX_STM_MH7	JUNCTION	0.000	0.915	0	01:32	0	5.94	-0.000	
EX_STM_MH7-S	JUNCTION	0.000	0.001	0	01:30	0	0.00154	5.208	
EX-MH20	JUNCTION	0.000	0.292	0	01:27	0	4.05	0.004	
EX-MH20-S	JUNCTION	0.000	0.409	0	01:25	0	0.567	0.037	
J-S1	JUNCTION	0.000	0.424	0	01:28	0	4.39	0.003	
J-S7	JUNCTION	0.000	0.223	0	01:27	0	1	0.008	
J-S7minor	JUNCTION	0.050	0.160	0	01:25	0.522	0.841	-0.005	
MH_C1	JUNCTION	0.084	0.084	0	02:50	1.15	1.15	-0.000	
MH_C2	JUNCTION	0.000	0.084	0	02:50	0	1.15	-0.000	
MH_C3	JUNCTION	0.000	0.084	0	02:50	0	1.15	0.097	
MH_C4	JUNCTION	0.000	0.084	0	02:51	0	1.15	-0.063	
MH1	JUNCTION	0.000	0.014	0	01:25	0	0.0384	0.012	
MH10	JUNCTION	0.000	0.623	0	01:29	0	1.51	-0.259	
MH10-S	JUNCTION	0.024	0.262	0	01:26	0.0316	0.359	-0.038	
MH11	JUNCTION	0.000	0.005	0	01:25	0	0.0342	0.123	
MH11-S	JUNCTION	0.010	0.010	0	01:25	0.0423	0.0423	0.350	
MH13	JUNCTION	0.000	0.064	0	01:26	0	0.29	0.127	
MH13-S	JUNCTION	0.112	0.296	0	01:25	0.153	0.428	-0.023	

MH14	JUNCTION	0.000	0.027	0	01:25	0	0.108	0.219
MH14-S	JUNCTION	0.141	0.141	0	01:25	0.212	0.212	-0.190
MH15	JUNCTION	0.000	0.623	0	01:29	0	1.51	-0.138
MH16	JUNCTION	0.000	0.010	0	01:10	0	1.51	-0.000
MH17	JUNCTION	0.000	0.013	0	01:25	0	1.53	0.004
MH17-S	JUNCTION	0.017	0.017	0	01:25	0.0367	0.0367	-0.106
MH18	JUNCTION	0.000	0.032	0	01:37	0	1.63	-0.001
MH18-S	JUNCTION	0.122	0.135	0	01:25	0.269	0.29	-0.471
MH19	JUNCTION	0.000	0.120	0	02:46	0	2.97	-0.001
MH19-S	JUNCTION	0.000	0.109	0	01:25	0	0.202	1.332
MH1-S	JUNCTION	0.126	0.126	0	01:25	0.184	0.184	-0.045
MH2	JUNCTION	0.000	0.025	0	01:25	0	0.084	-0.001
MH21	JUNCTION	0.000	0.005	0	01:25	0	0.0268	0.015
MH21-S	JUNCTION	0.110	0.110	0	01:25	0.157	0.157	-0.155
MH22	JUNCTION	0.000	0.024	0	01:25	0	0.114	0.002
MH22-S	JUNCTION	0.055	0.154	0	01:25	0.0752	0.206	0.009
MH23	JUNCTION	0.000	0.049	0	01:26	0	0.166	-0.000
MH23-S	JUNCTION	0.000	0.124	0	01:26	0	0.119	0.197
MH24	JUNCTION	0.000	0.058	0	01:27	0	0.195	0.002
MH24-S	JUNCTION	0.037	0.116	0	01:26	0.051	0.117	-0.116
MH25	JUNCTION	0.000	0.058	0	01:27	0	0.195	0.021
MH2-S	JUNCTION	0.000	0.111	0	01:25	0	0.146	-0.161
MH3	JUNCTION	0.000	0.030	0	01:25	0	0.103	0.105
MH3-S	JUNCTION	0.000	0.098	0	01:25	0	0.1	0.174
MH4	JUNCTION	0.000	0.080	0	01:26	0	0.323	-0.080
MH4-S	JUNCTION	0.000	0.280	0	01:25	0	0.33	0.081
MH5	JUNCTION	0.000	0.010	0	01:25	0	0.0515	0.021
MH5-S	JUNCTION	0.096	0.096	0	01:25	0.168	0.168	-0.039
MH6	JUNCTION	0.000	0.026	0	01:25	0	0.126	-0.000
MH6-S	JUNCTION	0.121	0.203	0	01:25	0.17	0.286	-0.090
MH7	JUNCTION	0.000	0.043	0	01:25	0	0.206	0.092
MH7-S	JUNCTION	0.053	0.227	0	01:25	0.118	0.329	0.043
MH8	JUNCTION	0.000	0.105	0	01:26	0	0.419	0.186
MH8-S	JUNCTION	0.143	0.381	0	01:26	0.225	0.54	-0.100
MH9	JUNCTION	0.000	0.378	0	01:29	0	0.984	0.191
MH9-S	JUNCTION	0.000	0.354	0	01:26	0	0.567	0.161
TEE1	JUNCTION	0.000	0.124	0	02:47	0	2.78	-0.015
J9_COM	OUTFALL	0.411	1.180	0	01:33	2.24	8.18	0.000
STM_TANK	STORAGE	0.000	0.623	0	01:29	0	1.51	-0.104

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Node Surcharge Summary
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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
EX_STM_MH5	JUNCTION	0.08	0.698	1.082
MH10	JUNCTION	9.24	0.321	2.648
MH13	JUNCTION	4.28	0.125	2.728
MH15	JUNCTION	10.82	0.386	2.708
MH19	JUNCTION	1.32	0.092	1.534
MH9	JUNCTION	0.40	0.002	2.618
STM_TANK	STORAGE	13.70	0.512	2.528

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Node Flooding Summary
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No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	0.426	15	0	0	1.282	44	0 04:33	0.040

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	76.11	0.076	1.180	8.181

System 76.11 0.076 1.180 8.181

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days	hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.072	0	01:27	1.14	0.21	0.42
C10	CHANNEL	0.103	0	01:27	0.57	0.02	0.20
C11	CHANNEL	0.395	0	01:26	0.89	0.03	0.19
C12	CHANNEL	0.000	0	00:00	0.00	0.00	0.08
C13	CONDUIT	0.423	0	01:28	1.40	0.52	0.75
C14	CHANNEL	0.000	0	00:00	0.00	0.00	0.12
C17	CONDUIT	0.291	0	01:28	2.03	0.67	0.63
C1-S	CHANNEL	0.198	0	01:26	0.59	0.01	0.15
C1-S7	CONDUIT	0.152	0	01:25	2.69	0.48	0.75
C2	CONDUIT	0.015	0	01:26	0.75	0.07	0.18
C2-S	CHANNEL	0.197	0	01:25	0.55	0.02	0.17
C3	CONDUIT	0.059	0	01:27	1.18	0.26	0.35
C3-S	CHANNEL	0.236	0	01:26	0.64	0.04	0.16
C4	CONDUIT	0.257	0	01:27	2.15	0.42	0.55
C4-S	CHANNEL	0.409	0	01:25	1.02	0.03	0.17
C5	CONDUIT	0.424	0	01:28	1.71	0.52	0.55
C5-S	CHANNEL	0.495	0	01:27	0.54	0.05	0.37
C6	CONDUIT	0.910	0	01:31	2.19	1.08	0.89
C6-S	CHANNEL	0.036	0	01:30	0.05	0.01	0.32
C7	CONDUIT	0.914	0	01:32	2.01	0.51	0.52
C7-S	CHANNEL	0.001	0	01:30	0.02	0.00	0.05
C8	CONDUIT	0.916	0	01:32	2.08	0.47	0.51
C9	CONDUIT	0.223	0	01:27	2.68	0.51	0.52
Pipe_-_(116)	CONDUIT	0.084	0	02:50	1.17	0.14	0.25
Pipe_-_(117)	CONDUIT	0.084	0	02:50	1.17	0.14	0.25
Pipe_-_(119)	CONDUIT	0.084	0	02:51	1.16	0.14	0.56
Pipe_-_(120)	CONDUIT	0.085	0	03:03	1.10	0.14	0.95
Pipe_-_(125)	CONDUIT	0.024	0	01:26	0.82	0.13	0.24
Pipe_-_(125)-S	CHANNEL	0.124	0	01:26	0.30	0.03	0.18
Pipe_-_(126)	CONDUIT	0.010	0	01:11	1.05	0.14	0.25
Pipe_-_(127)	CONDUIT	0.049	0	01:27	1.01	0.27	0.34
Pipe_-_(127)-S	CHANNEL	0.093	0	01:27	0.64	0.01	0.18
Pipe_-_(128)	CONDUIT	0.058	0	01:27	1.07	0.32	0.38
Pipe_-_(129)	CONDUIT	0.058	0	01:27	1.01	0.32	0.45
Pipe_-_(64)	CONDUIT	0.014	0	01:25	0.76	0.11	0.23
Pipe_-_(64)-S	CHANNEL	0.111	0	01:25	0.52	0.01	0.11
Pipe_-_(65)	CONDUIT	0.024	0	01:25	0.88	0.20	0.30
Pipe_-_(65)-S	CHANNEL	0.098	0	01:25	0.56	0.01	0.10
Pipe_-_(66)_(1)	CONDUIT	0.026	0	01:26	0.90	0.21	0.74
Pipe_-_(66)_(1)-S	CHANNEL	0.106	0	01:25	0.27	0.02	0.17
Pipe_-_(67)	CONDUIT	0.064	0	01:26	1.08	0.21	1.00
Pipe_-_(67)-S	CHANNEL	0.232	0	01:26	0.41	0.05	0.27
Pipe_-_(69)	CONDUIT	0.623	0	01:29	2.03	0.79	1.00
Pipe_-_(70)	CONDUIT	0.623	0	01:29	2.39	0.62	1.00
Pipe_-_(71)	CONDUIT	0.029	0	01:26	0.93	0.24	0.33
Pipe_-_(71)-S	CHANNEL	0.082	0	01:26	0.33	0.01	0.12
Pipe_-_(72)	CONDUIT	0.080	0	01:26	1.15	0.14	0.60
Pipe_-_(72)-S	CHANNEL	0.265	0	01:26	0.63	0.02	0.18
Pipe_-_(73)	CONDUIT	0.105	0	01:26	1.06	0.18	0.83
Pipe_-_(73)_(1)	CONDUIT	0.378	0	01:29	1.68	0.64	1.00
Pipe_-_(73)_(1)-S	CHANNEL	0.042	0	01:40	0.08	0.02	0.39
Pipe_-_(73)-S	CHANNEL	0.354	0	01:26	0.46	0.05	0.32
Pipe_-_(74)	CONDUIT	0.010	0	01:25	0.88	0.10	0.22
Pipe_-_(74)-S	CHANNEL	0.083	0	01:25	0.31	0.01	0.13
Pipe_-_(75)	CONDUIT	0.026	0	01:26	0.87	0.13	0.24
Pipe_-_(75)_(1)	CONDUIT	0.042	0	01:26	1.00	0.21	0.31
Pipe_-_(75)_(1)-S	CHANNEL	0.200	0	01:25	0.58	0.03	0.15
Pipe_-_(75)-S	CHANNEL	0.177	0	01:25	0.47	0.03	0.16
Pipe_-_(76)	CONDUIT	0.017	0	01:38	0.34	0.00	0.79
Pipe_-_(76)-S	CHANNEL	0.014	0	01:25	0.13	0.00	0.09
Pipe_-_(77)_1	CONDUIT	0.041	0	02:44	0.38	0.01	0.89
Pipe_-_(77)_2	CONDUIT	0.107	0	03:10	0.18	0.02	0.96
Pipe_-_(77)-S	CHANNEL	0.109	0	01:25	0.38	0.01	0.17
Pipe_-_(79)	CONDUIT	0.005	0	01:26	0.52	0.03	0.11
Pipe_-_(79)-S	CHANNEL	0.100	0	01:25	0.32	0.01	0.14
Pipe_-_(85)	CONDUIT	0.004	0	01:27	0.67	0.03	0.42
Pipe_-_(85)-S	CHANNEL	0.003	0	01:25	0.03	0.00	0.09
Pipe_-_(86)	CONDUIT	0.011	0	01:27	0.67	0.06	0.91
Pipe_-_(86)-S	CHANNEL	0.094	0	01:26	0.22	0.02	0.18
PUMP	PUMP	0.010	0	01:10		1.00	
OR2	ORIFICE	0.099	0	03:57			1.00
J-S7minor-IC	WEIR	0.123	0	01:26			0.26
CBMH12-IC	DUMMY	0.007	0	01:26			
J1_COM-IC	DUMMY	0.017	0	01:25			
J2_COM-IC	DUMMY	0.048	0	01:26			
J3_COM-IC	DUMMY	0.013	0	01:26			
J4_COM-IC	DUMMY	0.040	0	01:25			
J5_COM-IC	DUMMY	0.077	0	01:27			

J6_COM-IC	DUMMY	0.517	0	01:32
J7_COM-IC	DUMMY	0.008	0	01:30
J8_COM-IC	DUMMY	0.001	0	01:41
MH10-IC	DUMMY	0.189	0	01:30
MH11-IC	DUMMY	0.005	0	01:25
MH13-IC	DUMMY	0.027	0	01:26
MH14-IC	DUMMY	0.027	0	01:25
MH17-IC	DUMMY	0.003	0	01:25
MH18-IC	DUMMY	0.013	0	01:25
MH19-IC	DUMMY	0.052	0	01:32
MH1-IC	DUMMY	0.014	0	01:25
MH21-IC	DUMMY	0.005	0	01:25
MH22-IC	DUMMY	0.019	0	01:25
MH23-IC	DUMMY	0.026	0	01:27
MH24-IC	DUMMY	0.009	0	01:27
MH2-IC	DUMMY	0.011	0	01:25
MH3-IC	DUMMY	0.005	0	01:26
MH4-IC	DUMMY	0.008	0	01:26
MH5-IC	DUMMY	0.010	0	01:25
MH6-IC	DUMMY	0.016	0	01:25
MH7-IC	DUMMY	0.017	0	01:25
MH8-IC	DUMMY	0.025	0	01:26
MH9-IC	DUMMY	0.292	0	01:29

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Flow Classification Summary
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	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
C1	1.00	0.00	0.88	0.00	0.12	0.00	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.84	0.00	0.15	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.05	0.94	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.51	0.49	0.00	0.00	0.44	0.00
C14	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C1-S	1.00	0.00	0.37	0.00	0.63	0.01	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.01	0.00	0.92	0.07	0.00	0.00	0.99	0.00
C4-S	1.00	0.00	0.00	0.00	0.18	0.82	0.00	0.00	0.94	0.00
C5	1.00	0.00	0.00	0.00	0.87	0.13	0.00	0.00	0.25	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.95	0.00	0.05	0.00	0.00	0.00	0.97	0.00
C8	1.00	0.00	0.00	0.00	0.83	0.17	0.00	0.00	0.36	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(117)	1.00	0.02	0.00	0.00	0.00	0.00	0.00	0.98	0.00	0.00
Pipe_-_(119)	1.00	0.02	0.00	0.00	0.06	0.00	0.00	0.91	0.04	0.00
Pipe_-_(120)	1.00	0.03	0.00	0.00	0.08	0.00	0.00	0.89	0.01	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(125)-S	1.00	0.86	0.00	0.00	0.13	0.01	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(127)-S	1.00	0.84	0.05	0.00	0.09	0.02	0.00	0.00	0.99	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.99	0.00	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(64)-S	1.00	0.75	0.00	0.00	0.13	0.13	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(65)-S	1.00	0.88	0.00	0.00	0.01	0.11	0.00	0.00	0.01	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.20	0.00	0.00	0.80	0.11	0.00
Pipe_-_(66)_(1)-S	1.00	0.80	0.01	0.00	0.19	0.00	0.00	0.00	0.07	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.31	0.00	0.00	0.69	0.06	0.00
Pipe_-_(67)-S	1.00	0.85	0.00	0.00	0.14	0.01	0.00	0.00	0.03	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.38	0.00	0.00	0.62	0.02	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.41	0.00	0.00	0.59	0.02	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.05	0.00	0.00	0.95	0.04	0.00
Pipe_-_(71)-S	1.00	0.00	0.88	0.00	0.11	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.17	0.00	0.00	0.83	0.01	0.00
Pipe_-_(72)-S	1.00	0.00	0.00	0.00	0.86	0.13	0.00	0.00	0.86	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.28	0.00	0.00	0.72	0.08	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.35	0.00	0.00	0.65	0.08	0.00
Pipe_-_(73)_(1)-S	1.00	0.87	0.00	0.00	0.13	0.00	0.00	0.00	0.98	0.00
Pipe_-_(73)-S	1.00	0.76	0.00	0.00	0.21	0.02	0.00	0.00	0.05	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(74)-S	1.00	0.79	0.01	0.00	0.18	0.02	0.00	0.00	0.98	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.07	0.00	0.00	0.92	0.07	0.00

Pipe_-_(75)_(1)-S	1.00	0.00	0.87	0.00	0.12	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.84	0.00	0.00	0.15	0.00	0.00	0.00	0.98	0.00
Pipe_-_(76)	1.00	0.01	0.00	0.00	0.11	0.00	0.00	0.88	0.00	0.00
Pipe_-_(76)-S	1.00	0.83	0.02	0.00	0.15	0.00	0.00	0.00	1.00	0.00
Pipe_-_(77)_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.18	0.00
Pipe_-_(77)_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.91	0.00
Pipe_-_(77)-S	1.00	0.00	0.84	0.00	0.16	0.01	0.00	0.00	0.99	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(79)-S	1.00	0.78	0.00	0.00	0.19	0.03	0.00	0.00	0.05	0.00
Pipe_-_(85)	1.00	0.00	0.02	0.00	0.11	0.00	0.00	0.88	0.96	0.00
Pipe_-_(85)-S	1.00	0.67	0.18	0.00	0.15	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.23	0.00	0.00	0.77	0.07	0.00
Pipe_-_(86)-S	1.00	0.67	0.00	0.00	0.30	0.02	0.00	0.00	0.06	0.00

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Conduit Surcharge Summary
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	Hours Full			Hours Above Full	Hours Capacity
Conduit	Both Ends	Upstream	Dnstream	Normal Flow	Limited
C13	0.01	0.01	0.08	0.01	0.01
C1-S7	0.01	1.26	0.01	0.01	0.01
C6	0.01	0.08	0.01	0.12	0.01
Pipe_-_(120)	0.01	0.01	1.25	0.01	0.01
Pipe_-_(66)_(1)	0.01	0.01	4.28	0.01	0.01
Pipe_-_(67)	4.28	4.28	9.24	0.01	0.01
Pipe_-_(69)	9.24	9.24	10.80	0.01	0.01
Pipe_-_(70)	12.22	12.22	13.70	0.01	0.01
Pipe_-_(73)	0.01	0.01	0.40	0.01	0.01
Pipe_-_(73)_(1)	1.67	1.67	9.24	0.01	0.01
Pipe_-_(77)_2	0.01	0.01	1.32	0.01	0.01
Pipe_-_(86)	0.01	0.01	4.28	0.01	0.01

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Pumping Summary
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Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve Low	% Time Off Pump Curve High
PUMP	71.49	1	0.00	0.01	0.01	1.514	6.17	0.0	0.0

Analysis begun on: Tue Nov 10 11:18:38 2020
Analysis ended on: Tue Nov 10 11:18:44 2020

Proposed - Chicago 4h 100year Storm

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)

WARNING 03: negative offset ignored for Link C4-S
WARNING 03: negative offset ignored for Link Pipe_-_(70)
WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
WARNING 02: maximum depth increased for Node J-S7minor

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Element Count
****
Number of rain gages 9
Number of subcatchments ... 30
Number of nodes 74
Number of links 101
Number of pollutants 0
Number of land uses 0

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Raingage Summary
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Name	Data Source	Data Type	Recording Interval
25mm	25mm	INTENSITY	10 min.
Chicago_24h_100yr	Chicago_24h_100yr_COM	INTENSITY	5 min.
Chicago_24h_2yr	Chicago_24h_2yr_COM	INTENSITY	5 min.
Chicago_4h_100year_COM	Chicago_4h_100year_COM	INTENSITY	5 min.
Chicago_4h_10year_COM	Chicago_4h_10year_COM	INTENSITY	5 min.
Chicago_4h_25year_COM	Chicago_4h_25year_COM	INTENSITY	5 min.
Chicago_4h_2yr_COM	Chicago_4h_2yr_COM	INTENSITY	5 min.
Chicago_4h_50year_COM	Chicago_4h_50year_COM	INTENSITY	5 min.
Chicago_4h_5year_COM	Chicago_4h_5year_COM	INTENSITY	5 min.

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Subcatchment Summary
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Name	Area	Width	%Imperv	%Slope	Rain Gage	Outlet
Ext.1_1	2.51	100.40	7.00	1.0000	Chicago_4h_100year_COM	J-S7minor
Ext.1_2	0.37	46.75	95.00	1.0000	Chicago_4h_100year_COM	EX_STM_MH4-S
Ext.2	6.47	258.62	0.00	0.5000	Chicago_4h_100year_COM	MH_C1
Ext.4	8.59	818.53	7.00	1.5000	Chicago_4h_100year_COM	J9_COM
Ext.5	1.49	99.55	35.00	1.5000	Chicago_4h_100year_COM	EX_STM_MH-5-S
S1	0.16	16.10	20.00	0.5000	Chicago_4h_100year_COM	MH11-S
S10	0.20	42.08	80.00	0.5000	Chicago_4h_100year_COM	MH6-S
S11	0.12	38.25	80.00	0.5000	Chicago_4h_100year_COM	MH13-S
S12	0.16	37.93	80.00	0.5000	Chicago_4h_100year_COM	MH13-S
S13	0.06	35.94	80.00	0.5000	Chicago_4h_100year_COM	MH10-S
S14	0.29	41.87	80.00	0.5000	Chicago_4h_100year_COM	MH21-S
S15	0.14	29.73	80.00	0.5000	Chicago_4h_100year_COM	MH22-S
S16	0.09	17.51	80.00	0.5000	Chicago_4h_100year_COM	MH24-S
S17	0.79	78.53	80.00	0.5000	Chicago_4h_100year_COM	MH18-S
S18	0.11	10.70	16.00	0.5000	Chicago_4h_100year_COM	MH17-S
S2	0.39	22.67	80.00	0.5000	Chicago_4h_100year_COM	CBMH12-S
S3	0.11	40.00	20.00	1.5000	Chicago_4h_100year_COM	MH5-S
S4	0.12	64.00	60.00	1.5000	Chicago_4h_100year_COM	MH6-S
S5	0.34	39.91	80.00	0.5000	Chicago_4h_100year_COM	MH1-S
S6	0.25	21.45	80.00	0.5000	Chicago_4h_100year_COM	MH5-S
S6_ROW1	0.50	135.26	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH1-S
S6_ROW2	0.36	36.43	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH2-S
S6_ROW3	0.37	36.57	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH3-S
S6_ROW4	0.36	36.03	95.00	1.8000	Chicago_4h_100year_COM	EX_STM_MH4-S
S6_ROW5	0.37	37.28	95.00	1.8000	Chicago_4h_100year_COM	EX_MH1-S
S6_ROW6	0.42	84.54	95.00	1.0000	Chicago_4h_100year_COM	EX_STM_MH-5-S
S6_ROW7	0.45	89.84	95.00	1.0000	Chicago_4h_100year_COM	EX_STM_MH6-S
S7	0.33	82.08	80.00	0.5000	Chicago_4h_100year_COM	MH7-S
S8	0.42	33.23	80.00	0.5000	Chicago_4h_100year_COM	MH8-S
S9	0.39	39.12	80.00	0.5000	Chicago_4h_100year_COM	MH14-S

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Node Summary
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Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
CBMH12	JUNCTION	187.61	3.19	0.0	
CBMH12-S	JUNCTION	190.80	0.30	0.0	
Dummy	JUNCTION	189.90	0.30	0.0	
EX_MH1	JUNCTION	185.47	3.17	0.0	
EX_MH1-S	JUNCTION	188.64	0.30	0.0	
EX_STM_MH1	JUNCTION	191.70	2.25	0.0	
EX_STM_MH1-S	JUNCTION	193.95	0.30	0.0	
EX_STM_MH2	JUNCTION	191.00	2.00	0.0	
EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0	

EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.30	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.48	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.20	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH16	JUNCTION	188.50	2.05	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.90	0.0
MH19-S	JUNCTION	189.70	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	2.92	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	3.3070	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140
C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130
C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130

C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	MH16	MH17	CONDUIT	13.0	1.5386	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.4719	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
PUMP	STM_TANK	MH16	TYPE4 PUMP			
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

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

C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	19.09
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.07
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	CIRCULAR	1.20	1.13	0.30	1.20	1	1.95
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	CIRCULAR	1.20	1.13	0.30	1.20	1	1.66
Pipe_-_(77)_2	CIRCULAR	1.20	1.13	0.30	1.20	1	2.12
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.21
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

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Transect Summary
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Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761
0.7046	0.7341	0.7644	0.7955	0.8275
0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

0.0147 0.0293 0.0440 0.0587 0.0733
0.1026 0.1317 0.1608 0.1898 0.2188
0.2477 0.2766 0.3053 0.3341 0.3627
0.3913 0.4198 0.4483 0.4767 0.5051
0.5334 0.5616 0.5898 0.6179 0.6459
0.6735 0.6991 0.7228 0.7447 0.7651
0.7841 0.8017 0.8182 0.8337 0.8482
0.8618 0.8747 0.8869 0.8985 0.9095
0.9200 0.9301 0.9398 0.9492 0.9582
0.9670 0.9755 0.9839 0.9920 1.0000
Width:
0.0846 0.1692 0.2538 0.3385 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4462 0.4692 0.4923 0.5154 0.5385
0.5615 0.5846 0.6077 0.6308 0.6538
0.6769 0.7000 0.7231 0.7462 0.7692
0.7923 0.8154 0.8385 0.8615 0.8846
0.9077 0.9308 0.9538 0.9769 1.0000

Transect full-7m
Area:
0.0006 0.0024 0.0054 0.0097 0.0151
0.0217 0.0296 0.0387 0.0489 0.0604
0.0731 0.0869 0.1010 0.1151 0.1292
0.1433 0.1574 0.1715 0.1856 0.1997
0.2138 0.2279 0.2419 0.2560 0.2701
0.2848 0.3007 0.3179 0.3362 0.3557
0.3764 0.3984 0.4215 0.4459 0.4715
0.4983 0.5262 0.5554 0.5858 0.6174
0.6503 0.6843 0.7195 0.7560 0.7936
0.8325 0.8726 0.9138 0.9563 1.0000
Hrad:
0.0182 0.0364 0.0546 0.0728 0.0910
0.1092 0.1274 0.1456 0.1638 0.1820
0.2002 0.2243 0.2602 0.2960 0.3317
0.3673 0.4028 0.4381 0.4733 0.5084
0.5434 0.5783 0.6131 0.6477 0.6822
0.7157 0.7452 0.7713 0.7942 0.8145
0.8325 0.8484 0.8626 0.8754 0.8869
0.8974 0.9070 0.9160 0.9243 0.9322
0.9397 0.9469 0.9539 0.9607 0.9673
0.9739 0.9805 0.9870 0.9935 1.0000
Width:
0.0273 0.0545 0.0818 0.1091 0.1364
0.1636 0.1909 0.2182 0.2455 0.2727
0.3000 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3455 0.3727 0.4000 0.4273 0.4545
0.4818 0.5091 0.5364 0.5636 0.5909
0.6182 0.6455 0.6727 0.7000 0.7273
0.7545 0.7818 0.8091 0.8364 0.8636
0.8909 0.9182 0.9455 0.9727 1.0000

Transect full-8.5m
Area:
0.0021 0.0086 0.0192 0.0333 0.0475
0.0618 0.0760 0.0903 0.1046 0.1188
0.1331 0.1473 0.1616 0.1758 0.1901
0.2044 0.2186 0.2329 0.2471 0.2614
0.2757 0.2899 0.3042 0.3184 0.3327
0.3474 0.3632 0.3799 0.3977 0.4164
0.4361 0.4569 0.4786 0.5013 0.5250
0.5497 0.5754 0.6021 0.6298 0.6585
0.6881 0.7188 0.7505 0.7831 0.8168
0.8515 0.8871 0.9237 0.9614 1.0000
Hrad:
0.0157 0.0314 0.0470 0.0731 0.1043
0.1354 0.1664 0.1974 0.2282 0.2590
0.2897 0.3202 0.3508 0.3812 0.4115
0.4418 0.4720 0.5021 0.5321 0.5620
0.5918 0.6216 0.6513 0.6809 0.7104
0.7394 0.7655 0.7890 0.8102 0.8293
0.8465 0.8620 0.8760 0.8886 0.9000
0.9104 0.9199 0.9286 0.9366 0.9440
0.9509 0.9574 0.9635 0.9693 0.9748
0.9801 0.9853 0.9903 0.9952 1.0000
Width:
0.1093 0.2186 0.3280 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3898 0.4153 0.4407 0.4661 0.4915
0.5169 0.5424 0.5678 0.5932 0.6186
0.6441 0.6695 0.6949 0.7203 0.7458
0.7712 0.7966 0.8220 0.8475 0.8729

0.8983 0.9237 0.9492 0.9746 1.0000

****
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
****

****
Analysis Options
****
Flow Units ..... CMS
Process Models:
  Rainfall/Runoff ..... YES
  RDII ..... NO
  Snowmelt ..... NO
  Groundwater ..... NO
  Flow Routing ..... YES
  Ponding Allowed ..... YES
  Water Quality ..... NO
Infiltration Method ..... CURVE_NUMBER
Flow Routing Method ..... DYNWAVE
Surcharge Method ..... EXTRAN
Starting Date 04/29/2020 00:00:00
Ending Date 05/02/2020 00:00:00
Antecedent Dry Days 0.0
Report Time Step 00:01:00
Wet Time Step 00:01:00
Dry Time Step 00:01:00
Routing Time Step ..... 5.00 sec
Variable Time Step ..... YES
Maximum Trials 8
Number of Threads 6
Head Tolerance ..... 0.001500 m

Runoff Quantity Continuity	Volume hectare-m	Depth mm
Total Precipitation	2.122	79.436
Evaporation Loss	0.000	0.000
Infiltration Loss	0.988	36.972
Surface Runoff	1.103	41.288
Final Storage	0.032	1.200
Continuity Error (%)	-0.031	

Flow Routing Continuity	Volume hectare-m	Volume 10^6 ltr
Dry Weather Inflow	0.000	0.000
Wet Weather Inflow	1.103	11.028
Groundwater Inflow	0.000	0.000
RDII Inflow	0.000	0.000
External Inflow	0.000	0.000
External Outflow	1.105	11.046
Flooding Loss	0.000	0.000
Evaporation Loss	0.000	0.000
Exfiltration Loss	0.000	0.000
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.003
Continuity Error (%)	-0.204	

****
Highest Continuity Errors
****
Node MH8 (-1.29%)

****
Time-Step Critical Elements
****
Link C5 (4.40%)
Link Pipe_-_(70) (3.89%)
Link Pipe_-_(72) (2.39%)

****
Highest Flow Instability Indexes
****
Link Pipe_-_(70) (6)
Link Pipe_-_(69) (6)
Link Pipe_-_(72) (3)
Link C1-S7 (3)
Link Pipe_-_(73)_(1) (3)

****

Routing Time Step Summary
****

Minimum Time Step	:	0.50 sec
Average Time Step	:	4.77 sec
Maximum Time Step	:	5.00 sec
Percent in Steady State	:	0.00
Average Iterations per Step	:	2.11
Percent Not Converging	:	0.69

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	79.44	0.00	0.00	49.52	5.31	23.18	28.49	0.72	0.13	0.359
Ext.1_2	79.44	0.00	0.00	2.32	74.81	1.59	76.41	0.29	0.23	0.962
Ext.2	79.44	0.00	0.00	55.22	0.00	22.95	22.95	1.48	0.11	0.289
Ext.4	79.44	0.00	0.00	46.15	5.31	26.57	31.87	2.74	0.48	0.401
Ext.5	79.44	0.00	0.00	32.25	27.57	18.57	46.14	0.69	0.35	0.581
S1	79.44	0.00	0.00	40.44	15.76	22.11	37.86	0.06	0.02	0.477
S10	79.44	0.00	0.00	9.40	63.01	6.24	69.25	0.14	0.11	0.872
S11	79.44	0.00	0.00	9.35	63.02	6.29	69.31	0.09	0.07	0.873
S12	79.44	0.00	0.00	9.38	63.02	6.26	69.28	0.11	0.08	0.872
S13	79.44	0.00	0.00	9.28	63.05	6.36	69.41	0.04	0.03	0.874
S14	79.44	0.00	0.00	9.46	63.00	6.17	69.17	0.20	0.15	0.871
S15	79.44	0.00	0.00	9.40	63.01	6.24	69.25	0.10	0.07	0.872
S16	79.44	0.00	0.00	9.42	63.01	6.22	69.23	0.06	0.05	0.871
S17	79.44	0.00	0.00	9.55	62.99	6.09	69.08	0.54	0.37	0.870
S18	79.44	0.00	0.00	42.63	12.61	23.05	35.66	0.04	0.01	0.449
S2	79.44	0.00	0.00	9.71	62.98	5.93	68.91	0.27	0.16	0.867
S3	79.44	0.00	0.00	37.80	15.76	24.75	40.51	0.05	0.02	0.510
S4	79.44	0.00	0.00	15.88	47.30	15.40	62.69	0.08	0.06	0.789
S5	79.44	0.00	0.00	9.51	62.99	6.13	69.12	0.23	0.17	0.870
S6	79.44	0.00	0.00	9.58	62.99	6.05	69.04	0.17	0.11	0.869
S6_ROW1	79.44	0.00	0.00	2.30	74.85	1.61	76.46	0.38	0.33	0.963
S6_ROW2	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.22	0.962
S6_ROW3	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.22	0.962
S6_ROW4	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.22	0.962
S6_ROW5	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.23	0.962
S6_ROW6	79.44	0.00	0.00	1.97	74.83	1.94	76.77	0.32	0.27	0.966
S6_ROW7	79.44	0.00	0.00	1.97	74.83	1.94	76.77	0.34	0.29	0.966
S7	79.44	0.00	0.00	9.37	63.02	6.26	69.28	0.23	0.18	0.872
S8	79.44	0.00	0.00	9.61	62.98	6.03	69.01	0.29	0.19	0.869
S9	79.44	0.00	0.00	9.55	62.99	6.09	69.08	0.27	0.19	0.870

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Node Depth Summary
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Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days	hr:min	Reported Max Depth Meters
CBMH12	JUNCTION	0.20	1.07	188.67	0	04:27	1.07
CBMH12-S	JUNCTION	0.00	0.05	190.85	0	01:26	0.05
Dummy	JUNCTION	0.00	0.00	189.90	0	00:00	0.00
EX_MH1	JUNCTION	0.09	1.72	187.19	0	01:28	1.51
EX_MH1-S	JUNCTION	0.00	0.08	188.72	0	01:27	0.08
EX_STM_MH1	JUNCTION	0.00	0.10	191.80	0	01:25	0.10
EX_STM_MH1-S	JUNCTION	0.00	0.05	194.00	0	01:25	0.05
EX_STM_MH2	JUNCTION	0.01	0.20	191.20	0	01:26	0.20
EX_STM_MH2-S	JUNCTION	0.00	0.07	193.07	0	01:25	0.07
EX_STM_MH3	JUNCTION	0.01	0.18	190.27	0	01:26	0.18
EX_STM_MH3-S	JUNCTION	0.00	0.05	192.55	0	01:26	0.05
EX_STM_MH4	JUNCTION	0.02	0.31	187.92	0	01:28	0.30
EX_STM_MH4-S	JUNCTION	0.00	0.07	190.88	0	01:25	0.07
EX_STM_MH5	JUNCTION	0.10	2.83	187.60	0	01:25	1.84
EX_STM_MH-5-S	JUNCTION	0.02	0.30	187.60	0	01:34	0.30
EX_STM_MH6	JUNCTION	0.08	0.73	184.76	0	01:31	0.73
EX_STM_MH6-S	JUNCTION	0.00	0.06	187.66	0	01:25	0.06
EX_STM_MH7	JUNCTION	0.08	0.73	184.13	0	01:31	0.73
EX_STM_MH7-S	JUNCTION	0.00	0.01	187.63	0	01:36	0.01
EX-MH20	JUNCTION	0.08	1.28	187.51	0	01:27	1.21
EX-MH20-S	JUNCTION	0.00	0.07	189.82	0	01:26	0.06
J-S1	JUNCTION	0.09	1.74	187.13	0	01:28	1.52
J-S7	JUNCTION	0.02	0.27	189.67	0	01:27	0.27
J-S7minor	JUNCTION	0.05	1.01	192.56	0	01:25	1.00
MH_C1	JUNCTION	0.02	0.20	188.80	0	02:36	0.20
MH_C2	JUNCTION	0.02	0.44	188.51	0	01:54	0.43
MH_C3	JUNCTION	0.03	0.59	188.52	0	01:53	0.59
MH_C4	JUNCTION	0.05	1.11	188.60	0	01:40	1.01
MH1	JUNCTION	0.01	0.12	188.67	0	04:29	0.12
MH10	JUNCTION	0.53	1.77	188.67	0	04:30	1.77

MH10-S	JUNCTION	0.00	0.14	190.76	0	01:29	0.14	
MH11	JUNCTION	0.01	0.11	188.67	0	04:27	0.11	
MH11-S	JUNCTION	0.00	0.01	191.58	0	01:25	0.01	
MH13	JUNCTION	0.32	1.35	188.67	0	04:28	1.35	
MH13-S	JUNCTION	0.00	0.07	190.77	0	01:26	0.07	
MH14	JUNCTION	0.14	0.88	188.67	0	04:28	0.88	
MH14-S	JUNCTION	0.00	0.05	191.02	0	01:25	0.04	
MH15	JUNCTION	0.60	1.90	188.67	0	04:30	1.90	
MH16	JUNCTION	0.05	0.06	188.56	0	01:01	0.06	
MH17	JUNCTION	0.12	1.34	188.50	0	01:52	1.33	
MH17-S	JUNCTION	0.00	0.01	190.36	0	01:25	0.01	
MH18	JUNCTION	0.13	1.43	188.50	0	01:52	1.42	
MH18-S	JUNCTION	0.00	0.06	190.27	0	01:25	0.06	
MH19	JUNCTION	0.17	1.70	188.51	0	01:52	1.70	
MH19-S	JUNCTION	0.01	0.14	189.84	0	01:30	0.14	
MH1-S	JUNCTION	0.00	0.04	192.12	0	01:25	0.04	
MH2	JUNCTION	0.02	0.26	188.67	0	04:29	0.26	
MH21	JUNCTION	0.01	1.75	188.33	0	01:29	0.49	
MH21-S	JUNCTION	0.00	0.03	190.60	0	01:25	0.03	
MH22	JUNCTION	0.01	2.04	188.26	0	01:28	0.80	
MH22-S	JUNCTION	0.00	0.06	189.49	0	01:25	0.06	
MH23	JUNCTION	0.02	2.04	188.07	0	01:28	0.98	
MH23-S	JUNCTION	0.00	0.06	189.46	0	01:26	0.06	
MH24	JUNCTION	0.02	1.49	187.35	0	01:28	1.28	
MH24-S	JUNCTION	0.00	0.07	189.07	0	01:26	0.07	
MH25	JUNCTION	0.02	1.49	187.23	0	01:28	1.24	
MH2-S	JUNCTION	0.00	0.04	191.99	0	01:25	0.04	
MH3	JUNCTION	0.07	0.59	188.67	0	04:29	0.59	
MH3-S	JUNCTION	0.00	0.04	191.36	0	01:26	0.04	
MH4	JUNCTION	0.22	1.09	188.67	0	04:29	1.09	
MH4-S	JUNCTION	0.00	0.06	190.99	0	01:25	0.06	
MH5	JUNCTION	0.01	0.07	188.81	0	01:25	0.07	
MH5-S	JUNCTION	0.00	0.03	191.78	0	01:25	0.03	
MH6	JUNCTION	0.04	0.39	188.67	0	04:29	0.39	
MH6-S	JUNCTION	0.00	0.06	191.38	0	01:25	0.06	
MH7	JUNCTION	0.09	0.68	188.67	0	04:29	0.68	
MH7-S	JUNCTION	0.00	0.07	191.18	0	01:25	0.07	
MH8	JUNCTION	0.24	1.15	188.67	0	04:29	1.15	
MH8-S	JUNCTION	0.00	0.08	190.90	0	01:26	0.08	
MH9	JUNCTION	0.35	1.41	188.67	0	04:29	1.41	
MH9-S	JUNCTION	0.01	0.17	190.76	0	01:29	0.17	
TEE1	JUNCTION	0.13	1.51	188.50	0	01:53	1.50	
J9_COM	OUTFALL	0.08	0.64	183.74	0	01:32	0.64	
STM_TANK	STORAGE	1.13	2.67	188.67	0	04:30	2.67	

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.015	0	01:27	0	0.0923	-0.186	
CBMH12-S	JUNCTION	0.159	0.169	0	01:25	0.266	0.283	-0.024	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.588	0	01:26	0	5.91	-0.016	
EX_MH1-S	JUNCTION	0.227	1.023	0	01:26	0.285	1.25	-0.300	
EX_STM_MH1	JUNCTION	0.000	0.024	0	01:25	0	0.044	0.939	
EX_STM_MH1-S	JUNCTION	0.325	0.325	0	01:25	0.382	0.382	-0.162	
EX_STM_MH2	JUNCTION	0.000	0.097	0	01:25	0	0.183	-0.222	
EX_STM_MH2-S	JUNCTION	0.222	0.516	0	01:25	0.278	0.617	0.117	
EX_STM_MH3	JUNCTION	0.000	0.116	0	01:26	0	0.212	-0.018	
EX_STM_MH3-S	JUNCTION	0.223	0.664	0	01:24	0.279	0.757	-0.210	
EX_STM_MH4	JUNCTION	0.000	0.336	0	01:27	0	1.38	-0.006	
EX_STM_MH4-S	JUNCTION	0.446	0.833	0	01:25	0.561	0.944	-0.040	
EX_STM_MH5	JUNCTION	0.000	1.322	0	01:30	0	8.24	-0.003	
EX_STM_MH-5-S	JUNCTION	0.624	1.400	0	01:26	1.01	2.34	0.384	
EX_STM_MH6	JUNCTION	0.000	1.342	0	01:30	0	8.3	-0.001	
EX_STM_MH6-S	JUNCTION	0.287	0.287	0	01:25	0.345	0.345	-0.889	
EX_STM_MH7	JUNCTION	0.000	1.344	0	01:31	0	8.31	-0.000	
EX_STM_MH7-S	JUNCTION	0.000	0.011	0	01:26	0	0.00805	19.197	
EX-MH20	JUNCTION	0.000	0.425	0	01:27	0	5.47	0.014	
EX-MH20-S	JUNCTION	0.000	0.733	0	01:26	0	0.835	0.023	
J-S1	JUNCTION	0.000	0.557	0	01:26	0	5.91	-0.003	
J-S7	JUNCTION	0.000	0.269	0	01:27	0	1.27	0.008	
J-S7minor	JUNCTION	0.126	0.289	0	01:24	0.715	1.06	0.165	
MH_C1	JUNCTION	0.111	0.111	0	02:35	1.48	1.48	-0.066	
MH_C2	JUNCTION	0.000	0.111	0	02:36	0	1.49	0.053	
MH_C3	JUNCTION	0.000	0.116	0	02:19	0	1.48	-0.073	
MH_C4	JUNCTION	0.000	0.118	0	02:18	0	1.49	0.024	
MH1	JUNCTION	0.000	0.017	0	01:25	0	0.0449	0.051	
MH10	JUNCTION	0.000	0.920	0	01:29	0	2.02	-0.329	
MH10-S	JUNCTION	0.032	0.414	0	01:26	0.0399	0.517	0.000	
MH11	JUNCTION	0.000	0.007	0	01:25	0	0.0428	0.191	
MH11-S	JUNCTION	0.022	0.022	0	01:25	0.0602	0.0602	0.100	
MH13	JUNCTION	0.000	0.089	0	01:26	0	0.337	-0.131	

MH13-S	JUNCTION	0.152	0.407	0	01:25	0.194	0.577	-0.019
MH14	JUNCTION	0.000	0.030	0	01:25	0	0.122	0.343
MH14-S	JUNCTION	0.186	0.186	0	01:25	0.27	0.27	-0.148
MH15	JUNCTION	0.000	0.920	0	01:29	0	2.02	-0.492
MH16	JUNCTION	0.000	0.010	0	01:00	0	2.03	-0.000
MH17	JUNCTION	0.000	0.037	0	01:37	0	2.05	0.008
MH17-S	JUNCTION	0.012	0.012	0	01:25	0.0382	0.0382	0.041
MH18	JUNCTION	0.000	0.081	0	01:37	0	2.17	-0.025
MH18-S	JUNCTION	0.374	0.383	0	01:25	0.542	0.564	-0.234
MH19	JUNCTION	0.000	0.224	0	01:30	0	4.15	-0.022
MH19-S	JUNCTION	0.000	0.330	0	01:25	0	0.458	0.563
MH1-S	JUNCTION	0.166	0.166	0	01:25	0.234	0.234	-0.034
MH2	JUNCTION	0.000	0.029	0	01:25	0	0.0955	0.108
MH21	JUNCTION	0.000	0.071	0	01:28	0	0.0336	0.237
MH21-S	JUNCTION	0.147	0.147	0	01:25	0.199	0.199	-0.098
MH22	JUNCTION	0.000	0.154	0	01:27	0	0.14	-0.015
MH22-S	JUNCTION	0.073	0.209	0	01:25	0.0953	0.266	0.013
MH23	JUNCTION	0.000	0.159	0	01:27	0	0.208	0.033
MH23-S	JUNCTION	0.000	0.169	0	01:25	0	0.168	0.104
MH24	JUNCTION	0.000	0.187	0	01:26	0	0.239	-0.100
MH24-S	JUNCTION	0.049	0.168	0	01:26	0.0647	0.167	-0.066
MH25	JUNCTION	0.000	0.103	0	01:26	0	0.239	-0.071
MH2-S	JUNCTION	0.000	0.148	0	01:25	0	0.189	-0.115
MH3	JUNCTION	0.000	0.035	0	01:25	0	0.12	-0.004
MH3-S	JUNCTION	0.000	0.134	0	01:25	0	0.139	0.225
MH4	JUNCTION	0.000	0.107	0	01:26	0	0.381	0.093
MH4-S	JUNCTION	0.000	0.493	0	01:25	0	0.537	0.021
MH5	JUNCTION	0.000	0.011	0	01:25	0	0.0569	0.081
MH5-S	JUNCTION	0.133	0.133	0	01:25	0.217	0.217	-0.036
MH6	JUNCTION	0.000	0.030	0	01:25	0	0.14	0.117
MH6-S	JUNCTION	0.162	0.280	0	01:25	0.212	0.372	-0.001
MH7	JUNCTION	0.000	0.060	0	01:25	0	0.239	0.001
MH7-S	JUNCTION	0.177	0.420	0	01:25	0.227	0.517	-0.020
MH8	JUNCTION	0.000	0.164	0	01:26	0	0.495	-1.271
MH8-S	JUNCTION	0.188	0.637	0	01:25	0.287	0.804	-0.070
MH9	JUNCTION	0.000	0.527	0	01:27	0	1.29	0.285
MH9-S	JUNCTION	0.000	0.577	0	01:26	0	0.805	0.102
TEE1	JUNCTION	0.000	0.145	0	01:30	0	3.72	0.004
J9_COM	OUTFALL	0.481	1.711	0	01:35	2.74	11	0.000
STM_TANK	STORAGE	0.000	0.920	0	01:29	0	2.03	-0.074

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Node Surcharge Summary
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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
CBMH12	JUNCTION	15.29	0.615	2.128
EX_MH1	JUNCTION	0.35	0.965	1.450
EX_STM_MH5	JUNCTION	0.46	2.080	0.000
EX-MH20	JUNCTION	0.31	0.751	2.204
J-S1	JUNCTION	0.36	0.987	0.873
MH_C4	JUNCTION	0.93	0.402	2.319
MH10	JUNCTION	24.23	1.021	1.948
MH13	JUNCTION	19.91	0.825	2.028
MH14	JUNCTION	12.82	0.502	2.298
MH15	JUNCTION	25.68	1.086	2.008
MH18	JUNCTION	0.61	0.167	1.709
MH19	JUNCTION	1.59	0.502	1.194
MH21	JUNCTION	0.01	1.298	2.235
MH22	JUNCTION	0.15	1.500	1.170
MH23	JUNCTION	0.23	1.502	1.328
MH24	JUNCTION	0.30	0.980	1.649
MH25	JUNCTION	0.34	0.978	1.428
MH3	JUNCTION	4.02	0.127	2.648
MH4	JUNCTION	10.86	0.414	2.258
MH7	JUNCTION	5.64	0.193	2.438
MH8	JUNCTION	11.61	0.447	2.148
MH9	JUNCTION	17.20	0.702	1.918
TEE1	JUNCTION	0.93	0.305	2.239
STM_TANK	STORAGE	28.33	1.212	1.828

****
Node Flooding Summary
****

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CMS	Time of Max Occurrence days hr:min	Total Flood Volume 10^6 ltr	Maximum Ponded Depth Meters
EX_STM_MH5	0.01	0.162	0 01:25	0.000	0.300

****
Storage Volume Summary
****

Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	0.732	25	0	0	1.737	59	0 04:30	0.043

****
Outfall Loading Summary
****

Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	92.89	0.086	1.711	11.046
System	92.89	0.086	1.711	11.046

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.116	0 01:27	1.47	0.33	0.50
C10	CHANNEL	0.150	0 01:26	0.57	0.02	0.24
C11	CHANNEL	0.714	0 01:26	1.13	0.05	0.24
C12	CHANNEL	0.000	0 00:00	0.00	0.00	0.11
C13	CONDUIT	0.536	0 01:30	1.43	0.66	1.00
C14	CHANNEL	0.000	0 00:00	0.00	0.00	0.24
C17	CONDUIT	0.409	0 01:26	2.11	0.95	1.00
C1-S	CHANNEL	0.444	0 01:26	0.86	0.03	0.21
C1-S7	CONDUIT	0.154	0 01:25	2.72	0.49	0.75
C2	CONDUIT	0.021	0 01:26	0.82	0.11	0.22
C2-S	CHANNEL	0.294	0 01:25	0.63	0.03	0.20
C3	CONDUIT	0.090	0 01:27	1.32	0.40	0.45
C3-S	CHANNEL	0.372	0 01:25	0.72	0.06	0.21
C4	CONDUIT	0.336	0 01:27	2.12	0.55	0.79
C4-S	CHANNEL	0.733	0 01:26	1.28	0.06	0.22
C5	CONDUIT	0.557	0 01:26	1.83	0.68	1.00
C5-S	CHANNEL	0.843	0 01:27	0.54	0.08	0.61
C6	CONDUIT	1.322	0 01:30	3.04	1.57	0.96
C6-S	CHANNEL	0.183	0 01:25	0.15	0.03	0.57
C7	CONDUIT	1.340	0 01:31	2.20	0.74	0.66
C7-S	CHANNEL	0.011	0 01:26	0.07	0.01	0.10
C8	CONDUIT	1.344	0 01:32	2.26	0.68	0.65
C9	CONDUIT	0.268	0 01:27	2.79	0.62	0.58
Pipe_-_(116)	CONDUIT	0.111	0 02:36	1.27	0.19	0.42
Pipe_-_(117)	CONDUIT	0.116	0 02:19	1.27	0.20	0.72
Pipe_-_(119)	CONDUIT	0.118	0 02:18	1.16	0.20	0.94
Pipe_-_(120)	CONDUIT	0.118	0 02:18	1.10	0.20	1.00
Pipe_-_(125)	CONDUIT	0.129	0 01:27	1.05	0.71	1.00
Pipe_-_(125)-S	CHANNEL	0.169	0 01:25	0.34	0.05	0.20
Pipe_-_(126)	CONDUIT	0.010	0 01:01	1.05	0.14	0.52
Pipe_-_(127)	CONDUIT	0.106	0 01:27	1.07	0.58	1.00
Pipe_-_(127)-S	CHANNEL	0.134	0 01:26	0.69	0.02	0.21
Pipe_-_(128)	CONDUIT	0.114	0 01:26	1.08	0.63	1.00
Pipe_-_(129)	CONDUIT	0.103	0 01:26	0.90	0.57	1.00
Pipe_-_(64)	CONDUIT	0.017	0 01:25	0.80	0.14	0.43
Pipe_-_(64)-S	CHANNEL	0.148	0 01:25	0.59	0.02	0.13
Pipe_-_(65)	CONDUIT	0.029	0 01:25	0.92	0.23	0.85
Pipe_-_(65)-S	CHANNEL	0.134	0 01:25	0.61	0.01	0.12
Pipe_-_(66)_(1)	CONDUIT	0.029	0 01:26	0.93	0.24	1.00
Pipe_-_(66)_(1)-S	CHANNEL	0.146	0 01:25	0.31	0.02	0.20
Pipe_-_(67)	CONDUIT	0.089	0 01:26	1.04	0.29	1.00
Pipe_-_(67)-S	CHANNEL	0.316	0 01:26	0.38	0.07	0.36
Pipe_-_(69)	CONDUIT	0.920	0 01:29	2.40	1.17	1.00
Pipe_-_(70)	CONDUIT	0.920	0 01:29	2.57	0.92	1.00
Pipe_-_(71)	CONDUIT	0.034	0 01:26	0.97	0.28	1.00
Pipe_-_(71)-S	CHANNEL	0.118	0 01:26	0.35	0.01	0.15
Pipe_-_(72)	CONDUIT	0.107	0 01:26	1.18	0.18	1.00
Pipe_-_(72)-S	CHANNEL	0.472	0 01:26	0.82	0.04	0.22
Pipe_-_(73)	CONDUIT	0.164	0 01:26	0.96	0.28	1.00
Pipe_-_(73)_(1)	CONDUIT	0.526	0 01:27	1.76	0.88	1.00
Pipe_-_(73)_(1)-S	CHANNEL	0.080	0 01:26	0.07	0.03	0.53
Pipe_-_(73)-S	CHANNEL	0.577	0 01:26	0.56	0.08	0.40
Pipe_-_(74)	CONDUIT	0.011	0 01:25	0.91	0.11	0.44

Pipe_-_(74)-S	CHANNEL	0.119	0	01:25	0.36	0.01	0.15
Pipe_-_(75)	CONDUIT	0.030	0	01:25	0.88	0.15	0.93
Pipe_-_(75)_(1)	CONDUIT	0.059	0	01:26	1.10	0.29	1.00
Pipe_-_(75)_(1)-S	CHANNEL	0.379	0	01:25	0.76	0.05	0.20
Pipe_-_(75)-S	CHANNEL	0.247	0	01:25	0.48	0.04	0.20
Pipe_-_(76)	CONDUIT	0.035	0	01:37	0.56	0.02	1.00
Pipe_-_(76)-S	CHANNEL	0.010	0	01:25	0.08	0.00	0.13
Pipe_-_(77)_1	CONDUIT	0.051	0	01:39	0.62	0.03	1.00
Pipe_-_(77)_2	CONDUIT	0.138	0	02:21	0.43	0.07	1.00
Pipe_-_(77)-S	CHANNEL	0.330	0	01:25	0.43	0.05	0.33
Pipe_-_(79)	CONDUIT	0.066	0	01:28	0.64	0.37	1.00
Pipe_-_(79)-S	CHANNEL	0.136	0	01:25	0.37	0.01	0.16
Pipe_-_(85)	CONDUIT	0.007	0	01:27	0.77	0.04	0.64
Pipe_-_(85)-S	CHANNEL	0.010	0	01:25	0.06	0.00	0.10
Pipe_-_(86)	CONDUIT	0.015	0	01:27	0.71	0.07	1.00
Pipe_-_(86)-S	CHANNEL	0.133	0	01:27	0.26	0.03	0.20
PUMP	PUMP	0.010	0	01:00		1.00	
OR2	ORIFICE	0.177	0	01:53			1.00
J-S7minor-IC	WEIR	0.196	0	01:26			0.43
CBMH12-IC	DUMMY	0.008	0	01:27			
J1_COM-IC	DUMMY	0.024	0	01:25			
J2_COM-IC	DUMMY	0.076	0	01:25			
J3_COM-IC	DUMMY	0.026	0	01:26			
J4_COM-IC	DUMMY	0.075	0	01:25			
J5_COM-IC	DUMMY	0.144	0	01:27			
J6_COM-IC	DUMMY	0.811	0	01:34			
J7_COM-IC	DUMMY	0.028	0	01:25			
J8_COM-IC	DUMMY	0.004	0	01:36			
MH10-IC	DUMMY	0.317	0	01:29			
MH11-IC	DUMMY	0.007	0	01:25			
MH13-IC	DUMMY	0.045	0	01:26			
MH14-IC	DUMMY	0.030	0	01:25			
MH17-IC	DUMMY	0.002	0	01:25			
MH18-IC	DUMMY	0.025	0	01:25			
MH19-IC	DUMMY	0.224	0	01:30			
MH1-IC	DUMMY	0.017	0	01:25			
MH21-IC	DUMMY	0.006	0	01:25			
MH22-IC	DUMMY	0.026	0	01:25			
MH23-IC	DUMMY	0.029	0	01:26			
MH24-IC	DUMMY	0.014	0	01:26			
MH2-IC	DUMMY	0.012	0	01:25			
MH3-IC	DUMMY	0.006	0	01:26			
MH4-IC	DUMMY	0.014	0	01:26			
MH5-IC	DUMMY	0.011	0	01:25			
MH6-IC	DUMMY	0.019	0	01:25			
MH7-IC	DUMMY	0.031	0	01:25			
MH8-IC	DUMMY	0.057	0	01:26			
MH9-IC	DUMMY	0.406	0	01:29			

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Flow Classification Summary
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	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
C1	1.00	0.00	0.88	0.00	0.11	0.01	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.84	0.00	0.16	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.05	0.94	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.32	0.68	0.00	0.00	0.23	0.00
C14	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
C1-S	1.00	0.00	0.35	0.00	0.63	0.01	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.01	0.00	0.96	0.03	0.00	0.00	0.99	0.00
C4-S	1.00	0.00	0.00	0.00	0.12	0.88	0.00	0.00	0.95	0.00
C5	1.00	0.00	0.00	0.00	0.93	0.07	0.00	0.00	0.15	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.95	0.00	0.05	0.00	0.00	0.00	0.97	0.00
C8	1.00	0.00	0.00	0.00	0.85	0.15	0.00	0.00	0.17	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.03	0.00	0.00	0.02	0.00	0.00	0.95	0.01	0.00
Pipe_-_(117)	1.00	0.03	0.00	0.00	0.03	0.00	0.00	0.94	0.00	0.00
Pipe_-_(119)	1.00	0.03	0.00	0.00	0.07	0.00	0.00	0.91	0.02	0.00
Pipe_-_(120)	1.00	0.03	0.00	0.00	0.08	0.00	0.00	0.90	0.00	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
Pipe_-_(125)-S	1.00	0.86	0.00	0.00	0.14	0.01	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.98	0.01	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00

Pipe_-_(127)-S	1.00	0.84	0.06	0.00	0.08	0.02	0.00	0.00	1.00	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.07	0.00	0.00	0.93	0.01	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.08	0.00	0.00	0.92	0.03	0.00
Pipe_-_(64)-S	1.00	0.72	0.00	0.00	0.16	0.12	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.18	0.00	0.00	0.82	0.08	0.00
Pipe_-_(65)-S	1.00	0.88	0.00	0.00	0.01	0.10	0.00	0.00	0.01	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.40	0.00	0.00	0.60	0.11	0.00
Pipe_-_(66)_(1)-S	1.00	0.78	0.01	0.00	0.21	0.00	0.00	0.00	1.00	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.50	0.00	0.00	0.50	0.06	0.00
Pipe_-_(67)-S	1.00	0.84	0.00	0.00	0.15	0.01	0.00	0.00	0.03	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.56	0.00	0.00	0.44	0.02	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.59	0.00	0.00	0.41	0.02	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.27	0.00	0.00	0.73	0.07	0.00
Pipe_-_(71)-S	1.00	0.00	0.89	0.00	0.11	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.38	0.00	0.00	0.62	0.01	0.00
Pipe_-_(72)-S	1.00	0.00	0.00	0.00	0.86	0.13	0.00	0.00	0.87	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.46	0.00	0.00	0.54	0.07	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.54	0.00	0.00	0.46	0.08	0.00
Pipe_-_(73)_(1)-S	1.00	0.87	0.00	0.00	0.12	0.00	0.00	0.00	0.98	0.00
Pipe_-_(73)-S	1.00	0.74	0.00	0.00	0.24	0.02	0.00	0.00	0.06	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.09	0.00	0.00	0.91	0.09	0.00
Pipe_-_(74)-S	1.00	0.77	0.01	0.00	0.20	0.02	0.00	0.00	0.06	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.23	0.00	0.00	0.77	0.08	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.29	0.00	0.00	0.71	0.06	0.00
Pipe_-_(75)_(1)-S	1.00	0.00	0.83	0.00	0.15	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.81	0.03	0.00	0.15	0.01	0.00	0.00	0.99	0.00
Pipe_-_(76)	1.00	0.00	0.00	0.00	0.09	0.00	0.00	0.91	0.00	0.00
Pipe_-_(76)-S	1.00	0.74	0.11	0.00	0.12	0.03	0.00	0.00	0.07	0.00
Pipe_-_(77)_1	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.12	0.00
Pipe_-_(77)_2	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.82	0.00
Pipe_-_(77)-S	1.00	0.00	0.74	0.00	0.26	0.01	0.00	0.00	0.99	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
Pipe_-_(79)-S	1.00	0.76	0.01	0.00	0.21	0.02	0.00	0.00	0.05	0.00
Pipe_-_(85)	1.00	0.03	0.16	0.00	0.17	0.00	0.00	0.64	0.93	0.00
Pipe_-_(85)-S	1.00	0.63	0.23	0.00	0.14	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.43	0.00	0.00	0.57	0.07	0.00
Pipe_-_(86)-S	1.00	0.62	0.00	0.00	0.35	0.02	0.00	0.00	0.06	0.00

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Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C13	0.36	0.36	0.46	0.01	0.01
C17	0.31	0.31	0.35	0.01	0.02
C1-S7	0.01	2.10	0.01	0.01	0.01
C4	0.01	0.01	0.31	0.01	0.01
C5	0.35	0.35	0.36	0.01	0.01
C6	0.01	0.46	0.01	0.48	0.01
Pipe_-_(119)	0.01	0.01	0.93	0.01	0.01
Pipe_-_(120)	1.04	1.04	1.56	0.01	0.01
Pipe_-_(125)	0.20	0.20	0.23	0.01	0.01
Pipe_-_(127)	0.27	0.27	0.30	0.01	0.01
Pipe_-_(128)	0.32	0.32	0.34	0.01	0.01
Pipe_-_(129)	0.36	0.36	0.37	0.01	0.01
Pipe_-_(65)	0.01	0.01	4.01	0.01	0.01
Pipe_-_(66)_(1)	12.82	12.82	19.91	0.01	0.01
Pipe_-_(67)	19.91	19.91	24.23	0.01	0.01
Pipe_-_(69)	24.23	24.23	25.66	0.13	0.01
Pipe_-_(70)	26.97	26.97	28.33	0.01	0.01
Pipe_-_(71)	6.22	6.22	10.85	0.01	0.01
Pipe_-_(72)	10.85	10.85	11.61	0.01	0.05
Pipe_-_(73)	12.27	12.27	17.20	0.01	0.01
Pipe_-_(73)_(1)	17.87	17.87	24.23	0.01	0.01
Pipe_-_(75)	0.01	0.01	5.64	0.01	0.01
Pipe_-_(75)_(1)	6.58	6.58	10.85	0.01	0.01
Pipe_-_(76)	0.54	0.54	0.61	0.01	0.01
Pipe_-_(77)_1	0.75	0.75	0.93	0.01	0.01
Pipe_-_(77)_2	0.93	0.93	1.59	0.01	0.01
Pipe_-_(79)	0.01	0.01	0.15	0.01	0.01
Pipe_-_(85)	0.01	0.01	15.84	0.01	0.01
Pipe_-_(86)	15.29	15.29	19.91	0.01	0.01

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Pumping Summary
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Pump	Percent Utilized	Number of Start-Ups	Min Flow CMS	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr	Power Usage Kw-hr	% Time Off Pump Curve: Low	% Time Off Pump Curve: High
PUMP	91.14	1	0.00	0.01	0.01	2.027	6.35	0.0	0.0

Analysis begun on: Mon Nov 9 14:57:33 2020
Analysis ended on: Mon Nov 9 14:57:39 2020

Proposed - Chicago 4h 100year Storm - Pump Fail

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.1 (Build 5.1.013)
  ---------------------------------------------------------------

  WARNING 03: negative offset ignored for Link C4-S
  WARNING 03: negative offset ignored for Link Pipe_-_(70)
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_1
  WARNING 03: negative offset ignored for Link Pipe_-_(77)_2
  WARNING 10: crest elevation raised to downstream invert for regulator Link J-S7minor-IC
  WARNING 02: maximum depth increased for Node J-S7minor
  WARNING 02: maximum depth increased for Node MH19-S

  *************
  Element Count
  *************
  Number of rain gages ...... 9
  Number of subcatchments ... 30
  Number of nodes ........... 73
  Number of links ........... 100
  Number of pollutants ...... 0
  Number of land uses ....... 0


  ****************
  Raingage Summary
  ****************
                                                  Data       Recording
  Name                 Data Source                Type       Interval
  ----------------------------------------------------------------------
  25mm                 25mm                       INTENSITY   10 min.
  Chicago_24h_100yr    Chicago_24h_100yr_COM      INTENSITY    5 min.
  Chicago_24h_2yr      Chicago_24h_2yr_COM        INTENSITY    5 min.
  Chicago_4h_100year_COM Chicago_4h_100year_COM      INTENSITY    5 min.
  Chicago_4h_10year_COM Chicago_4h_10year_COM        INTENSITY    5 min.
  Chicago_4h_25year_COM Chicago_4h_25year_COM        INTENSITY    5 min.
  Chicago_4h_2yr_COM   Chicago_4h_2yr_COM         INTENSITY    5 min.
  Chicago_4h_50year_COM Chicago_4h_50year_COM        INTENSITY    5 min.
  Chicago_4h_5year_COM Chicago_4h_5year_COM        INTENSITY    5 min.


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  Subcatchment Summary
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  Name                         Area     Width   %Imperv    %Slope Rain Gage            Outlet
  ------------------------------------------------------------------------------------------------
  Ext.1_1                      2.51    100.40      7.00    1.0000 Chicago_4h_100year_COM J-S7minor
  Ext.1_2                      0.37     46.75     95.00    1.0000 Chicago_4h_100year_COM EX_STM_MH4-S
  Ext.2                        6.47    258.62      0.00    0.5000 Chicago_4h_100year_COM MH_C1
  Ext.4                        8.59    818.53      7.00    1.5000 Chicago_4h_100year_COM J9_COM
  Ext.5                        1.49     99.55     35.00    1.5000 Chicago_4h_100year_COM EX_STM_MH-5-S
  S1                           0.16     16.10     20.00    0.5000 Chicago_4h_100year_COM MH11-S
  S10                          0.20     42.08     80.00    0.5000 Chicago_4h_100year_COM MH6-S
  S11                          0.12     38.25     80.00    0.5000 Chicago_4h_100year_COM MH13-S
  S12                          0.16     37.93     80.00    0.5000 Chicago_4h_100year_COM MH13-S
  S13                          0.06     35.94     80.00    0.5000 Chicago_4h_100year_COM MH10-S
  S14                          0.29     41.87     80.00    0.5000 Chicago_4h_100year_COM MH21-S
  S15                          0.14     29.73     80.00    0.5000 Chicago_4h_100year_COM MH22-S
  S16                          0.09     17.51     80.00    0.5000 Chicago_4h_100year_COM MH24-S
  S17                          0.79     78.53     80.00    0.5000 Chicago_4h_100year_COM MH18-S
  S18                          0.11     10.70     16.00    0.5000 Chicago_4h_100year_COM MH17-S
  S2                           0.39     22.67     80.00    0.5000 Chicago_4h_100year_COM CBMH12-S
  S3                           0.11     40.00     20.00    1.5000 Chicago_4h_100year_COM MH5-S
  S4                           0.12     64.00     60.00    1.5000 Chicago_4h_100year_COM MH6-S
  S5                           0.34     39.91     80.00    0.5000 Chicago_4h_100year_COM MH1-S
  S6                           0.25     21.45     80.00    0.5000 Chicago_4h_100year_COM MH5-S
  S6_ROW1                      0.50    135.26     95.00    1.8000 Chicago_4h_100year_COM EX_STM_MH1-S
  S6_ROW2                      0.36     36.43     95.00    1.8000 Chicago_4h_100year_COM EX_STM_MH2-S
  S6_ROW3                      0.37     36.57     95.00    1.8000 Chicago_4h_100year_COM EX_STM_MH3-S
  S6_ROW4                      0.36     36.03     95.00    1.8000 Chicago_4h_100year_COM EX_STM_MH4-S
  S6_ROW5                      0.37     37.28     95.00    1.8000 Chicago_4h_100year_COM EX_MH1-S
  S6_ROW6                      0.42     84.54     95.00    1.0000 Chicago_4h_100year_COM EX_STM_MH-5-S
  S6_ROW7                      0.45     89.84     95.00    1.0000 Chicago_4h_100year_COM EX_STM_MH6-S
  S7                           0.33     82.08     80.00    0.5000 Chicago_4h_100year_COM MH7-S
  S8                           0.42     33.23     80.00    0.5000 Chicago_4h_100year_COM MH8-S
  S9                           0.39     39.12     80.00    0.5000 Chicago_4h_100year_COM MH14-S


  ************
  Node Summary
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                                          Invert      Max.    Ponded    External
  Name                 Type                Elev.     Depth      Area    Inflow
  ------------------------------------------------------------------------------
  CBMH12               JUNCTION           187.61      3.19       0.0
  CBMH12-S             JUNCTION           190.80      0.30       0.0
  Dummy                JUNCTION           189.90      0.30       0.0
  EX_MH1               JUNCTION           185.47      3.17       0.0
  EX_MH1-S             JUNCTION           188.64      0.30       0.0
  EX_STM_MH1           JUNCTION           191.70      2.25       0.0
  EX_STM_MH1-S         JUNCTION           193.95      0.30       0.0
  EX_STM_MH2           JUNCTION           191.00      2.00       0.0
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EX_STM_MH2-S	JUNCTION	193.00	0.30	0.0
EX_STM_MH3	JUNCTION	190.09	2.41	0.0
EX_STM_MH3-S	JUNCTION	192.50	0.30	0.0
EX_STM_MH4	JUNCTION	187.61	3.20	0.0
EX_STM_MH4-S	JUNCTION	190.81	0.30	0.0
EX_STM_MH5	JUNCTION	184.77	2.53	0.0
EX_STM_MH-5-S	JUNCTION	187.30	0.31	0.0
EX_STM_MH6	JUNCTION	184.03	3.57	0.0
EX_STM_MH6-S	JUNCTION	187.60	0.30	0.0
EX_STM_MH7	JUNCTION	183.40	4.22	0.0
EX_STM_MH7-S	JUNCTION	187.62	0.30	0.0
EX-MH20	JUNCTION	186.23	3.77	0.0
EX-MH20-S	JUNCTION	189.75	0.30	0.0
J-S1	JUNCTION	185.39	2.61	0.0
J-S7	JUNCTION	189.40	2.60	0.0
J-S7minor	JUNCTION	191.55	1.10	0.0
MH_C1	JUNCTION	188.60	3.20	0.0
MH_C2	JUNCTION	188.07	4.00	0.0
MH_C3	JUNCTION	187.92	3.96	0.0
MH_C4	JUNCTION	187.49	3.43	0.0
MH1	JUNCTION	188.55	3.53	0.0
MH10	JUNCTION	186.90	3.72	0.0
MH10-S	JUNCTION	190.62	0.30	0.0
MH11	JUNCTION	188.57	3.00	0.0
MH11-S	JUNCTION	191.57	0.30	0.0
MH13	JUNCTION	187.32	3.38	0.0
MH13-S	JUNCTION	190.70	0.30	0.0
MH14	JUNCTION	187.79	3.17	0.0
MH14-S	JUNCTION	190.97	0.30	0.0
MH15	JUNCTION	186.78	3.90	0.0
MH17	JUNCTION	187.16	3.19	0.0
MH17-S	JUNCTION	190.35	0.30	0.0
MH18	JUNCTION	187.07	3.14	0.0
MH18-S	JUNCTION	190.21	0.30	0.0
MH19	JUNCTION	186.80	2.90	0.0
MH19-S	JUNCTION	189.70	0.30	0.0
MH1-S	JUNCTION	192.08	0.30	0.0
MH2	JUNCTION	188.41	3.54	0.0
MH21	JUNCTION	186.59	3.98	0.0
MH21-S	JUNCTION	190.57	0.30	0.0
MH22	JUNCTION	186.22	3.21	0.0
MH22-S	JUNCTION	189.43	0.30	0.0
MH23	JUNCTION	186.03	3.37	0.0
MH23-S	JUNCTION	189.40	0.30	0.0
MH24	JUNCTION	185.86	3.14	0.0
MH24-S	JUNCTION	189.00	0.30	0.0
MH25	JUNCTION	185.74	2.92	0.0
MH2-S	JUNCTION	191.95	0.30	0.0
MH3	JUNCTION	188.08	3.24	0.0
MH3-S	JUNCTION	191.32	0.30	0.0
MH4	JUNCTION	187.58	3.35	0.0
MH4-S	JUNCTION	190.93	0.30	0.0
MH5	JUNCTION	188.74	3.01	0.0
MH5-S	JUNCTION	191.75	0.30	0.0
MH6	JUNCTION	188.28	3.04	0.0
MH6-S	JUNCTION	191.32	0.30	0.0
MH7	JUNCTION	187.99	3.12	0.0
MH7-S	JUNCTION	191.11	0.30	0.0
MH8	JUNCTION	187.52	3.30	0.0
MH8-S	JUNCTION	190.82	0.30	0.0
MH9	JUNCTION	187.26	3.33	0.0
MH9-S	JUNCTION	190.59	0.30	0.0
TEE1	JUNCTION	186.99	3.74	0.0
J9_COM	OUTFALL	183.10	1.05	0.0
STM_TANK	STORAGE	186.00	4.50	0.0

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Link Summary
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Name	From Node	To Node	Type	Length	%Slope	Roughness
C1	EX_STM_MH3	J-S7	CONDUIT	45.9	1.5026	0.0130
C10	MH24-S	EX_MH1-S	CONDUIT	38.3	0.9407	0.0140
C11	EX-MH20-S	EX_MH1-S	CONDUIT	61.1	1.8170	0.0140
C12	Dummy	EX-MH20-S	CONDUIT	30.4	0.4935	0.0140
C13	J-S1	EX_STM_MH5	CONDUIT	114.8	0.5400	0.0130
C14	Dummy	MH19-S	CONDUIT	6.1	3.3070	0.0140
C17	EX-MH20	EX_MH1	CONDUIT	52.7	1.0048	0.0130
C1-S	EX_STM_MH3-S	EX_STM_MH4-S	CONDUIT	102.1	1.6559	0.0140
C1-S7	J-S7minor	J-S7	CONDUIT	19.1	10.5425	0.0130
C2	EX_STM_MH1	EX_STM_MH2	CONDUIT	119.1	0.5039	0.0130
C2-S	EX_STM_MH1-S	EX_STM_MH2-S	CONDUIT	112.5	0.8445	0.0140
C3	EX_STM_MH2	EX_STM_MH3	CONDUIT	120.9	0.6284	0.0130
C3-S	EX_STM_MH2-S	EX_STM_MH3-S	CONDUIT	123.5	0.4048	0.0140
C4	EX_STM_MH4	EX-MH20	CONDUIT	67.5	2.0448	0.0130
C4-S	EX_STM_MH4-S	EX-MH20-S	CONDUIT	71.8	1.4775	0.0140
C5	EX_MH1	J-S1	CONDUIT	14.7	0.5443	0.0130
C5-S	EX_MH1-S	EX_STM_MH-5-S	CONDUIT	132.1	1.0144	0.0140
C6	EX_STM_MH5	EX_STM_MH6	CONDUIT	110.5	0.5700	0.0130

C6-S	EX_STM_MH-5-S	EX_STM_MH6-S	CONDUIT	119.3	-0.2514	0.0140
C7	EX_STM_MH6	EX_STM_MH7	CONDUIT	120.8	0.4389	0.0130
C7-S	EX_STM_MH7-S	EX_STM_MH6-S	CONDUIT	118.6	0.0177	0.0140
C8	EX_STM_MH7	J9_COM	CONDUIT	58.1	0.5162	0.0130
C9	J-S7	EX_STM_MH4	CONDUIT	73.4	2.3410	0.0130
Pipe_-_(116)	MH_C1	MH_C2	CONDUIT	94.0	0.5001	0.0130
Pipe_-_(117)	MH_C2	MH_C3	CONDUIT	18.0	0.5000	0.0130
Pipe_-_(119)	MH_C3	MH_C4	CONDUIT	79.9	0.5005	0.0130
Pipe_-_(120)	MH_C4	TEE1	CONDUIT	31.4	0.4937	0.0130
Pipe_-_(125)	MH22	MH23	CONDUIT	25.0	0.4006	0.0130
Pipe_-_(125)-S	MH22-S	MH23-S	CONDUIT	25.0	0.1202	0.0140
Pipe_-_(126)	STM_TANK	MH17	CONDUIT	33.8	1.7730	0.0130
Pipe_-_(127)	MH23	MH24	CONDUIT	27.2	0.4014	0.0130
Pipe_-_(127)-S	MH23-S	MH24-S	CONDUIT	30.0	1.3327	0.0140
Pipe_-_(128)	MH24	MH25	CONDUIT	14.2	0.4007	0.0130
Pipe_-_(129)	MH25	EX_MH1	CONDUIT	10.9	0.4036	0.0130
Pipe_-_(64)	MH1	MH2	CONDUIT	16.3	0.4973	0.0130
Pipe_-_(64)-S	MH1-S	MH2-S	CONDUIT	16.3	0.7981	0.0140
Pipe_-_(65)	MH2	MH3	CONDUIT	48.4	0.5000	0.0130
Pipe_-_(65)-S	MH2-S	MH3-S	CONDUIT	48.4	1.3018	0.0140
Pipe_-_(66)_(1)	MH14	MH13	CONDUIT	64.7	0.4995	0.0130
Pipe_-_(66)_(1)-S	MH14-S	MH13-S	CONDUIT	64.7	0.4176	0.0140
Pipe_-_(67)	MH13	MH10	CONDUIT	39.1	0.5012	0.0130
Pipe_-_(67)-S	MH13-S	MH10-S	CONDUIT	39.1	0.2046	0.0140
Pipe_-_(69)	MH10	MH15	CONDUIT	13.1	0.4969	0.0130
Pipe_-_(70)	MH15	STM_TANK	CONDUIT	8.0	0.8122	0.0130
Pipe_-_(71)	MH3	MH4	CONDUIT	39.4	0.5000	0.0130
Pipe_-_(71)-S	MH3-S	MH4-S	CONDUIT	39.4	0.9899	0.0140
Pipe_-_(72)	MH4	MH8	CONDUIT	6.7	0.4931	0.0130
Pipe_-_(72)-S	MH4-S	MH8-S	CONDUIT	6.7	1.6437	0.0140
Pipe_-_(73)	MH8	MH9	CONDUIT	44.9	0.5006	0.0130
Pipe_-_(73)_(1)	MH9	MH10	CONDUIT	57.9	0.4996	0.0130
Pipe_-_(73)_(1)-S	MH10-S	MH9-S	CONDUIT	57.9	0.0519	0.0140
Pipe_-_(73)-S	MH8-S	MH9-S	CONDUIT	44.9	0.5117	0.0140
Pipe_-_(74)	MH5	MH6	CONDUIT	30.9	1.0010	0.0130
Pipe_-_(74)-S	MH5-S	MH6-S	CONDUIT	30.9	1.3930	0.0140
Pipe_-_(75)	MH6	MH7	CONDUIT	50.4	0.4996	0.0130
Pipe_-_(75)_(1)	MH7	MH4	CONDUIT	36.4	0.4996	0.0130
Pipe_-_(75)_(1)-S	MH7-S	MH4-S	CONDUIT	36.4	0.4941	0.0140
Pipe_-_(75)-S	MH6-S	MH7-S	CONDUIT	50.4	0.4163	0.0140
Pipe_-_(76)	MH17	MH18	CONDUIT	11.6	0.2495	0.0130
Pipe_-_(76)-S	MH17-S	MH18-S	CONDUIT	11.6	1.2045	0.0140
Pipe_-_(77)_1	MH18	TEE1	CONDUIT	43.9	0.1821	0.0130
Pipe_-_(77)_2	TEE1	MH19	CONDUIT	64.2	0.2961	0.0130
Pipe_-_(77)-S	MH18-S	MH19-S	CONDUIT	108.1	0.4719	0.0140
Pipe_-_(79)	MH21	MH22	CONDUIT	69.2	0.4001	0.0130
Pipe_-_(79)-S	MH21-S	MH22-S	CONDUIT	69.2	1.6466	0.0140
Pipe_-_(85)	MH11	CBMH12	CONDUIT	88.4	1.0000	0.0130
Pipe_-_(85)-S	MH11-S	CBMH12-S	CONDUIT	88.4	0.8710	0.0140
Pipe_-_(86)	CBMH12	MH13	CONDUIT	42.1	0.4989	0.0130
Pipe_-_(86)-S	CBMH12-S	MH13-S	CONDUIT	42.1	0.2376	0.0140
OR2	MH19	EX-MH20	ORIFICE			
J-S7minor-IC	J-S7minor	EX_STM_MH3-S	WEIR			
CBMH12-IC	CBMH12-S	CBMH12	OUTLET			
J1_COM-IC	EX_STM_MH1-S	EX_STM_MH1	OUTLET			
J2_COM-IC	EX_STM_MH2-S	EX_STM_MH2	OUTLET			
J3_COM-IC	EX_STM_MH3-S	EX_STM_MH3	OUTLET			
J4_COM-IC	EX_STM_MH4-S	EX_STM_MH4	OUTLET			
J5_COM-IC	EX_MH1-S	EX_MH1	OUTLET			
J6_COM-IC	EX_STM_MH-5-S	EX_STM_MH5	OUTLET			
J7_COM-IC	EX_STM_MH6-S	EX_STM_MH6	OUTLET			
J8_COM-IC	EX_STM_MH7-S	EX_STM_MH7	OUTLET			
MH10-IC	MH10-S	MH10	OUTLET			
MH11-IC	MH11-S	MH11	OUTLET			
MH13-IC	MH13-S	MH13	OUTLET			
MH14-IC	MH14-S	MH14	OUTLET			
MH17-IC	MH17-S	MH17	OUTLET			
MH18-IC	MH18-S	MH18	OUTLET			
MH19-IC	MH19-S	MH19	OUTLET			
MH1-IC	MH1-S	MH1	OUTLET			
MH21-IC	MH21-S	MH21	OUTLET			
MH22-IC	MH22-S	MH22	OUTLET			
MH23-IC	MH23-S	MH23	OUTLET			
MH24-IC	MH24-S	MH24	OUTLET			
MH2-IC	MH2-S	MH2	OUTLET			
MH3-IC	MH3-S	MH3	OUTLET			
MH4-IC	MH4-S	MH4	OUTLET			
MH5-IC	MH5-S	MH5	OUTLET			
MH6-IC	MH6-S	MH6	OUTLET			
MH7-IC	MH7-S	MH7	OUTLET			
MH8-IC	MH8-S	MH8	OUTLET			
MH9-IC	MH9-S	MH9	OUTLET			

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

C1	CIRCULAR	0.45	0.16	0.11	0.45	1	0.35
C10	full-7m	0.30	2.98	0.16	22.00	1	6.11
C11	full-11m	0.30	4.26	0.20	26.00	1	14.15
C12	full-7m	0.30	2.98	0.16	22.00	1	4.43
C13	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C14	full-11m	0.30	4.26	0.20	26.00	1	19.09
C17	CIRCULAR	0.53	0.22	0.13	0.53	1	0.43
C1-S	full-11m	0.30	4.26	0.20	26.00	1	13.51
C1-S7	CIRCULAR	0.30	0.07	0.07	0.30	1	0.31
C2	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
C2-S	full-11m	0.30	4.26	0.20	26.00	1	9.65
C3	CIRCULAR	0.45	0.16	0.11	0.45	1	0.23
C3-S	full-11m	0.30	4.26	0.20	26.00	1	6.68
C4	CIRCULAR	0.53	0.22	0.13	0.53	1	0.62
C4-S	full-11m	0.30	4.26	0.20	26.00	1	12.76
C5	CIRCULAR	0.75	0.44	0.19	0.75	1	0.82
C5-S	full-11m	0.30	4.26	0.20	26.00	1	10.57
C6	CIRCULAR	0.75	0.44	0.19	0.75	1	0.84
C6-S	full-11m	0.30	4.26	0.20	26.00	1	5.26
C7	CIRCULAR	1.05	0.87	0.26	1.05	1	1.81
C7-S	full-11m	0.30	4.26	0.20	26.00	1	1.40
C8	CIRCULAR	1.05	0.87	0.26	1.05	1	1.96
C9	CIRCULAR	0.45	0.16	0.11	0.45	1	0.44
Pipe_-_(116)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(117)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(119)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(120)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(125)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(125)-S	full-11m	0.30	4.26	0.20	26.00	1	3.64
Pipe_-_(126)	CIRCULAR	0.25	0.05	0.06	0.25	1	0.08
Pipe_-_(127)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(127)-S	full-7m	0.30	2.98	0.16	22.00	1	7.27
Pipe_-_(128)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(129)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(64)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(64)-S	full-11m	0.30	4.26	0.20	26.00	1	9.38
Pipe_-_(65)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(65)-S	full-11m	0.30	4.26	0.20	26.00	1	11.98
Pipe_-_(66)_(1)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(66)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	6.78
Pipe_-_(67)	CIRCULAR	0.53	0.22	0.13	0.53	1	0.30
Pipe_-_(67)-S	full-11m	0.30	4.26	0.20	26.00	1	4.75
Pipe_-_(69)	CIRCULAR	0.75	0.44	0.19	0.75	1	0.78
Pipe_-_(70)	CIRCULAR	0.75	0.44	0.19	0.75	1	1.00
Pipe_-_(71)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.12
Pipe_-_(71)-S	full-11m	0.30	4.26	0.20	26.00	1	10.45
Pipe_-_(72)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(72)-S	full-11m	0.30	4.26	0.20	26.00	1	13.46
Pipe_-_(73)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)	CIRCULAR	0.68	0.36	0.17	0.68	1	0.59
Pipe_-_(73)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	2.39
Pipe_-_(73)-S	full-11m	0.30	4.26	0.20	26.00	1	7.51
Pipe_-_(74)	CIRCULAR	0.30	0.07	0.07	0.30	1	0.10
Pipe_-_(74)-S	full-11m	0.30	4.26	0.20	26.00	1	12.39
Pipe_-_(75)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(75)_(1)-S	full-11m	0.30	4.26	0.20	26.00	1	7.38
Pipe_-_(75)-S	full-11m	0.30	4.26	0.20	26.00	1	6.77
Pipe_-_(76)	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.20
Pipe_-_(76)-S	full-11m	0.30	4.26	0.20	26.00	1	11.52
Pipe_-_(77)_1	RECT_CLOSED	1.20	2.16	0.36	1.80	1	3.59
Pipe_-_(77)_2	RECT_CLOSED	1.20	2.16	0.36	1.80	1	4.58
Pipe_-_(77)-S	full-11m	0.30	4.26	0.20	26.00	1	7.21
Pipe_-_(79)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.18
Pipe_-_(79)-S	full-11m	0.30	4.26	0.20	26.00	1	13.47
Pipe_-_(85)	CIRCULAR	0.38	0.11	0.09	0.38	1	0.18
Pipe_-_(85)-S	full-11m	0.30	4.26	0.20	26.00	1	9.80
Pipe_-_(86)	CIRCULAR	0.45	0.16	0.11	0.45	1	0.20
Pipe_-_(86)-S	full-11m	0.30	4.26	0.20	26.00	1	5.12

****
Transect Summary
****

Transect full-11m
Area:

0.0015	0.0062	0.0139	0.0248	0.0387
0.0542	0.0697	0.0852	0.1007	0.1162
0.1317	0.1472	0.1627	0.1782	0.1937
0.2092	0.2246	0.2401	0.2556	0.2711
0.2866	0.3021	0.3176	0.3331	0.3486
0.3645	0.3813	0.3989	0.4173	0.4366
0.4568	0.4777	0.4996	0.5223	0.5458
0.5701	0.5954	0.6214	0.6483	0.6761
0.7046	0.7341	0.7644	0.7955	0.8275
0.8603	0.8939	0.9285	0.9638	1.0000

Hrad:

0.0147	0.0293	0.0440	0.0587	0.0733

0.1026 0.1317 0.1608 0.1898 0.2188
0.2477 0.2766 0.3053 0.3341 0.3627
0.3913 0.4198 0.4483 0.4767 0.5051
0.5334 0.5616 0.5898 0.6179 0.6459
0.6735 0.6991 0.7228 0.7447 0.7651
0.7841 0.8017 0.8182 0.8337 0.8482
0.8618 0.8747 0.8869 0.8985 0.9095
0.9200 0.9301 0.9398 0.9492 0.9582
0.9670 0.9755 0.9839 0.9920 1.0000
Width:
0.0846 0.1692 0.2538 0.3385 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4231 0.4231 0.4231 0.4231 0.4231
0.4462 0.4692 0.4923 0.5154 0.5385
0.5615 0.5846 0.6077 0.6308 0.6538
0.6769 0.7000 0.7231 0.7462 0.7692
0.7923 0.8154 0.8385 0.8615 0.8846
0.9077 0.9308 0.9538 0.9769 1.0000

Transect full-7m
Area:
0.0006 0.0024 0.0054 0.0097 0.0151
0.0217 0.0296 0.0387 0.0489 0.0604
0.0731 0.0869 0.1010 0.1151 0.1292
0.1433 0.1574 0.1715 0.1856 0.1997
0.2138 0.2279 0.2419 0.2560 0.2701
0.2848 0.3007 0.3179 0.3362 0.3557
0.3764 0.3984 0.4215 0.4459 0.4715
0.4983 0.5262 0.5554 0.5858 0.6174
0.6503 0.6843 0.7195 0.7560 0.7936
0.8325 0.8726 0.9138 0.9563 1.0000
Hrad:
0.0182 0.0364 0.0546 0.0728 0.0910
0.1092 0.1274 0.1456 0.1638 0.1820
0.2002 0.2243 0.2602 0.2960 0.3317
0.3673 0.4028 0.4381 0.4733 0.5084
0.5434 0.5783 0.6131 0.6477 0.6822
0.7157 0.7452 0.7713 0.7942 0.8145
0.8325 0.8484 0.8626 0.8754 0.8869
0.8974 0.9070 0.9160 0.9243 0.9322
0.9397 0.9469 0.9539 0.9607 0.9673
0.9739 0.9805 0.9870 0.9935 1.0000
Width:
0.0273 0.0545 0.0818 0.1091 0.1364
0.1636 0.1909 0.2182 0.2455 0.2727
0.3000 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3182 0.3182 0.3182 0.3182 0.3182
0.3455 0.3727 0.4000 0.4273 0.4545
0.4818 0.5091 0.5364 0.5636 0.5909
0.6182 0.6455 0.6727 0.7000 0.7273
0.7545 0.7818 0.8091 0.8364 0.8636
0.8909 0.9182 0.9455 0.9727 1.0000

Transect full-8.5m
Area:
0.0021 0.0086 0.0192 0.0333 0.0475
0.0618 0.0760 0.0903 0.1046 0.1188
0.1331 0.1473 0.1616 0.1758 0.1901
0.2044 0.2186 0.2329 0.2471 0.2614
0.2757 0.2899 0.3042 0.3184 0.3327
0.3474 0.3632 0.3799 0.3977 0.4164
0.4361 0.4569 0.4786 0.5013 0.5250
0.5497 0.5754 0.6021 0.6298 0.6585
0.6881 0.7188 0.7505 0.7831 0.8168
0.8515 0.8871 0.9237 0.9614 1.0000
Hrad:
0.0157 0.0314 0.0470 0.0731 0.1043
0.1354 0.1664 0.1974 0.2282 0.2590
0.2897 0.3202 0.3508 0.3812 0.4115
0.4418 0.4720 0.5021 0.5321 0.5620
0.5918 0.6216 0.6513 0.6809 0.7104
0.7394 0.7655 0.7890 0.8102 0.8293
0.8465 0.8620 0.8760 0.8886 0.9000
0.9104 0.9199 0.9286 0.9366 0.9440
0.9509 0.9574 0.9635 0.9693 0.9748
0.9801 0.9853 0.9903 0.9952 1.0000
Width:
0.1093 0.2186 0.3280 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3644 0.3644 0.3644 0.3644 0.3644
0.3898 0.4153 0.4407 0.4661 0.4915
0.5169 0.5424 0.5678 0.5932 0.6186
0.6441 0.6695 0.6949 0.7203 0.7458
0.7712 0.7966 0.8220 0.8475 0.8729
0.8983 0.9237 0.9492 0.9746 1.0000

```
************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

***************
Analysis Options
***************
Flow Units ............... CMS
Process Models:
  Rainfall/Runoff ........ YES
  RDII ................... NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Infiltration Method ...... CURVE_NUMBER
Flow Routing Method ...... DYNWAVE
Surcharge Method ......... EXTRAN
Starting Date ............ 04/29/2020 00:00:00
Ending Date .............. 05/02/2020 00:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Wet Time Step ............ 00:01:00
Dry Time Step ............ 00:01:00
Routing Time Step ........ 5.00 sec
Variable Time Step ....... YES
Maximum Trials ........... 8
Number of Threads ........ 6
Head Tolerance ........... 0.001500 m


**************************        Volume         Depth
Runoff Quantity Continuity     hectare-m            mm
**************************     ---------       -------
Total Precipitation ......         2.122        79.436
Evaporation Loss .........         0.000         0.000
Infiltration Loss ........         0.988        36.972
Surface Runoff ...........         1.105        41.355
Final Storage ............         0.030         1.133
Continuity Error (%) .....        -0.031


**************************        Volume        Volume
Flow Routing Continuity        hectare-m      10^6 ltr
**************************     ---------     ---------
Dry Weather Inflow .......         0.000         0.000
Wet Weather Inflow .......         1.105        11.046
Groundwater Inflow .......         0.000         0.000
RDII Inflow ..............         0.000         0.000
External Inflow ..........         0.000         0.000
External Outflow .........         0.904         9.035
Flooding Loss ............         0.000         0.000
Evaporation Loss .........         0.000         0.000
Exfiltration Loss ........         0.000         0.000
Initial Stored Volume ....         0.000         0.000
Final Stored Volume ......         0.199         1.989
Continuity Error (%) .....         0.194


************************
Highest Continuity Errors
************************
Node MH11 (9.26%)
Node CBMH12 (8.59%)
Node MH3 (4.73%)
Node MH2 (4.15%)
Node MH6 (3.83%)


**************************
Time-Step Critical Elements
**************************
Link C5 (4.78%)
Link Pipe_-_(70) (3.80%)
Link Pipe_-_(72) (1.98%)


********************************
Highest Flow Instability Indexes
********************************
Link Pipe_-_(66)_(1) (8)
Link Pipe_-_(64) (4)
Link C1-S7 (3)
Link Pipe_-_(72) (2)
Link J-S7minor-IC (1)
```

****
Routing Time Step Summary
****
Minimum Time Step : 0.50 sec
Average Time Step : 4.79 sec
Maximum Time Step : 5.00 sec
Percent in Steady State : 0.00
Average Iterations per Step : 2.05
Percent Not Converging : 0.43

****
Subcatchment Runoff Summary
****

Subcatchment	Total Precip mm	Total Runon mm	Total Evap mm	Total Infil mm	Imperv Runoff mm	Perv Runoff mm	Total Runoff mm	Total Runoff 10^6 ltr	Peak Runoff CMS	Runoff Coeff
Ext.1_1	79.44	0.00	0.00	49.52	5.31	23.18	28.49	0.72	0.13	0.359
Ext.1_2	79.44	0.00	0.00	2.32	74.81	1.59	76.41	0.29	0.23	0.962
Ext.2	79.44	0.00	0.00	55.22	0.00	22.95	22.95	1.48	0.11	0.289
Ext.4	79.44	0.00	0.00	46.15	5.52	26.57	32.08	2.76	0.48	0.404
Ext.5	79.44	0.00	0.00	32.25	27.57	18.57	46.14	0.69	0.35	0.581
S1	79.44	0.00	0.00	40.44	15.76	22.11	37.86	0.06	0.02	0.477
S10	79.44	0.00	0.00	9.40	63.01	6.24	69.25	0.14	0.11	0.872
S11	79.44	0.00	0.00	9.35	63.02	6.29	69.31	0.09	0.07	0.873
S12	79.44	0.00	0.00	9.38	63.02	6.26	69.28	0.11	0.08	0.872
S13	79.44	0.00	0.00	9.28	63.05	6.36	69.41	0.04	0.03	0.874
S14	79.44	0.00	0.00	9.46	63.00	6.17	69.17	0.20	0.15	0.871
S15	79.44	0.00	0.00	9.40	63.01	6.24	69.25	0.10	0.07	0.872
S16	79.44	0.00	0.00	9.42	63.01	6.22	69.23	0.06	0.05	0.871
S17	79.44	0.00	0.00	9.55	62.99	6.09	69.08	0.54	0.37	0.870
S18	79.44	0.00	0.00	42.63	12.61	23.05	35.66	0.04	0.01	0.449
S2	79.44	0.00	0.00	9.71	62.98	5.93	68.91	0.27	0.16	0.867
S3	79.44	0.00	0.00	37.80	15.76	24.75	40.51	0.05	0.02	0.510
S4	79.44	0.00	0.00	15.88	47.30	15.40	62.69	0.08	0.06	0.789
S5	79.44	0.00	0.00	9.51	62.99	6.13	69.12	0.23	0.17	0.870
S6	79.44	0.00	0.00	9.58	62.99	6.05	69.04	0.17	0.11	0.869
S6_ROW1	79.44	0.00	0.00	2.30	74.85	1.61	76.46	0.38	0.33	0.963
S6_ROW2	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.22	0.962
S6_ROW3	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.22	0.962
S6_ROW4	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.22	0.962
S6_ROW5	79.44	0.00	0.00	2.32	74.82	1.59	76.41	0.28	0.23	0.962
S6_ROW6	79.44	0.00	0.00	1.97	74.83	1.94	76.77	0.32	0.27	0.966
S6_ROW7	79.44	0.00	0.00	1.97	74.83	1.94	76.77	0.34	0.29	0.966
S7	79.44	0.00	0.00	9.37	63.02	6.26	69.28	0.23	0.18	0.872
S8	79.44	0.00	0.00	9.61	62.98	6.03	69.01	0.29	0.19	0.869
S9	79.44	0.00	0.00	9.55	62.99	6.09	69.08	0.27	0.19	0.870

****
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
CBMH12	JUNCTION	1.20	1.28	188.89	3 00:00	1.28
CBMH12-S	JUNCTION	0.00	0.05	190.85	0 01:26	0.05
Dummy	JUNCTION	0.00	0.00	189.90	0 00:00	0.00
EX_MH1	JUNCTION	0.05	1.59	187.06	0 01:28	1.43
EX_MH1-S	JUNCTION	0.00	0.08	188.72	0 01:27	0.08
EX_STM_MH1	JUNCTION	0.00	0.10	191.80	0 01:25	0.10
EX_STM_MH1-S	JUNCTION	0.00	0.05	194.00	0 01:25	0.05
EX_STM_MH2	JUNCTION	0.01	0.20	191.20	0 01:26	0.20
EX_STM_MH2-S	JUNCTION	0.00	0.07	193.07	0 01:25	0.07
EX_STM_MH3	JUNCTION	0.01	0.18	190.27	0 01:26	0.18
EX_STM_MH3-S	JUNCTION	0.00	0.05	192.55	0 01:26	0.05
EX_STM_MH4	JUNCTION	0.02	0.29	187.90	0 01:27	0.29
EX_STM_MH4-S	JUNCTION	0.00	0.07	190.88	0 01:25	0.07
EX_STM_MH5	JUNCTION	0.06	2.83	187.60	0 01:25	1.79
EX_STM_MH-5-S	JUNCTION	0.02	0.30	187.60	0 01:34	0.30
EX_STM_MH6	JUNCTION	0.04	0.73	184.76	0 01:32	0.73
EX_STM_MH6-S	JUNCTION	0.00	0.06	187.66	0 01:25	0.06
EX_STM_MH7	JUNCTION	0.04	0.72	184.12	0 01:32	0.72
EX_STM_MH7-S	JUNCTION	0.00	0.01	187.63	0 01:36	0.01
EX-MH20	JUNCTION	0.04	1.07	187.30	0 01:31	1.06
EX-MH20-S	JUNCTION	0.00	0.07	189.82	0 01:26	0.06
J-S1	JUNCTION	0.05	1.62	187.01	0 01:28	1.44
J-S7	JUNCTION	0.02	0.27	189.67	0 01:27	0.27
J-S7minor	JUNCTION	0.05	1.01	192.56	0 01:25	1.00
MH_C1	JUNCTION	0.02	0.20	188.80	0 02:36	0.20
MH_C2	JUNCTION	0.02	0.20	188.27	0 02:36	0.20
MH_C3	JUNCTION	0.02	0.20	188.12	0 02:36	0.20

MH_C4	JUNCTION	0.03	0.49	187.99	0	02:24	0.49
MH1	JUNCTION	0.31	0.34	188.89	2	18:55	0.34
MH10	JUNCTION	1.88	1.99	188.89	2	10:24	1.99
MH10-S	JUNCTION	0.00	0.14	190.76	0	01:29	0.14
MH11	JUNCTION	0.30	0.32	188.89	2	00:58	0.32
MH11-S	JUNCTION	0.00	0.01	191.58	0	01:25	0.01
MH13	JUNCTION	1.47	1.57	188.89	3	00:00	1.57
MH13-S	JUNCTION	0.00	0.07	190.77	0	01:26	0.07
MH14	JUNCTION	1.02	1.10	188.89	1	14:34	1.10
MH14-S	JUNCTION	0.00	0.05	191.02	0	01:25	0.04
MH15	JUNCTION	2.00	2.11	188.89	2	22:06	2.11
MH17	JUNCTION	0.05	0.82	187.99	0	02:23	0.82
MH17-S	JUNCTION	0.00	0.01	190.36	0	01:25	0.01
MH18	JUNCTION	0.06	0.91	187.99	0	02:23	0.91
MH18-S	JUNCTION	0.00	0.06	190.27	0	01:25	0.06
MH19	JUNCTION	0.09	1.18	187.98	0	02:24	1.18
MH19-S	JUNCTION	0.01	0.14	189.84	0	01:30	0.14
MH1-S	JUNCTION	0.00	0.04	192.12	0	01:25	0.04
MH2	JUNCTION	0.44	0.48	188.89	2	18:55	0.48
MH21	JUNCTION	0.01	0.37	186.95	0	01:30	0.36
MH21-S	JUNCTION	0.00	0.03	190.60	0	01:25	0.03
MH22	JUNCTION	0.01	1.92	188.14	0	01:28	0.72
MH22-S	JUNCTION	0.00	0.06	189.49	0	01:25	0.06
MH23	JUNCTION	0.02	1.71	187.74	0	01:28	0.90
MH23-S	JUNCTION	0.00	0.06	189.46	0	01:26	0.06
MH24	JUNCTION	0.02	1.40	187.26	0	01:27	1.06
MH24-S	JUNCTION	0.00	0.07	189.07	0	01:26	0.07
MH25	JUNCTION	0.02	1.36	187.10	0	01:28	1.16
MH2-S	JUNCTION	0.00	0.04	191.99	0	01:25	0.04
MH3	JUNCTION	0.75	0.81	188.89	2	03:07	0.81
MH3-S	JUNCTION	0.00	0.04	191.36	0	01:26	0.04
MH4	JUNCTION	1.23	1.31	188.89	2	12:36	1.31
MH4-S	JUNCTION	0.00	0.06	190.99	0	01:25	0.06
MH5	JUNCTION	0.14	0.15	188.89	1	09:10	0.15
MH5-S	JUNCTION	0.00	0.03	191.78	0	01:25	0.03
MH6	JUNCTION	0.56	0.61	188.89	2	08:36	0.61
MH6-S	JUNCTION	0.00	0.06	191.38	0	01:25	0.06
MH7	JUNCTION	0.84	0.90	188.89	1	19:18	0.90
MH7-S	JUNCTION	0.00	0.07	191.18	0	01:25	0.07
MH8	JUNCTION	1.29	1.37	188.89	2	12:36	1.37
MH8-S	JUNCTION	0.00	0.08	190.90	0	01:26	0.08
MH9	JUNCTION	1.53	1.62	188.89	2	14:31	1.62
MH9-S	JUNCTION	0.01	0.17	190.76	0	01:29	0.17
TEE1	JUNCTION	0.06	0.99	187.98	0	02:24	0.99
J9_COM	OUTFALL	0.04	0.63	183.73	0	01:32	0.63
STM_TANK	STORAGE	2.75	2.89	188.89	2	23:46	2.89

****
Node Inflow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 ltr	Total Inflow Volume 10^6 ltr	Flow Balance Error Percent	
CBMH12	JUNCTION	0.000	0.015	0	01:27	0	0.102	9.401	
CBMH12-S	JUNCTION	0.159	0.169	0	01:25	0.266	0.283	-0.023	
Dummy	JUNCTION	0.000	0.000	0	00:00	0	0	0.000	ltr
EX_MH1	JUNCTION	0.000	0.578	0	01:26	0	3.88	-0.032	
EX_MH1-S	JUNCTION	0.227	1.023	0	01:26	0.285	1.25	-0.300	
EX_STM_MH1	JUNCTION	0.000	0.024	0	01:25	0	0.044	0.939	
EX_STM_MH1-S	JUNCTION	0.325	0.325	0	01:25	0.382	0.382	-0.161	
EX_STM_MH2	JUNCTION	0.000	0.097	0	01:25	0	0.183	-0.222	
EX_STM_MH2-S	JUNCTION	0.222	0.516	0	01:25	0.278	0.617	0.117	
EX_STM_MH3	JUNCTION	0.000	0.116	0	01:26	0	0.212	-0.018	
EX_STM_MH3-S	JUNCTION	0.223	0.664	0	01:24	0.279	0.757	-0.245	
EX_STM_MH4	JUNCTION	0.000	0.336	0	01:27	0	1.38	-0.005	
EX_STM_MH4-S	JUNCTION	0.446	0.833	0	01:25	0.561	0.944	-0.040	
EX_STM_MH5	JUNCTION	0.000	1.302	0	01:31	0	6.21	-0.012	
EX_STM_MH-5-S	JUNCTION	0.624	1.400	0	01:26	1.01	2.34	0.387	
EX_STM_MH6	JUNCTION	0.000	1.321	0	01:31	0	6.27	-0.001	
EX_STM_MH6-S	JUNCTION	0.287	0.287	0	01:25	0.345	0.345	-0.889	
EX_STM_MH7	JUNCTION	0.000	1.323	0	01:32	0	6.28	-0.000	
EX_STM_MH7-S	JUNCTION	0.000	0.011	0	01:26	0	0.00805	19.196	
EX-MH20	JUNCTION	0.000	0.408	0	01:27	0	3.44	0.030	
EX-MH20-S	JUNCTION	0.000	0.733	0	01:26	0	0.835	0.023	
J-S1	JUNCTION	0.000	0.543	0	01:26	0	3.88	-0.003	
J-S7	JUNCTION	0.000	0.269	0	01:26	0	1.27	0.008	
J-S7minor	JUNCTION	0.126	0.289	0	01:24	0.715	1.06	0.190	
MH_C1	JUNCTION	0.111	0.111	0	02:35	1.48	1.48	0.000	
MH_C2	JUNCTION	0.000	0.111	0	02:36	0	1.48	-0.000	
MH_C3	JUNCTION	0.000	0.111	0	02:36	0	1.48	-0.057	
MH_C4	JUNCTION	0.000	0.111	0	02:37	0	1.49	0.039	
MH1	JUNCTION	0.000	0.017	0	01:25	0	0.0457	1.938	
MH10	JUNCTION	0.000	0.920	0	01:29	0	1.93	0.870	
MH10-S	JUNCTION	0.032	0.414	0	01:26	0.0399	0.517	0.001	
MH11	JUNCTION	0.000	0.007	0	01:25	0	0.0498	10.209	

MH11-S	JUNCTION	0.022	0.022	0	01:25	0.0602	0.0602	0.101
MH13	JUNCTION	0.000	0.089	0	01:26	0	0.331	3.867
MH13-S	JUNCTION	0.152	0.407	0	01:25	0.194	0.577	-0.019
MH14	JUNCTION	0.000	0.030	0	01:25	0	0.122	3.587
MH14-S	JUNCTION	0.186	0.186	0	01:25	0.27	0.27	-0.149
MH15	JUNCTION	0.000	0.920	0	01:29	0	1.91	0.552
MH17	JUNCTION	0.000	0.060	0	01:34	0	0.0349	0.291
MH17-S	JUNCTION	0.012	0.012	0	01:25	0.0382	0.0382	0.041
MH18	JUNCTION	0.000	0.107	0	01:34	0	0.175	-0.025
MH18-S	JUNCTION	0.374	0.383	0	01:25	0.542	0.564	-0.234
MH19	JUNCTION	0.000	0.224	0	01:30	0	2.13	-0.009
MH19-S	JUNCTION	0.000	0.330	0	01:25	0	0.458	0.563
MH1-S	JUNCTION	0.166	0.166	0	01:25	0.234	0.234	-0.034
MH2	JUNCTION	0.000	0.029	0	01:25	0	0.0969	4.331
MH21	JUNCTION	0.000	0.062	0	01:28	0	0.0328	0.302
MH21-S	JUNCTION	0.147	0.147	0	01:25	0.199	0.199	-0.098
MH22	JUNCTION	0.000	0.146	0	01:27	0	0.138	-0.001
MH22-S	JUNCTION	0.073	0.209	0	01:25	0.0953	0.266	0.013
MH23	JUNCTION	0.000	0.140	0	01:27	0	0.205	0.035
MH23-S	JUNCTION	0.000	0.169	0	01:25	0	0.168	0.103
MH24	JUNCTION	0.000	0.187	0	01:27	0	0.238	-0.110
MH24-S	JUNCTION	0.049	0.168	0	01:26	0.0647	0.167	-0.066
MH25	JUNCTION	0.000	0.101	0	01:27	0	0.238	-0.047
MH2-S	JUNCTION	0.000	0.148	0	01:25	0	0.189	-0.115
MH3	JUNCTION	0.000	0.035	0	01:25	0	0.115	4.963
MH3-S	JUNCTION	0.000	0.134	0	01:25	0	0.139	0.225
MH4	JUNCTION	0.000	0.107	0	01:26	0	0.356	2.514
MH4-S	JUNCTION	0.000	0.493	0	01:25	0	0.537	0.021
MH5	JUNCTION	0.000	0.011	0	01:25	0	0.0587	1.107
MH5-S	JUNCTION	0.133	0.133	0	01:25	0.217	0.217	-0.037
MH6	JUNCTION	0.000	0.030	0	01:25	0	0.143	3.985
MH6-S	JUNCTION	0.162	0.280	0	01:25	0.212	0.372	-0.001
MH7	JUNCTION	0.000	0.060	0	01:25	0	0.234	3.370
MH7-S	JUNCTION	0.177	0.420	0	01:25	0.227	0.517	-0.020
MH8	JUNCTION	0.000	0.164	0	01:26	0	0.467	2.823
MH8-S	JUNCTION	0.188	0.637	0	01:25	0.287	0.804	-0.070
MH9	JUNCTION	0.000	0.527	0	01:27	0	1.24	1.996
MH9-S	JUNCTION	0.000	0.577	0	01:26	0	0.805	0.102
TEE1	JUNCTION	0.000	0.161	0	01:31	0	1.71	0.030
J9_COM	OUTFALL	0.481	1.692	0	01:35	2.76	9.04	0.000
STM_TANK	STORAGE	0.000	0.920	0	01:29	0	1.89	0.103

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Node Surcharge Summary
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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
CBMH12	JUNCTION	69.89	0.833	1.910
EX_MH1	JUNCTION	0.32	0.837	1.578
EX_STM_MH5	JUNCTION	0.44	2.080	0.000
EX-MH20	JUNCTION	0.26	0.543	2.702
J-S1	JUNCTION	0.33	0.867	0.993
MH10	JUNCTION	70.24	1.239	1.730
MH13	JUNCTION	70.10	1.043	1.810
MH14	JUNCTION	69.74	0.720	2.080
MH15	JUNCTION	70.27	1.304	1.790
MH2	JUNCTION	67.72	0.043	3.060
MH22	JUNCTION	0.11	1.379	1.291
MH23	JUNCTION	0.20	1.171	1.659
MH24	JUNCTION	0.27	0.888	1.741
MH25	JUNCTION	0.31	0.850	1.556
MH3	JUNCTION	68.95	0.345	2.430
MH4	JUNCTION	69.60	0.632	2.040
MH6	JUNCTION	68.31	0.159	2.430
MH7	JUNCTION	69.13	0.411	2.220
MH8	JUNCTION	69.66	0.665	1.930
MH9	JUNCTION	70.00	0.920	1.700

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Node Flooding Summary
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Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CMS	Time of Max Occurrence days hr:min	Total Flood Volume 10^6 ltr	Maximum Ponded Depth Meters
EX_STM_MH5	0.01	0.188	0 01:25	0.000	0.300

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Storage Volume Summary
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Storage Unit	Average Volume 1000 m3	Avg Pcnt Full	Evap Pcnt Loss	Exfil Pcnt Loss	Maximum Volume 1000 m3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CMS
STM_TANK	1.788	61	0	0	1.878	64	2 23:46	0.000

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Outfall Loading Summary
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Outfall Node	Flow Freq Pcnt	Avg Flow CMS	Max Flow CMS	Total Volume 10^6 ltr
J9_COM	25.82	0.270	1.692	9.035
System	25.82	0.270	1.692	9.035

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Link Flow Summary
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Link	Type	Maximum |Flow| CMS	Time of Max Occurrence days hr:min	Maximum |Veloc| m/sec	Max/ Full Flow	Max/ Full Depth
C1	CONDUIT	0.116	0 01:27	1.47	0.33	0.50
C10	CHANNEL	0.150	0 01:26	0.57	0.02	0.24
C11	CHANNEL	0.714	0 01:26	1.13	0.05	0.24
C12	CHANNEL	0.000	0 00:00	0.00	0.00	0.11
C13	CONDUIT	0.506	0 01:31	1.41	0.62	1.00
C14	CHANNEL	0.000	0 00:00	0.00	0.00	0.24
C17	CONDUIT	0.395	0 01:26	2.10	0.92	1.00
C1-S	CHANNEL	0.444	0 01:26	0.86	0.03	0.21
C1-S7	CONDUIT	0.154	0 01:25	2.72	0.49	0.75
C2	CONDUIT	0.021	0 01:26	0.82	0.11	0.22
C2-S	CHANNEL	0.294	0 01:25	0.63	0.03	0.20
C3	CONDUIT	0.090	0 01:27	1.32	0.40	0.45
C3-S	CHANNEL	0.372	0 01:25	0.72	0.06	0.21
C4	CONDUIT	0.336	0 01:27	2.17	0.55	0.78
C4-S	CHANNEL	0.733	0 01:26	1.28	0.06	0.22
C5	CONDUIT	0.543	0 01:26	1.83	0.66	1.00
C5-S	CHANNEL	0.843	0 01:27	0.54	0.08	0.61
C6	CONDUIT	1.302	0 01:31	3.00	1.55	0.95
C6-S	CHANNEL	0.183	0 01:25	0.15	0.03	0.57
C7	CONDUIT	1.320	0 01:32	2.19	0.73	0.66
C7-S	CHANNEL	0.011	0 01:26	0.07	0.01	0.10
C8	CONDUIT	1.324	0 01:32	2.25	0.67	0.64
C9	CONDUIT	0.268	0 01:27	2.79	0.62	0.58
Pipe_-_(116)	CONDUIT	0.111	0 02:36	1.27	0.19	0.29
Pipe_-_(117)	CONDUIT	0.111	0 02:36	1.27	0.19	0.29
Pipe_-_(119)	CONDUIT	0.111	0 02:37	1.20	0.19	0.49
Pipe_-_(120)	CONDUIT	0.113	0 02:38	1.11	0.19	0.84
Pipe_-_(125)	CONDUIT	0.121	0 01:27	0.98	0.67	1.00
Pipe_-_(125)-S	CHANNEL	0.169	0 01:25	0.34	0.05	0.20
Pipe_-_(126)	CONDUIT	0.000	0 00:00	0.00	0.00	0.00
Pipe_-_(127)	CONDUIT	0.090	0 01:27	1.07	0.50	1.00
Pipe_-_(127)-S	CHANNEL	0.134	0 01:26	0.69	0.02	0.21
Pipe_-_(128)	CONDUIT	0.115	0 01:27	1.10	0.64	1.00
Pipe_-_(129)	CONDUIT	0.097	0 01:27	0.92	0.54	1.00
Pipe_-_(64)	CONDUIT	0.017	0 01:25	0.80	0.14	0.95
Pipe_-_(64)-S	CHANNEL	0.148	0 01:25	0.59	0.02	0.13
Pipe_-_(65)	CONDUIT	0.029	0 01:25	0.92	0.23	1.00
Pipe_-_(65)-S	CHANNEL	0.134	0 01:25	0.61	0.01	0.12
Pipe_-_(66)_(1)	CONDUIT	0.029	0 01:26	0.93	0.24	1.00
Pipe_-_(66)_(1)-S	CHANNEL	0.146	0 01:25	0.31	0.02	0.20
Pipe_-_(67)	CONDUIT	0.089	0 01:26	1.04	0.29	1.00
Pipe_-_(67)-S	CHANNEL	0.316	0 01:26	0.38	0.07	0.36
Pipe_-_(69)	CONDUIT	0.920	0 01:29	2.40	1.17	1.00
Pipe_-_(70)	CONDUIT	0.920	0 01:29	2.57	0.92	1.00
Pipe_-_(71)	CONDUIT	0.034	0 01:26	0.97	0.28	1.00
Pipe_-_(71)-S	CHANNEL	0.118	0 01:26	0.35	0.01	0.15
Pipe_-_(72)	CONDUIT	0.107	0 01:26	1.18	0.18	1.00
Pipe_-_(72)-S	CHANNEL	0.472	0 01:26	0.82	0.04	0.22
Pipe_-_(73)	CONDUIT	0.164	0 01:26	0.96	0.28	1.00
Pipe_-_(73)_(1)	CONDUIT	0.525	0 01:27	1.76	0.88	1.00
Pipe_-_(73)_(1)-S	CHANNEL	0.080	0 01:26	0.07	0.03	0.53
Pipe_-_(73)-S	CHANNEL	0.577	0 01:26	0.56	0.08	0.40
Pipe_-_(74)	CONDUIT	0.011	0 01:25	0.91	0.11	0.75
Pipe_-_(74)-S	CHANNEL	0.119	0 01:25	0.36	0.01	0.15
Pipe_-_(75)	CONDUIT	0.030	0 01:25	0.88	0.15	1.00
Pipe_-_(75)_(1)	CONDUIT	0.059	0 01:26	1.10	0.29	1.00

Pipe_-_(75)_(1)-S	CHANNEL	0.379	0	01:25	0.76	0.05	0.20
Pipe_-_(75)-S	CHANNEL	0.247	0	01:25	0.48	0.04	0.20
Pipe_-_(76)	CONDUIT	0.059	0	01:34	0.23	0.01	0.70
Pipe_-_(76)-S	CHANNEL	0.010	0	01:25	0.08	0.00	0.13
Pipe_-_(77)_1	CONDUIT	0.066	0	01:30	0.35	0.02	0.79
Pipe_-_(77)_2	CONDUIT	0.153	0	01:28	0.27	0.03	0.90
Pipe_-_(77)-S	CHANNEL	0.330	0	01:25	0.43	0.05	0.33
Pipe_-_(79)	CONDUIT	0.057	0	01:28	0.56	0.31	0.91
Pipe_-_(79)-S	CHANNEL	0.136	0	01:25	0.37	0.01	0.16
Pipe_-_(85)	CONDUIT	0.007	0	01:27	0.77	0.04	0.93
Pipe_-_(85)-S	CHANNEL	0.010	0	01:25	0.06	0.00	0.10
Pipe_-_(86)	CONDUIT	0.015	0	01:27	0.71	0.07	1.00
Pipe_-_(86)-S	CHANNEL	0.133	0	01:26	0.26	0.03	0.20
OR2	ORIFICE	0.145	0	02:24			1.00
J-S7minor-IC	WEIR	0.193	0	01:26			0.43
CBMH12-IC	DUMMY	0.008	0	01:26			
J1_COM-IC	DUMMY	0.024	0	01:25			
J2_COM-IC	DUMMY	0.076	0	01:25			
J3_COM-IC	DUMMY	0.026	0	01:26			
J4_COM-IC	DUMMY	0.075	0	01:25			
J5_COM-IC	DUMMY	0.144	0	01:27			
J6_COM-IC	DUMMY	0.811	0	01:34			
J7_COM-IC	DUMMY	0.028	0	01:25			
J8_COM-IC	DUMMY	0.004	0	01:36			
MH10-IC	DUMMY	0.317	0	01:29			
MH11-IC	DUMMY	0.007	0	01:25			
MH13-IC	DUMMY	0.045	0	01:26			
MH14-IC	DUMMY	0.030	0	01:25			
MH17-IC	DUMMY	0.002	0	01:25			
MH18-IC	DUMMY	0.025	0	01:25			
MH19-IC	DUMMY	0.224	0	01:30			
MH1-IC	DUMMY	0.017	0	01:25			
MH21-IC	DUMMY	0.006	0	01:25			
MH22-IC	DUMMY	0.026	0	01:25			
MH23-IC	DUMMY	0.029	0	01:26			
MH24-IC	DUMMY	0.014	0	01:26			
MH2-IC	DUMMY	0.012	0	01:25			
MH3-IC	DUMMY	0.006	0	01:26			
MH4-IC	DUMMY	0.014	0	01:26			
MH5-IC	DUMMY	0.011	0	01:25			
MH6-IC	DUMMY	0.019	0	01:25			
MH7-IC	DUMMY	0.031	0	01:25			
MH8-IC	DUMMY	0.057	0	01:26			
MH9-IC	DUMMY	0.406	0	01:29			

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Flow Classification Summary
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	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
C1	1.00	0.00	0.88	0.00	0.11	0.01	0.00	0.00	0.99	0.00
C10	1.00	0.00	0.84	0.00	0.16	0.00	0.00	0.00	1.00	0.00
C11	1.00	0.00	0.00	0.00	0.05	0.94	0.00	0.00	1.00	0.00
C12	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C13	1.00	0.00	0.00	0.00	0.94	0.06	0.00	0.00	0.90	0.00
C14	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C17	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
C1-S	1.00	0.00	0.35	0.00	0.63	0.01	0.00	0.00	1.00	0.00
C1-S7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
C2	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00
C2-S	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.99	0.00
C3	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C3-S	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
C4	1.00	0.00	0.00	0.00	0.97	0.03	0.00	0.00	0.99	0.00
C4-S	1.00	0.00	0.00	0.00	0.12	0.88	0.00	0.00	0.95	0.00
C5	1.00	0.00	0.00	0.00	0.94	0.06	0.00	0.00	0.39	0.00
C5-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C6	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C6-S	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
C7	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
C7-S	1.00	0.00	0.95	0.00	0.05	0.00	0.00	0.00	0.97	0.00
C8	1.00	0.00	0.00	0.00	0.87	0.13	0.00	0.00	0.85	0.00
C9	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
Pipe_-_(116)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(117)	1.00	0.03	0.00	0.00	0.00	0.00	0.00	0.97	0.00	0.00
Pipe_-_(119)	1.00	0.03	0.00	0.00	0.05	0.00	0.00	0.92	0.03	0.00
Pipe_-_(120)	1.00	0.03	0.00	0.00	0.07	0.00	0.00	0.90	0.01	0.00
Pipe_-_(125)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
Pipe_-_(125)-S	1.00	0.86	0.00	0.00	0.13	0.01	0.00	0.00	0.00	0.00
Pipe_-_(126)	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pipe_-_(127)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
Pipe_-_(127)-S	1.00	0.84	0.06	0.00	0.07	0.02	0.00	0.00	1.00	0.00
Pipe_-_(128)	1.00	0.00	0.00	0.00	0.02	0.00	0.00	0.98	0.00	0.00
Pipe_-_(129)	1.00	0.00	0.00	0.00	0.06	0.00	0.00	0.94	0.01	0.00
Pipe_-_(64)	1.00	0.00	0.00	0.00	0.92	0.00	0.00	0.08	0.00	0.00

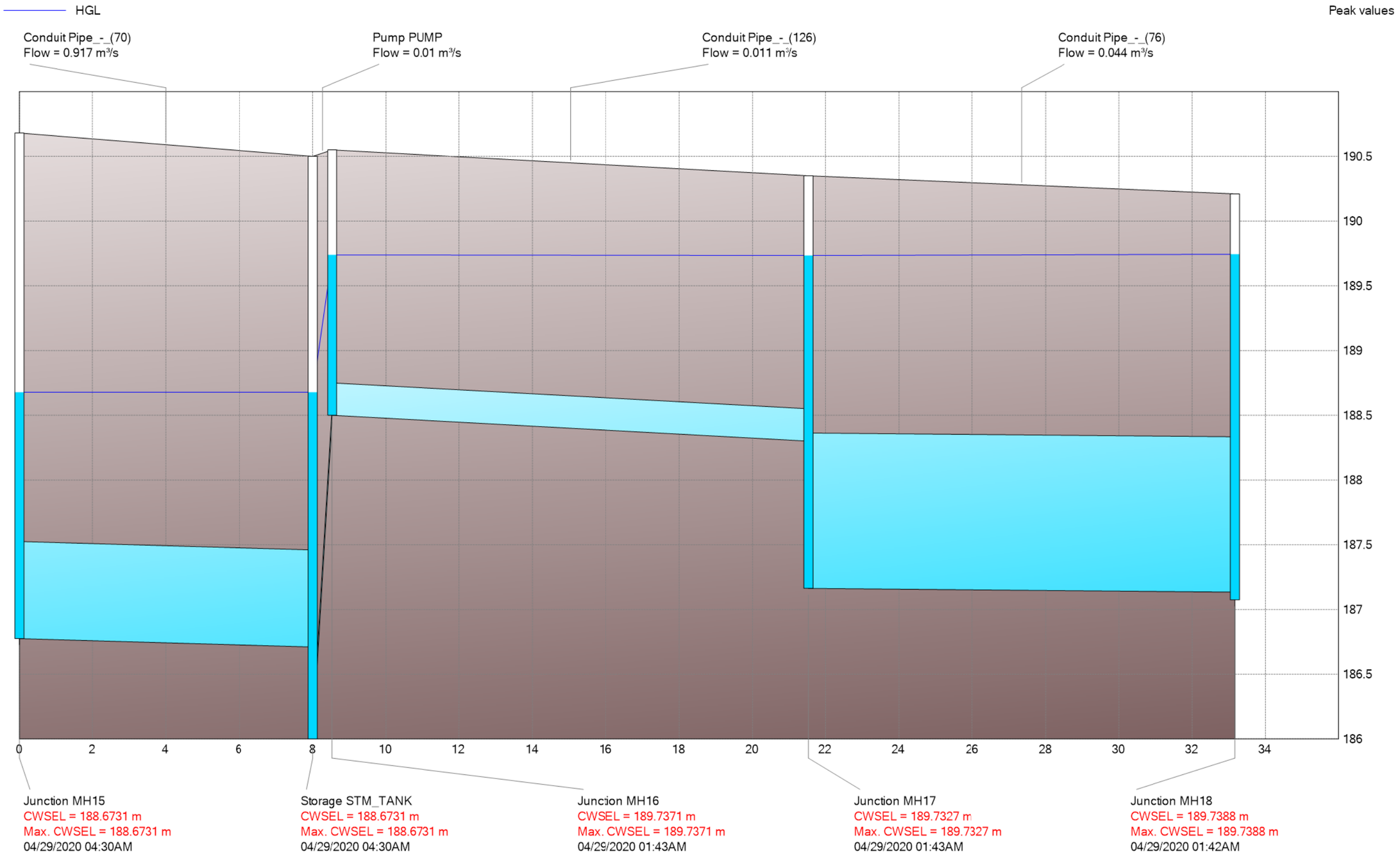
Pipe_-_(64)-S	1.00	0.72	0.00	0.00	0.16	0.12	0.00	0.00	0.00	0.00
Pipe_-_(65)	1.00	0.00	0.00	0.00	0.94	0.00	0.00	0.06	0.01	0.00
Pipe_-_(65)-S	1.00	0.89	0.00	0.00	0.01	0.10	0.00	0.00	0.01	0.00
Pipe_-_(66)_(1)	1.00	0.00	0.00	0.00	0.96	0.00	0.00	0.04	0.00	0.00
Pipe_-_(66)_(1)-S	1.00	0.78	0.01	0.00	0.20	0.00	0.00	0.00	1.00	0.00
Pipe_-_(67)	1.00	0.00	0.00	0.00	0.97	0.00	0.00	0.03	0.00	0.00
Pipe_-_(67)-S	1.00	0.84	0.00	0.00	0.14	0.01	0.00	0.00	0.03	0.00
Pipe_-_(69)	1.00	0.00	0.00	0.00	0.96	0.00	0.00	0.04	0.00	0.00
Pipe_-_(70)	1.00	0.00	0.00	0.00	0.96	0.00	0.00	0.04	0.00	0.00
Pipe_-_(71)	1.00	0.00	0.00	0.00	0.95	0.00	0.00	0.05	0.00	0.00
Pipe_-_(71)-S	1.00	0.00	0.89	0.00	0.10	0.00	0.00	0.00	0.99	0.00
Pipe_-_(72)	1.00	0.00	0.00	0.00	0.96	0.00	0.00	0.04	0.00	0.00
Pipe_-_(72)-S	1.00	0.00	0.00	0.00	0.86	0.13	0.00	0.00	0.87	0.00
Pipe_-_(73)	1.00	0.00	0.00	0.00	0.97	0.00	0.00	0.02	0.00	0.00
Pipe_-_(73)_(1)	1.00	0.00	0.00	0.00	0.97	0.00	0.00	0.03	0.00	0.00
Pipe_-_(73)_(1)-S	1.00	0.88	0.00	0.00	0.12	0.00	0.00	0.00	0.98	0.00
Pipe_-_(73)-S	1.00	0.75	0.00	0.00	0.23	0.02	0.00	0.00	0.06	0.00
Pipe_-_(74)	1.00	0.00	0.00	0.00	0.93	0.00	0.00	0.07	0.01	0.00
Pipe_-_(74)-S	1.00	0.77	0.01	0.00	0.20	0.02	0.00	0.00	0.06	0.00
Pipe_-_(75)	1.00	0.00	0.00	0.00	0.95	0.00	0.00	0.05	0.01	0.00
Pipe_-_(75)_(1)	1.00	0.00	0.00	0.00	0.95	0.00	0.00	0.05	0.00	0.00
Pipe_-_(75)_(1)-S	1.00	0.00	0.84	0.00	0.15	0.01	0.00	0.00	0.94	0.00
Pipe_-_(75)-S	1.00	0.82	0.03	0.00	0.15	0.01	0.00	0.00	0.99	0.00
Pipe_-_(76)	1.00	0.79	0.00	0.00	0.08	0.00	0.00	0.12	0.00	0.00
Pipe_-_(76)-S	1.00	0.74	0.11	0.00	0.12	0.03	0.00	0.00	0.07	0.00
Pipe_-_(77)_1	1.00	0.04	0.00	0.00	0.96	0.00	0.00	0.00	0.13	0.00
Pipe_-_(77)_2	1.00	0.00	0.11	0.00	0.89	0.00	0.00	0.00	0.93	0.00
Pipe_-_(77)-S	1.00	0.00	0.74	0.00	0.25	0.01	0.00	0.00	0.99	0.00
Pipe_-_(79)	1.00	0.00	0.00	0.00	0.01	0.00	0.00	0.99	0.00	0.00
Pipe_-_(79)-S	1.00	0.76	0.01	0.00	0.21	0.02	0.00	0.00	0.05	0.00
Pipe_-_(85)	1.00	0.00	0.00	0.00	0.95	0.00	0.00	0.05	0.02	0.00
Pipe_-_(85)-S	1.00	0.63	0.23	0.00	0.14	0.00	0.00	0.00	1.00	0.00
Pipe_-_(86)	1.00	0.00	0.00	0.00	0.97	0.00	0.00	0.03	0.00	0.00
Pipe_-_(86)-S	1.00	0.63	0.00	0.00	0.35	0.02	0.00	0.00	0.06	0.00

****
Conduit Surcharge Summary
****

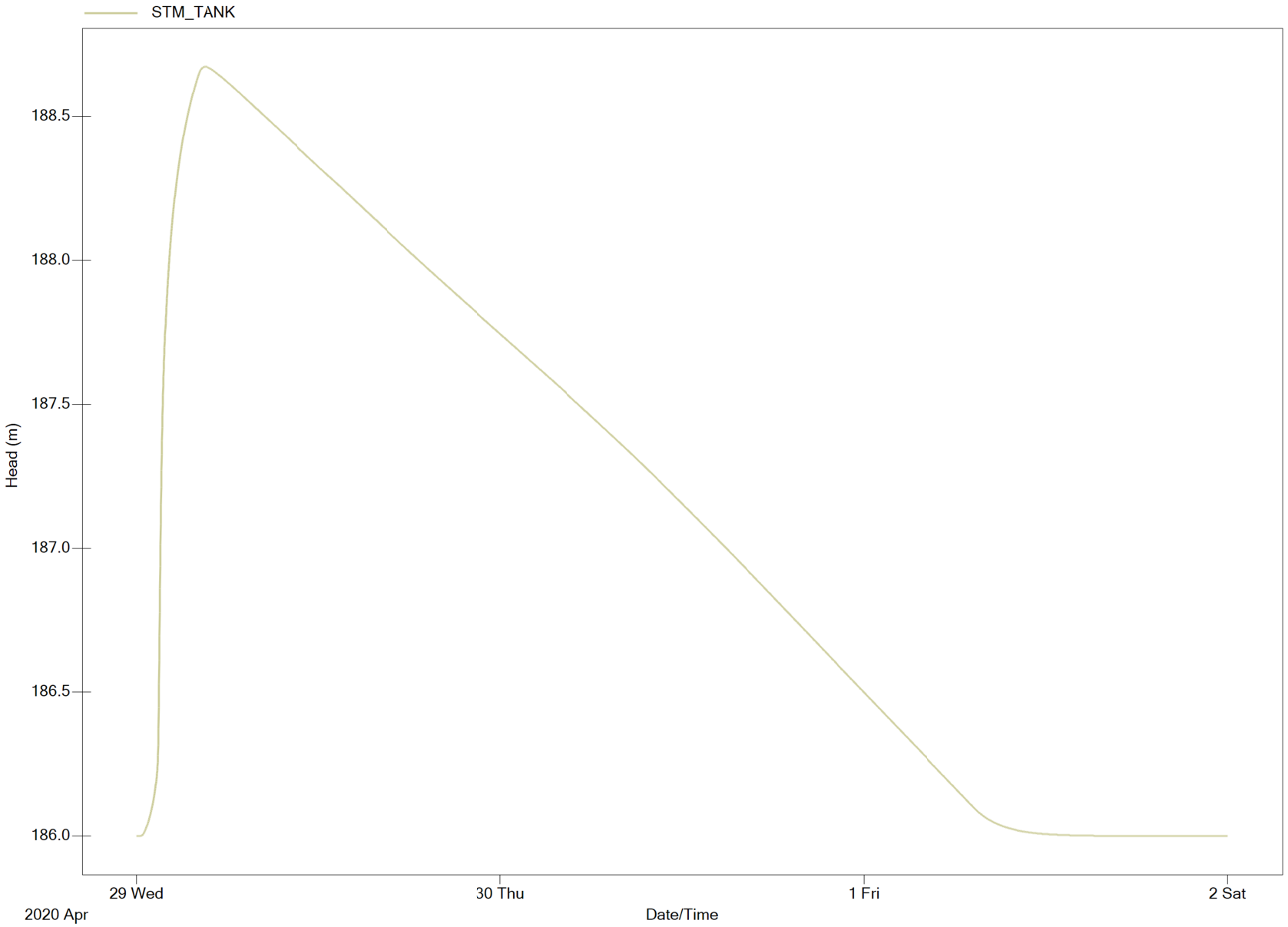
Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
C13	0.33	0.33	0.44	0.01	0.01
C17	0.26	0.26	0.32	0.01	0.01
C1-S7	0.01	2.10	0.01	0.01	0.01
C4	0.01	0.01	0.26	0.01	0.01
C5	0.32	0.32	0.33	0.01	0.01
C6	0.01	0.44	0.01	0.47	0.01
Pipe_-_(125)	0.17	0.17	0.20	0.01	0.01
Pipe_-_(127)	0.24	0.24	0.27	0.01	0.01
Pipe_-_(128)	0.30	0.30	0.31	0.01	0.01
Pipe_-_(129)	0.33	0.33	0.34	0.01	0.01
Pipe_-_(64)	0.01	0.01	67.72	0.01	0.01
Pipe_-_(65)	68.07	68.07	68.95	0.01	0.01
Pipe_-_(66)_(1)	69.74	69.74	70.10	0.01	0.01
Pipe_-_(67)	70.10	70.10	70.24	0.01	0.01
Pipe_-_(69)	70.24	70.24	70.27	0.13	0.01
Pipe_-_(70)	70.30	70.30	70.32	0.01	0.01
Pipe_-_(71)	69.20	69.20	69.60	0.01	0.01
Pipe_-_(72)	69.60	69.60	69.66	0.01	0.01
Pipe_-_(73)	69.71	69.71	70.00	0.01	0.01
Pipe_-_(73)_(1)	70.02	70.02	70.24	0.01	0.01
Pipe_-_(74)	0.01	0.01	68.31	0.01	0.01
Pipe_-_(75)	68.31	68.31	69.13	0.01	0.01
Pipe_-_(75)_(1)	69.23	69.23	69.60	0.01	0.01
Pipe_-_(79)	0.01	0.01	0.11	0.01	0.01
Pipe_-_(85)	0.01	0.01	69.89	0.01	0.01
Pipe_-_(86)	69.89	69.89	70.10	0.01	0.01

Analysis begun on: Mon Nov 9 15:32:21 2020
Analysis ended on: Mon Nov 9 15:32:27 2020

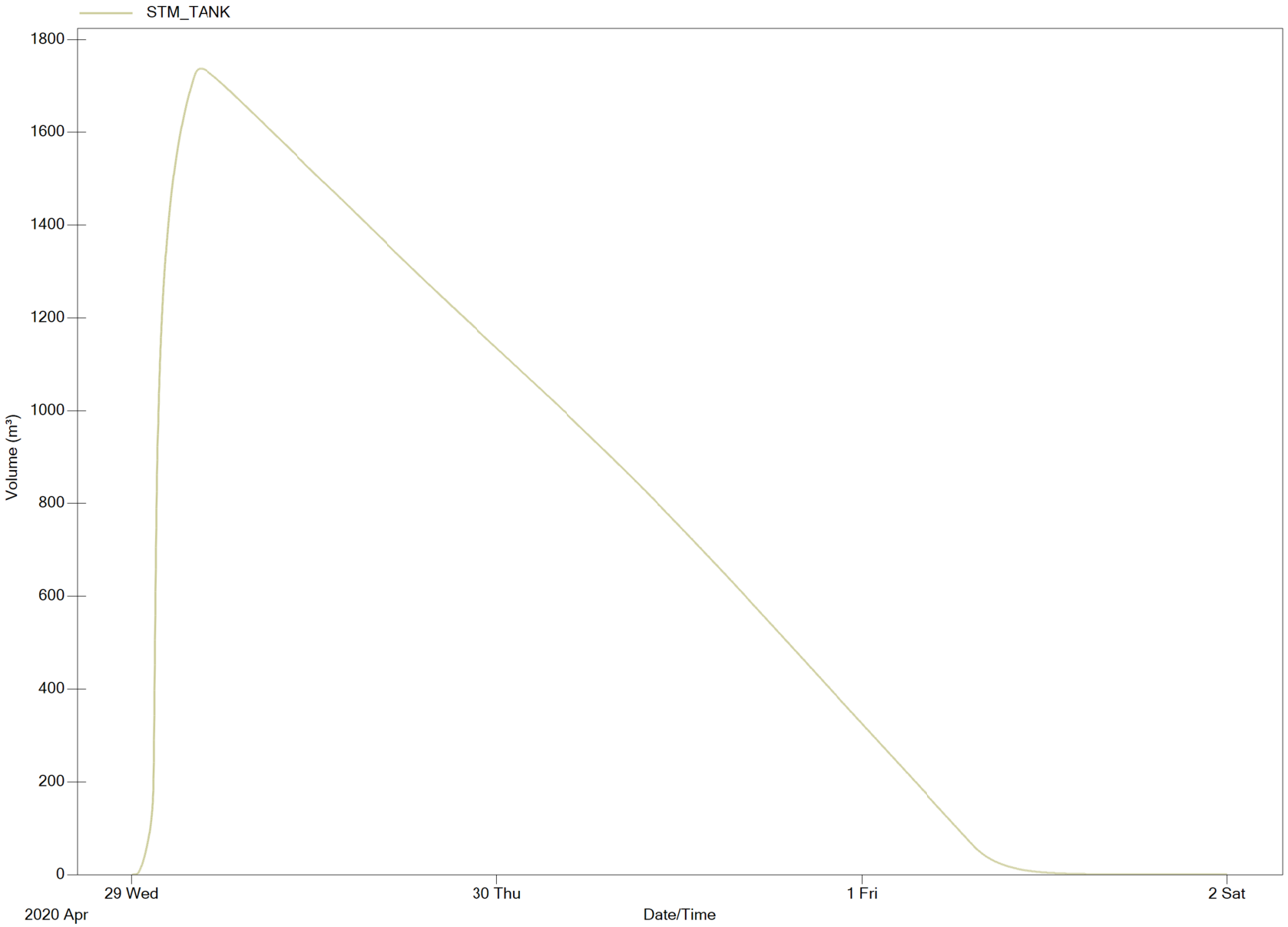
Storm Tank Profile



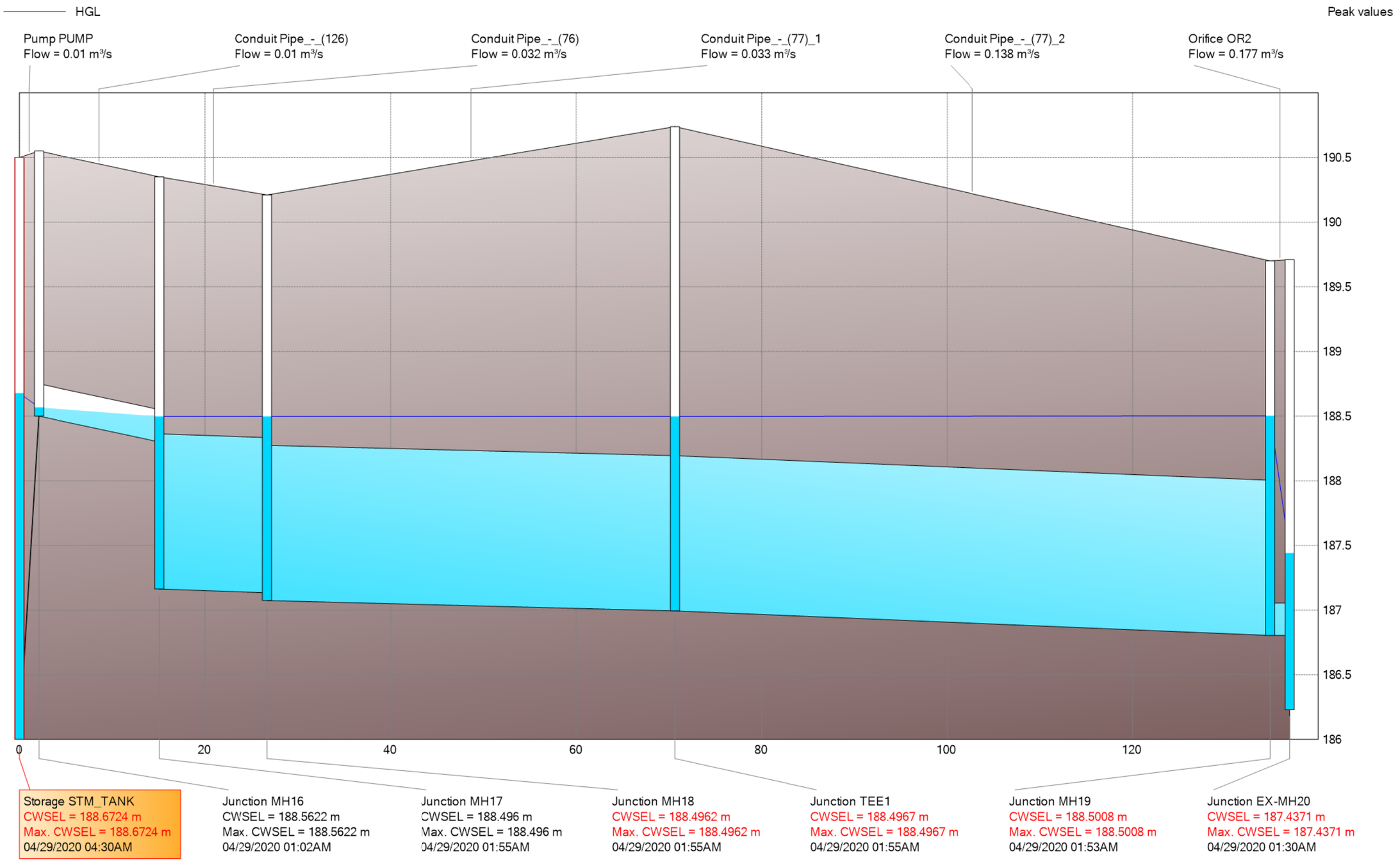
Tank - Head vs. Time



Tank - Volume vs. Time



Street A storage Pipe HGL



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SANITARY SEWER DESIGN SHEET

5150 NINTH LINE

CITY OF MISSISSAUGA, REGION OF PEEL

PROJECT DETAILS

Project No: 19-608
Date: 10-Nov-20
Designed by: SR
Checked by: DR

DESIGN CRITERIA

Min. Flow =	13	l/s			
Min Diameter =	250	mm	Avg. Domestic Flow =	302.8	l/c/d
Mannings 'n'=	0.013		Infiltration =	0.200	l/s/ha
Min. Velocity =	0.75	m/s	Max. Peaking Factor =	4.00	
Max. Velocity =	3.50	m/s	Min. Peaking Factor=	1.50	
			Domestic Sewage flow for < 1000 ppl = 0.013m^3/s		
Factor of Safety =	15	%	(Region of Peel Std. 2-5-2)		

NOMINAL PIPE SIZE USED

STREET	FROM MH	TO MH	RESIDENTIAL							COMMERCIAL/INDUSTRIAL/INSTITUTIONAL						FLOW CALCULATIONS								PIPE DATA						
			AREA (ha)	ACC. AREA (ha)	UNITS (#)	DENISTY (P/ha)	DENSITY (P/unit)	POP	ACCUM. RES. POP.	AREA (ha)	ACC. AREA (ha)	EQUIV. POP. (p/ha)	FLOW RATE (l/s/ha)	EQUIV. POP.	ACCUM. EQUIV. POP.	INFILTRATION (l/s)	TOTAL ACCUM. POP.	PEAKING FACTOR	RES. FLOW (l/s)	MIN. RES. FLOW (l/s)	COMM. FLOW (l/s)	ACCUM. COMM. FLOW (l/s)	TOTAL FLOW (l/s)	SLOPE (%)	PIPE DIAMETER (mm)	PIPE LENGTH (m)	FULL FLOW CAPACITY (l/s)	FULL FLOW VELOCITY (m/s)	ACTUAL VELOCITY (m/s)	PERCENT FULL (%)
1087 E LOWER BASE LINE		FUT1	1.5	1.5	405		2.7	1094	1094							0.30	1094	3.77	14.47	14.47			14.77	0.25	375		87.67	0.79	0.59	17%
5034 FUTURE ROAD	FUT1	FUT 2	0.72	2.22	209		2.7	565	1659							0.44	1659	3.65	21.21	21.21			21.65	0.25	375		87.67	0.79	0.64	25%
5054 FUTURE ROAD	FUT2	FUT3	1.03	1.03	298		2.7	805	805							0.21	805	3.86	10.89	13.00			13.21	0.25	375		87.67	0.79	0.57	15%
5080 FUTURE ROAD	FUT3	FUT4	3.09	4.12	835		2.7	2255	3060							0.82	3060	3.44	36.84	36.84			37.66	0.25	375		87.67	0.79	0.74	43%
5104 FUTURE ROAD	FUT4	18A	0.77	4.89	29		3.5	102	3162							0.98	3162	3.42	37.93	37.93			38.91	0.35	375		103.73	0.94	0.85	38%
5150 NINTH LINE	18A	19A	2.99	7.88	130		3.5	455	3617							1.58	3617	3.37	42.75	42.75			44.32	0.35	375		103.73	0.94	0.87	43%
5150 NINTH LINE	19A	20A	0.66	8.54	17		3.5	60	3677							1.71	3677	3.37	43.37	43.37			45.08	0.35	375		103.73	0.94	0.87	43%
5150 NINTH LINE	20A	21A		8.54					3677							1.71	3677	3.37	43.37	43.37			45.08	0.35	375		103.73	0.94	0.87	43%
5150 NINTH LINE	21A	1T	0.58	9.12	27		3.5	95	3772							1.82	3772	3.36	44.37	44.37			46.19	0.35	375		103.73	0.94	0.90	45%
NINTH LINE	1T	2T	2.22	11.34					3772							2.27	3772	3.36	44.37	44.37			46.63	0.35	375		103.73	0.94	0.90	45%
5170 NINTH LINE	2T	3T	0.73	12.07	27		3.5	95	3867							2.41	3867	3.35	45.35	45.35			47.77	0.35	375		103.73	0.94	0.90	46%

Urbantech Consulting, A Division of Leighton-Zec Ltd.
3760 14th Avenue, Suite 301 Markham, Ontario L3R 3T7
TEL: 905.946.9461 FAX: 905.946.9595
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APPENDIX B

DRAWINGS

- Drawing 1 – Site Grading
- Drawing 2A – Grading Cross Sections
- Drawing 2B – Grading Cross Sections
- Drawing 3 – Site Servicing
- Drawing 4 – ROW Cross Sections
- Drawing 5A – Existing Storm Drainage
- Drawing 5B – Storm Drainage
- Drawing 6 – Sanitary Drainage

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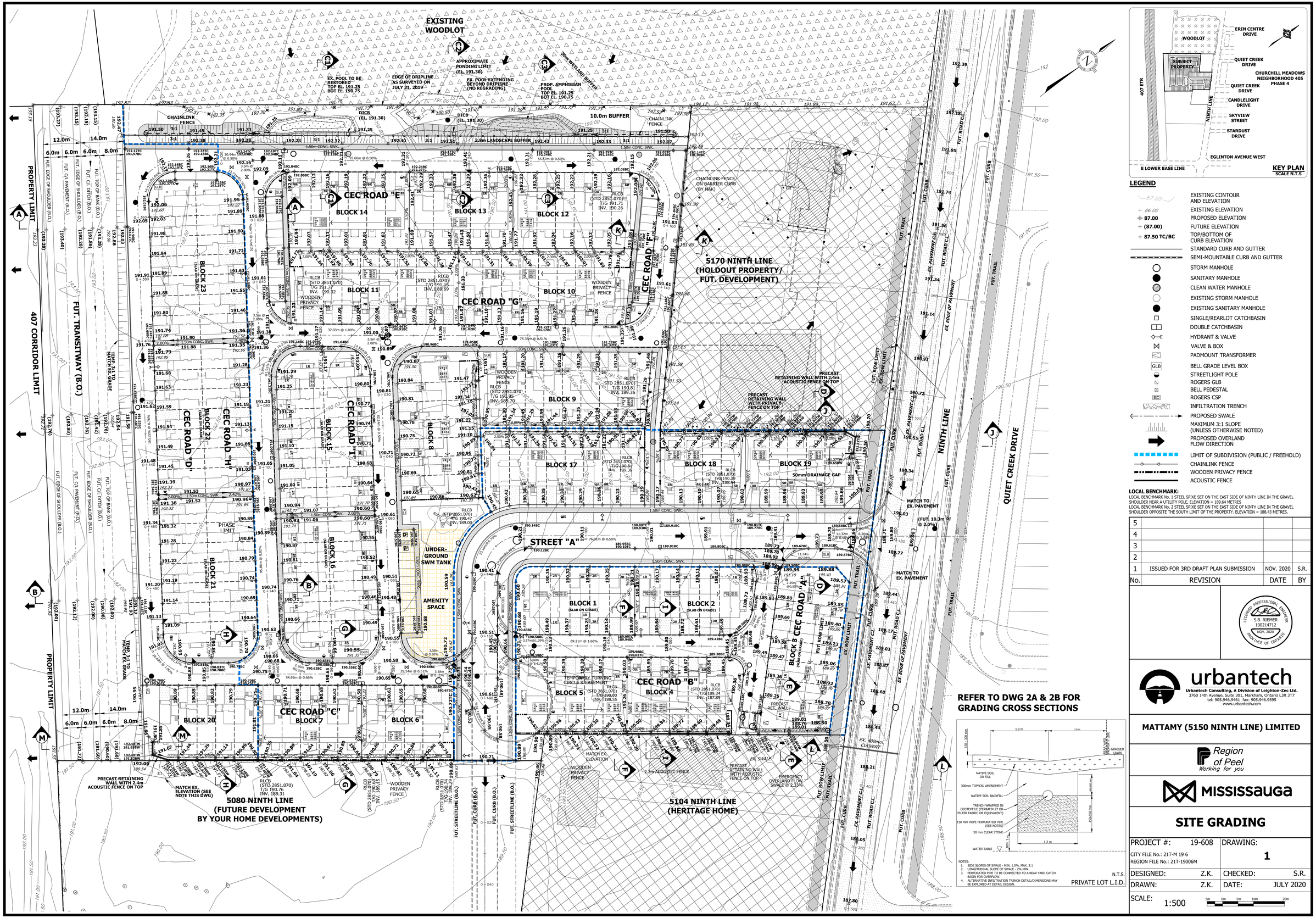

LEGEND

- EXISTING CONTOUR AND ELEVATION
- EXISTING ELEVATION
- PROPOSED ELEVATION
- FUTURE ELEVATION
- TOP/BOTTOM OF CURB ELEVATION
- STANDARD CURB AND GUTTER
- SEMI-MOUNTABLE CURB AND GUTTER
- STORM MANHOLE
- SANITARY MANHOLE
- CLEAN WATER MANHOLE
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- SINGLE/REARLOT CATCHBASIN
- DOUBLE CATCHBASIN
- HYDRANT & VALVE
- VALVE & BOX
- PADMOUNT TRANSFORMER
- BELL GRADE LEVEL BOX
- STREETLIGHT POLE
- ROGERS GLB
- BELL PEDESTAL
- ROGERS CSP
- INFILTRATION TRENCH
- PROPOSED SWALE
- MAXIMUM 3:1 SLOPE (UNLESS OTHERWISE NOTED)
- PROPOSED OVERLAND FLOW DIRECTION
- LIMIT OF SUBDIVISION (PUBLIC / FREEHOLD)
- CHAINLINK FENCE
- WOODEN PRIVACY FENCE
- ACOUSTIC FENCE

LOCAL BENCHMARK:
LOCAL BENCHMARK No. 1 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER NEAR A UTILITY POLE. ELEVATION = 189.64 METRES
LOCAL BENCHMARK No. 2 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER OPPOSITE THE SOUTH LIMIT OF THE PROPERTY. ELEVATION = 188.43 METRES.

No.	REVISION	DATE	BY
5			
4			
3			
2			
1	ISSUED FOR 3RD DRAFT PLAN SUBMISSION	NOV. 2020	S.R.

LICENSED PROFESSIONAL ENGINEER
S.B. RIEMER
100214712
NOV. 2020
PROVINCE OF ONTARIO

urbantech
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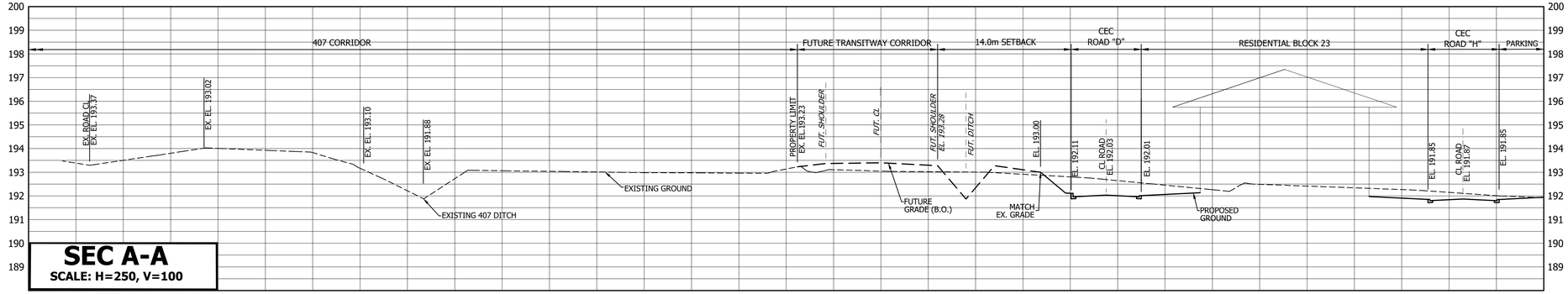
MATTAMY (5150 NINTH LINE) LIMITED

Region of Peel Working for you

MISSISSAUGA

SITE GRADING

PROJECT #:	19-608	DRAWING:	1
CITY FILE No.: 21T-M 19 6			
REGION FILE No.: 21T-19006M			
DESIGNED:	Z.K.	CHECKED:	S.R.
DRAWN:	Z.K.	DATE:	JULY 2020
SCALE:	1:500	5m 0m 5m 10m 20m	



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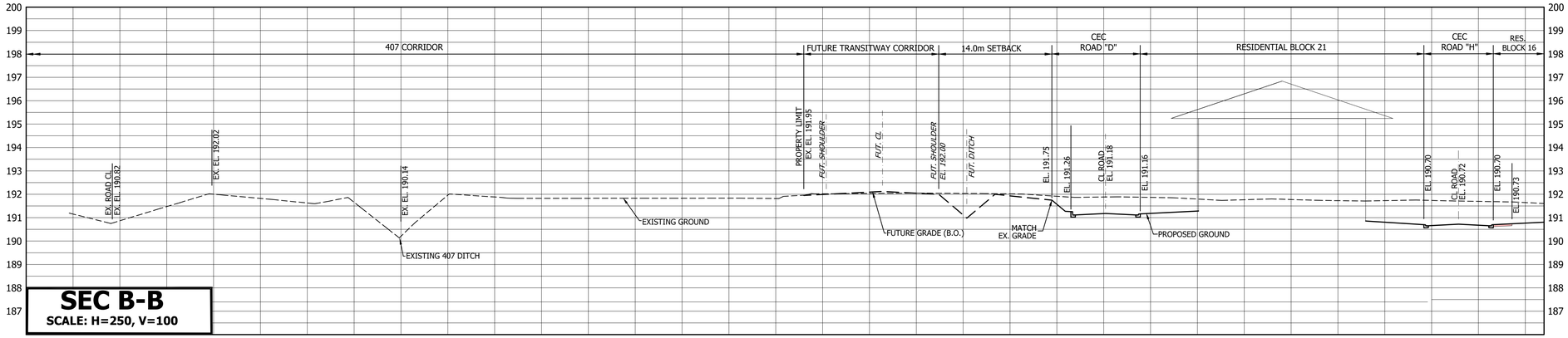

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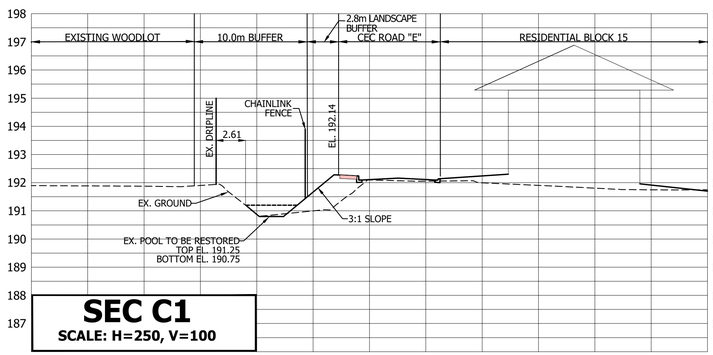

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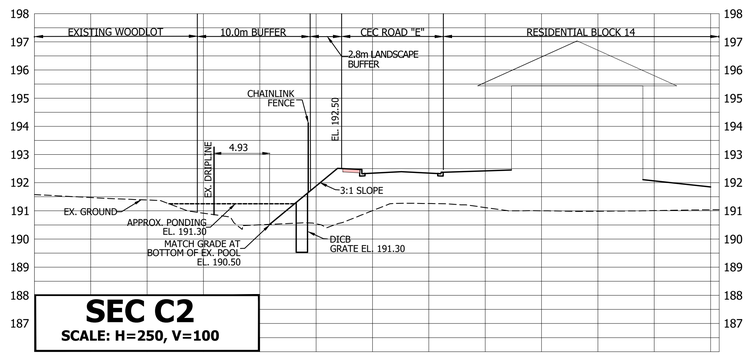

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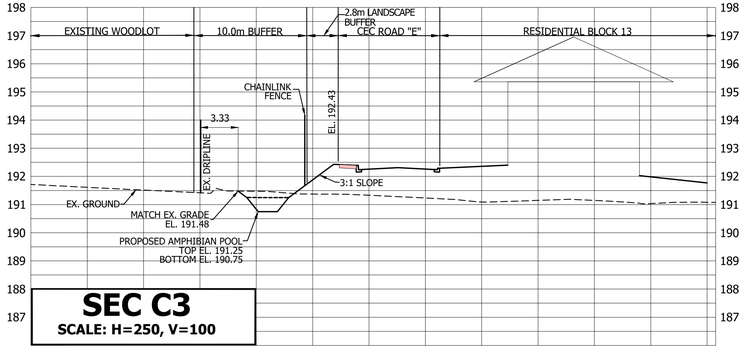

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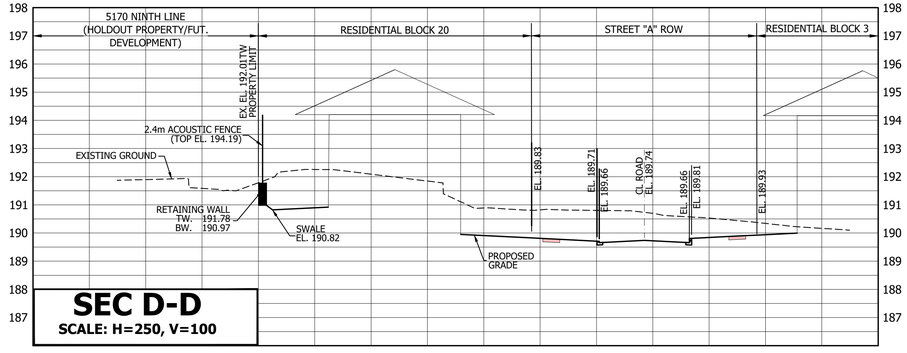

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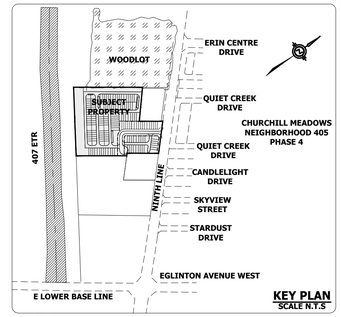

KEY PLAN
SCALE N.T.S

LEGEND

NOTE:

* SEE GRADING PLAN DWG. 1 FOR CROSS-SECTION LOCATION

LOCAL BENCHMARK:
LOCAL BENCHMARK No. 1 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER NEAR A UTILITY POLE. ELEVATION = 189.64 METRES
LOCAL BENCHMARK No. 2 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER OPPOSITE THE SOUTH LIMIT OF THE PROPERTY. ELEVATION = 188.43 METRES.

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1	ISSUED FOR 3RD DRAFT SUBMISSION	NOV. 2020	S.R.

LICENCED PROFESSIONAL ENGINEER
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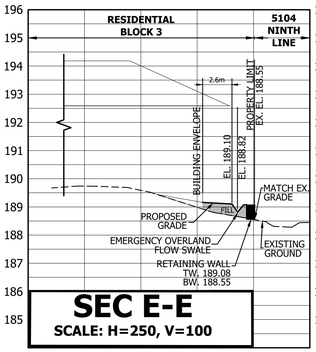
MATTAMY (5150 NINTH LINE) LIMITED

Region of Peel Working for you

MISSISSAUGA

GRADING CROSS SECTIONS

PROJECT #:	19-608	DRAWING:	2A
CITY FILE No.: 21T-M 19 6			
REGION FILE No.: 21T-19006M			
DESIGNED:	Z.K.	CHECKED:	S.R.
DRAWN:	Z.K.	DATE:	JULY 2020
SCALE:	H 1:250 , V 1:100		



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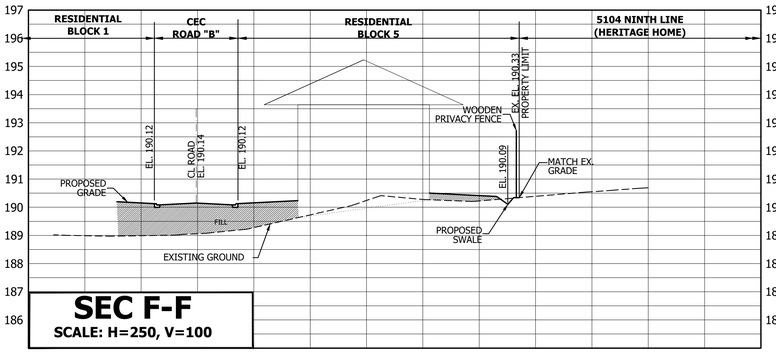

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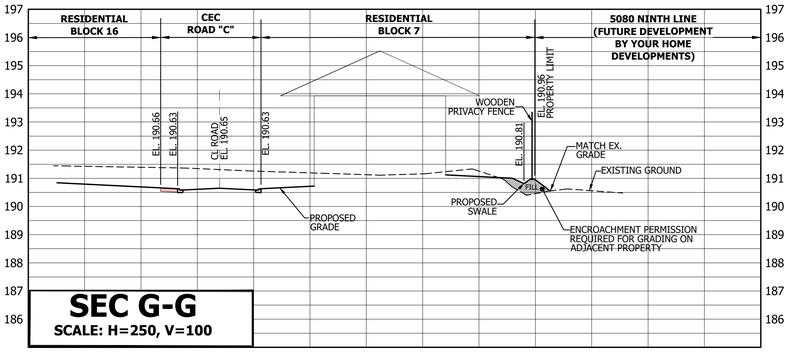

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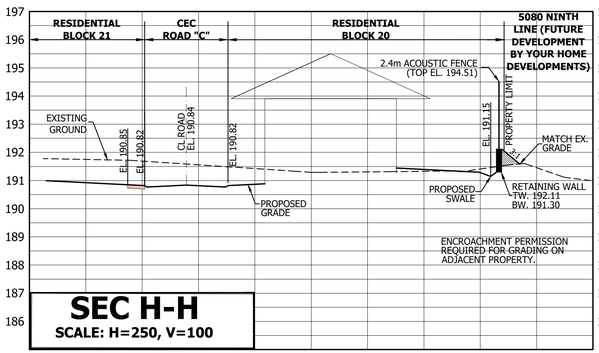

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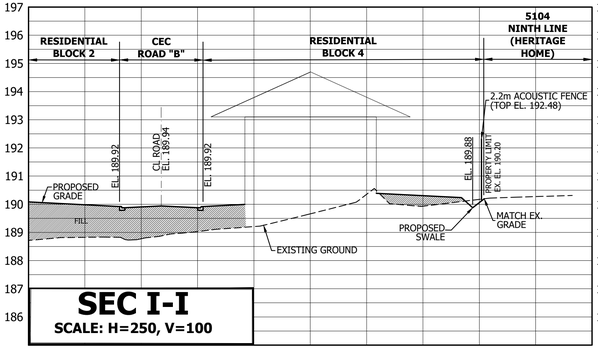

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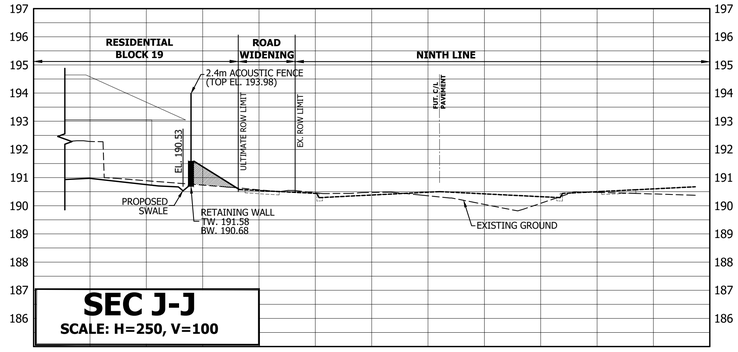

SEC J-J
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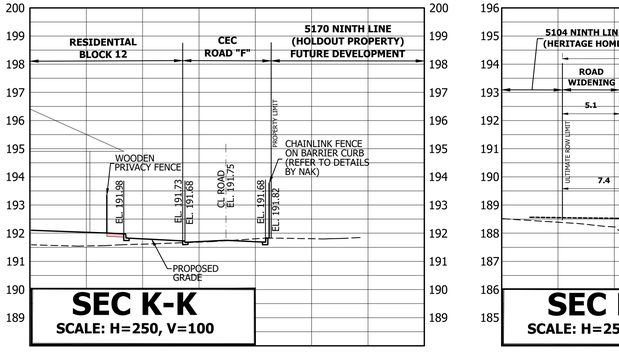

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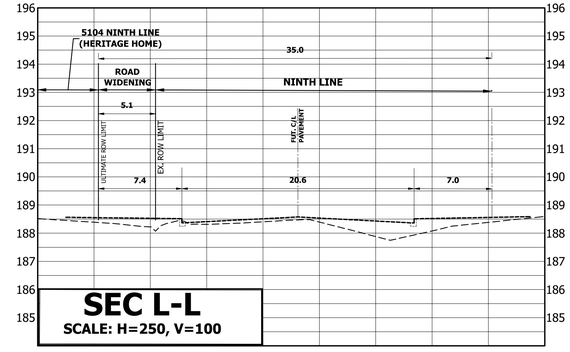

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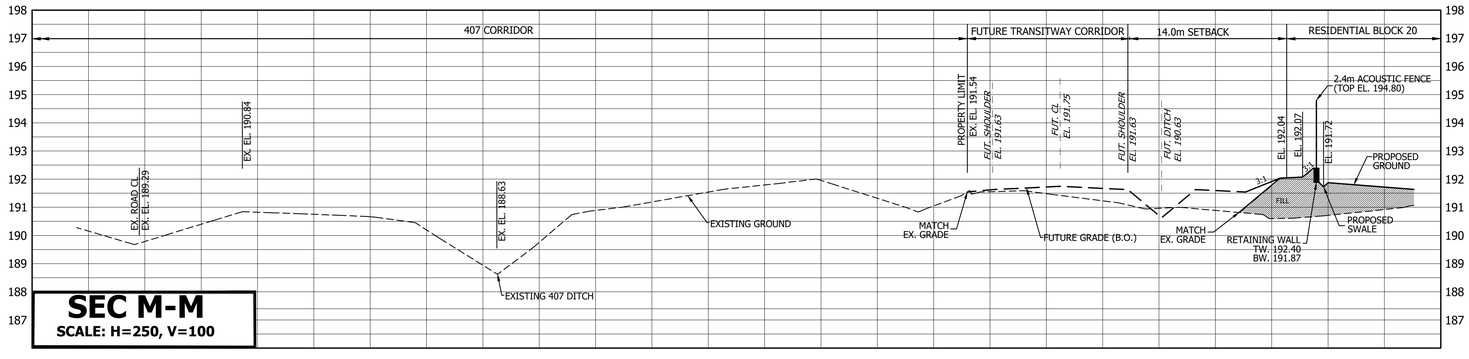

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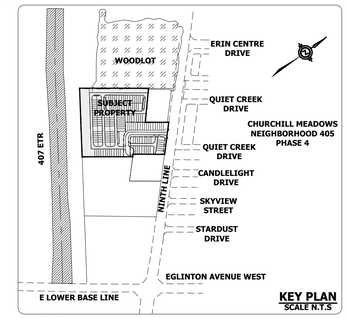

KEY PLAN
SCALE N.T.S

LEGEND

NOTE:

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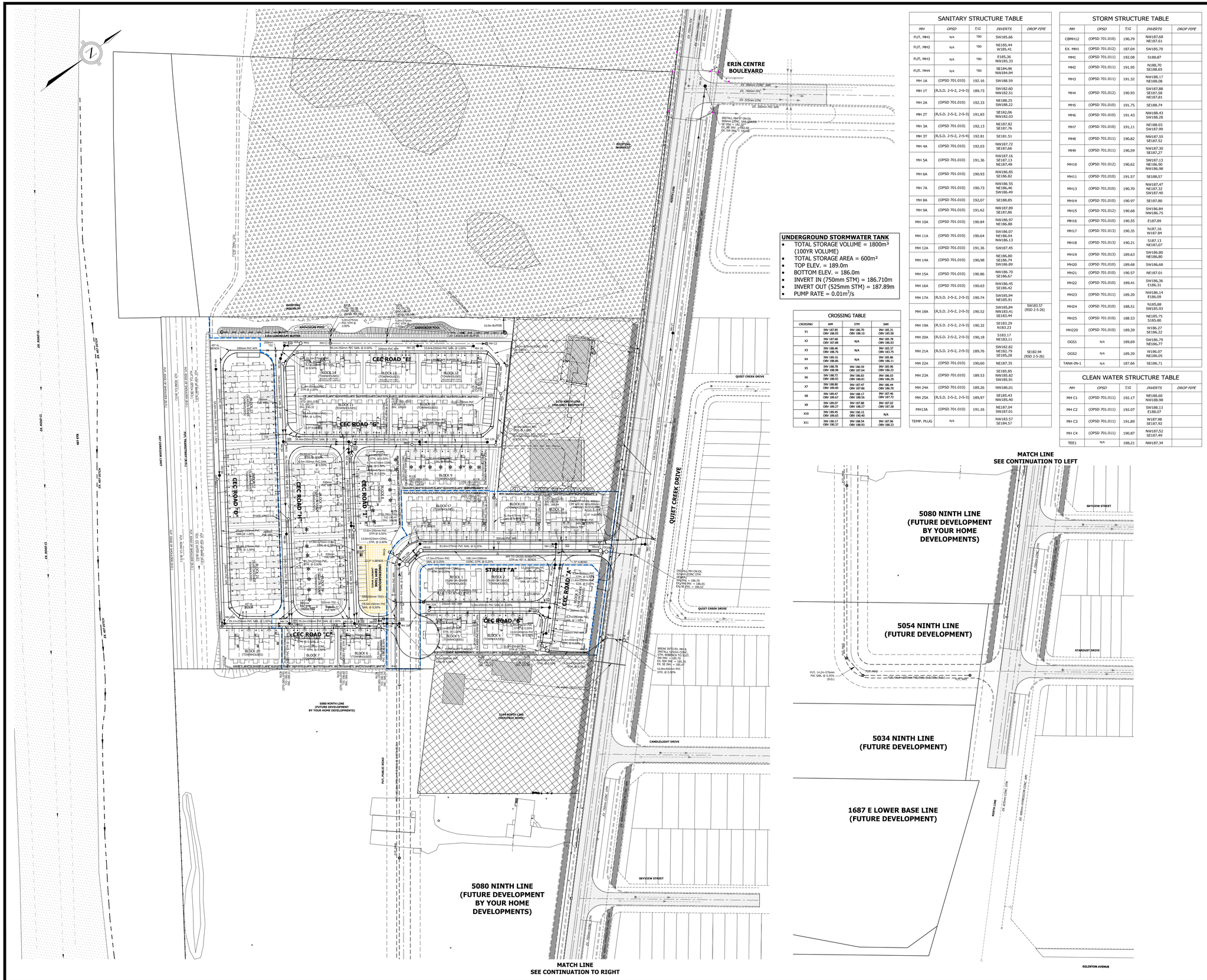
MATTAMY (5150 NINTH LINE) LIMITED

Region of Peel Working for you

MISSISSAUGA

GRADING CROSS SECTIONS

PROJECT #:	19-608	DRAWING:	2B
CITY FILE No.: 21T-M 19 6 REGION FILE No.: 21T-19006M			
DESIGNED:	Z.K.	CHECKED:	S.R.
DRAWN:	Z.K.	DATE:	JULY 2020
SCALE:	H 1:250 , V 1:100		



UNDERGROUND STORMWATER TANK
- TOTAL STORAGE VOLUME = 1800m³ (100YR VOLUME)
- TOTAL STORAGE AREA = 600m²
- TOP ELEV. = 189.0m
- BOTTOM ELEV. = 186.0m
- INVERT IN (750mm STM) = 186.710m
- INVERT OUT (525mm STM) = 187.89m
- PUMP RATE = $0.01m^3/s$

CROSSING TABLE

CROSSING	WM	STM	SAN
X1	INV 187.85 OBV 188.05	INV 186.70 OBV 188.10	INV 185.31 OBV 185.58
X2	INV 187.68 OBV 187.88	N/A	INV 185.78 OBV 186.03
X3	INV 188.46 OBV 188.76	N/A	INV 183.37 OBV 183.75
X4	INV 189.16 OBV 188.86	N/A	INV 185.86 OBV 186.11
X5	INV 188.78 OBV 188.98	INV 186.59 OBV 187.64	INV 185.96 OBV 186.22
X6	INV 188.72 OBV 188.92	INV 186.83 OBV 186.81	INV 186.03 OBV 186.29
X7	INV 188.80 OBV 189.00	INV 187.47 OBV 187.86	INV 186.44 OBV 186.70
X8	INV 189.47 OBV 189.67	INV 188.17 OBV 188.56	INV 187.46 OBV 187.72
X9	INV 189.07 OBV 189.27	INV 187.88 OBV 188.27	INV 187.02 OBV 187.28
X10	INV 189.45 OBV 189.65	INV 190.15 OBV 190.40	N/A
X11	INV 190.17 OBV 190.37	INV 188.54 OBV 188.93	INV 187.96 OBV 188.23

SANITARY STRUCTURE TABLE

MH	OPSD	T/G	INVERTS	DROP PIPE
FUT. MH1	N/A	TBD	SW185.66	
FUT. MH2	N/A	TBD	NE185.44 W185.41	
FUT. MH3	N/A	TBD	E185.36 NW185.33	
FUT. MH4	N/A	TBD	SE184.96 NW184.94	
MH 1A	(OPSD 701.010)	192.16	SW188.59	
MH 1T	(R.S.D. 2-5-2, 2-5-3)	189.73	SW182.60 NW182.51	
MH 2A	(OPSD 701.010)	192.33	NE188.25 SW188.22	
MH 2T	(R.S.D. 2-5-2, 2-5-3)	191.83	SE182.06 NW182.03	
MH 3A	(OPSD 701.010)	192.13	NE187.82 SE187.76	
MH 3T	(R.S.D. 2-5-2, 2-5-4)	192.81	SE181.51	
MH 4A	(OPSD 701.010)	192.03	NW187.72 SE187.66	
MH 5A	(OPSD 701.010)	191.36	NW187.16 SE187.13 NE187.48	
MH 6A	(OPSD 701.010)	190.93	NW186.85 SE186.82	
MH 7A	(OPSD 701.010)	190.73	NW186.55 NE186.46 SW186.49	
MH 8A	(OPSD 701.010)	192.07	SE188.85	
MH 9A	(OPSD 701.010)	191.62	NW187.89 SE187.86	
MH 10A	(OPSD 701.010)	190.84	NW186.97 NE186.88	
MH 11A	(OPSD 701.010)	190.64	SW186.07 NE186.04 NW186.13	
MH 12A	(OPSD 701.010)	191.36	SW187.45	
MH 14A	(OPSD 701.010)	190.98	NE186.80 SE186.74 SW186.89	
MH 15A	(OPSD 701.010)	190.86	NW186.70 SE186.67	
MH 16A	(OPSD 701.010)	190.63	NW186.45 SE186.42	
MH 17A	(R.S.D. 2-5-2, 2-5-3)	190.74	SW185.94 NE185.91	
MH 18A	(R.S.D. 2-5-2, 2-5-3)	190.52	SW185.84 NW183.41 SE183.44	SW183.57 (RSD 2-5-26)
MH 19A	(R.S.D. 2-5-2, 2-5-3)	190.32	SE183.29 N183.23	
MH 20A	(R.S.D. 2-5-2, 2-5-3)	190.18	S183.17 NE183.11	
MH 21A	(R.S.D. 2-5-2, 2-5-3)	189.76	SW182.82 NE182.79 SE185.28	SE182.94 (RSD 2-5-26)
MH 22A	(OPSD 701.010)	190.60	NE187.35	
MH 23A	(OPSD 701.010)	189.53	SE185.85 NW185.82 SW185.91	
MH 24A	(OPSD 701.010)	189.26	NW186.01	
MH 25A	(R.S.D. 2-5-2, 2-5-3)	189.97	SE185.43 NW185.40	
MH13A	(OPSD 701.010)	191.16	NE187.04 SW187.01	
TEMP. PLUG	N/A		NW183.57 SE184.57	

STORM STRUCTURE TABLE

MH	OPSD	T/G	INVERTS	DROP PIPE
CBMH12	(OPSD 701.010)	190.79	NW187.68 NE187.61	
EX. MH1	(OPSD 701.012)	187.04	SW185.70	
MH1	(OPSD 701.011)	192.08	S188.87	
MH2	(OPSD 701.011)	191.95	N188.70 SE188.65	
MH3	(OPSD 701.011)	191.32	NW188.17 NE188.08	
MH4	(OPSD 701.012)	190.93	SW187.88 SE187.58 NE187.81	
MH5	(OPSD 701.010)	191.75	SE188.74	
MH6	(OPSD 701.010)	191.43	NW188.43 SW188.28	
MH7	(OPSD 701.010)	191.11	NE188.03 SW187.99	
MH8	(OPSD 701.011)	190.82	NW187.55 SE187.52	
MH9	(OPSD 701.011)	190.59	NW187.30 SE187.27	
MH10	(OPSD 701.012)	190.62	SW187.13 NE186.90 NW186.98	
MH11	(OPSD 701.010)	191.57	SE188.57	
MH13	(OPSD 701.010)	190.70	NW187.47 NE187.32 SW187.40	
MH14	(OPSD 701.010)	190.97	SE187.80	
MH15	(OPSD 701.012)	190.68	SW186.84 NW186.75	
MH16	(OPSD 701.010)	190.55	E187.89	
MH17	(OPSD 701.013)	190.35	N187.16 W187.84	
MH18	(OPSD 701.013)	190.21	S187.13 NE187.07	
MH19	(OPSD 701.013)	189.63	SW186.80 NE186.80	
MH20	(OPSD 701.010)	189.68	SW186.68	
MH21	(OPSD 701.010)	190.57	NE187.01	
MH22	(OPSD 701.010)	189.41	SW186.36 E186.31	
MH23	(OPSD 701.011)	189.20	NW186.14 E186.09	
MH24	(OPSD 701.010)	188.51	N185.88 SW185.93	
MH25	(OPSD 701.010)	188.53	NE185.75 S185.80	
MH220	(OPSD 701.010)	189.39	W186.27 SE186.22	
OGS1	N/A	189.69	SW186.79 NE186.77	
OGS2	N/A	189.20	W186.07 NE186.05	
TANK-IN-1	N/A	187.66	SE186.71	

CLEAN WATER STRUCTURE TABLE

MH	OPSD	T/G	INVERTS	DROP PIPE
MH C1	(OPSD 701.011)	192.17	NE188.60 NW188.98	
MH C2	(OPSD 701.011)	192.07	SW188.13 E188.07	
MH C3	(OPSD 701.011)	191.89	W187.98 SE187.92	
MH C4	(OPSD 701.011)	190.87	NW187.52 SE187.49	
TEE1	N/A	188.21	NW187.34	

KEY PLAN
SCALE N.T.S

LEGEND

─○◄─	STORM SEWER AND MANHOLE
─●◄─	SANITARY SEWER AND MANHOLE
─⊘◄- -	CLEAN WATER SEWER AND MANHOLE
- -○◄- -	EXISTING STORM SEWER AND MANHOLE
- -●◄- -	EXISTING SANITARY SEWER AND MANHOLE
- -○◄- -	FUTURE STORM SEWER AND MANHOLE
- -●◄- -	FUTURE SANITARY SEWER AND MANHOLE
── GAS ──	EXISTING GAS LINE
── H ──	EXISTING HYDRO
□	SINGLE/REARLOT CATCHBASIN
□□	DOUBLE CATCHBASIN
⊕	BOREHOLE LOCATION
⌖	HYDRANT & VALVE
⋈	VALVE AND BOX
▪▪▪▪	LIMIT OF SUBDIVISION (PUBLIC / FREEHOLD)
⊲	PADMOUNT TRANSFORMER
GLB	BELL GRADE LEVEL BOX
◒	STREETLIGHT POLE
⧄	ROGERS GLB
⊠	BELL PEDESTAL
RC	ROGERS CSP
▨	INFILTRATION TRENCH
*	SANITARY SERVICE CONNECTION TO CROSS BENEATH STORM SEWER

LOCAL BENCHMARK:
LOCAL BENCHMARK No. 1 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER NEAR A UTILITY POLE. ELEVATION = 189.64 METRES
LOCAL BENCHMARK No. 2 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER OPPOSITE THE SOUTH LIMIT OF THE PROPERTY. ELEVATION = 188.43 METRES.

No.	REVISION	DATE	BY
5			
4			
3			
2			
1	ISSUED FOR 3RD DRAFT SUBMISSION	NOV. 2020	S.R.

LICENSED PROFESSIONAL ENGINEER
S.B. RIEMER
100214712
NOV. 2020
PROVINCE OF ONTARIO

urbantech
Urbantech Consulting, A Division of Leighton-Zec Ltd.
3760 14th Avenue, Suite 301, Markham, Ontario L3R 3T7
tel: 905.946.9461 fax: 905.946.9595
www.urbantech.com

MATTAMY (5150 NINTH LINE) LIMITED

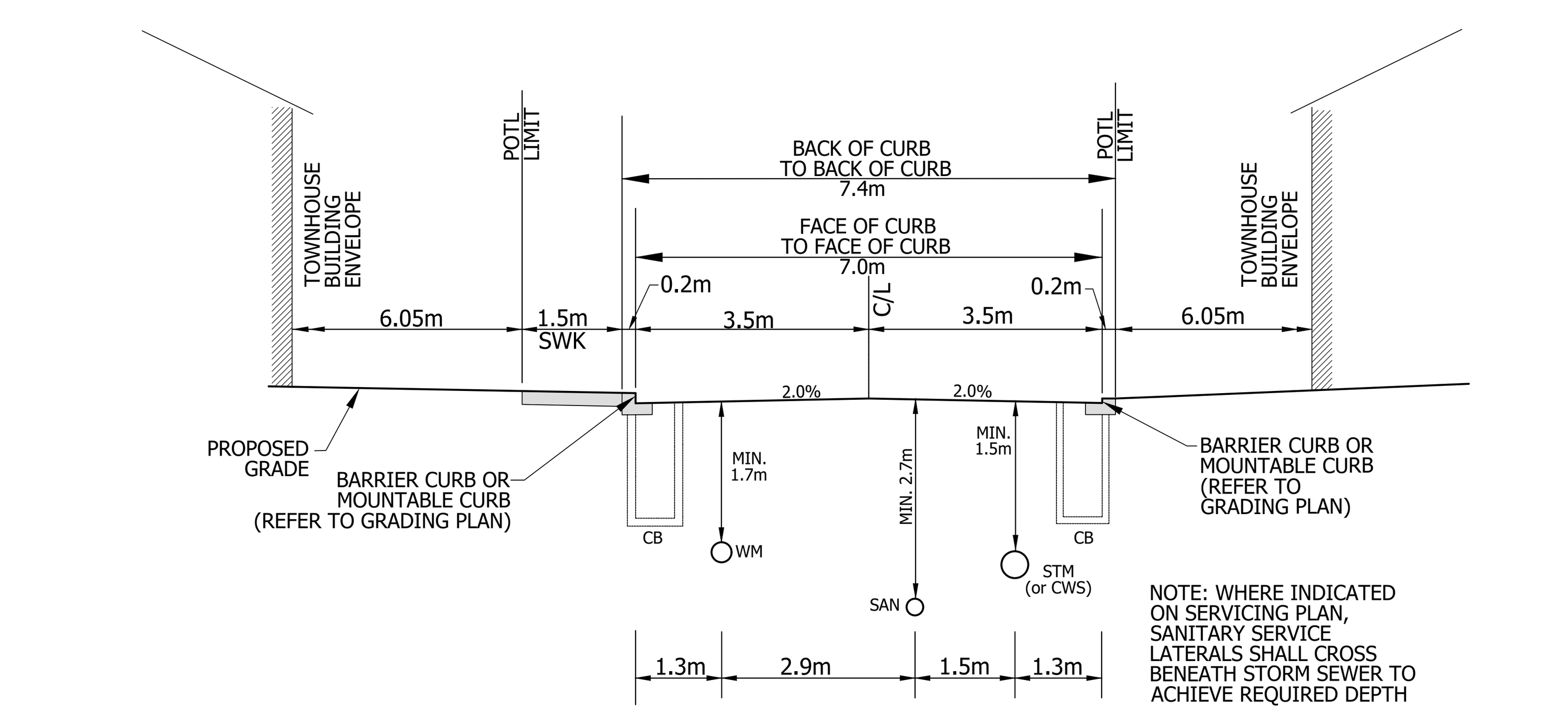
Region of Peel
Working for you

MISSISSAUGA

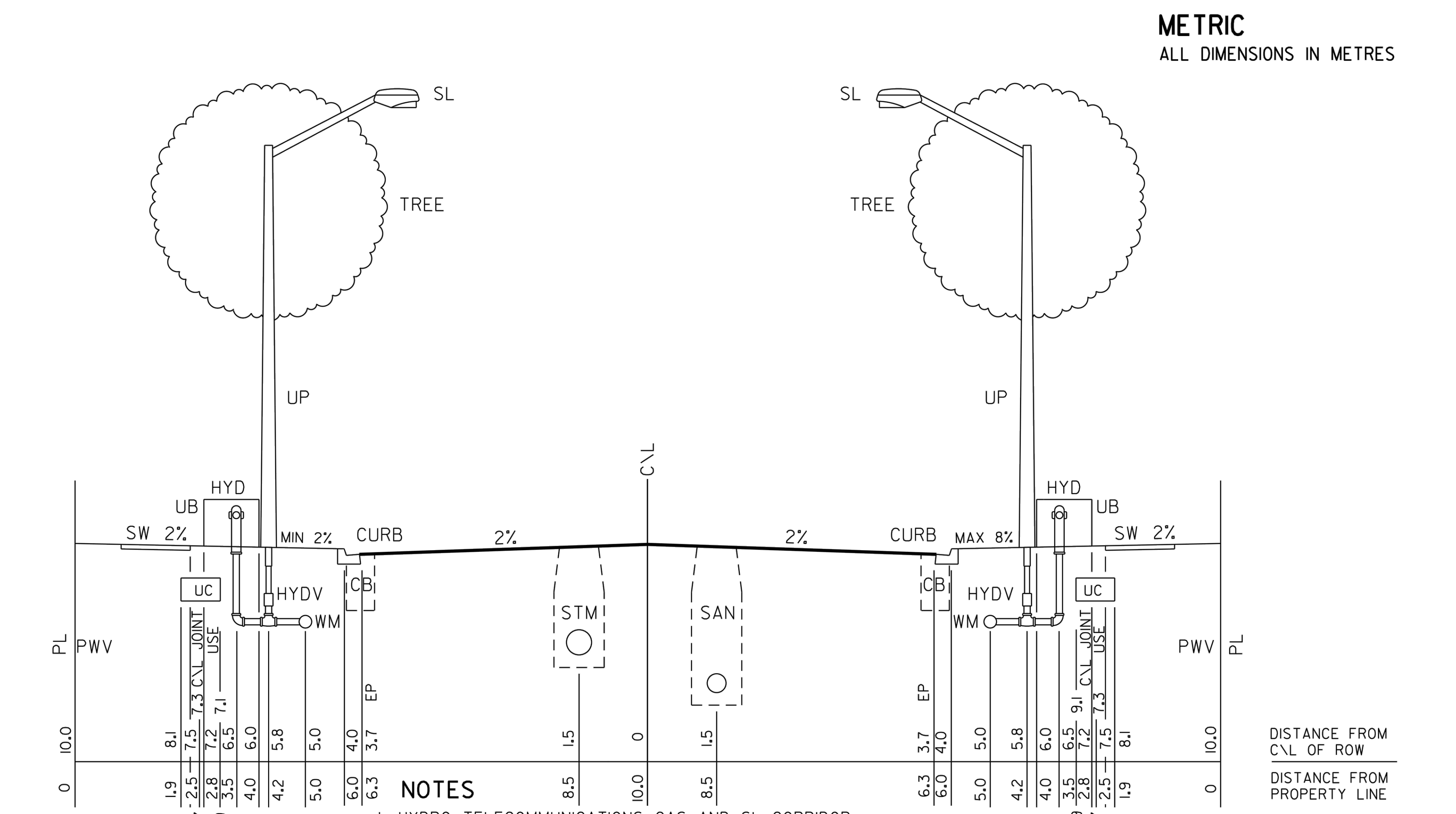
SITE SERVICING

PROJECT #: 19-608 CITY FILE No.: 21T-M 19 6 REGION FILE No.: 21T-19006M	DRAWING: 3
DESIGNED: Z.K.	CHECKED: S.R.
DRAWN: Z.K.	DATE: JULY 2020
SCALE: 1:1000	10m 0m 10m 20m 40m

FILE: P:\PROJECTS\19-608 5150 & 5170 NINTH LINE MATTAMY\REPORTS\FSR\DRAWINGS & FIGURES\DWG 3_SITE SERVICING.DWG REVISED BY [SRIEMER] ON November 10, 2020 AT 4:45 PM



TYPICAL 7.0m PAVEMENT
ROAD CROSS SECTION



LEGEND

- EP - EDGE OF PAVEMENT
- CB - CATCH BASIN
- CURB - CURB OR CURB AND GUTTER
- C/L - CENTRELINE
- GAS - GAS MAIN
- HYD - FIRE HYDRANT
- HYDV - FIRE HYDRANT VALVE
- PWV - PRIVATE WATER VALVE
- PL - PROPERTY LINE
- SL - STREETLIGHT
- SW - SIDEWALK
- SAN - SANITARY SEWER
- STM - STORM SEWER
- UB - UTIITY BOX (HYDRO,TELECOMMUNICATIONS)
- UC - UTILITY CORRIDOR (HYDRO,TELECOMM,GAS,SL)
- UP - UTILITY POLE
- WM - WATERMAIN

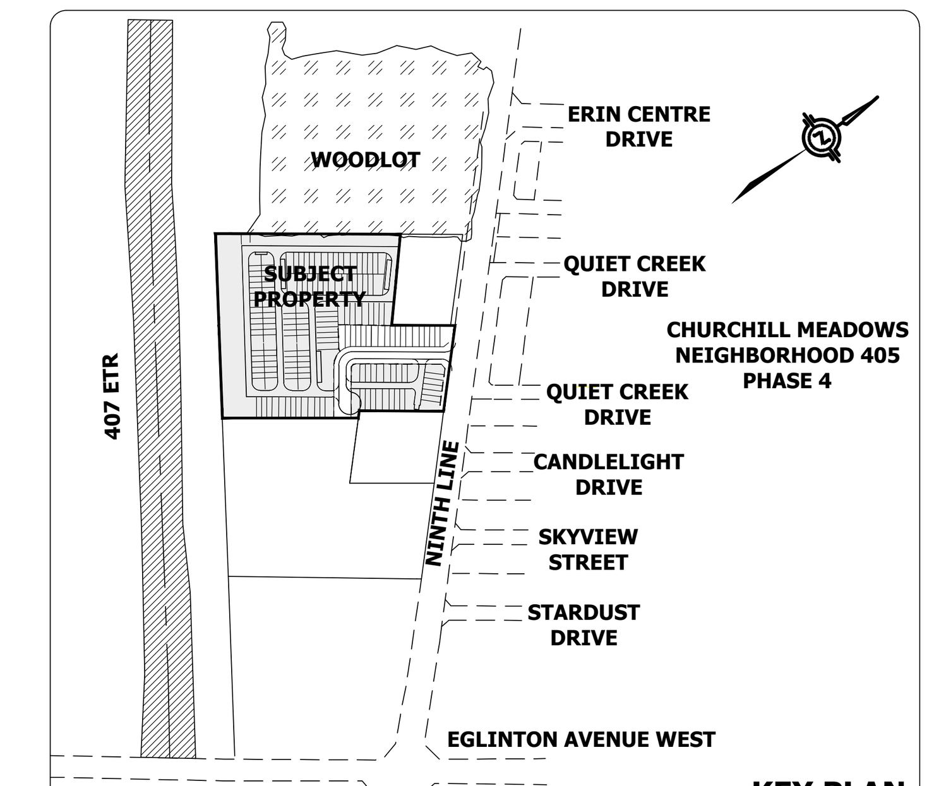
NOTES

1. HYDRO, TELECOMMUNICATIONS, GAS AND SL CORRIDOR TO HAVE A MINIMUM COVER OF 0.965m.
2. WATERMAIN TO HAVE A MINIMUM COVER OF 1.7m.
3. IF UTILITIES CANNOT BE INSTALLED ACCORDING TO THIS STANDARD THEY ARE TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE PRESCRIBED LOCATION SUBJECT TO THE APPROVAL OF THE TRANSPORTATION AND WORKS DEPARTMENT OF THE CITY OF MISSISSAUGA.
4. A 0.4m - 0.6m CLEARANCE MUST BE MAINTAINED BETWEEN CABLES AND HYDRANTS.
5. A 0.3m CLEARANCE MUST BE MAINTAINED BETWEEN WATERMAINS AND UTILITY POLES.
6. ROAD WIDTH IS MEASURED FROM FACE OF CURB TO FACE OF CURB AS DEFINED ON OPSD STD. 600.040 CURB & GUTTER. PAVEMENT WIDTH IS MEASURED FROM EDGE OF PAVEMENT (EP) TO EDGE OF PAVEMENT (EP).
7. FOR LOCATION OF GAS MAIN WITHIN UTILITY CORRIDOR REFER TO STD. 2211.280

MISSISSAUGA

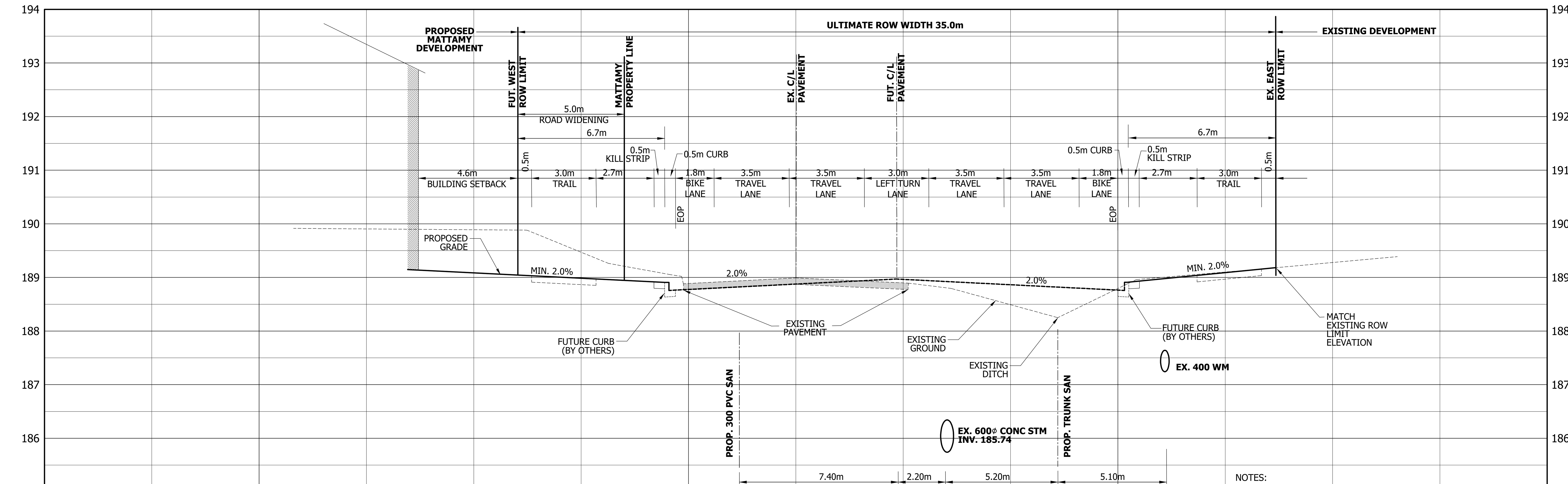
STANDARD
LOCAL RESIDENTIAL ROAD
8.0m ROAD ON 20m ROW

EFF. DATE		2002-01-01	SCALE	N.T.S.
REV.	7	2015-06-05	STANDARD No.	2211.070



KEY PLAN
SCALE N.T.S

LEGEND



PRELIMINARY NINTH LINE CROSS SECTION
SCALE HOR 1:125 VER: 1:50

NOTES:

- * PROPOSED ROAD CONFIGURATION SHOWN ON THIS SECTION IS CONCEPTUAL ONLY, AND IT IS SUBJECT TO FUTURE EA.
- * PROPOSED ROW SECTION MATCHES APPROVED NINTH LINE ROAD CONFIGURATION WITHIN TOWN OF OAKVILLE.

LOCAL BENCHMARK:
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LOCAL BENCHMARK No. 2 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER OPPOSITE THE SOUTH LIMIT OF THE PROPERTY. ELEVATION = 188.43 METRES.

No.	REVISION	DATE	BY
5			
4			
3			
2			
1	ISSUED FOR 3RD DRAFT SUBMISSION	NOV. 2020	S.R.

LICENSED PROFESSIONAL ENGINEER
S.B. RIEMER
100214712
NOV. 2020
PROVINCE OF ONTARIO

urbantech
Urbantech Consulting, A Division of Leighton-Zec Ltd.
3760 14th Avenue, Suite 301, Markham, Ontario L3R 3T7
tel: 905.946.9461 fax: 905.946.9595
www.urbantech.com

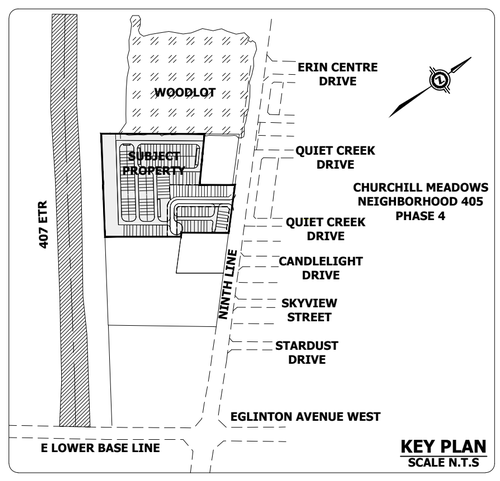
MATTAMY (5150 NINTH LINE) LIMITED

Region of Peel
Working for you

MISSISSAUGA

ROW CROSS SECTIONS

PROJECT #: 19-608	DRAWING:
CITY FILE No.: 21T-M 19 6 REGION FILE No.: 21T-19006M	4
DESIGNED: Z.K.	CHECKED: S.R.
DRAWN: Z.K.	DATE: JULY 2020
SCALE: 1:100	



LEGEND

- SUBJECT PROPERTY
- NON-PARTICIPATING LAND OWNERS
- WETLAND
- 256.00 — EXISTING CONTOUR
- 2.50ha / 50% — DRAINAGE AREA (ha) / IMPERVIOUSNESS
- EXISTING STORM SEWER AND MANHOLE
- EXISTING OVERLAND FLOW DIRECTION
- EXISTING DRAINAGE BOUNDARY

LOCAL BENCHMARK:
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MATTAMY (5150 NINTH LINE) LIMITED
MEDIUM DENSITY BLOCKS 1-17 (Phase 1) & 21-24 (Phase 2)

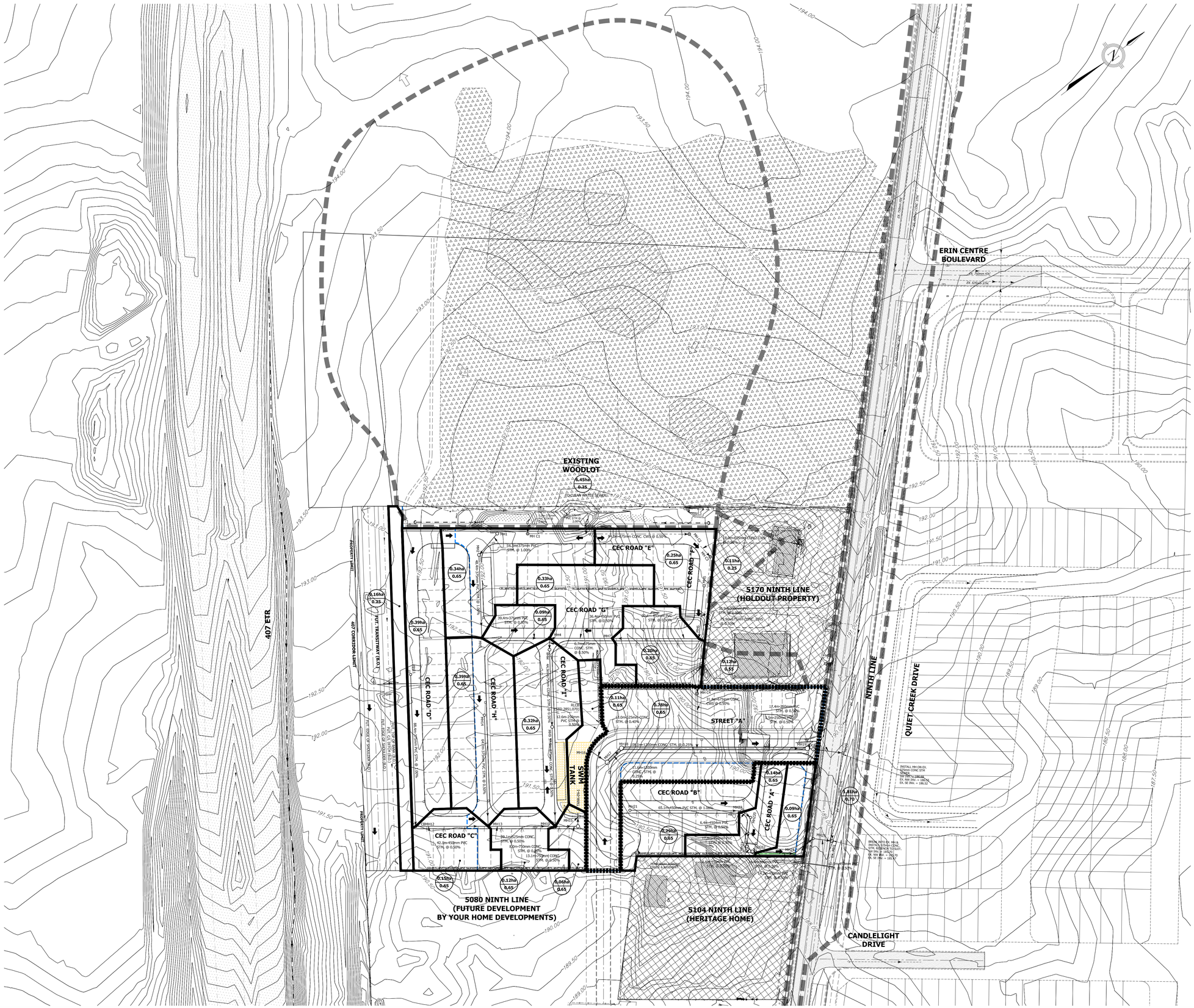
Region of Peel
Working for you

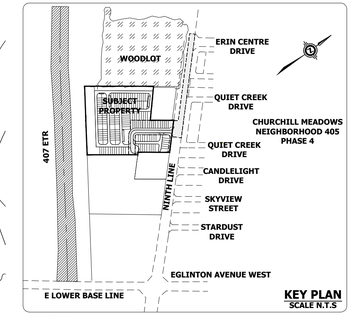
MISSISSAUGA

EXISTING STORM DRAINAGE

PROJECT #: 19-608	DRAWING: 5A
CITY FILE No.: 21T-M 19 6 REGION FILE No.: 21T-19006M	
DESIGNED: Z.K.	CHECKED: S.R.
DRAWN: Z.K.	DATE: JULY 2020
SCALE: 1:1250	

FILE: P:\PROJECTS\19-608 5150 & 5170 NINTH LINE MATTAMY\REPORTS\FSR\DRAWINGS & FIGURES\DWG 5A_EXISTING STORM DRAINAGE.DWG REVISED BY [ZKARIM] ON November 10, 2020 AT 11:27 AM





LEGEND

- 87.00 — EXISTING CONTOUR AND ELEVATION
- STORM SEWER AND MANHOLE
- EXISTING STORM SEWER AND MANHOLE
- EXISTING FOUNDATION DRAIN COLLECTOR
- CLEAN WATER SERVICE AND MANHOLE
- SINGLE/REARLOT CATCHBASIN
- DOUBLE CATCHBASIN
- 0.25 / 0.60 — PROPOSED DRAINAGE AREA (ha) FOR MINOR SYSTEM (5 YEAR) FLOW / PROPOSED RUNOFF COEFFICIENT
- MINOR SYSTEM DRAINAGE BOUNDARY
- PUBLIC MINOR SYSTEM DRAINAGE BOUNDARY
- EXISTING STORM DRAINAGE BOUNDARY
- OVERLAND FLOW ROUTE
- EXISTING OVERLAND FLOW ROUTE
- EXISTING WOODLOT
- EXISTING WETLAND

LOCAL BENCHMARK:

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LOCAL BENCHMARK No. 2 STEEL SPIKE SET ON THE EAST SIDE OF NINTH LINE IN THE GRAVEL SHOULDER OPPOSITE THE SOUTH LIMIT OF THE PROPERTY. ELEVATION = 188.43 METRES.

No.	REVISION	DATE	BY
5			
4			
3			
2			
1	ISSUED FOR 3RD DRAFT SUBMISSION	NOV. 2020	S.R.

LICENCED PROFESSIONAL ENGINEER
S.B. RIEMER
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NOV. 2020
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MATTAMY (5150 NINTH LINE) LIMITED

Region of Peel
Working for you

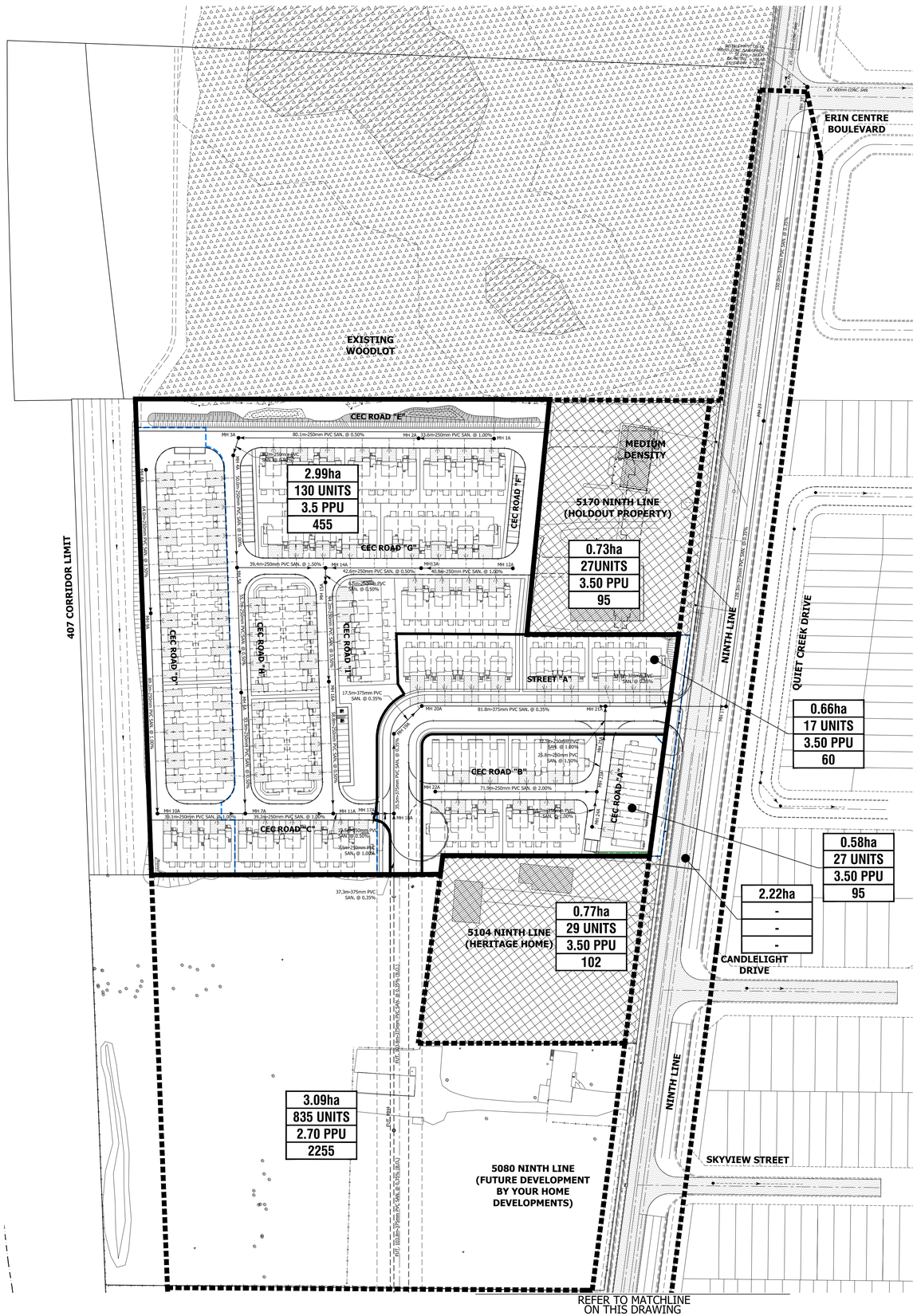
MISSISSAUGA

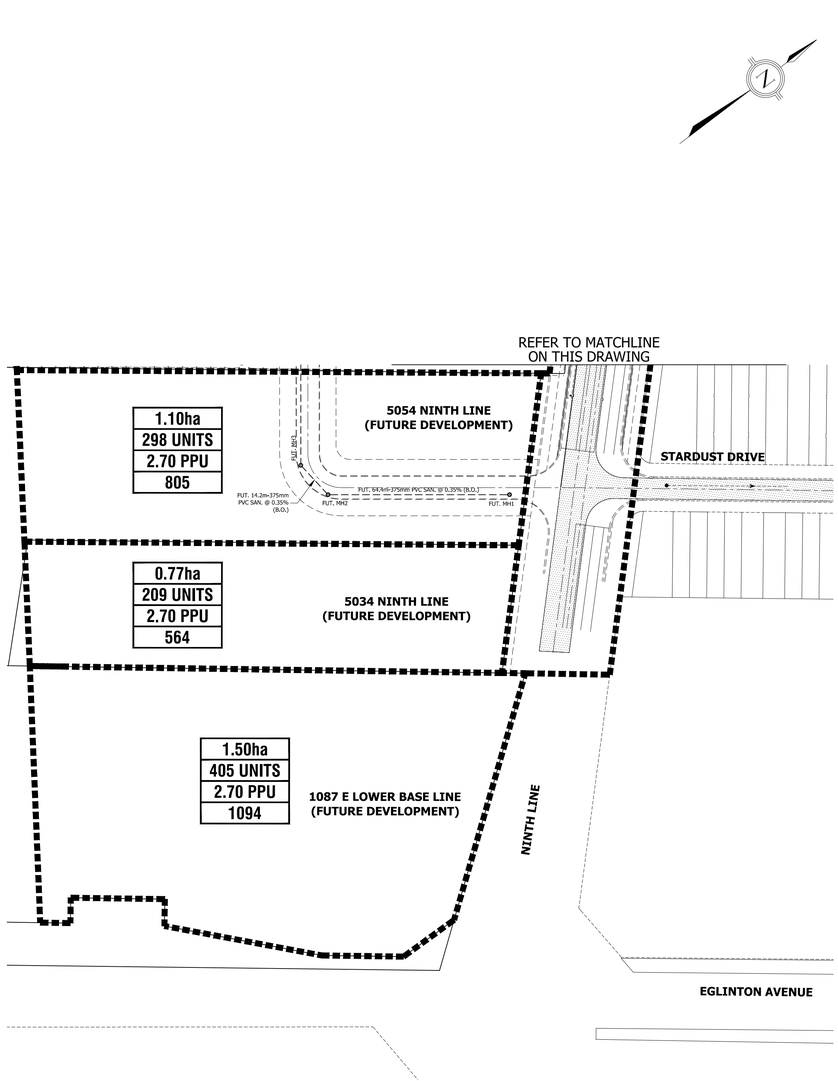
STORM DRAINAGE PLAN

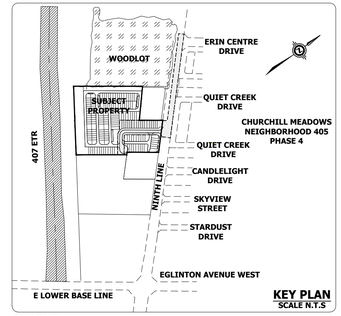
INTERNAL & EXTERNAL AREAS

PROJECT #:	19-608	DRAWING:	5B
CITY FILE No.:			
REGION FILE No.:			
DESIGNED:	Z.K.	CHECKED:	S.R.
DRAWN:	Z.K.	DATE:	JULY 2020

SCALE: 1:1000 (5m 0m 5m 10m 20m)







LEGEND

- SANITARY SEWER AND MANHOLE
- EXISTING SANITARY SEWER AND MANHOLE
- FUTURE SANITARY SEWER AND MANHOLE
- 0.50ha / 10 UNITS / 3.50 PPU / 35 — DRAINAGE AREA (Ha.) / PERSONS PER UNIT / POPULATION
- DRAINAGE AREA BOUNDARY
- EXTERNAL DRAINAGE AREA BOUNDARY

LOCAL BENCHMARK:

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1	ISSUED FOR 3RD DRAFT PLAN SUBMISSION	NOV. 2020	S.R.

LICENSED PROFESSIONAL ENGINEER
S.B. RIEMER
100214712
NOV. 2020
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MATTAMY (5150 NINTH LINE) LIMITED

Region of Peel
Working for you

MISSISSAUGA

SANITARY DRAINAGE PLAN

INTERNAL & EXTERNAL AREAS

PROJECT #: 19-608	DRAWING: 6
CITY FILE No.: 21T-M 19 6 REGION FILE No.: 21T-19006M	
DESIGNED: Z.K.	CHECKED: S.R.
DRAWN: Z.K.	DATE: JULY 2020
SCALE: 1:1000	10m 0m 10m 20m 40m

urbantech

APPENDIX C

WATER & WASTEWATER CALCULATIONS (MES)

Urbantech Consulting, A Division of Leighton-Zec Ltd.
3760 14th Avenue, Suite 301 Markham, Ontario L3R 3T7
TEL: 905.946.9461 FAX: 905.946.9595
www.urbantech.com

Municipal Engineering Solutions

November 6, 2020 Project No. 17003-35

Sent via email
Mr. Craig Scarlett
Mattamy (5150 Ninth Line) Ltd.
7880 Keele Street, Suite 300
Vaughan, ON L4K 4G7

Subject: 5150 Ninth Line Development
Water and Wastewater Calculations
City of Mississauga, Region of Peel

Dear Mr. Scarlett,

Municipal Engineering Solutions ("MES") was retained by Mattamy (5150 Ninth Line) Ltd. to calculate the water demands and sanitary flow for the proposed 5150 Ninth Line Development in the City of Mississauga (Region of Peel). As part of this assignment MES was requested to calculate the flow requirements for the proposed development using Region of Peel, Fire Underwriters Survey, provincial and industry design standards to complete the Region's Single-Use Demand Table.

Development Background

The development site is located on the south-west side of Ninth Line, south of Erin Centre Boulevard (adjacent to Quiet Creek Drive) in the City of Mississauga. The development consists of 174 townhouses built in two phases. The proposed water connection to the development will be from the 400 mm watermain on Ninth Line. The proposed sanitary connection will be to the existing 300 mm sanitary sewer along Ninth Line.

Equivalent Population Serviced

To calculate the equivalent population for the proposed development MES used population densities received from the Region of Peel in August 2020. **Table 1** summarizes the residential population densities.

Table 1 – Equivalent Population Density

Type of Development	Equivalent Population Density
Townhouse	3.5 People/unit

Source: Region of Peel

The equivalent population for the site was calculated to be 609 people. Detailed calculations are attached.

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Domestic Water Usage

The domestic water demands for the development were calculated using the design criteria outlined in the Region of Peel "*Watermain Design Criteria, 2010*". **Table 2** summarizes the average daily demand and peaking factors used for this analysis.

Table 2 - Water Design Factors

Type of Development	Average Daily Demand	Maximum Daily Demand Peaking Factor	Peak Hourly Demand Peaking Factor
Residential	280 L/capita/day	2.0	3.0

Source: Region of Peel Watermain Design Criteria, 2010

Utilizing the equivalent population data from Table 1 and the corresponding Maximum Day and Peak Hour data from Table 2 the water demands for this development were calculated. The calculated demands for the development are summarized in **Table 3**. Detailed water demand calculations are attached.

Table 3 – Water Demand for the 5150 Ninth Line Development

	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)
Townhouses	1.97	3.94	5.91

Fire Flow Demands

The fire demands for the development were estimated using the Fire Underwriters Survey ("FUS") formula outlined in the *'Water Supply For Public Fire Protection Guideline'*, dated 1999. The minimum required fire flow is shown in **Table 4**. Detailed calculations are attached.

Table 4 - Fire Flow Requirements

Type of Development	Fire Flow (L/s)
Townhouses	350

Source: Fire Underwriters Survey

As noted, the fire flow in Table 4 above was calculated using the FUS formula. **Table 5** below summarizes the criteria utilized to calculate the fire flow requirements as well as the assumptions made. The largest expected townhome unit with the worst exposure of each type has been used to calculate the fire flow requirements. These calculations are preliminary based on the data currently available. Once the detailed design data (specifics) for these building(s) are finalized the assumptions noted in Table 5 and in the FUS calculation must be reviewed and confirmed by the appropriate designer and any design/criteria changes required are to be reported to MES.

Table 5 – FUS Criteria/Assumptions

	Type of Development
	Townhouses
Type of Construction	Wood Frame Construction (Structure Essentially All Combustible)
Occupancy Type	Limited Combustible
Fire Protection (Sprinkler/Firewalls)	Assumes No Firewalls or Sprinklers Present.

Area Considered	Townhouses Maximum 8 Units per Block Maximum 218 m² per Unit Dual Frontage Townhouses Maximum 7 Units per Block Maximum 187 m² per Unit Back to Back Townhouses Maximum 14 Units per Block Maximum 152 m² per Unit

Note: For Additional Information on FUS Criteria Refer to Water Supply for Public Protection Guide, Fire Underwriters Survey, 1999

The calculation assumes that there are no firewalls within any of the townhouse blocks. Should fire walls be included in the units then only firewalls with a fire resistive rating of 2 or more hours as per the current edition of the National Building Code of Canada would be considered to reduce the required fire flow for the townhouses.

Hydrant Test

A hydrant test was performed on Ninth Line on September 10th, 2020 by Watermark Solutions Ltd. The results of the hydrant test are attached.

The results of the hydrant test indicate that the theoretical available fire flow at 140 kPa (20 psi) from the existing hydrant on Ninth Line is approximately 370 L/s (5860 USgpm). The available flows at the proposed hydrants within the development have not been calculated.

Watermain Hydraulic Modelling

The intent of this report is to complete the Region's Single-Use Demand Table. It should be noted that water hydraulic modeling will be required within the townhouse development to ensure that the required fire flows are met at the proposed hydrants within the development.

Sanitary Sewer Flow

The sanitary flow for the development was estimated using the design criteria outlined in the Region of Peel "*Sanitary Sewer Design Criteria, July 2009*". **Table 6** summarizes the sanitary flow and infiltration allowance used for this analysis.

Table 6 - Sanitary Design Factors

Type of Development	Sewage Flow
Domestic Sewage Flow	302.8 L/capita/day
Peak Flow Factor	Harmon Formula
Infiltration	0.0002 m³/sec/Ha

Utilizing the equivalent population and the corresponding rates from Table 6 the sanitary flow for this development was calculated. Please note that the sanitary flow was calculated based on the projected population whereas typically the sanitary flow for all populations less than 1000 people are taken as the minimum of 0.013 m^3/sec (13 L/s) as per the Peel Region Design Criteria. The calculated sanitary flow for the development is summarized in **Table 7**. Detailed sanitary flow calculations are attached.

Table 7 – Total Sanitary Flow

	Sanitary Flow (L/s)
Total Sanitary Sewer Effluent	**9.21**

Conclusions/Recommendations

Please see the Preliminary Calculations for the Region's Single-Use Demand Table attached for the projected water and sanitary flow rates for the proposed development.

Once the buildings have been designed the required fire flow for each building will need to be verified to determine the minimum required fire flow for the development as per the Fire Underwriters Survey. Watermain hydraulic modelling will be required for the internal watermains to ensure that the minimum required fire flows can be met at each of the hydrants within the development.

We trust you find this report satisfactory. Should you have any questions or require further clarification, please call.

Yours truly,

Municipal Engineering Solutions

Kristin St-Jean, P.Eng.

/KS

Attachments:

Connection Single-Use Demand Table
Region of Peel Design Criteria
Domestic Water Usage Calculations
Fire Underwriters Survey (FUS) Calculation
Hydrant Test Results
Sanitary Sewer Flow Calculations

Connection Single Use Demand Table

WATER CONNECTION

Connection point [3]				
400mm diameter watermain on Ninth Line, adjacent to Quiet Creek Drive (vicinity of Hydrant Number 6548000)				
Pressure zone of connection point			Zone 4W	
Total equivalent population to be serviced [1]			609 people	
Total lands to be serviced			4.14 Ha	
Hydrant flow test				
	Hydrant flow test location			
Ninth Line, adjacent to Quiet Creek Drive (Hydrant 6548000)				
		Pressure (kPa)	Flow (in l/s)	Time
	Minimum water pressure	324 kPa	147 L/s	10:20 am
	Maximum water pressure	365 kPa	0 L/s	10:20 am

No.	Water demands		
	Demand type	**Demand**	**Units**
1	Average day flow	1.97	l/s
2	Maximum day flow	3.94	l/s
3	Peak hour flow	5.91	l/s
4	Fire flow [2]	350	l/s
Analysis			
5	Maximum day plus fire flow	353.94	l/s

WASTEWATER CONNECTION

Connection point [4]	300 mm diameter sewer on Ninth Line, adjacent to Quiet Creek Drive	
Total equivalent population to be serviced [1]		609 people
Total lands to be serviced		4.14 Ha
6	Wastewater sewer effluent (in l/s)	9.21 L/s

[1] The calculations should be based on the development estimated population (employment or residential).

[2] Please reference the Fire Underwriters Survey Document

[3] Please specify the connection point ID

[4] Please specify the connection point (wastewater line or manhole ID)
Also, the "total equivalent popopulation to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

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

Region of Peel Design Criteria

Equivalent Population by Unit

Type of Development	Equivalent Population Density *(Person/Unit)*
Rowhouses	3.50

Source: Region of Peel August 2020

Water Design Factors

Residential	
Average Daily Demand (L/person/day)	280
Maximum Day Factor	2.0
Peak Hour Factor	3.0

Source: Region of Peel Watermain Design Criteria, June 2010

Sanitary Design Factors

Design Flow	Sewage Flow
Domestic Sewage Flow	302.8 L/capita/day
Peak Flow Factor	Harmon Formula
Domestic Sewage Flow (<1000 persons)	0.013 m^3/sec
Infiltration by Hectare	0.0002 m^3/sec/Ha

Source: Region of Peel Sanitary Sewer Design Criteria, July 2009

TOWNHOUSES

Population

Unit Type	Units	People/Unit	Population (Res)
Townhouses	174	3.5	609.0
Residential Population			**609**

Water Demands

Demand Type	Population (Res)	Demand Rate
Average Day	609	280 L/capita/day
Average Day Water Demand Townhouses		170520 L/day
		1.97 L/s

Residential Water Demands

Demand Type	Peaking Factor	Water Demands (Res)
Average Day		1.97 L/s
Maximum Day	2.0	3.94 L/s
Peak Hour	3.0	5.91 L/s

TOTAL

Population

Total Population	609

Total Demands

Demand Type	Demand (L/s)
Average Day	1.97
Maximum Day	3.94
Peak Hour	5.91

Calculations are based on "Water Supply for Public Fire Protection Guide" by Fire Underwriters Survey

Municipal Engineering Solutions

FUS CALCULATION

Project:	5150 Ninth Line	**Building Type/Block #**	Townhouses
Project Number:	17003-35	**Firewalls/Sprinkler:**	None
Project Location:	Region of Peel	**Number of Units/Unit #'s**	4-8 Units per Block

1.0 FUS Formula

$$F = 220C\sqrt{A}$$

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

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
GFA per Unit	218	sq metres
Number of units	8	(example Block 11)
C =	1.5	
A =	1744	
F =	**14000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-2100	L/min
Adjusted Fire Flow	**11900**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			
Distance to Building (m)	3.1 to 10	20%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	70%
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	3.1 to 10	20%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **8330 L/min**

Total Required Fire Flow (rounded)	**20000**	**L/min**
	333	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combustible=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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Calculations are based on "Water Supply for Public Fire Protection Guide" by Fire Underwriters Survey

Municipal Engineering Solutions

FUS CALCULATION

Project:	5150 Ninth Line	**Building Type/Block #**	Dual Frontage Townhouses
Project Number:	17003-35	**Firewalls/Sprinkler:**	None
Project Location:	Region of Peel	**Number of Units/Unit #'s**	5-7 Units per Block

1.0 FUS Formula

$$F = 220C\sqrt{A}$$

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

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
GFA per Unit	187	sq metres
Number of units	5	(example Block 2)
C =	1.5	
A =	935	
F =	**10000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-1500	L/min
Adjusted Fire Flow	**8500**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			60%
Distance to Building (m)	20.1 to 30	10%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	3.1 to 10	20%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **5100 L/min**

Total Required Fire Flow	**14000**	**L/min**
(rounded)	**233**	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combustible=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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Calculations are based on "Water Supply for Public Fire Protection Guide" by Fire Underwriters Survey

Municipal Engineering Solutions

FUS CALCULATION

Project:	5150 Ninth Line	**Building Type/Block #**	Back to Back Townhouses
Project Number:	17003-35	**Firewalls/Sprinkler:**	None
Project Location:	Region of Peel	**Number of Units/Unit #'s**	12-14 Units per Block

1.0 FUS Formula

$$F = 220C\sqrt{A}$$

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

NBC Occupancy	Group C	
Type of Construction[b]	wood frame construction	
GFA per Unit	152	sq metres
Number of units	14	(example Block 15)
C =	1.5	
A =	2128	
F =	**15000**	**L/min**

2.0 Occupancy Adjustment

Type of Occupancy[c]	limited combustible	
Hazard Allowance	-0.15	
	-2250	L/min
Adjusted Fire Flow	**12750**	**L/min**

3.0 Sprinkler Adjustment

		Credit	Total
NFPA 13 sprinkler standard	NO	0%	0%
Standard Water Supply	NO	0%	
Fully Supervised system	NO	0%	

Sprinkler Credit **0 L/min**

4.0 Exposure Adjustment

		Percent	Total*
North Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		
South Side			
Distance to Building (m)	3.1 to 10	20%	
Length (ft) by height in storeys	over 120		
East Side			
Distance to Building (m)	10.1 to 20	15%	65%
Length (ft) by height in storeys	over 120		
West Side			
Distance to Building (m)	10.1 to 20	15%	
Length (ft) by height in storeys	over 120		

*max 75%

Exposures Surcharge **8290 L/min**

Total Required Fire Flow (rounded)	**21000**	**L/min**
	350	**L/sec**

a) For fire-resistive buildings, consider the two largest adjoining floors plus 50% of each of any floors immediately above them up to 8, when vertical openings are inadequately protected. If the vertical openings and exterior vertical communications are properly protected, consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

b) Wood frame=1.5, Ordinary=1.0, Non-combustible=0.8, Fire-resistive=0.6

c) Non-combustible=-25%, Limited combustible=-15%, Combustible=0, Free burning=+15%, Rapid burning=+25%

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Craig Scarlett
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Mattamy Homes
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September 10th, 2020

RE: Fire Flow Testing, 5150 Ninth Line, Mississauga Ontario

Watermark has conducted one fire flow capacity test in the vicinity of 5150 Ninth Line, in the City of Mississauga. The testing was completing in accordance with NFPA 291. Region of Peel operations staff were on hand to assist.

Static pressure prior to the test was observed to be 53 PSI. Using 2 x 2.5" ports and 1 x 4" port on the flow hydrant, a maximum flow rate of 2325 USGPM was achieved. This provided a 11% pressure drop, to 47 PSI. As this test did not achieve the 25% pressure drop required by NFPA 291, the test should not be used for NFPA purposes. However the high flow rate achieved should provide insight into the capacity of the watermain.

Equipment:

Flow: 1 x 4" HoseMonster with integrated 4" Pitotless Nozzle
Flow: 2 x 2.5" HoseMonster with integrated 2" Pitotless Nozzle

We strongly feel that all attempts have been made to ensure that the required data as stipulated will be captured, stored and presented in an accurate, efficient and timely manner for the required period. We are pleased Watermark again as your data provider, and we look forward to working with you in the future.

Please feel free to contact us if you require any further information.

Kind Regards,

Colin Powell

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colin.powell@watermark.ca

Watermark Solutions Limited
Unit 117
115 George Street
Oakville, Ontario
L6J 0A2

www.watermark.ca

Hydrant Flow Test Report

Date: 10-Sep-20 Time: 10:20 AM Operator: Derek Rowles

Test Location: 5170 Ninth Line Hydrant Number 6548000

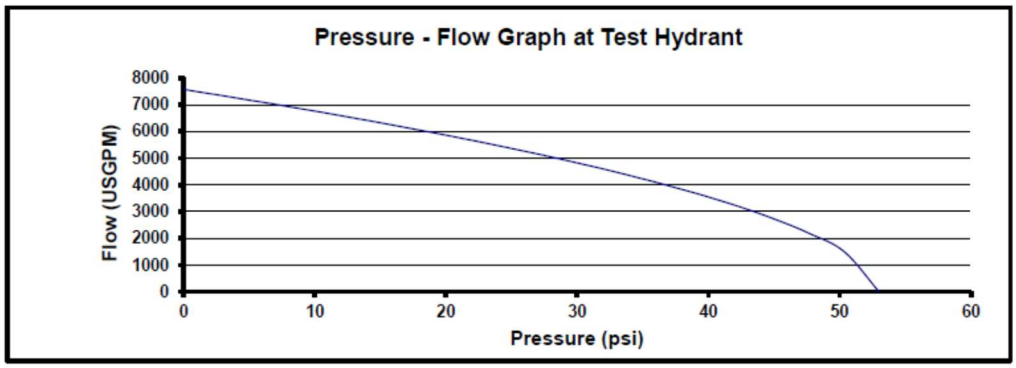
Test Number: 1
N.F.P.A. Colour Code: **BLUE**

STATIC PRESSURE: 53 psi Pressure Drop 11%
RESIDUAL PRESSURE: 47 psi

Flow Hydrant Location: 5150 Ninth Line Hydrant Number 6548001
Flow Hydrant Location: Hydrant Number

Hydrant No.	Logger No.	Outlet Dia. (in.)	Coefficient (~0.9)	Pitot Gauge Reading (psi)	Flow (USGPM)
	HoseMonster	4"			1300
	HoseMonster	2.5"			517
	HoseMonster	2.5"			517
			Total Flow (USGPM)		2334

Available Flow At Test Hydrant at 20 psi 5860 USGPM 4843 IGPM



Comments/Discrepencies/Diagram:

TOWNHOUSES

Population

Unit Type	No. of Units	PPU	Population (Res)
Townhouses	174	3.5	609.0
Residential Population			**609**

Design Flow

Demand Type	Population	Demand Rate
Domestic Flow	609	302.8 L/capita/day
Average Domestic Sanitary Sewage Flow		184405.2 L/day
		2.13 L/sec

Peak Flow

Harmon Peaking Factor (see notes below)	3.93
Peak Domestic Flow including the Harmon PF	724461 L/day
Domestic Sanitary Sewage Flow	8.38 L/s

Infiltration

Demand Type	Area (Ha)	Demand Rate
Infiltration	4.14	0.0002 m^3/sec/Ha
Infiltration		0.83 L/s

Total Sanitary Flow

Demand Type		Sanitary Flow
Domestic and Infiltration		9.21 L/s

TOTAL

Population

Total Population	609

Total Sanitary Flow

Demand Type	Demand (L/s)
Peak Domestic Flow	9.21

Please note that the peak domestic sanitary sewage flow was calculated based on projected population. Normally, domestic sewage flow for less than 1000 persons shall be 0.013 m^3/sec as per Peel Region Design Criteria, however, for this development the sanitary flow was calculated using the Region's standard flow rate(s), projected population and the Harmon Peaking Factor. For comparative purposes the total estimated sanitary flow using the Region's criteria for less than 1000 persons (including infiltration) would be 13.83 L/s.

Notes:

Harmon Formula

$$H = 1 + \frac{14}{4 + p^{0.5}}$$

Where:
H = Ratio of peak flow to average flow
p = population in thousands