

# 6160 THUNDER ROAD & 5368 BOUNDARY ROAD: STORMWATER MANAGEMENT REPORT

AUGUST 2024



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In the City of Ottawa, Ontario

**AUGUST 2024**

Prepared for:  
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Prepared by:



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Jonathon Burnett, P.Eng  
(J.F. Sabourin and Associates Inc.)

## Rationale for Update

This report is an update of the May 2023 "6150 Thunder Road: Stormwater Management Report" by JFSA Canada Inc. It reflects proposed changes to the site plan, coordinated with Thunder Road Limited Partnership and LRL Associates Ltd. The revisions include the transition of the intended use of the site from a combination of warehouses, loading areas, and parking spaces to a layout that primarily features parking spaces, accompanied by an office and a supplementary building. The parking areas will now consist mainly of gravel, with a design that includes sawtooth patterns to maximize the use of the site's main storage system. The storm sewer runoff from the site will still be captured and attenuated by a dry SWM pond in the northwest portion of the site, and a smaller dry pond in the southeast of the site along Boundary Road, although the exact configuration of the SWM facilities has been updated to reflect the latest design. The Stormwater Management (SWM) report has also been revised to address concerns raised by South Nation Conservation (SNC) and the City of Ottawa in their review comments provided on August 15, 2023. It is important to note that due to the alterations in the site plan, certain comments from the City and SNC are now deemed irrelevant.

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- Appendix A – Pre-Development Conditions
- Appendix B – Post-Development Conditions
- Appendix C - Erosion Analysis
- Appendix D – Oil and Grit Separator

## 1 Introduction

JFSA Canada Inc (JFSA) was commissioned by Thunder Road Limited Partnership to complete the stormwater management analysis for the proposed industrial development located at 6160 Thunder Road and 5368 Boundary Road. The total site is **15.16 ha**, however, approximately **3.93 ha** of the development site will either remain unchanged and drain uncontrolled or falls within the O1R zone. Therefore, the drainage area for the development site, for the purposes of this study, is approximately **11.23 ha**. This area will consist primarily of parking spaces, accompanied by an office and a supplementary building. Currently, the site is undeveloped and covered in vegetation, with several small drainage channels that ultimately flow into the Bear Brook tributary; under the proposed conditions, the site will still discharge into the Bear Brook tributary. However, the development will implement various stormwater management (SWM) solutions to ensure that there are no increases in peak flows compared to the existing conditions and that there will be no negative impacts on the existing watercourse with regard to flooding and erosion. **Figure 1** below provides an approximate outline of the proposed development's extent and location. This document will outline and evaluate the different stormwater management solutions proposed for this site.

**Figure 1: Development Overview**



## 1.1 Background Data / Information

The following section outlines the background data and information used to support and supplement this study:

### 1.1.1 Topographic Survey

A detailed topographic survey of the site was completed by Annis, O'Sullivan Vollebakk LTD (AOV) in March 2021. This topographic information has been merged with the City of Ottawa LiDAR to determine the pre-development conditions of the site.

### 1.1.2 LiDAR

LiDAR data was acquired from the City of Ottawa to supplement locations where there is insufficient topographic detail included in the survey by AOV. This LiDAR was merged with AOV's survey to provide a complete picture of the topography throughout the development area.

### 1.1.3 Existing Reports

The following background documents were reviewed in preparing this report:

- Bear Brook and Tributaries Flood Hazard Mapping Report, SNC, March 2022
- 6150 Thunder Road: Floodplain Mapping, JFSA, July 2021
- 5368 Boundary Road and 6150 Thunder Road Functional Serviceability Report, LRL, December 2020
- Environmental Impact Statement, 6150 Thunder Road, Ottawa, Kilgore & Associates LTD, December 2020
- The City of Ottawa Technical Bulletin ISTB-2018-04, City of Ottawa, June 2018.
- The City of Ottawa Technical Bulletin PIEDTB-2016-01, City of Ottawa, September 2016.
- Technical Bulletin ISDTB-2014-01, Revisions to Ottawa Design Guidelines – Sewer, City of Ottawa, February 2014.
- City of Ottawa Sewer Design Guidelines, City of Ottawa, October 2012.
- Erosion and Sediment Control Guidelines for Urban Construction, Conservation Halton et al., December 2006.
- Stormwater Management Planning and Design Manual, Ministry of the Environment, March 2003.

## 2 Existing Conditions

Given that the site under existing conditions is a large natural undeveloped area, it was determined that the SWMHYMO modelling software would be the most suitable hydrologic modelling program to use to determine the pre-development flows. The following outlines the derivation of key model parameters used to represent these existing lands, and in turn, determine the post-development target release rates.

### 2.1.1 Drainage Areas

As identified above, LiDAR data was merged with the detailed topographic survey of the site completed by AOV to derive a single Digital Terrain Model (DTM). This data was imported into GIS software where watershed delineation algorithms were applied. **Figure A1 in Appendix A** provides a visual overview of the existing drainage areas within the study area. Note that the majority of the site drains directly to the Bear Brook tributary, with a small portion of the site in the southeast corner draining to a roadside ditch along Boundary Road before discharging to the Bear Brook tributary.

### 2.1.2 Land Use

Land use data has been taken from Land Information Ontario's (LIO) Southern Ontario Land Resource Information System (SOLRIS) data package, which is a primary data layer that provides a comprehensive, standardized, landscape-level inventory of natural, rural and urban lands throughout southern Ontario. This data was discretized based on the respective subcatchments. **Figure A2 in Appendix A** provides a visual overview of the respective land use data for each of the subcatchments within the study area. Under existing conditions, the site primarily consists of plantation and treed swamplands.

### 2.1.3 Soil/Infiltration Data

Soil data within the study area has been taken from the Soil Survey Complex Data available on Land Information Ontario (LIO). **Figure A3 in Appendix A** provides a visual overview of the respective soil type data for each of the subcatchments within the study area. Under existing conditions, the site primarily consists of Allendale and Cheney Soils both of which are Loamy Fine Sand soils (Hydrologic Soil Type C).

### 2.1.4 Curve Number (CN)

Based on the underlying Land Use Type and Soil Classification at each location within a subcatchment, a Curve Number (CN) was calculated, based on applicable values outlined in **Tables A2 and A3** in the SWMHYMO Manual. Each Curve Number was then weighted based on the total area within a given subcatchment to determine the weighted CN for that subcatchment. **Table A1 in Appendix A** provides a full summary of the CN calculations for each of the pre-development subcatchments.

### 2.1.5 Time to Peak ( $t_p$ )

The time-to-peak value for each of the subcatchments has been calculated based on existing topography. Flow paths have been discretized based on the topographic data using GIS tools and the longest major flow path within each subcatchment identified; refer to **Figure A4 in Appendix A** for the flow paths discretized for each subcatchment. The upstream and downstream topographic elevations and flow lengths were identified for each subcatchment and used in the calculations. For these natural subcatchments, the Federal Aviation Administration (FFA) method was determined to be the most appropriate method to calculate the Time to Peak. Full details of these calculations have been provided in **Table A2 in Appendix A**, along with other time-to-peak values using alternative  $t_p$  calculation methods.

## 2.2 Results

**Table 1** below outlines the peak flow at key locations within the study area based on the SWMHYMO simulations. Note that both the 3-Hour Chicago and 24-Hour SCS design storms were assessed in this study. The peak flows determined by this model have been used to set the maximum allowable post-development release rates. Full input and summary files of the proposed SWMHYMO models have been provided in **Appendix A**.

**Table 1: Pre-Development Peak Flows**

Event	Peak Flow (m <sup>3</sup> /s)	
	Bear Brook Trib	Boundary Road - Ditch
25mm CHI 4Hr	0.020	0.001
2-Year CHI 3Hr	0.038	0.003
5-Year CHI 3Hr	0.070	0.005
100-Year CHI 3Hr	0.194	0.015
100-Year SCS 24 Hr	0.265	0.021
100-Year CHI 3Hr +20%	0.271	0.021

## 3 Proposed Conditions

### 3.1 Model Overview

#### 3.1.1 Drainage Areas / Imperviousness

Under the proposed conditions, the drainage areas have been delineated by LRL based on the site's proposed grading. The impervious values for each of these areas are based on the runoff coefficients determined by LRL and converted to impervious values using the following formula

$$\% \text{ Impervious} = \left( \frac{C - 0.2}{0.7} \right) \times 100$$

For these lands, the following Horton's Infiltration parameters have been assumed:  $F_o=76.2$  mm/hr,  $F_c=13.2$  mm/hr,  $DCA Y=4.14$  /hr,  $F=0$  mm, and initial abstraction values of 1.57mm and 4.67 mm for impervious and pervious surfaces, all as per the City of Ottawa design guidelines. An overview of the proposed development drainage areas and imperviousness has been provided in **Figure B1 of Appendix B**.

#### 3.1.2 Storm Sewer Network

The storm sewer network was designed by LRL based on rational method calculations and general site grading constraints (see **Appendix B** for full rational method calculations). The storm sewer network plan has been incorporated into the model based on this design, with exit losses applied to the model to account for losses that occur at bends in the system.

Maintenance Hole Catch Basins (MHCBS) have been implemented throughout the majority of the site to allow for easy maintenance. Further to this, no ICDs have been proposed for this site, and the constriction that the CBMH grate provides has been the only consideration for attenuating and retaining flows within the major system.



The majority of the site will capture flows via Maintenance Hole Catch Basin (MHCB) which will then convey flows to Dry SWM ponds located in the northwest (Pond 1) and southeast (Pond 2) extents of the site. The northwest SWM pond is connected to an additional storage area upstream via **2 x 600 mm CSPs** and will outlet to the Bear Brook tributary via a naturalized drainage swale. The southeastern extent of the development will have an independent storm sewer network, that will outlet to the roadside ditch along Boundary Road. The full storm sewer network has been outlined in **Figure B2 of Appendix B**.

### 3.1.3 Road Storage & ICDs

The site grading has been optimized to make full use of any potential major system ponding locations throughout the site. This storage has been represented in the model through the use of storage nodes, which are depth/area curves based on LRL's detailed grading of the site. In the event of a blockage, there is enough storage within each of these low points to contain the full runoff volume for the 100-year event. Thus, Depth x Velocity summary tables have not been provided for this analysis. In an event greater than the 100-year event +20% and a coinciding blockage, flows will cascade from low point to low point until reaching the SWM Pond in the west and north of the site.

### 3.1.4 Stormwater Management Facilities

Two dry Stormwater Management (SWM) ponds are proposed for the site. They are numbered 1 and 2, with Pond 1 located in the northwest corner and Pond 2 in the southeast. For their exact locations and the full storm sewer network, refer to **Figure B2 in Appendix B**.

The majority of the site will gravity drain to a proposed ditch/swale along the southern extent of the property. Flows will be attenuated in the ditch before discharging to SWM Pond 1 in the western extent of the site. A storm sewer network will also be implemented in the north to capture runoff from roads along the northern edge of the property. These flows will be conveyed to SWM Pond 2 in the southeast of the site before discharging to the roadside ditch along Boundary Road. The majority of the subdivision ultimately outlets to the Bear Brook tributary through SWM Pond 1.

The SWM pond 1 outlet will consist of 2 components, a **130 mm** circular orifice at the invert elevation of the pond (**75.80 m**), the top of the pond outlet structure will be open at the top at an elevation of **77.00m** and will be equipped with a steel grate, and a **5 m** wide overflow weir will be provided at **77.1m** as an emergency overflow in the event of a blockage in the pond outlet structure or downstream pipe network.

For all summer events a fixed downstream boundary elevation of **75.87m** has been applied to the model which is reflective of the 100-year summer water level in the Bear Brook Tributary at the SWM pond outlet location. Note that the 100-year summer water level is 7cm higher than the pond bottom, but due to differences in the timing of peaks between the development and the larger watershed the fixed downstream elevation has not been considered to be able to backflow into the pond at the start of the simulation. See Section 3.1.6 for additional details regarding the downstream boundary conditions.

Pond 2 is located in the southeast corner of the development servicing a smaller portion of the development and will discharge to the existing roadside ditch along Boundary Road, before discharging to the Bear Brook tributary. Given the small release rates for this location, a conventional orifice outlet configuration is not a feasible option as the orifice opening sizes would be so small that it would be at risk of blockage. Alternatively, a hydrovex flow control device is proposed to be implemented at this location to limit the flows to the required rate while avoiding the risk of blockage. For this analysis, a **Veolia 75 VHV-1 hydrovex** unit has been assumed. A

**70 m** wide overflow weir has been set at **77.20 m**, along the eastern edge of the pond, and will act as an emergency overflow weir during a blockage or extreme event.

### 3.1.5 Oil and Grit Separator (OGS) Units

Throughout this site, Oil and grit separator (OGS) units will be implemented to provide water treatment and in conjunction with the Dry SWM ponds will provide enhanced (80%) water quality treatment for the site. OGS units will be implemented downstream of Pond 1 before discharging to the Bear Brook Tributary, and downstream of Pond 2 before it discharges to the roadside ditch on Boundary Road. For Pond 1 an **EF06 Stormceptor** is proposed and an **EF04 Stormceptor** for SWM Pond 2. Full details of these OGS units have been provided in **Appendix D**.

### 3.1.6 Downstream Boundary Conditions

As requested by South Nation Conservation (SNC) the Bear Brook HEC-RAS model of record has been extended upstream to the proposed SWM pond outlet. An additional cross-section was added to the model at the location of the proposed SWM pond outlet based on the City of Ottawa LiDAR and a detailed survey completed by AOV. Other HEC-RAS model parameters (e.g. manning's, expansion-contraction coefficients) for this cross-section were updated to align with exiting downstream cross-sections and other associated model parameters (channel and overbank lengths) were updated accordingly. The model was re-run again using both summer and spring flows as outlined in SNC's HEC-HMS model of the Bear Brook, and the respective water levels obtained. The following table outlines the various water levels derived from the model.

**Table 2: Bear Brook Tributary Water Levels**

Design Storm	Flow (m <sup>3</sup> /s)	Water Surface Elevation (m)
2-Year Summer	0.05	75.72
25-Year Summer	0.13	75.82
100-Year Summer Event	0.20	75.87
100-Year Snow Melt	0.60	76.07

Based on this analysis the water level at the outlet of the SWM pond will reach **75.87m** during the 100-year summer event. Similarly, during the 100-year spring event, the water level is projected to be **76.07m**. The bottom of the SWM pond at this location will be set at **75.8m**, which means that during the 100-year event, the downstream water level will be **7cm** and **27cm** above the bottom of the pond during the summer and spring events respectively. The bottom of the SWM pond will be above the 2-year summer water level, and only **2 cm** lower than the 25-year summer event. As mentioned above all summer design storms assume a 100-year summer water level on the Bear Brook Trib, and the spring snowmelt analysis assumes a 100-year spring water level on the Bear Brook Trib. A copy of the HEC-RAS model has been provided electronically.

### 3.1.7 Snow Melt Event

As requested by SNC the site has also been assessed under a 100-year 10-day rainfall plus snowmelt event, to ensure that the stormwater management infrastructure is sufficiently sized to convey such an event. In this modelling scenario, the infiltration method was changed to CN, and all areas had a value of 95 applied to reflect frozen/saturated soils (in line with the Bear Brook floodplain mapping study). The complete findings of this analysis are presented in the Results section of this report. It's crucial to highlight that the assumption is made that the soils are either frozen or saturated. Consequently, the peak flows and total runoff volumes from the development under post-development conditions align closely with those under pre-development conditions. This means that the impacts on the receiving watercourse remain unchanged, if not reduced, due to the incorporation of the Stormwater Management (SWM) facilities. Thus the intention of this analysis is to ensure that the site can continue to function as planned without any flooding issues under such a scenario.

### 3.1.8 Erosion Analysis

SNC has also requested the completion of a geomorphological and erosion assessment on the downstream watercourse. The purpose of this study is to quantify and understand any potential impacts that the development might have on the waterway.

In collaboration with Geomorphix Ltd (GMX), JFSA completed an erosion exceedance analysis. As part of this work, JFSA created a hydrologic model of the existing watershed up to its confluence with the main branch of Bear Brook, located approximately 1.4 km downstream of the proposed development. This model was run using 39 years of historical rainfall data (from 1967 to 2007, excluding 2001 & 2005).

The hydrologic model was then updated to simulate post-development conditions by closely aligning the total inflows and storage/outflows with the detailed PCSWMM model (refer to Appendix C for complete comparisons and details). The model was rerun over the same period, and hydrographs were extracted from a location in the model that best represented BBT-7, identified as the most erosion-sensitive location based on GMX's rapid stream assessment.

GMX compared the changes in pre and post-development hydrographs and derived various erosion indices. The analysis results indicate that the proposed stormwater management strategy for the development effectively mitigates potential downstream erosion impacts on the receiving watercourse. Comprehensive details of the hydrologic modelling conducted as part of this work can be found in Appendix C. The full details of the geomorphological assessment are available in GMX's August 2024 report titled "Geomorphological and Erosion Assessment, Tributary of Bear Brook - 6160 Thunder Road and 5368 Boundary Road".

## 3.2 Results

The following section outlines the various results of the proposed development

### 3.2.1 Post-Development Release Rates

**Table 3** outlines the peak flows from SWM Pond 1 and SWM Pond 2. As seen below the peak flows to both the Bear Brook Tributary and the Boundary Road Roadside Ditch are either equal to or less than that under pre-development conditions as outlined in **Table 1** above, as such the proposed development should have no negative impacts on the existing floodplain. Additionally, peak flows for the 25mm event are also either less than or equal to pre-development conditions and as such the proposed development will not exacerbate any existing erosion concerns. Note that given the existing erosion concerns identified downstream, the site SWM release rates are based on mitigating erosion exceedances not on matching pre-development peak flows, thus the peak flows from the site under post-development conditions are notably less than pre-development for the majority of design storm assessed.

**Table 3: Post-Development Peak Flows**

Event	Pond 1 Outlet / Bear Brook Trib	Boundary Road Ditch
25mm CHI 4Hr	0.020	0.000
2-Year CHI 3Hr	0.022	0.001
5-Year CHI 3Hr	0.026	0.003
100-Year CHI 3Hr	0.032	0.003
100-Year SCS 24 Hr	0.033	0.004
100-Year CHI 3Hr +20%	0.035	0.004

### 3.2.2 SWM Pond Summary

**Table 4** outlines the peak water levels and depths and storage volume used for SWM Ponds 1, and 2. Note that flows are contained within the ponds for all events, including the stress test.

**Table 4: SWM Facility Peak Water Surface Elevation (WSE) and Depth**

Event	Pond 1			Pond 2		
	Max WSE (m)	Max Depth (m)	Max Storage Volume (m <sup>3</sup> )	Max WSE (m)	Max Depth (m)	Max Storage Volume (m <sup>3</sup> )
25mm CHI 4Hr	76.22	0.42	1,350	76.68	0.14	183
2-Year CHI 3Hr	76.31	0.51	2,061	76.72	0.18	248
5-Year CHI 3Hr	76.46	0.66	3,279	76.80	0.26	350
100-Year CHI 3Hr	76.75	0.95	5,930	77.02	0.48	677
100-Year SCS 24 Hr	76.80	1.00	6,342	77.10	0.56	812
100-Year CHI 3Hr +20%	76.87	1.07	7,152	77.12	0.58	843

### 3.2.3 HGL & Major System Summary

The storm sewer network has been designed by LRL based on 2-year rational method flows to ensure minimal pipe sizes throughout the site while also utilizing major system storage during larger events. The detailed PCSWMM model has been used to assess the minor system's ability to convey flows greater than the 2-year event, and to ensure the site is not subject to excess flooding during such events. During the 100-year event and stress test, the minor system will become surcharged, and the HGL in the storm sewer network will exceed the top of the CB grate in some locations. Note that this is not a concern as the building will be slab on grade and the depth of the major system ponding at each location will be greater than the HGL in the pipe (e.g. potential for backflow through the CB grate). The following table outlines the HGL at each CB along with the water surface elevation of the ponded water at each respective grate, and the max major system ponding depth.

**Table 5** outlines the maximum HGL within the storm sewer trunk system for both the 100-Year Chicago 3Hr and stress test events. Note that the 100-Year SCS 24-Hour event has not been included as it is not the critical event for this site. Refer to **Figure B2 in Appendix B** for the exact location of each MH.

Based on this analysis the HGL is lower than the major system ponding at all CBMH locations, there is no backflow through the CB grates, and the maximum ponding depth for the 100-year event on the site is **26 cm** and **30cm** for the stress test event, both located at CBMH23, which is within the maximum allowable depths as per the City guidelines. The maximum calculated pond elevations have been provided back to LRL and mapped on the site's proposed grading surface to indicate the extent of major system ponding during such events, refer to LRL's **C601** figure for full details of major system ponding.



**Table 5: HGL and Major System Ponding**

Name	100-Year CHI 3 Hr				100-Year CHI 3 Hr + 20%			
	Max HGL (m)	Major Ponding WSE (m)	Major Ponding >HGL	Ponding Depth (m)	Max HGL (m)	Major Ponding WSE (m)	Major Ponding >HGL	Ponding Depth (m)
STM_CBMH01	78.02	78.12	TRUE	0.17	78.05	78.15	TRUE	0.21
STM_CBMH02	77.93	78.04	TRUE	0.16	77.97	78.08	TRUE	0.21
STM_CBMH03	77.54	77.91	TRUE	0.13	77.60	77.94	TRUE	0.16
STM_CBMH04	77.99	78.10	TRUE	0.19	78.03	78.14	TRUE	0.23
STM_CBMH05	77.87	77.99	TRUE	0.14	77.92	78.04	TRUE	0.19
STM_CBMH06	77.65	77.88	TRUE	0.13	77.72	77.90	TRUE	0.15
STM_CBMH07	77.95	78.07	TRUE	0.18	78.00	78.11	TRUE	0.22
STM_CBMH08	77.84	77.96	TRUE	0.15	77.89	78.01	TRUE	0.20
STM_CBMH09	77.62	77.84	TRUE	0.13	77.70	77.86	TRUE	0.15
STM_CBMH10	77.91	78.02	TRUE	0.19	77.96	78.07	TRUE	0.24
STM_CBMH11	77.79	77.91	TRUE	0.15	77.85	77.97	TRUE	0.21
STM_CBMH12	77.58	77.79	TRUE	0.13	77.67	77.82	TRUE	0.15
STM_CBMH13	77.77	77.87	TRUE	0.11	77.83	77.93	TRUE	0.16
STM_CBMH14	77.68	77.80	TRUE	0.15	77.75	77.86	TRUE	0.21
STM_CBMH15	77.50	77.71	TRUE	0.13	77.59	77.74	TRUE	0.15
STM_CBMH16	77.29	77.72	TRUE	0.21	77.51	77.77	TRUE	0.27
STM_CBMH17	77.48	77.74	TRUE	0.19	77.58	77.78	TRUE	0.22
STM_CBMH18	77.16	77.64	TRUE	0.14	77.25	77.67	TRUE	0.17
STM_CBMH19	76.83	77.52	TRUE	0.22	76.98	77.56	TRUE	0.26
STM_CBMH20	77.25	77.47	TRUE	0.16	77.37	77.54	TRUE	0.23
STM_CBMH21	76.93	77.44	TRUE	0.13	77.03	77.48	TRUE	0.17
STM_CBMH22	77.60	77.71	TRUE	0.20	77.65	77.75	TRUE	0.25
STM_CBMH23	77.68	77.81	TRUE	0.26	77.73	77.86	TRUE	0.30
STM_CBMH24	77.53	77.68	TRUE	0.08	77.60	77.69	TRUE	0.09
STM_CBMH25	77.28	77.60	TRUE	0.09	77.37	77.61	TRUE	0.10
STM_CBMH26	77.03	77.53	TRUE	0.13	77.11	77.56	TRUE	0.15
STM_CBMH27	77.82	77.93	TRUE	0.13	77.88	78.00	TRUE	0.20
STM_CBMH28	77.86	77.96	TRUE	0.14	77.91	78.02	TRUE	0.19
STM_CBMH29	77.71	77.98	TRUE	0.21	77.77	78.01	TRUE	0.25
			<b>Max</b>	<b>0.26</b>			<b>Max</b>	<b>0.30</b>

### 3.2.4 100 Year 10 Day Rainfall + Snow Melt Results

**Table 6** below outlines the results of the site during the 100-year 10-day snowmelt event. From this analysis, it is seen that the SWM ponds have sufficient capacity to capture and attenuate flows from the site and the flows out of the pond during this event are less than the pre-development 100-year events. The maximum major system ponding depth on the site for this event was found to be **2 cm** at WS-29.

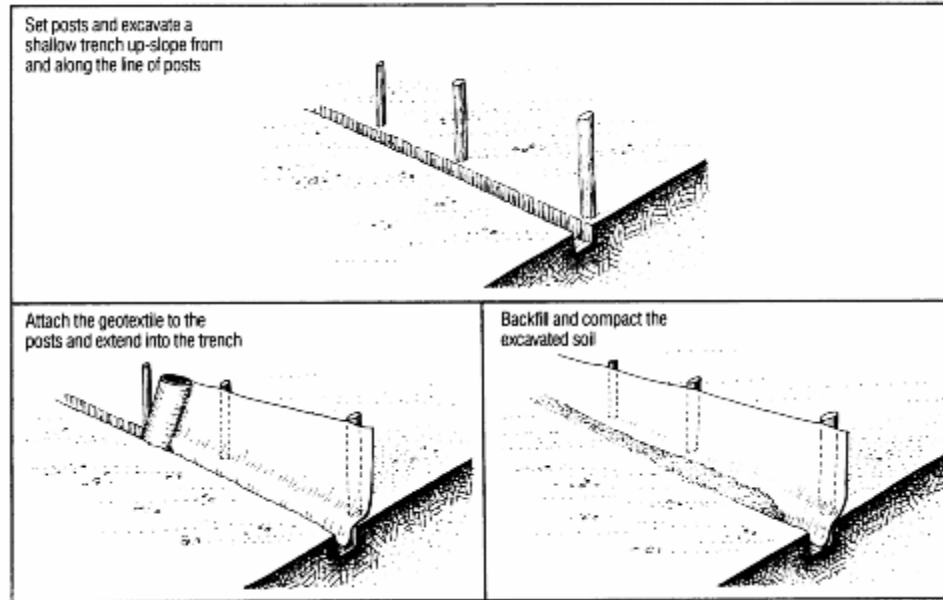
**Table 6: SWM Summary - 100-Year 10 Day Snowmelt Event**

SWM	Pond Max WSE (m)	Freeboard (m)	Max Storage Volume (m <sup>3</sup> )	Max Outflow (m <sup>3</sup> /s)	Max Major system ponding Depth (cm)	Location
Pond 1	77.02	0.18	8,452	0.040	2.0	WS-29
Pond 2	77.20	0.10	976	0.021		

### 3.3 Erosion and sediment control during and after construction

Silt and erosion control strategies shall be implemented during construction activities to minimize the transfer of silt off-site. The following measures should be implemented:

- i) Silt control fences shall be installed as required to prevent the movement of silt off-site during rainfall events.
- ii) Construction of a mud mat shall be installed at the site entrance to promote self-cleaning of truck tires when leaving the site.
- iii) All catch basins shall be equipped with a crushed stone filter to prevent the capture of silt in the storm sewer system.
- iv) Regular cleaning of the adjacent roads shall be undertaken during the construction activities.
- v) Regular inspection and maintenance of the silt control measures shall be undertaken until the site has been stabilized.
- vi) The erosion and sediment control devices shall be removed after the site has been stabilized.



**Figure 7:** Typical installation of silt fences

## 4 CONCLUSION

As documented above, JFSA Canada Inc (JFSA) has completed a detailed hydrologic analysis of the proposed development site under pre-development conditions to establish target release rates. A detailed PCSWMM model was then created based on the detailed design developed by LRL to assess the hydrologic and hydraulic operations of the site under post-development conditions to ensure that: the development storm sewer network is sufficiently sized, the proposed SWM ponds have sufficient capacity to attenuate flows to pre-development conditions, that the major system storage locations do not pose a risk to the proposed building and the increase in runoff volume does not exacerbate downstream erosion issues. Based on this analysis it was determined that the proposed SWM infrastructure is sufficiently sized to ensure no risk to both the proposed development and surrounding existing lands.

# Appendix A

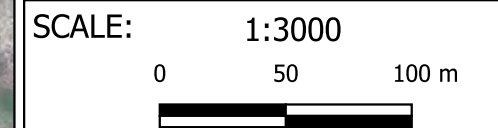
Pre-Development Model  
(SWMHYMO)





**Legend**

- Subcatchments  
<Name>  
<Area>



**J.F. Sabourin and Associates Inc.**  
 WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS  
 52 Springbrook Drive (613) 836-3884  
 Ottawa, ON, K2S 1B9 www.jfsa.com

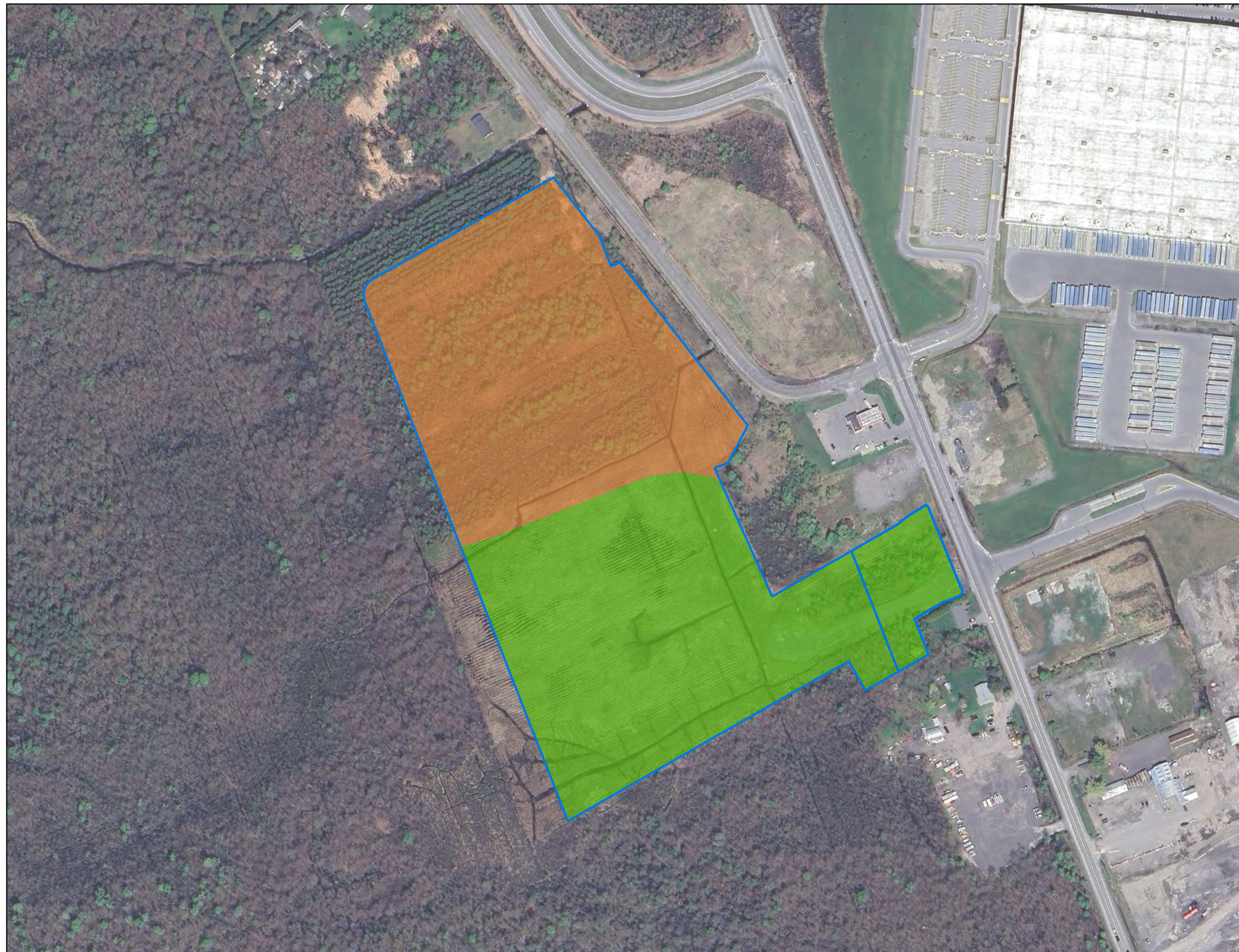
Thunder Road Partnership

6150 Thunder Road SWM Report

Figure A1: Subcatchments

PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUGUST 2024





**Legend**

- Subcatchments
- Land Use
- Plantation
- Treed Swamp



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 Ottawa, ON, K2S 1B9 www.jfsa.com

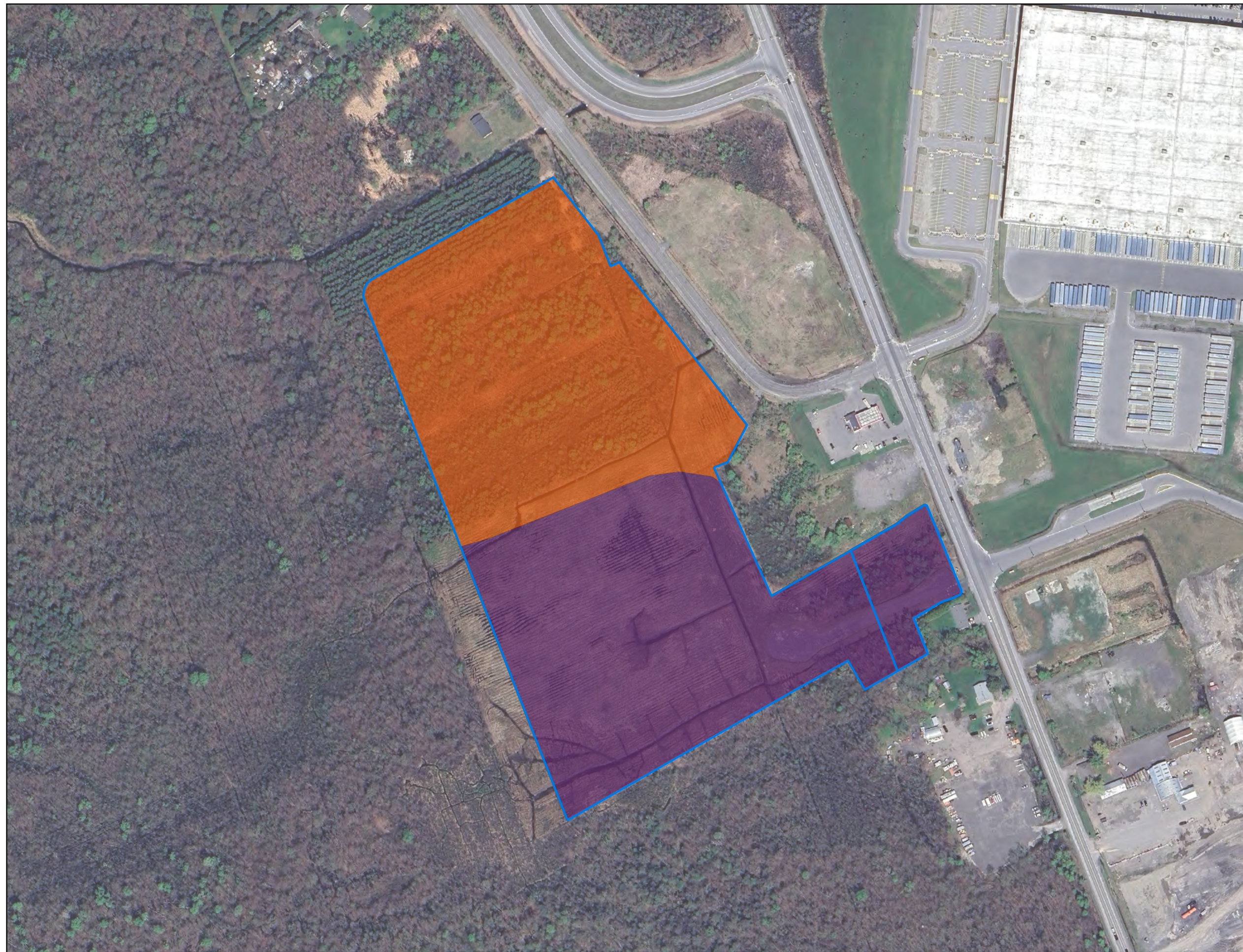
Thunder Road Partnership

6150 Thunder Road SWM Report

Figure A2: Land Use

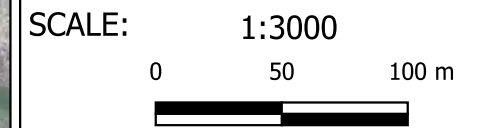
PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUGUST 2024





**Legend**

- Subcatchments
- Soil Name (Type)
- ALLENDALE (C)
- CHENEY (C)



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 Ottawa, ON, K2S 1B9 www.jfsa.com

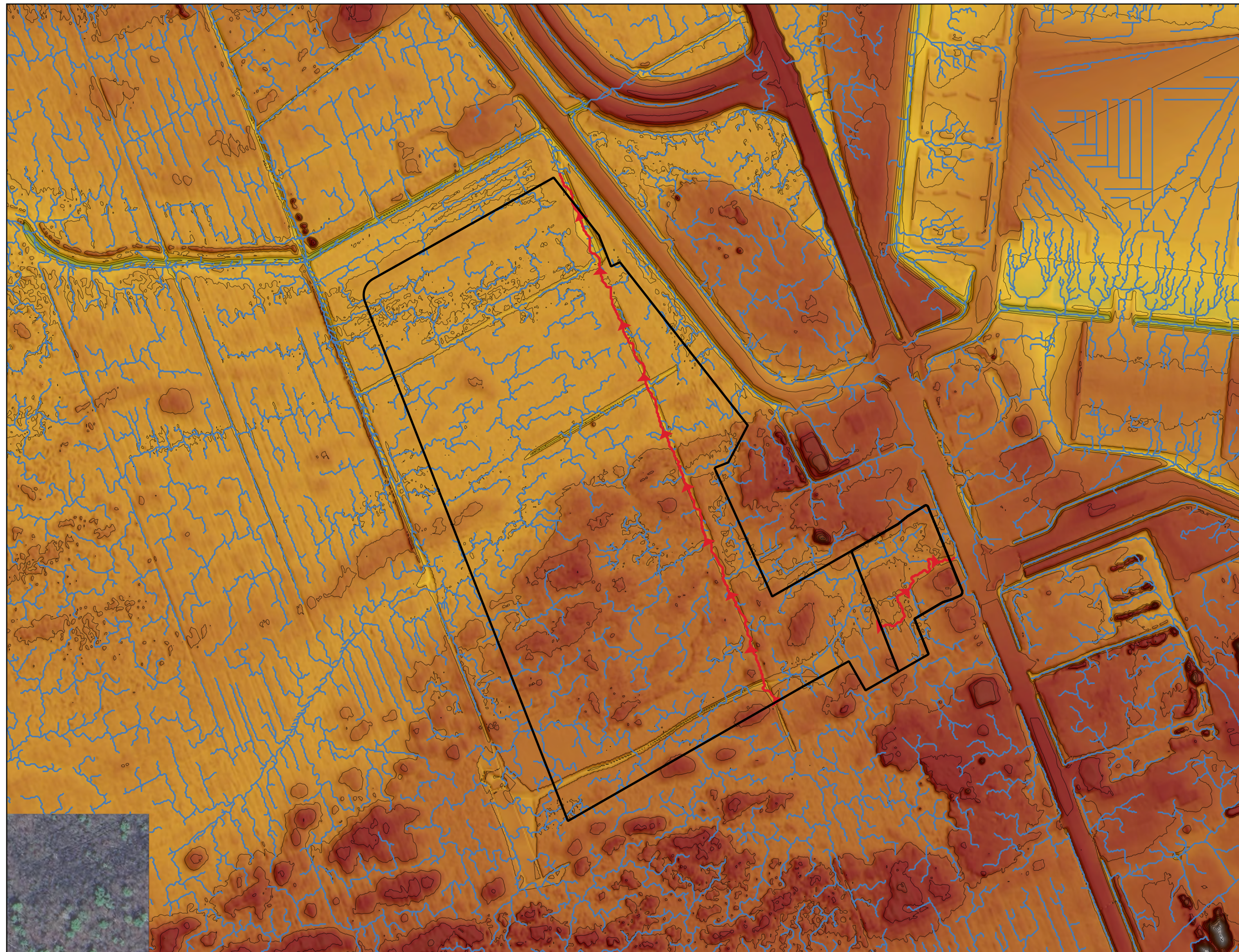
Thunder Road Partnership

6150 Thunder Road SWM Report

Figure A3: Soil Types

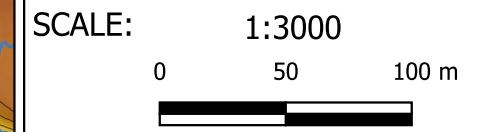
PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUGUST 2024





**Legend**

- Development Area
- Streams
- Major Flow Path
- Terrain (m)
- 70
- 72
- 74
- 76
- 78
- 80
- 82
- 84
- Contours (0.5m)



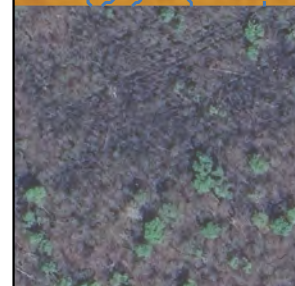
**J.F. Sabourin and Associates Inc.**  
 WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS  
 52 Springbrook Drive  
 Ottawa, ON, K2S 1B9  
 (613) 836-3884  
 www.jfsa.com

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6150 Thunder Road SWM Report

Figure A4: Terrain

PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUGUST 2024





**Table A1: Calculation of SCS Curve Number (CN) and Modified Curve Number (CN\*)**

EWS-01 ( 10.616 ha)							
Area (ha)	Land Type	Soil Name	Soil Condition	Soil Group	CN	% of Catchment	Weighted CN
5.353	Treed Swamp	CHENEY	C	Good	50	50.4%	25.2
5.263	Plantation	ALLENDALE	C	Good	70	49.6%	34.7
						<b>CN</b>	<b>60</b>

EWS-02 ( 0.613 ha)							
Area (ha)	Land Type	Soil Name	Soil Condition	Soil Group	CN	% of Catchment	Weighted CN
0.613	Treed Swamp	CHENEY	C	Good	50	100.0%	50
						<b>CN*</b>	<b>50</b>

**Table A2: Time to Peak Calculations**

Parameter	Units	EWS-01	EWS-02
Area	ha	10.62	0.61
CN*	-	60	50
Ptotal to calc C from CN, use 2 yr 12 hr SCS stom	P(mm)	43.2	43.2
	la(mm)	4.67	4.67
	RV(mm)	7.1	5.1
C	-	0.16	0.12
Length of Channel	m	491	120
	ft	1611	395
Elevation of Head Water	m	76.98	76.97
	ft	253	253
Elevation of Outlet	m	76.00	76.58
	ft	249	251
Average Slope	m/m	0.20%	0.32%
	ft/ft	0.20%	0.32%
<b>Kirpich</b>			
Time of Concentration	mins	25	7
Time to Peak	min	17	5
Time to Peak	Hours	0.28	0.08
<b>FAA</b>			
Time of Concentration	mins	116	51
Time to Peak	mins	77	34
Time to Peak	Hours	1.29	0.57
<b>Barnsby Williams</b>			
Time of Concentration	mins	31	9
Time to Peak	mins	21	6
Time to Peak	Hours	0.34	0.10
<b>SCS</b>			
Time of Concentration	mins	181	59
Time to Peak	mins	121	39
Time to Peak	Hours	2.01	0.66
<b>Selected Method</b>			
FAA			
Time to Peak	min	77	34
Time to Peak	Hours	1.29	0.57

Note:

All methods calculated as per Appendix A of the SWMHYMO manual

Time to Peak calculated as 2/3 Time of concentration



```
1 20 Metric units / ID numbers OFF
2 *#*****
3 *# SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
4 *#*****
5 *# Project Name : [6150 Thunder Road SWM - Existing Conditions]
6 *# Project Number : [2120]
7 *# Date : 2024/08/14
8 *# Modeller : JZ
9 *# Company : J.F. Sabourin and Associates
10 *# License # : 2582634
11 *#*****
12 *Model developed to set pre-development release rates for future industrial park
13 *#*****
14 *% 25 mm Storm based on 2-Year, 4-Hour Chicago Storm
15 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[001]
16 [ "25MM4H.stm" ] <--storm filename, one per line for NSTORM time
17 *%-----|-----|
18 READ STORM STORM_FILENAME=[ "storm.001" ]
19 *%-----|-----|
20 *DEFAULT VALUES ICASEdef=[1], read and print values
21 * DEFVAL_FILENAME=[ "Ottawa.val" ]
22 *%-----|-----|
23 *#####
24 *# Pre-Development Drainage Area
25 *#####
26 CALIB NASHYD NHYD=[ "EWS-01" ], DT=[1] (min), AREA=[10.616] (ha),
27 DWF=[0] (cms), CN=[60], IA=[4.67] (mm), N=[3], TP[1.29] (hrs),
28 RAINFALL[ , , -1]
29 *%-----|-----|
30 CALIB NASHYD NHYD=[ "EWS-02" ], DT=[1] (min), AREA=[0.613] (ha),
31 DWF=[0] (cms), CN=[50], IA=[4.67] (mm), N=[3], TP[0.57] (hrs),
32 RAINFALL[ , , -1]
33 *%-----|-----|
34 *#####
35 *# STORMS
36 *#####
37 *% 25 mm Storm based on 2-Year, 3-Hour Chicago Storm
38 *%START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[001]
39 *% [ "25MMC3H.stm" ] <--storm filename, one per line for NSTORM time
40 *%-----|-----|
41 *% 2-Year, 3-Hour Chicago Storm
42 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[002]
43 [ "002YC3H.stm" ] <--storm filename, one per line for NSTORM time
44 *%-----|-----|
45 *% 5-Year, 3-Hour Chicago Storm
46 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[005]
47 [ "005YC3H.stm" ] <--storm filename, one per line for NSTORM time
48 *%-----|-----|
49 *% 10-Year, 3-Hour Chicago Storm
50 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[010]
51 [ "010YC3H.stm" ] <--storm filename, one per line for NSTORM time
52 *%-----|-----|
53 *% 25-Year, 3-Hour Chicago Storm
54 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[025]
55 [ "025YC3H.stm" ] <--storm filename, one per line for NSTORM time
56 *%-----|-----|
57 *% 50-Year, 3-Hour Chicago Storm
58 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[050]
59 [ "050YC3H.stm" ] <--storm filename, one per line for NSTORM time
60 *%-----|-----|
61 *% 100-Year, 3-Hour Chicago Storm
62 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[099]
63 [ "100YC3H.stm" ] <--storm filename, one per line for NSTORM time
64 *%-----|-----|
65 *% 2-Year, 24-Hour SCS Storm
66 START TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[102]
67 [ "SC24002x.stm" ] <--storm filename, one per line for NSTORM time
68 *%-----|-----|
69 *% 5-Year, 24-Hour SCS Storm
```

```

70 START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[105]
71 ..... ["SC24005x.stm"] <--storm filename, one per line for NSTORM time
72 *%-----|-----
73 *% 10-Year, 24-Hour SCS Storm
74 START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[110]
75 ..... ["SC24010x.stm"] <--storm filename, one per line for NSTORM time
76 *%-----|-----
77 *% 25-Year, 24-Hour SCS Storm
78 START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[125]
79 ..... ["SC24025x.stm"] <--storm filename, one per line for NSTORM time
80 *%-----|-----
81 *% 50-Year, 24-Hour SCS Storm
82 START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[150]
83 ..... ["SC24050x.stm"] <--storm filename, one per line for NSTORM time
84 *%-----|-----
85 *% 100-Year, 24-Hour SCS Storm
86 START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[199]
87 ..... ["SC24100x.stm"] <--storm filename, one per line for NSTORM time
88 *%-----|-----
89 *% 2-Year, 12-Hour SCS Storm
90 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[202]
91 *% ..... ["SC12002c.stm"] <--storm filename, one per line for NSTORM time
92 *%-----|-----
93 *% 5-Year, 12-Hour SCS Storm
94 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[205]
95 *% ..... ["SC12005c.stm"] <--storm filename, one per line for NSTORM time
96 *%-----|-----
97 *% 10-Year, 12-Hour SCS Storm
98 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[210]
99 *% ..... ["SC12010c.stm"] <--storm filename, one per line for NSTORM time
100 *%-----|-----
101 *% 25-Year, 12-Hour SCS Storm
102 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[225]
103 *% ..... ["SC12025c.stm"] <--storm filename, one per line for NSTORM time
104 *%-----|-----
105 *% 50-Year, 12-Hour SCS Storm
106 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[250]
107 *% ..... ["SC12050c.stm"] <--storm filename, one per line for NSTORM time
108 *%-----|-----
109 *% 100-Year, 12-Hour SCS Storm
110 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[299]
111 *% ..... ["SC12100c.stm"] <--storm filename, one per line for NSTORM time
112 *%-----|-----
113 *% July 1st, 1979 Storm - Ottawa International Airport
114 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[979]
115 *% ..... ["19790701.stm"] <--storm filename, one per line for NSTORM time
116 *%-----|-----
117 *% August 4th, 1988 Storm - Ottawa International Airport
118 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[988]
119 *% ..... ["19880804.stm"] <--storm filename, one per line for NSTORM time
120 *%-----|-----
121 *% August 8th, 1996 Storm - Ottawa International Airport
122 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[996]
123 *% ..... ["19960808.stm"] <--storm filename, one per line for NSTORM time
124 *%-----|-----
125 *% 100-Year, 24-Hour SCS Storm + 20%
126 *START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[998]
127 *% ..... ["SC24100x+.stm"] <--storm filename, one per line for NSTORM time
128 *%-----|-----
129 *% 100-Year, 3-Hour Chicago Storm + 20%
130 START ..... TZERO=[0.0], METOUT=[2], NSTORM=[1], NRUN=[999]
131 ..... ["100YC3H+.stm"] <--storm filename, one per line for NSTORM time
132 *%-----|-----
133 FINISH

```

```

00001 *****
00002 *****
00003 SSSS W W M M H H Y Y M M O O 222 000 11 5555 *****
00004 S W W M M M H H Y Y M M M O O 2 0 0 11 5 *****
00005 SSSS W W M M H H Y Y M M O O 2 0 0 11 5 Ver 5.500
00006 S W W M M H H Y Y M M O O 222 0 0 11 555 FEB 2015
00007 SSSS W W M M H H Y Y M M O O 2 0 0 11 5 *****
00008 *****
00009 StormWater Management Hydrologic Model 222 000 11 555 *****
00010 *****
00011 *****
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```

```

00181> START
00182> [ZERO = .00 hrs on 0]
00183> [NETOUT = 2 (1=Imperial, 2=metric output)]
00184> [NSTORM = 1]
00185> [NRUN = 0010]
00186> *****
00187> SMHWMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00188> *****
00189> Project Name : [6150 Thunder Road SWM - Existing Conditions]
00190> Project Number : [2120]
00191> Date : 2024/08/14
00192> Modeller : JZ
00193> Company : J.F. Sabourin and Associates
00194> License # : 2582634
00195> *****
00196> R0101:CO0001-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00197> *****
00198> READ STORM
00199> File name = storm.001
00200> Comment = CHICAGO STORM 10 Year, 3 Hours
00201> [SDT=10.00:SDCR= 3.00:PTOT= 49.50]
00202> *****
00203> # Pre-Development Drainage Area
00204> *****
00205> R0101:CO0001-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00206> CALIB NASHYD [CN= 60.0: N= 3.00: Tp= 1.29] 10.62 .095 No_date 2:42 9.39 190 .000
00207> *****
00208> R0101:CO0004-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00209> CALIB NASHYD [CN= 50.0: N= 3.00: Tp= .57] .61 .007 No_date 1:45 6.73 136 .000
00210> *****
00211> # STORMS
00212> *****
00213> *****
00214> ** END OF RUN : 24
00215> *****
00216> *****
00217> *****
00218> *****
00219> *****
00220> CALIB NASHYD 1.0 01:SW-02 .61 .007 No_date 1:45 6.73 136 .000
00221> *****
00222> RUN:COMMANDS
00223> R0225:CO0001-----
00224> START
00225> [ZERO = .00 hrs on 0]
00226> [NETOUT = 2 (1=Imperial, 2=metric output)]
00227> [NSTORM = 1]
00228> [NRUN = 0025]
00229> *****
00230> SMHWMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00231> *****
00232> Project Name : [6150 Thunder Road SWM - Existing Conditions]
00233> Project Number : [2120]
00234> Date : 2024/08/14
00235> Modeller : JZ
00236> Company : J.F. Sabourin and Associates
00237> License # : 2582634
00238> *****
00239> R0225:CO0002-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00240> *****
00241> READ STORM
00242> File name = storm.001
00243> Comment = CHICAGO STORM 25 Year, 3 Hours
00244> [SDT=10.00:SDCR= 3.00:PTOT= 58.23]
00245> *****
00246> # Pre-Development Drainage Area
00247> *****
00248> R0225:CO0003-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00249> CALIB NASHYD [CN= 60.0: N= 3.00: Tp= 1.29] 10.62 .131 No_date 2:41 12.87 221 .000
00250> *****
00251> R0225:CO0004-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00252> CALIB NASHYD [CN= 50.0: N= 3.00: Tp= .57] .61 .010 No_date 1:44 9.32 160 .000
00253> *****
00254> *****
00255> *****
00256> *****
00257> *****
00258> *****
00259> *****
00260> *****
00261> *****
00262> *****
00263> *****
00264> *****
00265> *****
00266> R050:CO0001-----
00267> START
00268> [ZERO = .00 hrs on 0]
00269> [NETOUT = 2 (1=Imperial, 2=metric output)]
00270> [NSTORM = 1]
00271> [NRUN = 0050]
00272> *****
00273> SMHWMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00274> *****
00275> Project Name : [6150 Thunder Road SWM - Existing Conditions]
00276> Project Number : [2120]
00277> Date : 2024/08/14
00278> Modeller : JZ
00279> Company : J.F. Sabourin and Associates
00280> License # : 2582634
00281> *****
00282> R050:CO0002-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00283> *****
00284> READ STORM
00285> File name = storm.001
00286> Comment = CHICAGO STORM 50 Year, 3 Hours
00287> [SDT=10.00:SDCR= 3.00:PTOT= 64.81]
00288> *****
00289> # Pre-Development Drainage Area
00290> *****
00291> R050:CO0003-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00292> CALIB NASHYD [CN= 60.0: N= 3.00: Tp= 1.29] 10.62 .161 No_date 2:40 15.76 243 .000
00293> *****
00294> R050:CO0004-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00295> CALIB NASHYD 1.0 01:SW-02 .61 .012 No_date 1:44 11.91 178 .000
00296> *****
00297> *****
00298> *****
00299> *****
00300> *****
00301> *****
00302> *****
00303> *****
00304> *****
00305> *****
00306> *****
00307> *****
00308> *****
00309> R099:CO0001-----
00310> START
00311> [ZERO = .00 hrs on 0]
00312> [NETOUT = 2 (1=Imperial, 2=metric output)]
00313> [NSTORM = 1]
00314> [NRUN = 0099]
00315> *****
00316> SMHWMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00317> *****
00318> Project Name : [6150 Thunder Road SWM - Existing Conditions]
00319> Project Number : [2120]
00320> Date : 2024/08/14
00321> Modeller : JZ
00322> Company : J.F. Sabourin and Associates
00323> License # : 2582634
00324> *****
00325> R099:CO0002-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00326> *****
00327> READ STORM
00328> File name = storm.001
00329> Comment = CHICAGO STORM 100 Year, 3 Hours
00330> [SDT=10.00:SDCR= 3.00:PTOT= 71.46]
00331> *****
00332> # Pre-Development Drainage Area
00333> *****
00334> R099:CO0003-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00335> CALIB NASHYD [CN= 60.0: N= 3.00: Tp= 1.29] 10.62 .184 No_date 2:39 18.99 265 .000
00336> *****
00337> R099:CO0004-----DTmin-ID:INHYD-----AREHA-QPEACms-TpeakDate_hh:mm-----RvM-R.C-----DWFCms
00338> CALIB NASHYD 1.0 01:SW-02 .61 .015 No_date 1:43 13.98 195 .000
00339> *****
00340> *****
00341> *****
00342> *****
00343> *****
00344> *****
00345> *****
00346> *****
00347> *****
00348> *****
00349> *****
00350> *****
00351> *****
00352> *****
00353> *****
00354> *****
00355> *****
00356> *****
00357> *****
00358> *****
00359> *****
00360> *****

```

```

00361 # Project Name : [6150 Thunder Road SSM - Existing Conditions]
00362 # Project Number : [2120]
00363 # Date : 2024/08/14
00364 # Modeller : JZ
00365 # Company : J.F. Sabourin and Associates
00366 # License # : 2582634
00367 # *****
00368 # *****
00369 R0102:C0002-----
00370 READ STORM
00371 File Name = storm.001
00372 Comment = 2 years SCS Type 2 Storm 24 Hours step 10 min, City of Ottawa
00373 [SDT=10.00;SDCR= 24.00;PTOT= 48.46]
00374 *****
00375 # Pre-Development Drainage Area
00376 *****
00377 R0102:C0003-----
00378 CALIB NASHVD 1.0 01;SWS-01 10.62 .060 No.Date 13:25 9.00 .186 .000
00379 [Cm 60.0; N= 3.00; Tp= 1.29]
00380 R0102:C0004-----
00381 CALIB NASHVD 1.0 01;SWS-02 .61 .004 No.Date 12:33 6.44 .133 .000
00382 [Cm 50.0; N= 3.00; Tp= .57]
00383 *****
00384 # STORMS
00385 *****
00386 ** END OF RUN : 104
00387 *****
00388 *****
00389 *****
00390 *****
00391 *****
00392 *****
00393 *****
00394 R0105:C0001-----
00395 START
00396 [TZERO = .00 hrs on 0]
00397 [METOUT= 2 (1=Imperial, 2=metric output)]
00398 [NFORM= 1]
00399 [NSUN = 0110]
00400 *****
00401 # SWHYND Ver:5.02/Jan 2001 <SBTA / INPUT DATA FILE
00402 *****
00403 # Project Name : [6150 Thunder Road SSM - Existing Conditions]
00404 # Project Number : [2120]
00405 # Date : 2024/08/14
00406 # Modeller : JZ
00407 # Company : J.F. Sabourin and Associates
00408 # License # : 2582634
00409 # *****
00410 # *****
00411 R0105:C0002-----
00412 READ STORM
00413 File Name = storm.001
00414 Comment = 5 years SCS Type 2 Storm 24 Hours step 10 min, City of Ottawa
00415 [SDT=10.00;SDCR= 24.00;PTOT= 64.11]
00416 *****
00417 # Pre-Development Drainage Area
00418 *****
00419 R0105:C0003-----
00420 CALIB NASHVD 1.0 01;SWS-01 10.62 .104 No.Date 13:23 15.44 .241 .000
00421 [Cm 60.0; N= 3.00; Tp= 1.29]
00422 R0105:C0004-----
00423 CALIB NASHVD 1.0 01;SWS-02 .61 .008 No.Date 12:32 11.27 .176 .000
00424 [Cm 50.0; N= 3.00; Tp= .57]
00425 *****
00426 # STORMS
00427 *****
00428 ** END OF RUN : 109
00429 *****
00430 *****
00431 *****
00432 *****
00433 *****
00434 *****
00435 *****
00436 *****
00437 R0110:C0001-----
00438 READ STORM
00439 File Name = storm.001
00440 Comment = 10 years SCS Type 2 Storm 24 Hours step 10 min, City of Ottawa
00441 [SDT=10.00;SDCR= 24.00;PTOT= 74.35]
00442 *****
00443 # Pre-Development Drainage Area
00444 *****
00445 R0110:C0003-----
00446 CALIB NASHVD 1.0 01;SWS-01 10.62 .104 No.Date 13:23 15.44 .241 .000
00447 [Cm 60.0; N= 3.00; Tp= 1.29]
00448 R0110:C0004-----
00449 CALIB NASHVD 1.0 01;SWS-02 .61 .008 No.Date 12:32 11.27 .176 .000
00450 [Cm 50.0; N= 3.00; Tp= .57]
00451 *****
00452 # STORMS
00453 *****
00454 ** END OF RUN : 124
00455 *****
00456 *****
00457 *****
00458 *****
00459 *****
00460 *****
00461 *****
00462 *****
00463 *****
00464 *****
00465 *****
00466 *****
00467 *****
00468 *****
00469 *****
00470 *****
00471 *****
00472 *****
00473 *****
00474 *****
00475 *****
00476 *****
00477 *****
00478 *****
00479 *****
00480 R0125:C0001-----
00481 READ STORM
00482 File Name = storm.001
00483 Comment = 25 years SCS Type 2 Storm 24 Hours step 10 min, City of Ottawa
00484 [SDT=10.00;SDCR= 24.00;PTOT= 86.89]
00485 *****
00486 # Pre-Development Drainage Area
00487 *****
00488 R0125:C0003-----
00489 CALIB NASHVD 1.0 01;SWS-01 10.62 .184 No.Date 13:22 26.87 .309 .000
00490 [Cm 60.0; N= 3.00; Tp= 1.29]
00491 R0125:C0004-----
00492 CALIB NASHVD 1.0 01;SWS-02 .61 .014 No.Date 12:32 20.10 .231 .000
00493 [Cm 50.0; N= 3.00; Tp= .57]
00494 *****
00495 # STORMS
00496 *****
00497 ** END OF RUN : 149
00498 *****
00499 *****
00500 *****
00501 *****
00502 *****
00503 *****
00504 *****
00505 *****
00506 R0125:C0003-----
00507 CALIB NASHVD 1.0 01;SWS-01 10.62 .184 No.Date 13:22 26.87 .309 .000
00508 [Cm 60.0; N= 3.00; Tp= 1.29]
00509 R0125:C0004-----
00510 CALIB NASHVD 1.0 01;SWS-02 .61 .014 No.Date 12:32 20.10 .231 .000
00511 [Cm 50.0; N= 3.00; Tp= .57]
00512 *****
00513 # STORMS
00514 *****
00515 ** END OF RUN : 149
00516 *****
00517 *****
00518 *****
00519 *****
00520 *****
00521 *****
00522 *****
00523 R0150:C0001-----
00524 START
00525 [TZERO = .00 hrs on 0]
00526 [METOUT= 2 (1=Imperial, 2=metric output)]
00527 [NFORM= 1]
00528 [NSUN = 0150]
00529 *****
00530 # SWHYND Ver:5.02/Jan 2001 <SBTA / INPUT DATA FILE
00531 *****
00532 # Project Name : [6150 Thunder Road SSM - Existing Conditions]
00533 # Project Number : [2120]
00534 # Date : 2024/08/14
00535 # Modeller : JZ
00536 # Company : J.F. Sabourin and Associates
00537 # License # : 2582634
00538 # *****
00539 # *****
00540 # *****

```

```

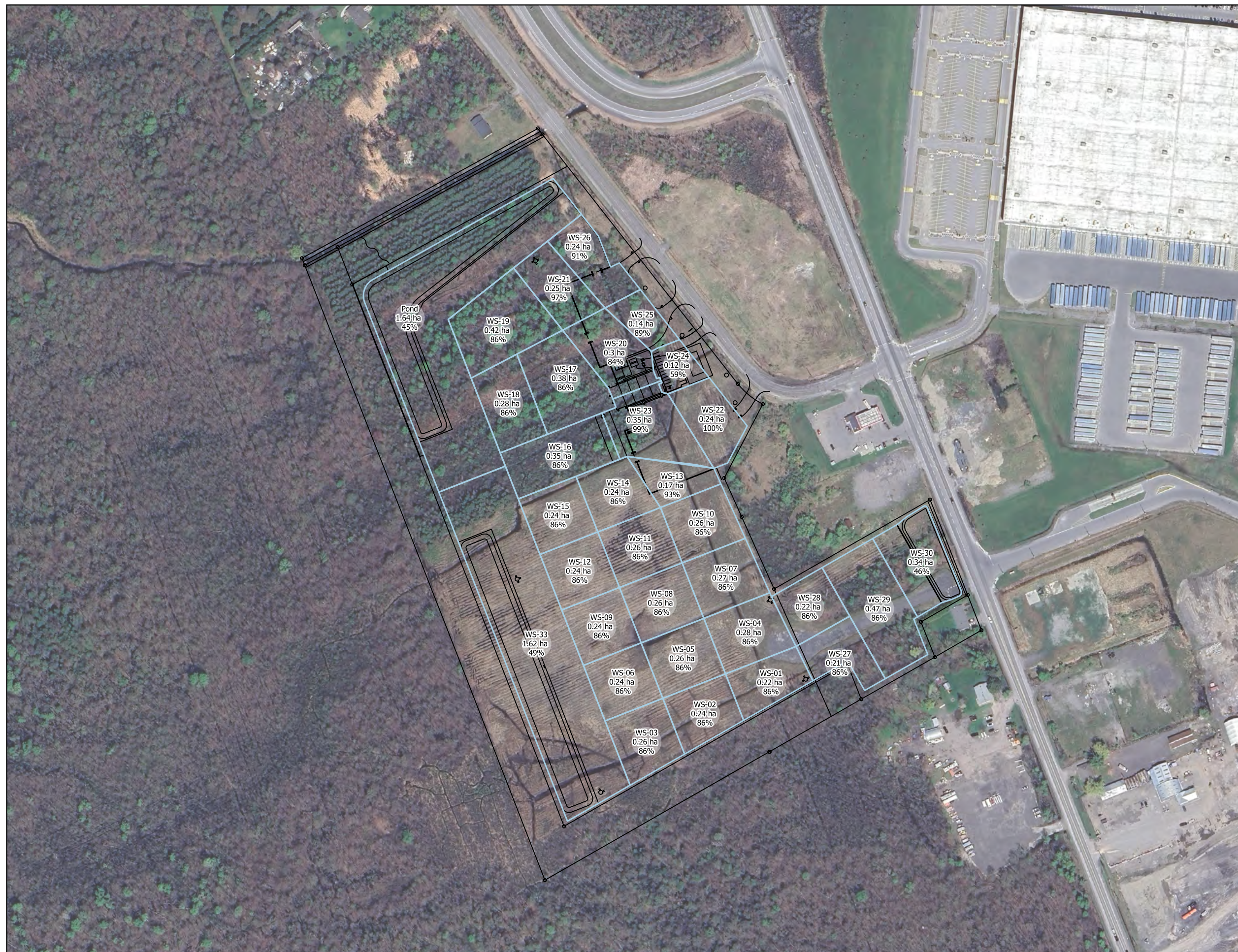
00541 R0150:C0002-----
00542 READ STORM
00543 File Name = storm.001
00544 Comment = 50 years SCS Type 2 Storm 24 Hours step 10 min, City of Ottawa
00545 [SDT=10.00;SDCR= 24.00;PTOT= 86.83]
00546 *****
00547 # Pre-Development Drainage Area
00548 *****
00549 R0150:C0003-----
00550 CALIB NASHVD 1.0 01;SWS-01 10.62 .222 No.Date 13:21 32.10 .315 .000
00551 [Cm 60.0; N= 3.00; Tp= 1.29]
00552 R0150:C0004-----
00553 CALIB NASHVD 1.0 01;SWS-02 .61 .017 No.Date 12:31 24.39 .253 .000
00554 [Cm 50.0; N= 3.00; Tp= .57]
00555 *****
00556 # STORMS
00557 *****
00558 ** END OF RUN : 198
00559 *****
00560 *****
00561 *****
00562 *****
00563 *****
00564 *****
00565 *****
00566 R0199:C0001-----
00567 READ STORM
00568 File Name = storm.001
00569 Comment = 100 years SCS Type 2 Storm 24 Hours step 10 min, City of Ottawa
00570 [SDT=10.00;SDCR= 24.00;PTOT= 106.73]
00571 *****
00572 # Pre-Development Drainage Area
00573 *****
00574 R0199:C0003-----
00575 CALIB NASHVD 1.0 01;SWS-01 10.62 .265 No.Date 13:21 38.38 .360 .000
00576 [Cm 60.0; N= 3.00; Tp= 1.29]
00577 R0199:C0004-----
00578 CALIB NASHVD 1.0 01;SWS-02 .61 .021 No.Date 12:31 29.25 .274 .000
00579 [Cm 50.0; N= 3.00; Tp= .57]
00580 *****
00581 # STORMS
00582 *****
00583 ** END OF RUN : 998
00584 *****
00585 *****
00586 *****
00587 *****
00588 *****
00589 *****
00590 *****
00591 *****
00592 *****
00593 *****
00594 *****
00595 *****
00596 *****
00597 *****
00598 *****
00599 *****
00600 *****
00601 *****
00602 *****
00603 *****
00604 *****
00605 *****
00606 *****
00607 *****
00608 *****
00609 *****
00610 R0999:C0001-----
00611 READ STORM
00612 File Name = storm.001
00613 Comment = CHUCK STORM 100 Year, 3 Hours +20% Stress Test
00614 [SDT=10.00;SDCR= 3.00;PTOT= 86.00]
00615 *****
00616 # Pre-Development Drainage Area
00617 *****
00618 R0999:C0003-----
00619 CALIB NASHVD 1.0 01;SWS-01 10.62 .271 No.Date 2:38 26.39 .307 .000
00620 [Cm 60.0; N= 3.00; Tp= .57]
00621 R0999:C0004-----
00622 CALIB NASHVD 1.0 01;SWS-02 .61 .021 No.Date 1:43 19.72 .229 .000
00623 [Cm 50.0; N= 3.00; Tp= .57]
00624 *****
00625 # STORMS
00626 *****
00627 ** END OF RUN : 124
00628 *****
00629 *****
00630 *****
00631 *****
00632 *****
00633 *****
00634 *****
00635 *****
00636 *****
00637 *****
00638 *****
00639 *****
00640 *****
00641 *****
00642 *****
00643 *****
00644 *****
00645 *****
00646 *****
00647 *****
00648 *****
00649 *****
00650 *****
00651 *****
00652 *****

```

# Appendix B

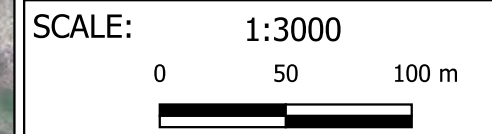
Post Development Model  
(PCSWMM)





### Legend

- Subcatchments  
     <Name>  
     <Area (ha)>  
     <% Imp>
- Site Plan



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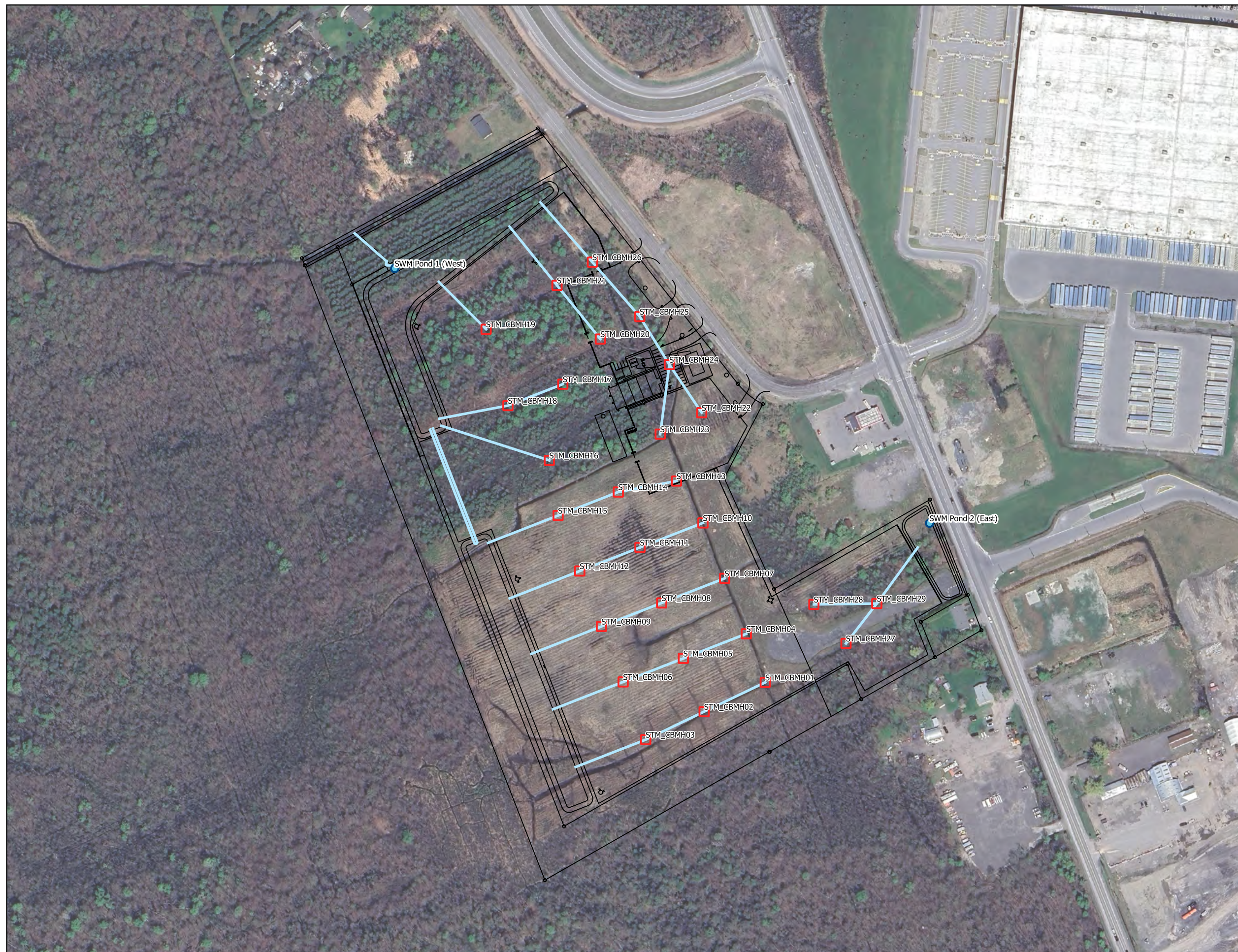
Thunder Road Partnership

6150 Thunder Road SWM Report

Figure B1: Subcatchments

PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUGUST 2024





**Legend**

- CBMH
- Outlet
- Minor System Conduits
- Site Plan



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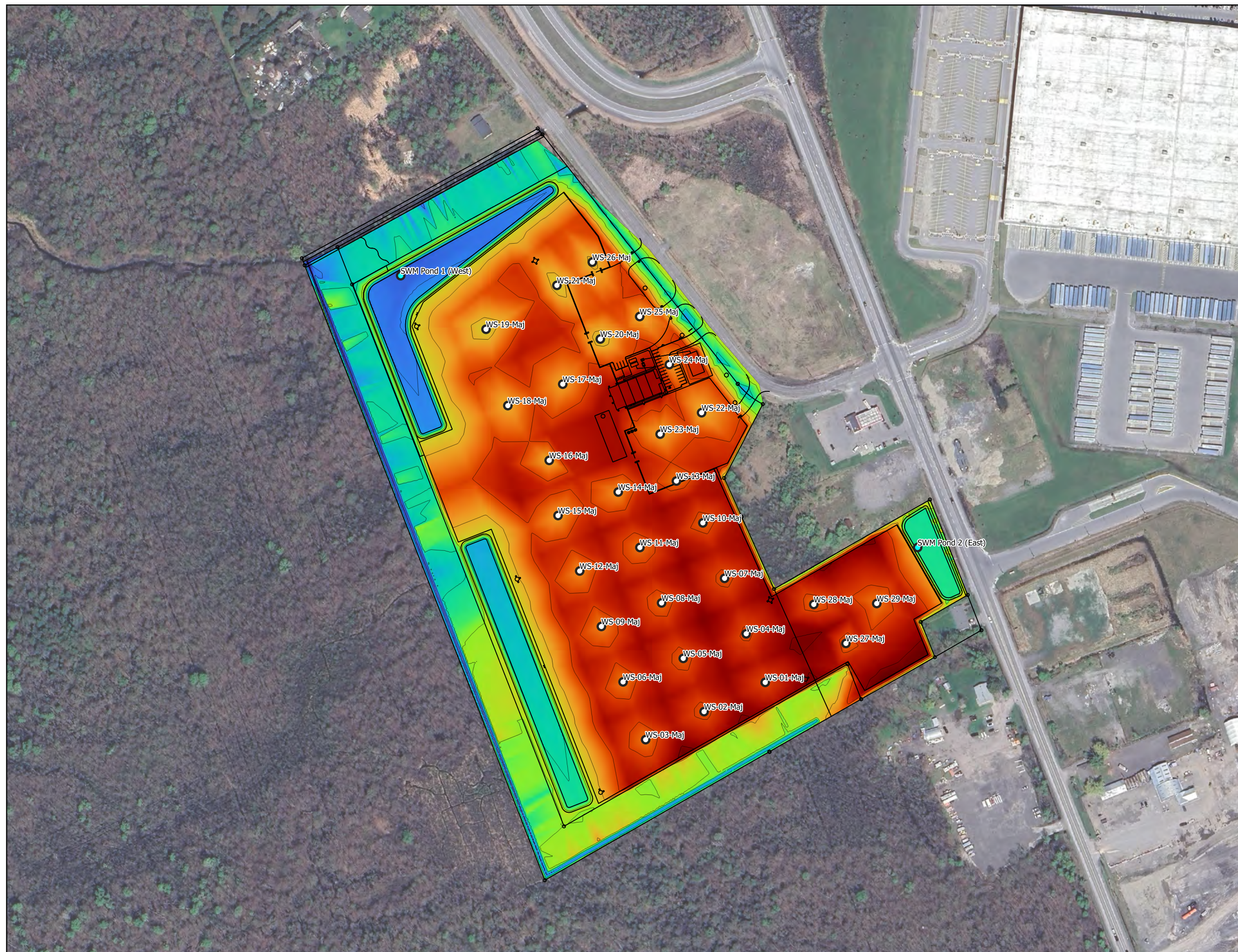
Thunder Road Partnership

6150 Thunder Road SWM Report

Figure B2: Minor System

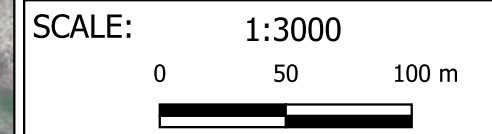
PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUGUST 2024





**Legend**

- Major System
  - Ponds
- PROPOSED TERRAIN
- 78.6
  - 75.4
  - Contours (0.5m)
  - Site Plan



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Figure B3: Major System

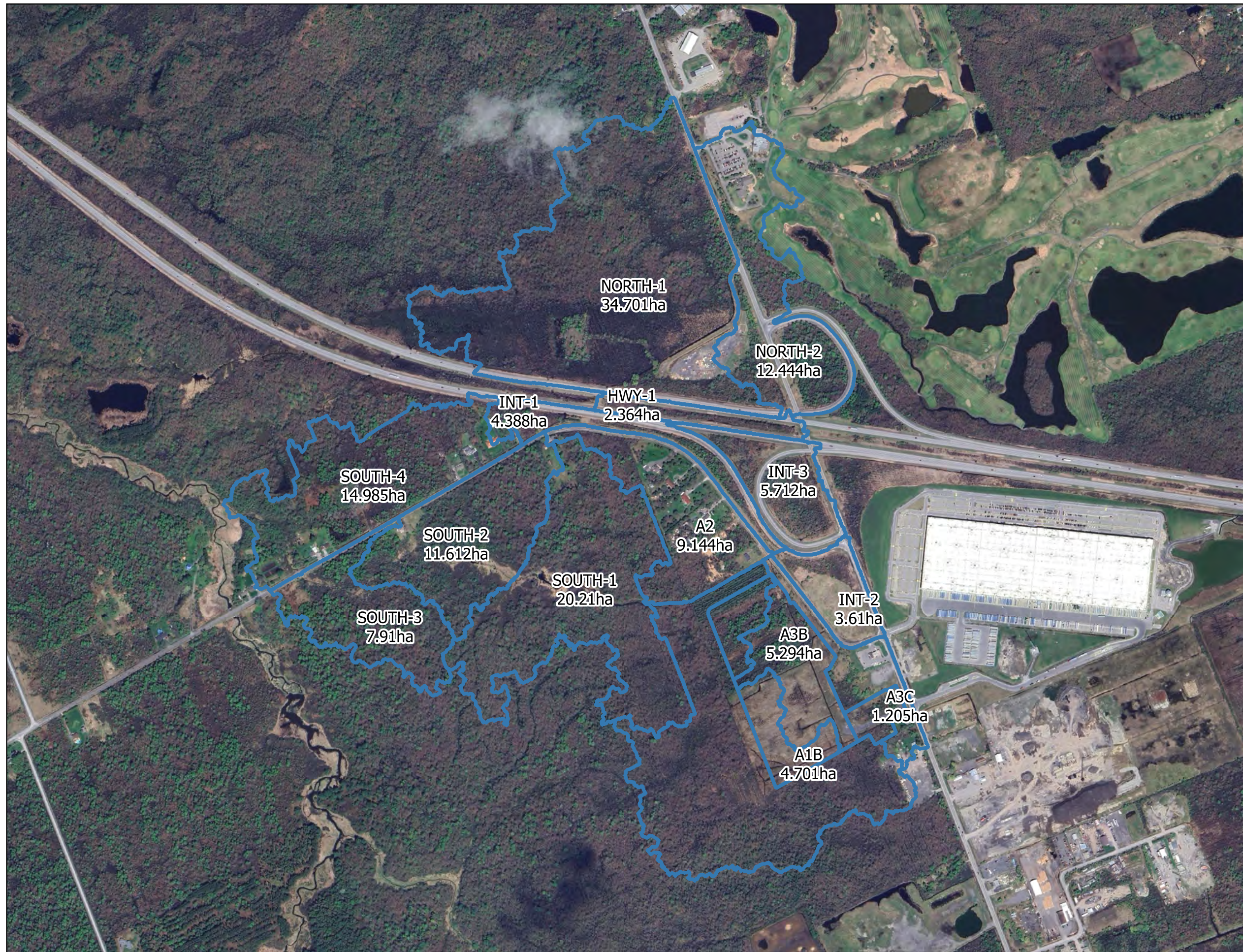
PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUGUST 2024



# Appendix C

Pump Curve





**Legend**

- Drainage Areas  
[Name]  
[Areas]

SCALE: 1:9000



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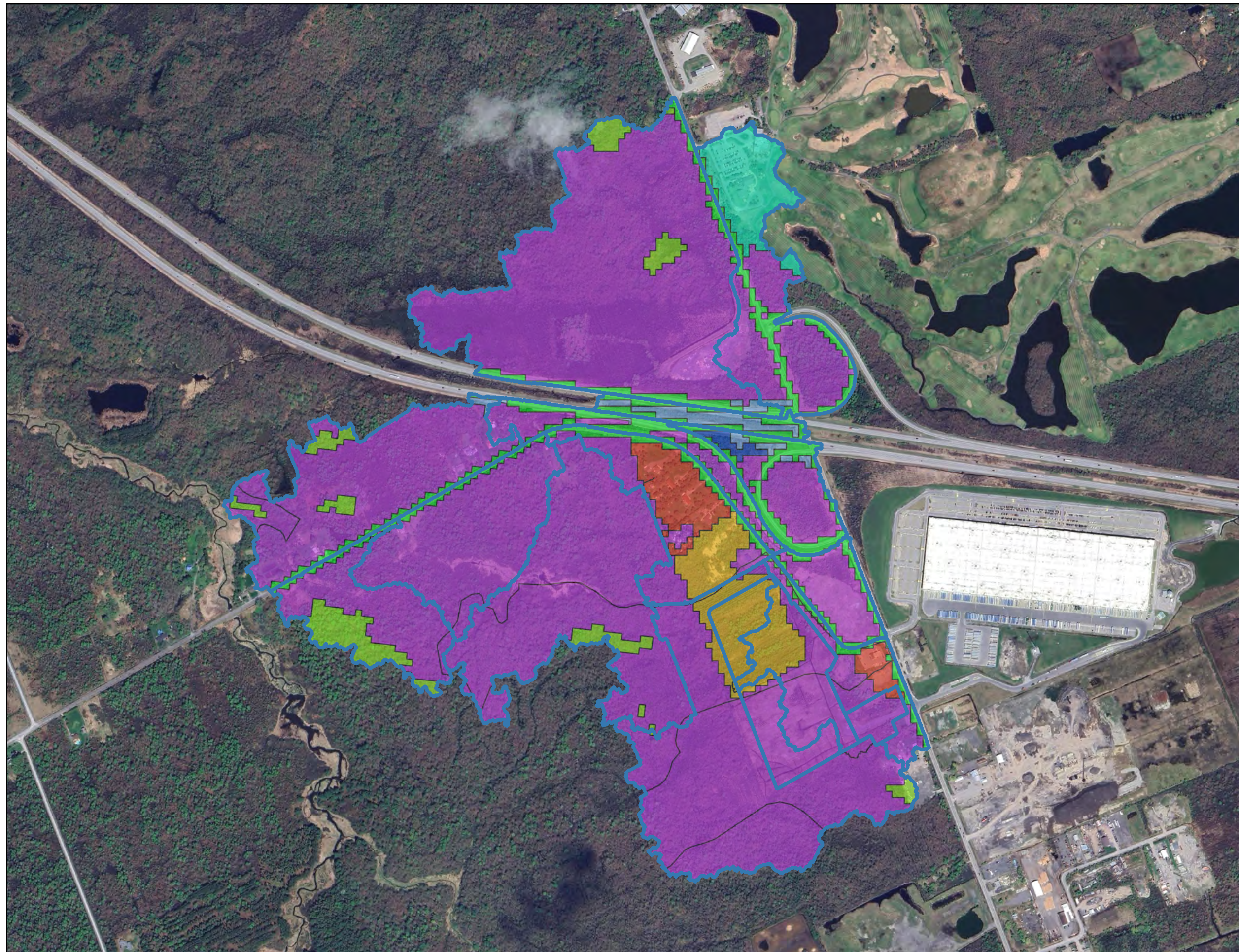
Thunder Road Partnership

6150 Thunder Road

Figure C1 - Drainage Areas

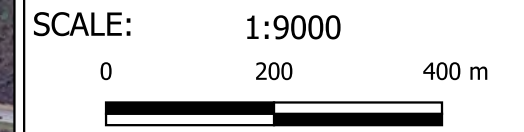
PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUG 2024





**Legend**

- Drainage Areas
- Land Use
- Treed Swamp
- Plantation
- Transportation
- Built Up Area - Impervious
- Deciduous Forest
- Built Up Area - Pervious
- Tilled
- Forest



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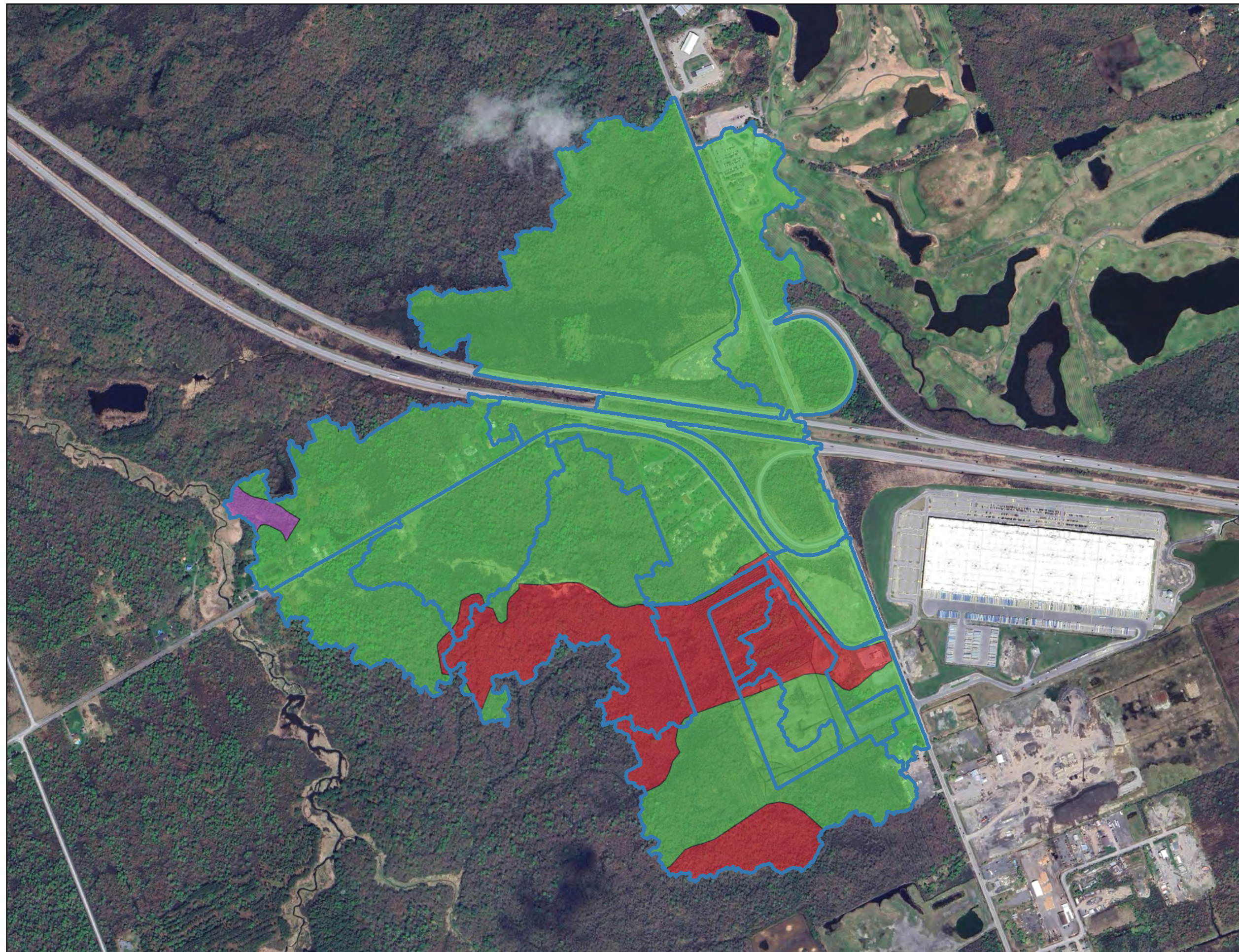
Thunder Road Partnership

6150 Thunder Road

Figure C2 - Land Use

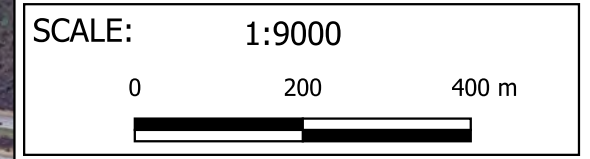
PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUG 2024





**Legend**

- Drainage Areas
- Soil Type
- ALLENDALE (C)
- CHENEY (C)
- ERODED CHANNEL (N)



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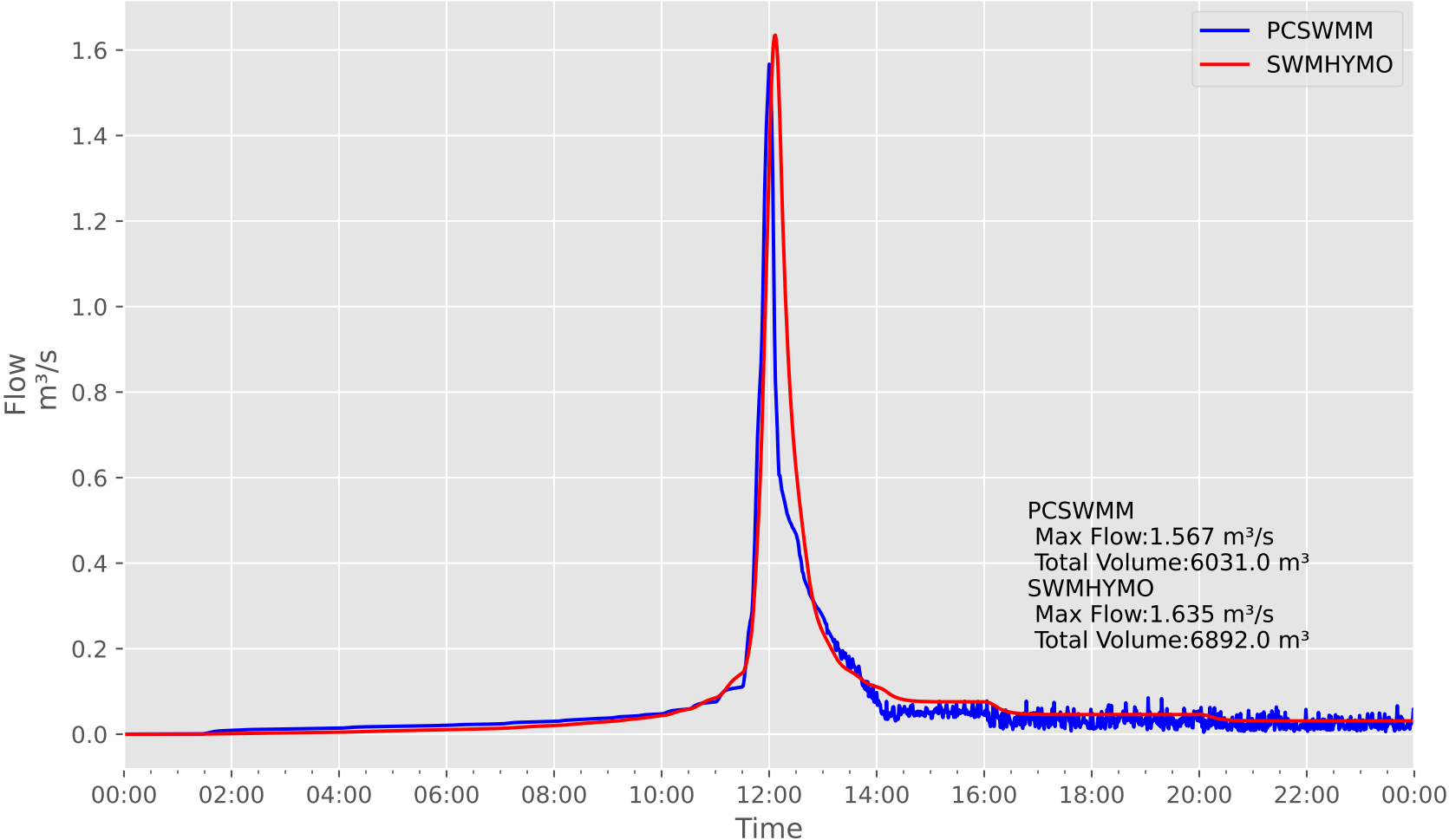
6150 Thunder Road

Figure C3 - Soils

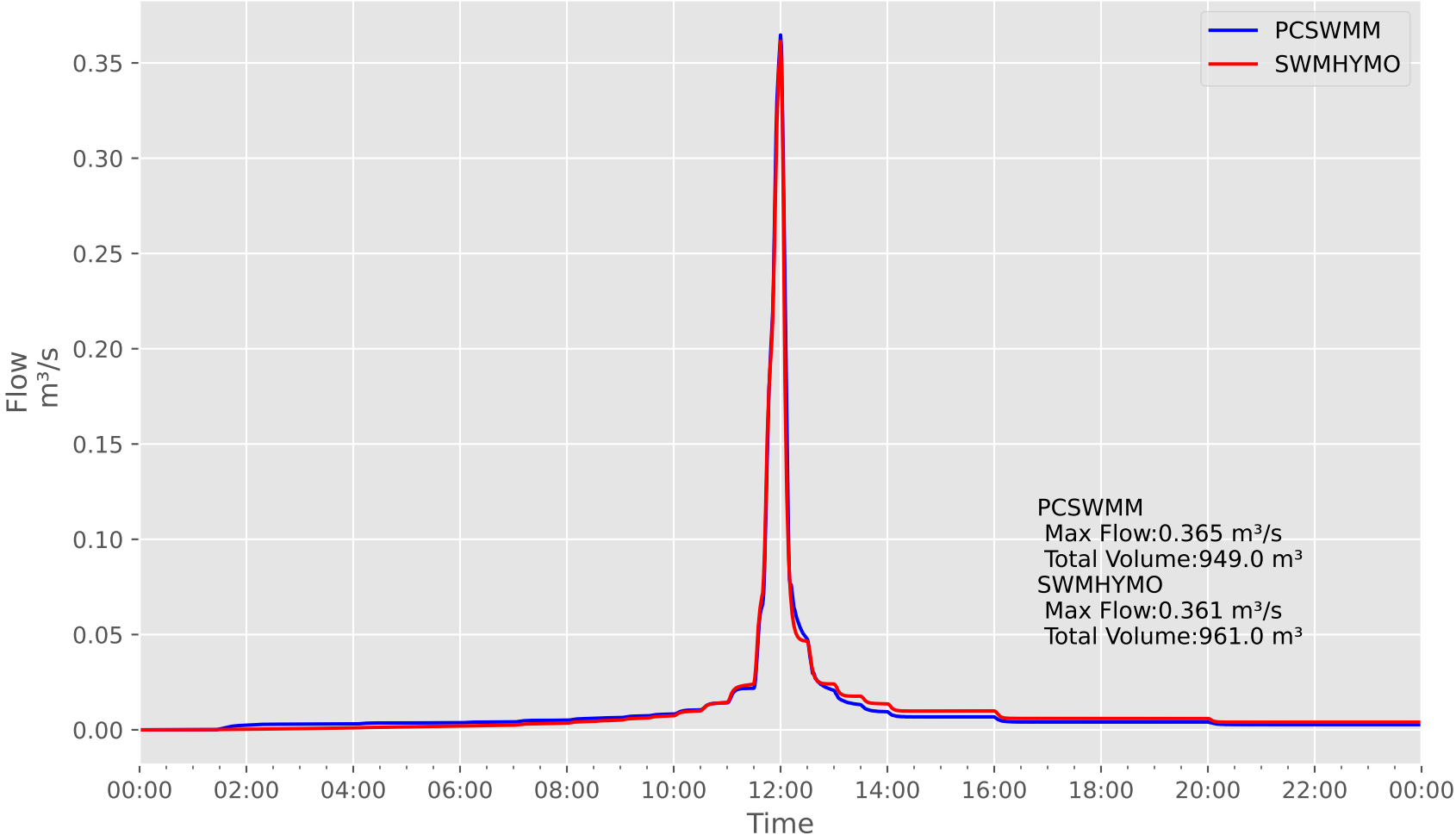
PROJECT	2120(01)-21
DRAWN	JZ
DATE	AUG 2024



# Pond1-100YrSCS24Hr



# Pond2-100YrSCS24Hr



```

1 20 Metric units / ID numbers OFF
2 *#*****
3 *# SWMHYMO / INPUT DATA FILE
4 *#*****
5 *# Project Name: [THUNDER ROAD] Project Number: [2128]
6 *# Date: [04-28-2021]
7 *# Modeller: [J.B]
8 *# Company: [JFSAinc.]
9 *# License #: [2549237]
10 *#*****
11 * Model Developed to assess the post development erosion/hydrologic conditions on the
12 Bear Brook
13 * tributary near 6150 Thunder Road
14 *#*****
15 START TZERO=[1967.0101], METOUT=[2], NSTORM=[0], NRUN=[1967]
16 *% [""] <-- storm filename, one per line for NSTORM time
17 *%-----|-----|
18 *# Ottawa International Airport - April 1st to October 31st
19 READ AES DATA AES_FILENAME=[ "YOW_1967_2007.123" ],
20 IELEM=[123], START_DATE=[0], END_DATE=[-213]
21 *%-----|-----|
22 COMPUTE API APII=[50], APIK=[0.90]/day
23 *%-----|-----|
24 * DRAINAGE AREAS NORTH OF HIGHWAY
25 *%-----|-----|
26 CONTINUOUS NASHYD NHYD=[ "NORTH-1" ], DT=[5](min), AREA=[34.701](ha),
27 DWF=[0](cms), CN/C=[38.1], IA=[4.67](mm), N=[3], TP=[4.12](hrs),
28 Continuous simulation parameters:
29 IaREcper=[6](hrs),
30 SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
31 InterEventTime=[12](hrs),
32 Baseflow simulation parameters:
33 BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
34 VHydCond=[.02](mm/hr), END=-1
35 *%-----|-----|
36 CONTINUOUS NASHYD NHYD=[ "NORTH-2" ], DT=[5](min), AREA=[12.444](ha),
37 DWF=[0](cms), CN/C=[53.0], IA=[4.67](mm), N=[3], TP=[1.29](hrs),
38 Continuous simulation parameters:
39 IaREcper=[6](hrs),
40 SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
41 InterEventTime=[12](hrs),
42 Baseflow simulation parameters:
43 BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
44 VHydCond=[.02](mm/hr), END=-1
45 *%-----|-----|
46 CONTINUOUS NASHYD NHYD=[ "HWY-1" ], DT=[5](min), AREA=[2.364](ha),
47 DWF=[0](cms), CN/C=[81.7], IA=[4.67](mm), N=[3], TP=[1.21](hrs),
48 Continuous simulation parameters:
49 IaREcper=[6](hrs),
50 SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
51 InterEventTime=[12](hrs),
52 Baseflow simulation parameters:
53 BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
54 VHydCond=[.02](mm/hr), END=-1
55 *%-----|-----|
56 *ADD AREAS UPSTREAM OF HIGHWAY
57 ADD HYD NHYDsum=[ "J1" ], NHYDs to add=[ "NORTH-1"+"NORTH-2"+"HWY-1" ]
58 *%-----|-----|
59 * ROUTE UPSTREAM FLOWS TO THUNDER ROAD
60 ROUTE CHANNEL NHYDout=[ "R1" ], NHYDin=[ "J1" ], RDT=[5](min),
61 CHLGTH=[.478](m), CHSLOPE=[0.44](%), FPSLOPE=[0.44](%),
62 SECNUM=[.1], NSEG=[.3]
63 ( SEGROUGH, SEGDIST (m))=[0.05, 2.49, -0.035, 8.73, 0.05, 26.18] NSEG
64 ( DISTANCE (m), ELEVATION (m))=[0, 76.83]
65 [1.25, 76.8]
66 [2.49, 76.64]
67 [3.74, 76.45]

```

```

68 ..... [4.99,76.22]
69 ..... [6.23,76.3]
70 ..... [7.48,76.52]
71 ..... [8.73,76.58]
72 ..... [9.97,76.61]
73 ..... [22.44,76.62]
74 ..... [23.69,76.7]
75 ..... [24.93,76.75]
76 ..... [26.18,76.85]
77 *%-----|-----|
78 * DRAINAGE AREAS AROUND HIGHWAY INTERCHANGE
79 *%-----|-----|
80 CONTINUOUS NASHYD NHYD=["INT-1"], DT=[5](min), AREA=[4.388](ha),
81 ..... DWF=[0](cms), CN/C=[60.4], IA=[4.67](mm), N=[3], TP=[1.66](hrs),
82 ..... Continuous simulation parameters:
83 ..... IaRECper=[6](hrs),
84 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
85 ..... InterEventTime=[12](hrs),
86 ..... Baseflow simulation parameters:
87 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
88 ..... VHydCond=[.02](mm/hr), END=-1
89 *%-----|-----|
90 CONTINUOUS NASHYD NHYD=["INT-2"], DT=[5](min), AREA=[3.61](ha),
91 ..... DWF=[0](cms), CN/C=[47.4], IA=[4.67](mm), N=[3], TP=[0.95](hrs),
92 ..... Continuous simulation parameters:
93 ..... IaRECper=[6](hrs),
94 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
95 ..... InterEventTime=[12](hrs),
96 ..... Baseflow simulation parameters:
97 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
98 ..... VHydCond=[.02](mm/hr), END=-1
99 *%-----|-----|
100 CONTINUOUS NASHYD NHYD=["A3A"], DT=[5](min), AREA=[3.84](ha),
101 ..... DWF=[0](cms), CN/C=[58.4], IA=[4.67](mm), N=[3], TP=[1.46](hrs),
102 ..... Continuous simulation parameters:
103 ..... IaRECper=[6](hrs),
104 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
105 ..... InterEventTime=[12](hrs),
106 ..... Baseflow simulation parameters:
107 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
108 ..... VHydCond=[.02](mm/hr), END=-1
109 *%-----|-----|
110 CONTINUOUS NASHYD NHYD=["A3B"], DT=[5](min), AREA=[5.294](ha),
111 ..... DWF=[0](cms), CN/C=[42.6], IA=[4.67](mm), N=[3], TP=[1.26](hrs),
112 ..... Continuous simulation parameters:
113 ..... IaRECper=[6](hrs),
114 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
115 ..... InterEventTime=[12](hrs),
116 ..... Baseflow simulation parameters:
117 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
118 ..... VHydCond=[.02](mm/hr), END=-1
119 *%-----|-----|
120 CONTINUOUS NASHYD NHYD=["A3C"], DT=[5](min), AREA=[1.205](ha),
121 ..... DWF=[0](cms), CN/C=[37.8], IA=[4.67](mm), N=[3], TP=[0.87](hrs),
122 ..... Continuous simulation parameters:
123 ..... IaRECper=[6](hrs),
124 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
125 ..... InterEventTime=[12](hrs),
126 ..... Baseflow simulation parameters:
127 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
128 ..... VHydCond=[.02](mm/hr), END=-1
129 *%-----|-----|
130 *Route runoff from north site lands through road side ditch (500m @ 0.14%)
131 ROUTE CHANNEL NHYDout=["A3C-R"], NHYDin=["A3C"], RDT=[5](min),
132 ..... CHLGTH=[500](m), CHSLOPE=[0.14](%), FPSLOPE=[0.14](%),
133 ..... SECNUM=[1], NSEG=[3]
134 ..... (SEGROUGH, SEGDIST (m))=[0.05, 2.95, -0.035, 7.38, 0.05, 10.33] NSEG
..... times
135 ..... (DISTANCE (m), ELEVATION (m))=[0.00, 76.58]

```



```

136 ..... [1.48, 76.57]
137 ..... [2.95, 76.49]
138 ..... [4.43, 76.15]
139 ..... [5.90, 76.11]
140 ..... [7.38, 76.58]
141 ..... [8.85, 76.95]
142 ..... [10.33, 77.20]
143 ..... [-1, -1]
144 *%-----|-----|
145 CONTINUOUS NASHYD NHYD=[ "INT-3" ], DT=[ 5 ](min), AREA=[ 5.712 ](ha),
146 ..... DWF=[ 0 ](cms), CN/C=[ 58.5 ], IA=[ 4.67 ](mm), N=[ 3 ], TP=[ 0.89 ](hrs),
147 ..... Continuous simulation parameters:
148 ..... IaRECper=[ 6 ](hrs),
149 ..... SMIN=[ -1 ](mm), SMAX=[ -1 ](mm), SK=[ 0.03 ]/(mm),
150 ..... InterEventTime=[ 12 ](hrs),
151 ..... Baseflow simulation parameters:
152 ..... BaseFlowOption=[ 1 ], InitGWResVol=[ 12 ](mm), GWResK=[ 0.95 ](mm/day/mm),
153 ..... VHydCond=[ .02 ](mm/hr), END=-1
154 *%-----|-----|
155 ADD HYD NHYDsum=[ "J2" ], NHYDs to
156 add=[ "R1"+"INT-1"+"INT-2"+"INT-3"+"A3A"+"A3B"+"A3C-R" ]
157 *%-----|-----|
158 ROUTE CHANNEL NHYDout=[ "R2" ], NHYDin=[ "J2" ], RDT=[ 5 ](min),
159 ..... CHLGTH=[ 359 ](m), CHSLOPE=[ 0.56 ](%), FPSLOPE=[ 0.56 ](%),
160 ..... SECNUM=[ 1 ], NSEG=[ 3 ]
161 ..... ( SEGROUGH, SEGDIST (m))=[ 0.05, 15.18, -0.035, 25.29, 0.05, 30.35 ]
162 ..... NSEG times
163 ..... ( DISTANCE (m), ELEVATION (m))=[ 0, 77.2 ]
164 ..... [1.26, 77.14]
165 ..... [2.53, 77.09]
166 ..... [6.32, 77.02]
167 ..... [7.59, 77.01]
168 ..... [8.85, 76.99]
169 ..... [11.38, 76.96]
170 ..... [13.91, 76.92]
171 ..... [15.18, 76.86]
172 ..... [16.44, 76.63]
173 ..... [17.71, 76.28]
174 ..... [18.97, 76.24]
175 ..... [20.23, 76.23]
176 ..... [21.5, 76.33]
177 ..... [22.76, 76.62]
178 ..... [24.03, 76.73]
179 ..... [25.29, 76.8]
180 ..... [27.82, 76.8]
181 ..... [29.09, 76.81]
182 ..... [30.35, 77]
183 ..... [-1, -1]
184 *%-----|-----|
185 * DRAINAGE AREAS DOPWNSTREAM OF THUNDERROAD
186 *%-----|-----|
187 CONTINUOUS NASHYD NHYD=[ "A1A" ], DT=[ 5 ](min), AREA=[ 21.435 ](ha),
188 ..... DWF=[ 0 ](cms), CN/C=[ 36.1 ], IA=[ 4.67 ](mm), N=[ 3 ], TP=[ 1.68 ](hrs),
189 ..... Continuous simulation parameters:
190 ..... IaRECper=[ 6 ](hrs),
191 ..... SMIN=[ -1 ](mm), SMAX=[ -1 ](mm), SK=[ 0.03 ]/(mm),
192 ..... InterEventTime=[ 12 ](hrs),
193 ..... Baseflow simulation parameters:
194 ..... BaseFlowOption=[ 1 ], InitGWResVol=[ 12 ](mm), GWResK=[ 0.95 ](mm/day/mm),
195 ..... VHydCond=[ .02 ](mm/hr), END=-1
196 *%-----|-----|
197 CONTINUOUS NASHYD NHYD=[ "A1B" ], DT=[ 5 ](min), AREA=[ 4.701 ](ha),
198 ..... DWF=[ 0 ](cms), CN/C=[ 44.6 ], IA=[ 4.67 ](mm), N=[ 3 ], TP=[ 1.72 ](hrs),
199 ..... Continuous simulation parameters:
200 ..... IaRECper=[ 6 ](hrs),
201 ..... SMIN=[ -1 ](mm), SMAX=[ -1 ](mm), SK=[ 0.03 ]/(mm),
202 ..... InterEventTime=[ 12 ](hrs),
203 ..... Baseflow simulation parameters:
204 ..... BaseFlowOption=[ 1 ], InitGWResVol=[ 12 ](mm), GWResK=[ 0.95 ](mm/day/mm),

```

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203 ..... VHydCond=[.02](mm/hr), END=-1
204 *%-----|-----|
205 CONTINUOUS NASHYD ..... NHYD=["A2"], DT=[5](min), AREA=[9.144](ha),
206 ..... DWF=[0](cms), CN/C=[68.4], IA=[4.67](mm), N=[3], TP=[1.12](hrs),
207 ..... Continuous simulation parameters:
208 ..... IaREcper=[6](hrs),
209 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
210 ..... InterEventTime=[12](hrs),
211 ..... Baseflow simulation parameters:
212 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
213 ..... VHydCond=[.02](mm/hr), END=-1
214 *%-----|-----|
215 ADD HYD ..... NHYDsum=["J3"], NHYDs to add=["R2"+"A1A"+"A1B"+"A2"]
216 *%-----|-----|
217 ROUTE CHANNEL ..... NHYDout=["R3"], NHYDin=["J3"], RDT=[5](min),
218 ..... CHLGTH=[396](m), CHSLOPE=[0.305](%), FPSLOPE=[0.305](%),
219 ..... SECNUM=[1], NSEG=[3]
220 ..... (SEGROUGH, SEGDIST (m))=[0.05, 20.3, -0.035, 25.43, 0.05, 43.65]
221 ..... NSEG times
222 ..... (DISTANCE (m), ELEVATION (m))=[0, 75.94]
223 ..... [5.08, 75.73]
224 ..... [10.15, 75.63]
225 ..... [15.23, 75.56]
226 ..... [20.3, 75.36]
227 ..... [21.32, 75.15]
228 ..... [22.33, 75.04]
229 ..... [23.35, 74.98]
230 ..... [24.36, 75.13]
231 ..... [25.38, 75.21]
232 ..... [30.45, 75.36]
233 ..... [35.53, 75.5]
234 ..... [40.61, 75.85]
235 ..... [43.65, 76.04]
236 ..... [-1, -1]
237 *%-----|-----|
238 CONTINUOUS NASHYD ..... NHYD=["SOUTH-1"], DT=[5](min), AREA=[20.21](ha),
239 ..... DWF=[0](cms), CN/C=[35.5], IA=[4.67](mm), N=[3], TP=[1.4](hrs),
240 ..... Continuous simulation parameters:
241 ..... IaREcper=[6](hrs),
242 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
243 ..... InterEventTime=[12](hrs),
244 ..... Baseflow simulation parameters:
245 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
246 ..... VHydCond=[.02](mm/hr), END=-1
247 *%-----|-----|
248 ADD HYD ..... NHYDsum=["J4"], NHYDs to add=["R3"+"SOUTH-1"]
249 *%-----|-----|
249 ROUTE CHANNEL ..... NHYDout=["R4"], NHYDin=["J4"], RDT=[5](min),
250 ..... CHLGTH=[482](m), CHSLOPE=[0.41](%), FPSLOPE=[0.41](%),
251 ..... SECNUM=[1], NSEG=[3]
252 ..... (SEGROUGH, SEGDIST (m))=[0.05, 20.48, -0.035, 24.1, 0.05, 40.97]
253 ..... NSEG times
254 ..... (DISTANCE (m), ELEVATION (m))=[0.00, 75.19]
255 ..... [4.82, 75.02]
256 ..... [10.84, 74.46]
257 ..... [20.48, 73.88]
258 ..... [21.69, 73.71]
259 ..... [22.89, 73.79]
260 ..... [24.1, 74.07]
261 ..... [25.3, 74.18]
262 ..... [30.12, 74.6]
263 ..... [34.94, 74.69]
264 ..... [40.97, 75.14]
265 ..... [-1, -1]
266 *%-----|-----|
267 CONTINUOUS NASHYD ..... NHYD=["SOUTH-2"], DT=[5](min), AREA=[11.612](ha),
268 ..... DWF=[0](cms), CN/C=[36.7], IA=[4.67](mm), N=[3], TP=[0.96](hrs),
269 ..... Continuous simulation parameters:
270 ..... IaREcper=[6](hrs),

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270 ..... SMIN=[-1](mm), · SMAX=[-1](mm), · SK=[0.03]/(mm),
271 ..... InterEventTime=[12](hrs),
272 ..... Baseflow simulation parameters:
273 ..... BaseFlowOption=[1], · InitGWResVol=[12](mm), · GWResK=[0.95](mm/day/mm),
274 ..... VHydCond=[.02](mm/hr), · END=-1
275 *%-----|-----|
276 ADD HYD ..... NHYDsum=["J5"], · NHYDs to add=["R4"+"SOUTH-2"]
277 *%-----|-----|
278 ROUTE CHANNEL ..... NHYDout=["R5"], · NHYDin=["J5"], · RDT=[5](min),
279 ..... CHLGTH=[181](m), · CHSLOPE=[0.5](%), · FPSLOPE=[0.5](%),
280 ..... SECNUM=[ 1 ], · NSEG=[ 3 ]
281 ..... ( · SEGROUGH, · SEGDIST (m))=[0.05, 42.50, -0.035, 47.69, 0.05, 65.31]
      NSEG times
282 ..... ( · DISTANCE (m), · ELEVATION (m))=[0.000, 75.10]
283 ..... [10.37, 74.34]
284 ..... [20.73, 73.72]
285 ..... [30.06, 73.11]
286 ..... [42.50, 72.86]
287 ..... [45.61, 72.59]
288 ..... [47.69, 72.82]
289 ..... [60.13, 73.68]
290 ..... [65.31, 74.98]
291 ..... [-1, -1]
292 *%-----|-----|
293 CONTINUOUS NASHYD ..... NHYD=["SOUTH-3"], · DT=[5](min), · AREA=[7.982](ha),
294 ..... DWF=[0](cms), · CN/C=[42.6], · IA=[4.67](mm), · N=[3], · TP=[0.89](hrs),
295 ..... Continuous simulation parameters:
296 ..... IaREcper=[6](hrs),
297 ..... SMIN=[-1](mm), · SMAX=[-1](mm), · SK=[0.03]/(mm),
298 ..... InterEventTime=[12](hrs),
299 ..... Baseflow simulation parameters:
300 ..... BaseFlowOption=[1], · InitGWResVol=[12](mm), · GWResK=[0.95](mm/day/mm),
301 ..... VHydCond=[.02](mm/hr), · END=-1
302 *%-----|-----|
303 ADD HYD ..... NHYDsum=["J6"], · NHYDs to add=["R5"+"SOUTH-3"]
304 *%-----|-----|
305 SAVE HYD ..... NHYD=["J6"], · # OF PCYCLES=[-1], · ICASEsh=[1]
306 ..... HYD_COMMENT=["J6-Bearbrook Tributary Upstream of Thunder Road
      Crossing"]
307 *%-----|-----|
308 ROUTE CHANNEL ..... NHYDout=["R6"], · NHYDin=["J6"], · RDT=[5](min),
309 ..... CHLGTH=[ 323 ](m), · CHSLOPE=[0.44](%), · FPSLOPE=[0.44](%),
310 ..... SECNUM=[ 1 ], · NSEG=[ 3 ]
311 ..... ( · SEGROUGH, · SEGDIST (m))=[0.05, 20.48, -0.035, 24.1, 0.05, 40.97]
      NSEG times
312 ..... ( · DISTANCE (m), · ELEVATION (m))=[0,75.19]
313 ..... [4.82,75.02]
314 ..... [10.84,74.46]
315 ..... [20.48,73.88]
316 ..... [21.69,73.71]
317 ..... [22.89,73.79]
318 ..... [24.1,74.07]
319 ..... [25.3,74.18]
320 ..... [30.12,74.6]
321 ..... [34.94,74.69]
322 ..... [40.97,75.14]
323 ..... [-1, -1]
324 *%-----|-----|
325 CONTINUOUS NASHYD ..... NHYD=["SOUTH-4"], · DT=[5](min), · AREA=[14.985](ha),
326 ..... DWF=[0](cms), · CN/C=[39.5], · IA=[4.67](mm), · N=[3], · TP=[1.23](hrs),
327 ..... Continuous simulation parameters:
328 ..... IaREcper=[6](hrs),
329 ..... SMIN=[-1](mm), · SMAX=[-1](mm), · SK=[0.03]/(mm),
330 ..... InterEventTime=[12](hrs),
331 ..... Baseflow simulation parameters:
332 ..... BaseFlowOption=[1], · InitGWResVol=[12](mm), · GWResK=[0.95](mm/day/mm),
333 ..... VHydCond=[.02](mm/hr), · END=-1
334 *%-----|-----|
335 ADD HYD ..... NHYDsum=["Total"], · NHYDs to add=["R6"+"SOUTH-4"]

```

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336 *%-----|-----|
337 *#=====|=====|
338 * ..... DESIGN STORMS .....
339 *#-----|-----|
340 *#####|#####|
341 *# CONTINUOUS RAINFALL DATA
342 *#####|#####|
343 *#*****|*****|
344 *# STORMS
345 *#*****|*****|
346 START ..... TZERO=[ 1968.0401], METOUT=[ 2], NSTORM=[ 0], NRUN=[ 1968]
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348 START ..... TZERO=[ 1969.0401], METOUT=[ 2], NSTORM=[ 0], NRUN=[ 1969]
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350 START ..... TZERO=[ 1970.0401], METOUT=[ 2], NSTORM=[ 0], NRUN=[ 1970]
351 *%-----|-----|
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353 *%-----|-----|
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355 *%-----|-----|
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404 START ..... TZERO=[ 1997.0401], METOUT=[ 2], NSTORM=[ 0], NRUN=[ 1997]

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406 START ..... TZERO=[1998.0401], METOUT=[2], NSTORM=[0], NRUN=[1998]
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416 START ..... TZERO=[2004.0401], METOUT=[2], NSTORM=[0], NRUN=[2004]
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418 START ..... TZERO=[2006.0401], METOUT=[2], NSTORM=[0], NRUN=[2006]
419 *%-----|-----|
420 START ..... TZERO=[2007.0401], METOUT=[2], NSTORM=[0], NRUN=[2007]
421 *%-----|-----|
422 FINISH
423
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00001 .....
00002 .....
00003 SSSSS W M M H H Y Y M M O O O 222 0 0 11 5555 .....
00004 S W M M M M H H Y Y M M M O O 2 0 0 11 5 .....
00005 SSSSS W M M M M H H Y Y M M M O O 2 0 0 11 5 Ver 5.500 .....
00006 S W M M M H H Y Y M M O O 222 0 0 11 555 FEB 2013 .....
00007 SSSSS W M M M H H Y Y M M O O 2 0 0 11 5 .....
00008 .....
00009 Stormwater Management Hydrologic Model 222 000 11 555 .....
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00721 [Start\_date= 1970.0401; End\_date= 1970.1031]
00722 [Df= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00723 Maximum average rainfall intensities over
00724 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
00725 35.30 35.30 35.30 35.30 35.30 35.30 35.30 35.30 35.30 mm/hr
00726 35.30 36.60 36.60 36.60 43.50 43.50 43.50 43.50 43.50
00727 1970026 1970026 1970027 1970028 1970029 1970030 1970031 1970032 1970033 date
00728 Number of rainfall events per following interval time
00729 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
00730 118 99 99 99 99 99 99 99 99
00731 Number of events with at least the following durations
00732 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
00733 117 66 30 9 2 0 0 0 0
00734 1970-C00001-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00735 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00736 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00737 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00738 1970-C00004-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00739 CONTINUOUS NASHDY 5.0 01:18HVT-1 34.70 .054 1970.0927.1100 150.39 .315 .000
00740 [Cm= 38.1; W= 3.00; Tm= 1.29]
00741 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00742 [InterEventTime= 12.00]
00743 1970-C00005-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00744 CONTINUOUS NASHDY 5.0 01:18HVT-2 12.44 .083 1970.0926.2210 151.68 .317 .000
00745 [Cm= 38.1; W= 3.00; Tm= 1.29]
00746 [IARC= 6.00; SMIN= 91.01; SMAX= 606.70; SK= .030]
00747 [InterEventTime= 12.00]
00748 1970-C00006-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00749 CONTINUOUS NASHDY 5.0 01:18HVT-1 2.36 .040 1970.0926.2210 157.23 .329 .000
00750 [Cm= 41.7; W= 1.00; Tm= 4.46]
00751 [IARC= 6.00; SMIN= 25.21; SMAX= 168.09; SK= .030]
00752 [InterEventTime= 12.00]
00753 1970-C00007-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00754 ADD HYD + 5.0 02:18HVT-1 34.70 .054 1970.0927.1100 150.39 n/a .000
00755 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00756 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00757 [InterEventTime= 12.00]
00758 1970-C00008-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00759 ROUTE CHANNEL -> 5.0 02:21 49.51 .152 1970.0926.2215 151.04 n/a .000
00760 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00761 [I/S= 478 / 440 / 035]
00762 [Vmax= 421; Dmax= 293]
00763 1970-C00009-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00764 CONTINUOUS NASHDY 5.0 01:18HVT-1 4.39 .030 1970.0926.2210 152.59 .319 .000
00765 [Cm= 38.1; W= 3.00; Tm= 1.29]
00766 [IARC= 6.00; SMIN= 67.24; SMAX= 448.24; SK= .030]
00767 [InterEventTime= 12.00]
00768 1970-C00010-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00769 CONTINUOUS NASHDY 5.0 01:18HVT-2 3.61 .026 1970.0926.2145 151.11 .316 .000
00770 [Cm= 41.7; W= 1.00; Tm= 4.46]
00771 [IARC= 6.00; SMIN= 115.26; SMAX= 768.40; SK= .030]
00772 [InterEventTime= 12.00]
00773 1970-C00011-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00774 CONTINUOUS NASHDY 5.0 01:18HVT-3 3.84 .027 1970.0926.2210 152.32 .319 .000
00775 [Cm= 38.1; W= 3.00; Tm= 1.29]
00776 [IARC= 6.00; SMIN= 73.13; SMAX= 487.55; SK= .030]
00777 [InterEventTime= 12.00]
00778 1970-C00012-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00779 CONTINUOUS NASHDY 5.0 01:18HVT-4 5.29 .025 1970.0926.2210 150.69 .315 .000
00780 [Cm= 38.1; W= 3.00; Tm= 1.29]
00781 [IARC= 6.00; SMIN= 141.94; SMAX= 946.27; SK= .030]
00782 [InterEventTime= 12.00]
00783 1970-C00013-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00784 CONTINUOUS NASHDY 5.0 01:18HVT-5 1.21 .006 1970.0926.2145 150.29 .315 .000
00785 [Cm= 38.1; W= 3.00; Tm= 1.29]
00786 [IARC= 6.00; SMIN= 179.29; SMAX= \*\*\*\*\*; SK= .030]
00787 [InterEventTime= 12.00]
00788 1970-C00014-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00789 ROUTE CHANNEL -> 5.0 02:18 1.21 .004 1970.0926.2145 150.29 n/a .000
00790 [IARC= 6.00; SMIN= 179.29; SMAX= \*\*\*\*\*; SK= .030]
00791 [I/S= 500 / 140 / 035]
00792 [Vmax= 105; Dmax= 447]
00793 1970-C00015-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00794 CONTINUOUS NASHDY 5.0 01:18HVT-3 5.71 .062 1970.0926.2145 152.32 .319 .000
00795 [Cm= 38.1; W= 3.00; Tm= 1.29]
00796 [IARC= 6.00; SMIN= 73.13; SMAX= 487.55; SK= .030]
00797 [InterEventTime= 12.00]
00798 1970-C00016-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00799 ADD HYD + 5.0 02:21 49.51 .148 1970.0926.2210 151.04 n/a .000
00800 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00801 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00802 [InterEventTime= 12.00]
00803 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00804 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00805 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00806 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00807 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00808 ROUTE CHANNEL -> 5.0 02:12 73.56 .302 1970.0926.2215 151.27 n/a .000
00809 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00810 [I/S= 359 / 567 / 035]
00811 [I/S= 527; Dmax= 167]
00812 1970-C00018-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00813 CONTINUOUS NASHDY 5.0 01:18HVT-1 21.43 .064 1970.0926.2215 150.20 .314 .000
00814 [Cm= 38.1; W= 3.00; Tm= 1.68]
00815 [IARC= 6.00; SMIN= 141.94; SMAX= 946.27; SK= .030]
00816 [InterEventTime= 12.00]
00817 1970-C00019-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00818 CONTINUOUS NASHDY 5.0 01:18HVT-2 4.70 .018 1970.0926.2215 150.79 .316 .000
00819 [Cm= 44.6; W= 3.00; Tm= 1.72]
00820 [IARC= 6.00; SMIN= 179.29; SMAX= 896.47; SK= .030]
00821 [InterEventTime= 12.00]
00822 1970-C00020-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00823 CONTINUOUS NASHDY 5.0 01:18HVT-3 9.14 .110 1970.0926.2155 153.83 .322 .000
00824 [Cm= 41.7; W= 3.00; Tm= 1.12]
00825 [IARC= 6.00; SMIN= 179.29; SMAX= 323.73; SK= .030]
00826 [InterEventTime= 12.00]
00827 1970-C00021-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00828 ADD HYD + 5.0 02:21 73.56 .299 1970.0926.2210 151.27 n/a .000
00829 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00830 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00831 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00832 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00833 1970-C00022-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00834 ROUTE CHANNEL -> 5.0 02:23 108.84 .461 1970.0926.2215 151.25 n/a .000
00835 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00836 [I/S= 396 / 305 / 035]
00837 [Vmax= 401; Dmax= 293]
00838 1970-C00023-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00839 CONTINUOUS NASHDY 5.0 01:18HVT-1 20.21 .066 1970.0926.2155 150.11 .314 .000
00840 [Cm= 38.1; W= 3.00; Tm= 1.29]
00841 [IARC= 6.00; SMIN= 204.20; SMAX= \*\*\*\*\*; SK= .030]
00842 [InterEventTime= 12.00]
00843 1970-C00024-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00844 ADD HYD + 5.0 02:23 108.84 .466 1970.0926.2210 151.25 n/a .000
00845 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00846 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00847 [InterEventTime= 12.00]
00848 1970-C00025-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00849 ROUTE CHANNEL -> 5.0 02:24 129.05 .531 1970.0926.2210 151.07 n/a .000
00850 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00851 [I/S= 482 / 410 / 035]
00852 [Vmax= 566; Dmax= 319]
00853 1970-C00026-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00854 CONTINUOUS NASHDY 5.0 01:18HVT-2 11.61 .065 1970.0926.2150 150.20 .314 .000
00855 [Cm= 36.7; W= 3.00; Tm= .96]
00856 [IARC= 6.00; SMIN= 179.29; SMAX= 896.47; SK= .030]
00857 [InterEventTime= 12.00]
00858 1970-C00027-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00859 ADD HYD + 5.0 02:24 129.05 .519 1970.0926.2245 151.07 n/a .000
00860 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00861 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00862 1970-C00028-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00863 ROUTE CHANNEL -> 5.0 02:25 140.66 .556 1970.0926.2240 151.00 n/a .000
00864 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00865 [I/S= 482 / 410 / 035]
00866 [Vmax= 534; Dmax= 293]
00867 1970-C00029-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00868 CONTINUOUS NASHDY 5.0 01:18HVT-3 7.98 .051 1970.0926.2145 150.69 .315 .000
00869 [Cm= 42.6; W= 3.00; Tm= .89]
00870 [IARC= 6.00; SMIN= 141.94; SMAX= 946.27; SK= .030]
00871 [InterEventTime= 12.00]
00872 1970-C00030-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00873 ADD HYD + 5.0 02:25 140.66 .554 1970.0926.2245 151.00 n/a .000
00874 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00875 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00876 [InterEventTime= 12.00]
00877 1970-C00031-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00878 SAVE HYD + 5.0 01:26 148.64 .583 1970.0926.2240 150.38 n/a .000
00879 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00880 [I/S= 482 / 410 / 035]
00881 [Vmax= 534; Dmax= 293]
00882 1970-C00032-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00883 ROUTE CHANNEL -> 5.0 01:26 148.64 .578 1970.0926.2210 150.38 n/a .000
00884 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00885 [I/S= 482 / 410 / 035]
00886 [Vmax= 595; Dmax= 328]
00887 1970-C00033-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00888 CONTINUOUS NASHDY 5.0 01:18HVT-4 11.61 .065 1970.0926.2150 150.20 .314 .000
00889 [Cm= 35.1; W= 3.00; Tm= 1.21]
00890 [IARC= 6.00; SMIN= 179.29; SMAX= 896.47; SK= .030]
00891 [InterEventTime= 12.00]
00892 1970-C00034-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00893 ADD HYD + 5.0 02:25 140.66 .554 1970.0926.2245 151.00 n/a .000
00894 [ADf= 60.mins; Metric= 381; Digits= 4855; PTO= 477.80]
00895 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00896 [InterEventTime= 12.00]
00897 1970-C00035-----Dtm-ID-NHVD-----AREHA-QPEARms-TPeakDate\_hh:mm-----Rvmm-R.C-----DWfms
00898 ROUTE CHANNEL -> 5.0 01:26 148.64 .578 1970.0926.2210 150.38 n/a .000
00899 [IARC= 6.00; SMIN= 168.62; SMAX= \*\*\*\*\*; SK= .030]
00900 [I/S= 482 / 410 / 035]
00901 [Vmax= 595; Dmax= 328]

00901 \*\* END OF RUN : 1970
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01081 R1971C0030 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01082 ADD HYD + 5.0 02:02R1 148.64 .422 1971.0810.1715 155.11 n/a .000
01083 + 5.0 02:SOOTH-3 7.98 .033 1971.0810.1620 155.04 n/a .000
01084 SUM = 5.0 01:26 148.64 .422 1971.0810.1710 155.11 n/a .000
01085 R1971C0031 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01086 SAVE HYD 5.0 01:26 148.64 .422 1971.0810.1710 155.11 n/a .000
01087 #####
01088 remark:J6-BearBrook Tributary Upstream of Thunder Road Crossing
01089 R1971C0032 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01090 ROUTE CHANNEL -> 5.0 02:18R 148.64 .419 1971.0810.1710 155.11 n/a .000
01091 \* [RD= 5.0] out-> 5.0 01:86 148.64 .419 1971.0810.1710 155.11 n/a .000
01092 \* [S/N= 500 / 140 / 035]
01093 \* [Vmax = 553.0Dmax = 284]
01094 R1971C0033 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01095 CONTINUOUS NASHDY 5.0 01:86R 148.64 .419 1971.0810.1715 154.97 122 .000
01096 [Cm 39.5; Nm 3.00; Tps 1.23]
01097 [IAREC 6.00; SMIN=161.62; SMAX=666.70; SK= .030]
01098 [InterEventTime= 12.00]
01099 R1971C0034 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01100 ADD HYD 5.0 02:86R 148.64 .422 1971.0810.1715 155.11 n/a .000
01101 + 5.0 02:SOOTH-4 14.99 .044 1971.0810.1635 154.97 122 .000
01102 SUM = 5.0 01:Total 163.63 .456 1971.0810.1715 155.10 n/a .000
01103 #####
01104 [IAREC 6.00; SMIN=161.62; SMAX=666.70; SK= .030]
01105 [InterEventTime= 12.00]
01106 # CONTINUOUS RAINFALL DATA
01107 #####
01108 # \*\*\*\*\*
01109 # STORMS
01110 [IAREC 6.00; SMIN=161.62; SMAX=666.70; SK= .030]
01111 \*\* END OF RUN : 1971
01112 #####
01113 #####
01114 #####
01115 #####
01116 #####
01117 #####
01118 #####
01119 RvM-COMMANDS
01120 R1972C0002B -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01121 START
01122 [TERR = .00 hrs on 19720401]
01123 [METOUT= 2 (1=imperial, 2=metric output)]
01124 [NFORM= 0]
01125 [APRINT= 1971.0810.1715; MEDICA= 484; DRYCR= 4702; PTOF= 722.10]
01126 #####
01127 # SHOWNO / SAVD DATA FILE 4.39 .046 1972.0807.2315 304.41 422 .000
01128 [IAREC 6.00; SMIN=161.62; SMAX=666.70; SK= .030]
01129 [InterEventTime= 12.00]
01130 # Project Name: [THUNDER ROAD] Project Number: [2128]
01131 # Date : 04-28-2021
01132 # Modeller : [J.B]
01133 # Company : JFSaInc.
01134 # License # : 2549237
01135 #####
01136 # \*\*\*\*\*
01137 # \*\*\*\*\*
01138 # \*\*\*\*\*
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01157 # \*\*\*\*\*
01158 R1972C0003 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01159 CONTINUOUS NASHDY 5.0 01:86R 14.70 .125 1972.0808.430 304.41 422 .000
01160 [Cm 24.1; Nm 3.00; Tps 1.23]
01161 [IAREC 6.00; SMIN=161.62; SMAX=666.70; SK= .030]
01162 [InterEventTime= 12.00]
01163 R1972C0005 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01164 CONTINUOUS NASHDY 5.0 01:86R 12.44 .130 1972.0807.2315 305.77 423 .000
01165 [Cm 40.0; Nm 3.00; Tps 1.23]
01166 [IAREC 6.00; SMIN=91.01; SMAX=606.70; SK= .030]
01167 [InterEventTime= 12.00]
01168 R1972C0006 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01169 CONTINUOUS NASHDY 5.0 01:86R 2.36 .055 1972.0807.2310 312.29 432 .000
01170 [Cm 41.7; Nm 3.00; Tps 1.23]
01171 [IAREC 6.00; SMIN=25.21; SMAX=168.09; SK= .030]
01172 [InterEventTime= 12.00]
01173 R1972C0007 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01174 ADD HYD + 5.0 02:86R 34.70 .125 1972.0808.430 304.41 n/a .000
01175 + 5.0 02:SOOTH-2 32.86 .115 1972.0807.2315 305.77 n/a .000
01176 + 5.0 02:SOOTH-1 2.36 .055 1972.0807.2310 312.29 n/a .000
01177 SUM = 5.0 01:26 49.51 .229 1972.0808.0105 305.13 n/a .000
01178 R1972C0008 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01179 ROUTE CHANNEL -> 5.0 02:21 49.51 .229 1972.0808.0105 305.13 n/a .000
01180 \* [RD= 5.0] out-> 5.0 01:81 49.51 .229 1972.0808.0105 305.13 n/a .000
01181 \* [S/N= 478 / 440 / 035]
01182 \* [Vmax = 497.0Dmax = 284]
01183 R1972C0009 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01184 CONTINUOUS NASHDY 5.0 01:86R 4.39 .046 1972.0808.0120 306.73 425 .000
01185 [Cm 48.4; Nm 3.00; Tps 1.23]
01186 [IAREC 6.00; SMIN=67.24; SMAX=448.24; SK= .030]
01187 [InterEventTime= 12.00]
01188 R1972C0010 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01189 CONTINUOUS NASHDY 5.0 01:86R 3.61 .040 1972.0807.2340 305.17 423 .000
01190 [Cm 47.4; Nm 3.00; Tps 1.23]
01191 [IAREC 6.00; SMIN=115.26; SMAX=768.40; SK= .030]
01192 [InterEventTime= 12.00]
01193 R1972C0011 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01194 CONTINUOUS NASHDY 5.0 01:86R 3.84 .042 1972.0808.0105 306.44 426 .000
01195 [Cm 48.4; Nm 3.00; Tps 1.23]
01196 [IAREC 6.00; SMIN=73.13; SMAX=487.55; SK= .030]
01197 [InterEventTime= 12.00]
01198 R1972C0012 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01199 CONTINUOUS NASHDY 5.0 01:86R 5.29 .040 1972.0807.2315 304.73 422 .000
01200 [Cm 48.4; Nm 3.00; Tps 1.23]
01201 [IAREC 6.00; SMIN=141.94; SMAX=946.27; SK= .030]
01202 [InterEventTime= 12.00]
01203 R1972C0013 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01204 CONTINUOUS NASHDY 5.0 01:86R 1.21 .010 1972.0807.2315 304.31 421 .000
01205 [Cm 24.1; Nm 3.00; Tps 1.23]
01206 [IAREC 6.00; SMIN=179.29; SMAX=666.70; SK= .030]
01207 [InterEventTime= 12.00]
01208 R1972C0014 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01209 ROUTE CHANNEL -> 5.0 02:18R 1.21 .010 1972.0807.2315 304.31 n/a .000
01210 \* [RD= 5.0] out-> 5.0 01:81 1.21 .006 1972.0808.0105 304.31 n/a .000
01211 \* [S/N= 500 / 140 / 035]
01212 \* [Vmax = 126.0Dmax = 066]
01213 R1972C0015 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01214 CONTINUOUS NASHDY 5.0 01:86R 5.71 .093 1972.0807.2315 306.44 424 .000
01215 [Cm 58.5; Nm 3.00; Tps .89]
01216 [IAREC 6.00; SMIN=73.13; SMAX=487.55; SK= .030]
01217 [InterEventTime= 12.00]
01218 R1972C0016 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01219 ADD HYD + 5.0 02:81 49.51 .229 1972.0808.0120 305.13 n/a .000
01220 + 5.0 02:SOOTH-1 3.61 .040 1972.0807.2340 305.17 n/a .000
01221 + 5.0 02:SOOTH-2 3.61 .040 1972.0807.2340 305.17 n/a .000
01222 + 5.0 02:SOOTH-3 5.71 .093 1972.0807.2315 306.44 n/a .000
01223 + 5.0 02:18R 3.84 .042 1972.0808.0105 306.44 n/a .000
01224 + 5.0 02:18R 5.29 .040 1972.0807.2315 304.73 n/a .000
01225 + 5.0 02:18R 1.21 .010 1972.0808.0105 304.31 n/a .000
01226 SUM = 5.0 01:22 73.56 .470 1972.0808.0105 305.36 n/a .000
01227 R1972C0017 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01228 ROUTE CHANNEL -> 5.0 02:12 73.56 .470 1972.0808.0105 305.36 n/a .000
01229 \* [RD= 5.0] out-> 5.0 01:82 73.56 .466 1972.0808.0105 305.36 n/a .000
01230 \* [S/N= 389 / 560 / 035]
01231 \* [Vmax = 614.0Dmax = 209]
01232 R1972C0018 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01233 CONTINUOUS NASHDY 5.0 01:86R 21.43 .104 1972.0808.0125 304.21 421 .000
01234 [Cm 36.1; Nm 3.00; Tps 1.61]
01235 [IAREC 6.00; SMIN=191.89; SMAX=946.27; SK= .030]
01236 [InterEventTime= 12.00]
01237 R1972C0019 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01238 CONTINUOUS NASHDY 5.0 01:86R 4.70 .029 1972.0808.0130 304.83 422 .000
01239 [Cm 44.6; Nm 3.00; Tps 1.72]
01240 [IAREC 6.00; SMIN=141.94; SMAX=896.47; SK= .030]
01241 [InterEventTime= 12.00]
01242 R1972C0020 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01243 CONTINUOUS NASHDY 5.0 01:86R 1.44 .162 1972.0807.2345 308.03 427 .000
01244 [Cm 68.4; Nm 3.00; Tps 1.12]
01245 [IAREC 6.00; SMIN=43.73; SMAX=323.73; SK= .030]
01246 [InterEventTime= 12.00]
01247 R1972C0021 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01248 ADD HYD 5.0 02:82 73.56 .466 1972.0808.0105 305.36 n/a .000
01249 + 5.0 02:18R 21.43 .104 1972.0808.0125 304.21 n/a .000
01250 + 5.0 02:18R 4.70 .029 1972.0808.0130 304.83 n/a .000
01251 + 5.0 02:12 9.14 .162 1972.0807.2345 308.03 n/a .000
01252 SUM = 5.0 01:26 148.84 .748 1972.0808.0105 305.13 n/a .000
01253 R1972C0022 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01254 CONTINUOUS NASHDY 5.0 02:23 108.84 .748 1972.0808.0105 305.13 n/a .000
01255 \* [RD= 5.0] out-> 5.0 01:83 108.84 .731 1972.0808.0105 305.13 n/a .000
01256 \* [S/N= 396 / 305 / 035]
01257 \* [Vmax = 462.0Dmax = 212]
01258 R1972C0023 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01259 CONTINUOUS NASHDY 5.0 01:86R 20.21 .107 1972.0808.0105 304.12 421 .000
01260 [Cm 36.5; Nm 3.00; Tps 1.40]
01261 [IAREC 6.00; SMIN=204.20; SMAX=946.27; SK= .030]
01262 [InterEventTime= 12.00]
01263 R1972C0024 -----DtmIn-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWfmsC
01264 ADD HYD + 5.0 02:83 108.84 .731 1972.0808.0105 305.13 n/a .000
01265 + 5.0 02:SOOTH-1 20.21 .107 1972.0808.0105 304.12 n/a .000
01266 SUM = 5.0 01:26 148.64 .419 1971.0810.1710 155.11 n/a .000
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01441 [Vmax :562;Dmax: 12.00]
01442 R1973-C0018 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01443 CONTINUOUS NASHDY 5.0 01:A1A 21.43 .076 1973.0908.21:25 262.89 425 .000
01444 [Cm: 36.1; N: 3.00; Tp: 1.68]
01445 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01446 [InterEventTime: 12.00]
01447 R1973-C0019 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01448 CONTINUOUS NASHDY 5.0 01:A1B 4.70 .022 1973.0908.21:30 263.43 426 .000
01449 [Cm: 44.6; N: 3.00; Tp: 1.72]
01450 [IARC: 6.00; SMIN: 39.71; SMAX: 896.47; SK: -030]
01451 [InterEventTime: 12.00]
01452 R1973-C0020 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01453 CONTINUOUS NASHDY 5.0 01:A12 9.14 .130 1973.0908.20:50 266.34 430 .000
01454 [Cm: 64.1; N: 3.00; Tp: 1.12]
01455 [IARC: 6.00; SMIN: 43.84; SMAX: 323.73; SK: -030]
01456 [InterEventTime: 12.00]
01457 R1973-C0021 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01458 ADD HYD 5.0 02:R82 73.56 .357 1973.0908.21:15 263.85 n/a .000
01459 + 5.0 02:R1A 21.43 .076 1973.0908.21:25 262.89 n/a .000
01460 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01461 + 5.0 02:R1B 4.70 .022 1973.0908.21:30 263.43 n/a .000
01462 + 5.0 02:A23 9.14 .130 1973.0908.20:50 266.34 n/a .000
01463 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01464 + 5.0 02:R3A 3.84 .011 1974.0719.11:55 74.81 n/a .000
01465 + 5.0 02:A3B 5.29 .010 1974.0719.11:45 74.68 n/a .000
01466 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01467 + 5.0 02:R3B 5.29 .010 1974.0719.11:45 74.68 n/a .000
01468 R1974-C0017 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01469 ROUTE CHANNEL -> 5.0 02:12 73.56 .124 1974.0719.11:55 74.87 n/a .000
01470 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01471 [L/S/N: 396./ /305./035]
01472 + 5.0 02:12 73.56 .122 1974.0719.2:00 74.87 n/a .000
01473 [Vmax :427;Dmax: 14.7]
01474 R1973-C0024 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01475 ADD HYD 5.0 02:R83 108.84 .558 1973.0908.21:25 263.84 n/a .000
01476 + 5.0 02:R1A 21.43 .076 1973.0908.21:25 262.89 n/a .000
01477 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01478 + 5.0 02:R1B 4.70 .022 1973.0908.21:30 263.43 n/a .000
01479 + 5.0 02:A24 129.05 .634 1973.0908.21:20 263.47 n/a .000
01480 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01481 [L/S/N: 482./ /440./035]
01482 + 5.0 02:R1A 21.43 .076 1973.0908.21:25 262.89 n/a .000
01483 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01484 + 5.0 02:A24 129.05 .622 1973.0908.21:25 263.47 n/a .000
01485 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01486 [InterEventTime: 12.00]
01487 R1973-C0025 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01488 ADD HYD 5.0 02:R84 129.05 .622 1973.0908.21:25 263.47 n/a .000
01489 + 5.0 02:SOOTH-2 11.61 .064 1973.0908.20:45 262.89 n/a .000
01490 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01491 + 5.0 02:R1A 21.43 .076 1973.0908.21:25 262.89 n/a .000
01492 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01493 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01494 [L/S/N: 181./ /500./035]
01495 [IARC: 6.00; SMIN: 41.54; SMAX: 896.47; SK: -030]
01496 R1973-C0029 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01497 CONTINUOUS NASHDY 5.0 01:SOOTH-1 7.98 .060 1973.0908.20:40 263.34 426 .000
01498 [Cm: 42.6; N: 3.00; Tp: .89]
01499 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01500 [InterEventTime: 12.00]
01501 R1973-C0030 ----DtmIn-ID:HYD----AREHA-GPEARCom-TPeakDate\_hh:mm----RvM-R-C---DWFms
01502 ADD HYD 5.0 02:SOOTH-3 7.98 .060 1973.0908.20:40 263.34 n/a .000
01503 + 5.0 02:SOOTH-3 7.98 .060 1973.0908.20:40 263.34 n/a .000
01504 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01505 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01506 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01507 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01508 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01509 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01510 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01511 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01512 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01513 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01514 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01515 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01516 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01517 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01518 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01519 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01520 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01521 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01522 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01523 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01524 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01525 [IARC: 6.00; SMIN: 41.94; SMAX: 946.27; SK: -030]
01526 # CONTINUOUS RAINFALL DATA
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01528 # STORMS
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01795 # \*\*\*\*\*
01796 # \*\*\*\*\*
01797 # \*\*\*\*\*
01798 # \*\*\*\*\*
01799 # \*\*\*\*\*
01800 # \*\*\*\*\*







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02521 [I#REC# 6.00# SMIN:204.20;# SMAX:*****# SK# -030]
02522 [InterEventTime= 12.00]
02523 R1978R-C00024-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02524 ADD HYD * 5.0 02:02R3 108.84 .417 1978.0618.18:30 166.64 n/a .000
02525 [I#S/n= 482.7 / 4407.035]
02526 [I#S/n= 482.7 / 4407.035]
02527 R1978R-C00025-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02528 ROUTE CHANNEL -> 5.0 02:24 129.05 .473 1978.0618.18:30 166.61 n/a .000
02529 [I#S/n= 482.7 / 4407.035]
02530 [I#S/n= 482.7 / 4407.035]
02531 [I#S/n= 482.7 / 4407.035]
02532 R1978R-C00026-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02533 CONTINUOUS RAINFALL DATA 5.0 01:00T#2 11.61 .049 1978.0618.17:45 166.43 326 .000
02534 [I#S/n= 482.7 / 4407.035]
02535 [I#S/n= 482.7 / 4407.035]
02536 [I#S/n= 482.7 / 4407.035]
02537 R1978R-C00027-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02538 ADD HYD * 5.0 02:02R4 129.05 .461 1978.0618.18:40 166.61 n/a .000
02539 [I#S/n= 482.7 / 4407.035]
02540 [I#S/n= 482.7 / 4407.035]
02541 R1978R-C00028-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02542 ROUTE CHANNEL -> 5.0 02:25 140.66 .491 1978.0618.18:40 166.59 n/a .000
02543 [I#S/n= 482.7 / 4407.035]
02544 [I#S/n= 482.7 / 4407.035]
02545 [I#S/n= 482.7 / 4407.035]
02546 R1978R-C00029-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02547 CONTINUOUS RAINFALL DATA 5.0 01:00T#3 7.98 .047 1978.0618.17:45 166.32 326 .000
02548 [I#S/n= 482.7 / 4407.035]
02549 [I#S/n= 482.7 / 4407.035]
02550 R1978R-C00030-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02551 ADD HYD * 5.0 02:02R3 148.64 .509 1978.0618.18:40 166.59 n/a .000
02552 [I#S/n= 482.7 / 4407.035]
02553 [I#S/n= 482.7 / 4407.035]
02554 [I#S/n= 482.7 / 4407.035]
02555 [I#S/n= 482.7 / 4407.035]
02556 [I#S/n= 482.7 / 4407.035]
02557 R1978R-C00031-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02558 SAVE HYD * 5.0 01:26 148.64 .514 1978.0618.18:40 166.59 n/a .000
02559 [I#S/n= 482.7 / 4407.035]
02560 [I#S/n= 482.7 / 4407.035]
02561 [I#S/n= 482.7 / 4407.035]
02562 R1978R-C00032-----D#AIN-ID#HYD-----AREAH-QPEA#GMS-TpeakDate_hh:mm-----R#V#M-R-C-----DW#FMS
02563 CONTINUOUS RAINFALL DATA 5.0 01:00T#4 34.785 .057 1978.0618.18:05 166.47 326 .000
02564 [I#S/n= 482.7 / 4407.035]
02565 [I#S/n= 482.7 / 4407.035]
02566 [I#S/n= 482.7 / 4407.035]
02567 [I#S/n= 482.7 / 4407.035]
02568 [I#S/n= 482.7 / 4407.035]
02569 [I#S/n= 482.7 / 4407.035]
02570 [I#S/n= 482.7 / 4407.035]
02571 [I#S/n= 482.7 / 4407.035]
02572 [I#S/n= 482.7 / 4407.035]
02573 [I#S/n= 482.7 / 4407.035]
02574 [I#S/n= 482.7 / 4407.035]
02575 [I#S/n= 482.7 / 4407.035]
02576 # CONTINUOUS RAINFALL DATA
02577 # CONTINUOUS RAINFALL DATA
02578 # CONTINUOUS RAINFALL DATA
02579 # STORMS
02580 ***** END OF RUN : 1978
02581 ***** END OF RUN : 1978
02582 ***** END OF RUN : 1978
02583 ***** END OF RUN : 1978
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02693 ***** END OF RUN : 1978
02694 ***** END OF RUN : 1978
02695 ***** END OF RUN : 1978
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02697 ***** END OF RUN : 1978
02698 ***** END OF RUN : 1978
02699 ***** END OF RUN : 1978
02700 ***** END OF RUN : 1978
    
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03601 R1983-C0030 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03602 ADD HYD ..... 5.0 02:02R1 ..... 140.76 ..... 475 1983.1005.20.25 149.19 n/a ..... 0000
03603 + 5.0 02:SOOTH-3 ..... 7.98 ..... 032 1983.1005.16:20 149.39 n/a ..... 0000
03604 SIM# ..... 5.0 01:26 ..... 148.64 ..... 501 1983.1005.20:20 149.39 n/a ..... 0000
03605 R1983-C0031 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03606 SAVE HYD ..... 5.0 01:26 ..... 148.64 ..... 501 1983.1005.20:20 149.39 n/a ..... 0000
03607 #####
03608 remark:J6-BearBrook Tributary Upstream of Thunder Road Crossing
03609 R1983-C0032 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03610 ROUTE CHANNEL -> 5.0 02:18 ..... 148.64 ..... 501 1983.1005.20:20 149.39 n/a ..... 0000
03611 [R/W= 5.0] out-> 5.0 01:86 ..... 148.64 ..... 500 1983.1005.20:30 149.39 n/a ..... 0000
03612 [L/S= 447 / 440 / 035]
03613 (Vmax= 573;Dmax= 106)
03614 R1983-C0033 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03615 CONTINUOUS NASHDY ..... 34.789 ..... 048 1983.1005.16:45 148.51 n/a ..... 0000
03616 [Cm= 39.5; Nr= 3.00; Tps= 1.23]
03617 [AREC= 6.00; SMIN=161.62; SMAX=\*\*\*\*\*; SK= .030]
03618 [InterEventTime= 12.00]
03619 R1983-C0034 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03620 ADD HYD ..... 5.0 02:02R1 ..... 148.64 ..... 501 1983.1005.20:20 149.39 n/a ..... 0000
03621 + 5.0 02:SOOTH-4 ..... 14.99 ..... 048 1983.1005.16:45 148.51 n/a ..... 0000
03622 SIM# ..... 5.0 01:Total ..... 163.63 ..... 545 1983.1005.20:25 149.31 n/a ..... 0000
03623 #####
03624 #####
03625 #####
03626 # CONTINUOUS RAINFALL DATA
03627 #####
03628 #####
03629 # STORMS
03630 [AREC= 6.00; SMIN=141.94; SMAX=946.27; SK= .030]
03631 \*\*\* END OF RUN : 1983
03632 #####
03633 #####
03634 #####
03635 #####
03636 #####
03637 #####
03638 #####
03639 #####
03640 R1984-C0002 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03641 START
03642 [TERR= .00 hrs on 19840401]
03643 [METOUT= 2 (1=Imperial, 2=metric output)]
03644 [NFORM= 0]
03645 [APIN= 1984.00; APIDK= 9900; APIDK= 9956]
03646 #####
03647 # SWINGING / SWFT DATA FILE 4.39 ..... 021 1984.0813. 7:55 147.61 n/a ..... 0000
03648 #####
03649 # Project Name: [THUNDER ROAD] Project Number: [2128]
03650 # Date : 04-28-2021
03651 # Modeller : [J.B]
03652 # Company : JFSAINC
03653 # License # : 2549237
03654 #####
03655 #####
03656 #####
03657 # Create International Airport - April 1st to October 31st
03658 R1984-C0002 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03659 \* READ ARE DATA
03660 [Filename= YOM\_1967\_2007.123 ]
03661 [Start\_date= 1984.0401; End\_date= 1984.1031]
03662 [DPR= 6.00; Length= 1983.1005.20.25; Dryhrs= 3400; PTO= 149.30]
03663 #####
03664 Maximum average rainfall intensities over
03665 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
03666 17.80 12.40 9.70 7.30 5.58 4.39 3.30 2.60 2.20 mm/hr
03667 17.80 19.40 22.70 26.00 36.10 44.30 57.00 57.00 72.20 mm
03668 1984012 1984012 1984012 1984012 1984012 1984012 1984012 1984012 1984012 date
03669 #####
03670 Number of rainfall events per following interval time
03671 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
03672 71 87 85 50 44 38 32 26 19
03673 #####
03674 Number of events with at least the following durations
03675 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
03676 3 2 2 1 1 0 0 0 0
03677 #####
03678 R1984-C0003 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03679 COMPUTE API
03680 [APIN= 50.00; APIDK= 9900; APIDK= 9956]
03681 [APIN= 1984.00; APIDK= 9900; APIDK= 9956]
03682 R1984-C0004 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03683 CONTINUOUS NASHDY ..... 5.0 01:SOOTH-1 ..... 34.70 ..... 058 1984.0813.11:10 147.35 n/a ..... 0000
03684 [Cm= 41.4; Nr= 3.00; Tps= 1.46]
03685 [AREC= 6.00; SMIN=161.62; SMAX=\*\*\*\*\*; SK= .030]
03686 [InterEventTime= 12.00]
03687 R1984-C0005 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03688 CONTINUOUS NASHDY ..... 5.0 01:SOOTH-2 ..... 12.44 ..... 058 1984.0813. 7:25 147.61 n/a ..... 0000
03689 [Cm= 42.0; Nr= 3.00; Tps= 1.46]
03690 [AREC= 6.00; SMIN= 91.01; SMAX=606.70; SK= .030]
03691 [InterEventTime= 12.00]
03692 R1984-C0006 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03693 CONTINUOUS NASHDY ..... 5.0 01:HWY-1 ..... 2.36 ..... 022 1984.0813. 7:10 150.42 n/a ..... 0000
03694 [Cm= 41.7; Nr= 3.00; Tps= 1.46]
03695 [AREC= 6.00; SMIN= 25.21; SMAX=168.09; SK= .030]
03696 [InterEventTime= 12.00]
03697 R1984-C0007 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03698 ADD HYD ..... 5.0 02:SOOTH-1 ..... 34.70 ..... 058 1984.0813.11:10 147.35 n/a ..... 0000
03699 + 5.0 02:SOOTH-2 ..... 32.87 ..... 13.00 13.60 11.17 6.60 3.30 1.65 1.11 89 60 mm/hr
03700 + 5.0 02:HWY-1 ..... 2.36 ..... 022 1984.0813. 7:10 150.42 n/a ..... 0000
03701 SIM# ..... 5.0 01:26 ..... 49.51 ..... 111 1984.0813. 7:45 147.56 n/a ..... 0000
03702 [L/S= 478 / 440 / 035]
03703 (Vmax= 595;Dmax= 148)
03704 R1984-C0009 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03705 CONTINUOUS NASHDY ..... 5.0 01:INT-1 ..... 4.39 ..... 021 1984.0813. 7:55 147.95 n/a ..... 0000
03706 [Cm= 40.4; Nr= 3.00; Tps= 1.46]
03707 [AREC= 6.00; SMIN= 67.24; SMAX=448.24; SK= .030]
03708 [InterEventTime= 12.00]
03709 R1984-C0010 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03710 CONTINUOUS NASHDY ..... 5.0 01:INT-2 ..... 3.61 ..... 018 1984.0813. 6:50 147.49 n/a ..... 0000
03711 [Cm= 47.4; Nr= 3.00; Tps= 1.46]
03712 [AREC= 6.00; SMIN=115.26; SMAX=768.40; SK= .030]
03713 [InterEventTime= 12.00]
03714 R1984-C0011 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03715 CONTINUOUS NASHDY ..... 5.0 01:AJA ..... 3.84 ..... 019 1984.0813. 7:35 147.81 n/a ..... 0000
03716 [Cm= 48.4; Nr= 3.00; Tps= 1.46]
03717 [AREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
03718 [InterEventTime= 12.00]
03719 R1984-C0012 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03720 CONTINUOUS NASHDY ..... 5.0 01:AJB ..... 5.29 ..... 019 1984.0813. 7:20 147.41 n/a ..... 0000
03721 [Cm= 42.4; Nr= 3.00; Tps= 1.46]
03722 [AREC= 6.00; SMIN=141.94; SMAX=946.27; SK= .030]
03723 [InterEventTime= 12.00]
03724 R1984-C0013 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03725 CONTINUOUS NASHDY ..... 5.0 01:AJC ..... 1.21 ..... 005 1984.0813. 6:45 147.33 n/a ..... 0000
03726 [Cm= 21.8; Nr= 3.00; Tps= 1.46]
03727 [AREC= 6.00; SMIN=179.29; SMAX=\*\*\*\*\*; SK= .030]
03728 [InterEventTime= 12.00]
03729 R1984-C0014 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03730 ROUTE CHANNEL -> 5.0 02:AJC ..... 1.21 ..... 005 1984.0813. 6:45 147.33 n/a ..... 0000
03731 [R/W= 5.0] out-> 5.0 01:AJC ..... 1.21 ..... 003 1984.0813. 7:05 147.61 n/a ..... 0000
03732 [L/S= 500 / 140 / 035]
03733 (Vmax= 106;Dmax= 148)
03734 R1984-C0015 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03735 CONTINUOUS NASHDY ..... 5.0 01:INT-3 ..... 5.71 ..... 039 1984.0813. 6:45 147.81 n/a ..... 0000
03736 [Cm= 48.5; Nr= 3.00; Tps= .89]
03737 [AREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
03738 [InterEventTime= 12.00]
03739 R1984-C0016 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03740 ADD HYD ..... 5.0 02:R1 ..... 49.51 ..... 110 1984.0813. 8:05 147.56 n/a ..... 0000
03741 + 5.0 02:INT-1 ..... 3.61 ..... 018 1984.0813. 7:55 147.81 n/a ..... 0000
03742 + 5.0 02:INT-2 ..... 3.61 ..... 018 1984.0813. 6:50 147.49 n/a ..... 0000
03743 + 5.0 02:INT-3 ..... 5.71 ..... 039 1984.0813. 6:45 147.81 n/a ..... 0000
03744 + 5.0 02:AJA ..... 3.84 ..... 019 1984.0813. 7:35 147.81 n/a ..... 0000
03745 + 5.0 02:AJB ..... 5.29 ..... 019 1984.0813. 7:20 147.41 n/a ..... 0000
03746 + 5.0 02:AJC ..... 1.21 ..... 003 1984.0813. 7:05 147.61 n/a ..... 0000
03747 SIM# ..... 5.0 01:22 ..... 73.56 ..... 214 1984.0813. 7:35 147.60 n/a ..... 0000
03748 R1984-C0017 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03749 ROUTE CHANNEL -> 5.0 02:22 ..... 73.56 ..... 214 1984.0813. 7:40 147.60 n/a ..... 0000
03750 [R/W= 5.0] out-> 5.0 01:82 ..... 73.56 ..... 213 1984.0813. 7:40 147.60 n/a ..... 0000
03751 (Vmax= 466;Dmax= 142)
03752 R1984-C0018 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03753 CONTINUOUS NASHDY ..... 5.0 01:AJA ..... 21.43 ..... 052 1984.0813. 8:05 147.31 n/a ..... 0000
03754 [Cm= 36.1; Nr= 3.00; Tps= 1.61]
03755 [AREC= 6.00; SMIN=191.83; SMAX=\*\*\*\*\*; SK= .030]
03756 [InterEventTime= 12.00]
03757 R1984-C0019 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03758 CONTINUOUS NASHDY ..... 5.0 01:AJB ..... 4.70 ..... 014 1984.0813. 8:05 147.43 n/a ..... 0000
03759 [Cm= 44.6; Nr= 3.00; Tps= 1.72]
03760 [AREC= 6.00; SMIN=141.94; SMAX=946.27; SK= .030]
03761 [InterEventTime= 12.00]
03762 R1984-C0020 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03763 CONTINUOUS NASHDY ..... 5.0 01:AJC ..... 1.14 ..... 068 1984.0813. 7:05 148.60 n/a ..... 0000
03764 [Cm= 48.4; Nr= 3.00; Tps= 1.12]
03765 [AREC= 6.00; SMIN= 43.73; SK= .030]
03766 [InterEventTime= 12.00]
03767 R1984-C0021 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03768 ADD HYD ..... 5.0 02:R2 ..... 73.56 ..... 213 1984.0813. 7:40 147.60 n/a ..... 0000
03769 + 5.0 02:AJA ..... 21.43 ..... 052 1984.0813. 8:05 147.31 n/a ..... 0000
03770 + 5.0 02:AJB ..... 4.70 ..... 014 1984.0813. 8:05 147.43 n/a ..... 0000
03771 + 5.0 02:AJC ..... 1.14 ..... 068 1984.0813. 7:05 148.60 n/a ..... 0000
03772 SIM# ..... 5.0 01:22 ..... 73.56 ..... 214 1984.0813. 7:35 147.60 n/a ..... 0000
03773 R1984-C0022 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03774 ROUTE CHANNEL -> 5.0 02:23 ..... 108.84 ..... 341 1984.0813. 7:35 147.62 n/a ..... 0000
03775 [R/W= 5.0] out-> 5.0 01:83 ..... 108.84 ..... 336 1984.0813. 7:35 147.62 n/a ..... 0000
03776 [L/S= 396 / 305 / 035]
03777 (Vmax= 106;Dmax= 148)
03778 R1984-C0023 .....D-Tmin-ID-NHYD.....AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFCMS
03779 CONTINUOUS NASHDY ..... 5.0 01:SOOTH-1 ..... 20.21 ..... 052 1984.0813. 7:35 147.30 n/a ..... 0000
03780 [Cm= 36.5; Nr= 3.00; Tps= 1.40]

03961 [Vmax :455;Dmax: 12.00]
03962 R195-C0018 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03963 CONTINUOUS NASHYD 5.0 01:18A 21.43 .044 1985.0618, 1:25 154.88 340 .000
03964 [Cm :36.1; Nm :3.00; Tm :.96]
03965 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03966 [InterEventTime: 12.00]
03967 R195-C0019 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03968 CONTINUOUS NASHYD 5.0 01:18A 4.70 .013 1985.0618, 1:25 155.35 341 .000
03969 [Cm :44.6; Nm :3.00; Tm :.72]
03970 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03971 [InterEventTime: 12.00]
03972 R195-C0020 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03973 CONTINUOUS NASHYD 5.0 01:12 9.14 .070 1985.0618, 0:35 158.09 347 .000
03974 [Cm :64.1; Nm :3.00; Tm :.12]
03975 [IAREC :6.0; SMIN:41.84; SMAX:323.73; SK: -030]
03976 [InterEventTime: 12.00]
03977 R195-C0021 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03978 ADD HYD 5.0 02:82 73.56 .201 1985.0618, 1:05 155.79 n/a .000
03979 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03980 [InterEventTime: 12.00]
03981 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03982 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03983 R195-C0022 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03984 ROUTE CHANNEL -> 5.0 02:23 108.84 .321 1985.0618, 1:00 155.79 n/a .000
03985 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03986 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03987 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03988 R195-C0023 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03989 CONTINUOUS NASHYD 5.0 01:SOOTH-1 20.21 .043 1985.0618, 1:00 154.82 340 .000
03990 [Cm :35.8; Nm :3.00; Tm :.96]
03991 [IAREC :6.0; SMIN:204.20; SMAX:896.47; SK: -030]
03992 [InterEventTime: 12.00]
03993 R195-C0024 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03994 ADD HYD 5.0 02:83 108.84 .315 1985.0618, 1:20 155.79 n/a .000
03995 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03996 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
03997 R195-C0025 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
03998 ROUTE CHANNEL -> 5.0 02:24 129.05 .357 1985.0618, 1:15 155.64 n/a .000
03999 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04000 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04001 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04002 R195-C0026 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04003 CONTINUOUS NASHYD 5.0 01:SOOTH-2 11.61 .031 1985.0618, 0:30 154.88 340 .000
04004 [Cm :36.7; Nm :3.00; Tm :.96]
04005 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04006 [InterEventTime: 12.00]
04007 R195-C0027 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04008 ADD HYD 5.0 02:84 129.05 .353 1985.0618, 1:30 155.64 n/a .000
04009 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04010 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04011 R195-C0028 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04012 ROUTE CHANNEL -> 5.0 02:25 140.66 .377 1985.0618, 1:25 155.57 n/a .000
04013 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04014 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04015 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04016 R195-C0029 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04017 CONTINUOUS NASHYD 5.0 01:SOOTH-3 7.98 .029 1985.0618, 0:25 155.26 340 .000
04018 [Cm :42.6; Nm :3.00; Tm :.89]
04019 [IAREC :6.0; SMIN:141.94; SMAX:896.47; SK: -030]
04020 [InterEventTime: 12.00]
04021 R195-C0030 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04022 ADD HYD 5.0 02:SOOTH-2 148.64 .395 1985.0618, 1:35 155.56 n/a .000
04023 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04024 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04025 R195-C0031 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04026 SAVE HYD 5.0 01:26 148.64 .397 1985.0618, 1:30 155.56 n/a .000
04027 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04028 remark:16-Bearbrook Tributary Upstream of Thunder Road Crossing
04029 R195-C0032 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04030 ROUTE CHANNEL -> 5.0 01:26 148.64 .395 1985.0618, 1:30 155.56 n/a .000
04031 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04032 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04033 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04034 R195-C0033 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04035 CONTINUOUS NASHYD 5.0 01:SOOTH-4 24.89 .040 1985.0618, 0:45 155.42 340 .000
04036 [Cm :39.5; Nm :3.00; Tm :1.23]
04037 [IAREC :6.0; SMIN:115.26; SMAX:896.47; SK: -030]
04038 [InterEventTime: 12.00]
04039 R195-C0034 ID-HYD AREHA-OPERA-TPeakDate\_hh:mm--RvM-R-C--DWFFms
04040 ADD HYD 5.0 02:SOOTH-4 14.99 .040 1985.0618, 0:45 155.02 n/a .000
04041 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04042 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04043 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04044 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04045 [IAREC :6.0; SMIN:41.84; SMAX:896.47; SK: -030]
04046 # CONTINUOUS RAINFALL DATA
04047 # SWINNO / HWY DATA FILE
04048 #
04049 # STORMS
04050 #
04051 # END OF RUN : 1985
04052 #
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04321 [IAREC 6.00] SMIN: 25.21; SMAX:168.09; SK: -030]
04322 [InterEventTime= 12.00]
04323 ADD HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04324 1987-000007 + 5.0 02:HYD-1 34.70 .078 1987.0724.05.00 189.83 n/a .000
04325 CONTINUOUS NASHDY 5.0 01:SOOTH-1 12.44 .084 1987.0724.22.40 190.52 n/a .000
04326 + 5.0 02:INT-2 2.36 .038 1987.0724.15.40 194.66 n/a .000
04327 [I/S= 478 / 440 / 035]
04328 1987-000008 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04329 ROUTE CHANNEL -> 5.0 02:IA 49.51 .176 1987.0724.22.45 190.23 n/a .000
04330 [I/S= 478 / 440 / 035]
04331 [I/S= 478 / 440 / 035]
04332 [I/S= 478 / 440 / 035]
04333 1987-000009 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04334 CONTINUOUS NASHDY 5.0 01:SOOTH-1 4.39 .031 1987.0724.16.05 191.01 338 .000
04335 [CN: 68.4; N: 3.00; Tm: .89]
04336 [IAREC 6.00] SMIN: 67.24; SMAX:448.24; SK: -030]
04337 [InterEventTime= 12.00]
04338 1987-000010 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04339 CONTINUOUS NASHDY 5.0 01:SOOTH-2 3.61 .025 1987.0724.22.20 190.21 337 .000
04340 [CN: 68.4; N: 3.00; Tm: .89]
04341 [IAREC 6.00] SMIN:115.26; SMAX:768.40; SK: -030]
04342 [InterEventTime= 12.00]
04343 1987-000011 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04344 CONTINUOUS NASHDY 5.0 01:IA 3.84 .028 1987.0724.15.55 190.87 338 .000
04345 [IAREC 6.00] SMIN: 73.13; SMAX:487.55; SK: -030]
04346 [InterEventTime= 12.00]
04347 1987-000012 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04348 CONTINUOUS NASHDY 5.0 01:IA 5.29 .027 1987.0724.22.40 189.99 337 .000
04349 [CN: 42.6; N: 3.00; Tm: .89]
04350 [IAREC 6.00] SMIN:141.94; SMAX:946.27; SK: -030]
04351 [InterEventTime= 12.00]
04352 1987-000013 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04353 CONTINUOUS NASHDY 5.0 01:IA 1.21 .006 1987.0724.22.10 189.78 336 .000
04354 [CN: 31.1; N: 3.00; Tm: 1.61]
04355 [IAREC 6.00] SMIN:179.29; SMAX:*****; SK: -030]
04356 [InterEventTime= 12.00]
04357 1987-000014 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04358 ROUTE CHANNEL -> 5.0 02:IA 1.21 .006 1987.0724.22.20 189.78 n/a .000
04359 [IAREC 6.00] SMIN:179.29; SMAX:*****; SK: -030]
04360 [InterEventTime= 12.00]
04361 [I/S= 500 / 140 / 035]
04362 [I/S= 500 / 140 / 035]
04363 1987-000015 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04364 CONTINUOUS NASHDY 5.0 01:INT-3 5.71 .056 1987.0724.15.30 190.87 338 .000
04365 [CN: 68.4; N: 3.00; Tm: .89]
04366 [IAREC 6.00] SMIN: 73.13; SMAX:487.55; SK: -030]
04367 [InterEventTime= 12.00]
04368 1987-000016 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04369 ADD HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04370 + 5.0 02:IA 49.51 .173 1987.0724.23.00 190.23 n/a .000
04371 + 5.0 02:INT-2 3.61 .025 1987.0724.22.40 190.21 n/a .000
04372 + 5.0 02:INT-2 2.36 .038 1987.0724.15.40 194.66 n/a .000
04373 + 5.0 02:IA 49.51 .176 1987.0724.22.45 190.23 n/a .000
04374 + 5.0 02:IA 49.51 .176 1987.0724.22.45 190.23 n/a .000
04375 + 5.0 02:IA 49.51 .176 1987.0724.22.45 190.23 n/a .000
04376 + 5.0 02:IA 49.51 .176 1987.0724.22.45 190.23 n/a .000
04377 + 5.0 02:IA 49.51 .176 1987.0724.22.45 190.23 n/a .000
04378 1987-000017 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04379 ROUTE CHANNEL -> 5.0 02:IA 73.56 .330 1987.0724.22.40 190.34 n/a .000
04380 [IAREC 6.00] SMIN:156.78; SMAX:986.47; SK: -030]
04381 [InterEventTime= 12.00]
04382 1987-000018 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04383 CONTINUOUS NASHDY 5.0 01:IA 21.43 .073 1987.0724.23.00 189.73 336 .000
04384 [CN: 31.1; N: 3.00; Tm: 1.61]
04385 [IAREC 6.00] SMIN:191.09; SMAX:323.73; SK: -030]
04386 [InterEventTime= 12.00]
04387 1987-000019 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04388 CONTINUOUS NASHDY 5.0 01:IA 4.70 .020 1987.0724.23.00 190.04 337 .000
04389 [CN: 44.6; N: 3.00; Tm: 1.72]
04390 [IAREC 6.00] SMIN:191.09; SMAX:323.73; SK: -030]
04391 [InterEventTime= 12.00]
04392 1987-000020 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04393 CONTINUOUS NASHDY 5.0 01:IA 9.14 .104 1987.0724.15.40 191.73 340 .000
04394 [CN: 68.4; N: 3.00; Tm: 1.12]
04395 [IAREC 6.00] SMIN:191.09; SMAX:323.73; SK: -030]
04396 [InterEventTime= 12.00]
04397 1987-000021 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04398 ADD HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04399 + 5.0 02:IA 73.56 .327 1987.0724.22.50 190.33 n/a .000
04400 + 5.0 02:IA 21.43 .073 1987.0724.23.00 189.73 n/a .000
04401 + 5.0 02:IA 4.70 .020 1987.0724.23.00 190.04 n/a .000
04402 + 5.0 02:IA 9.14 .104 1987.0724.15.40 191.74 n/a .000
04403 + 5.0 02:IA 9.14 .104 1987.0724.15.40 191.74 n/a .000
04404 1987-000022 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04405 ROUTE CHANNEL -> 5.0 02:IA 108.84 .510 1987.0724.22.45 190.32 n/a .000
04406 [IAREC 6.00] SMIN:191.09; SMAX:323.73; SK: -030]
04407 [InterEventTime= 12.00]
04408 1987-000023 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04409 CONTINUOUS NASHDY 5.0 01:SOOTH-1 20.21 .075 1987.0724.22.45 189.68 336 .000
04410 [CN: 31.1; N: 3.00; Tm: 1.61]
04411 [IAREC 6.00] SMIN:204.20; SMAX:*****; SK: -030]
04412 [InterEventTime= 12.00]
04413 1987-000024 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04414 ADD HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04415 + 5.0 02:IA 108.84 .500 1987.0724.23.00 190.32 n/a .000
04416 + 5.0 02:IA 20.21 .075 1987.0724.22.45 189.68 n/a .000
04417 1987-000025 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04418 ROUTE CHANNEL -> 5.0 02:IA 129.05 .573 1987.0724.22.55 190.22 n/a .000
04419 [IAREC 6.00] SMIN:191.09; SMAX:323.73; SK: -030]
04420 [InterEventTime= 12.00]
04421 1987-000026 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04422 CONTINUOUS NASHDY 5.0 01:SOOTH-2 11.61 .056 1987.0724.22.25 189.73 336 .000
04423 [CN: 36.7; N: 3.00; Tm: .96]
04424 [IAREC 6.00] SMIN:191.09; SMAX:323.73; SK: -030]
04425 [InterEventTime= 12.00]
04426 1987-000027 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04427 ADD HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04428 + 5.0 02:IA 129.05 .565 1987.0724.23.10 190.22 n/a .000
04429 + 5.0 02:SOOTH-2 11.61 .056 1987.0724.22.25 189.73 n/a .000
04430 + 5.0 01:Total 140.66 .606 1987.0724.23.05 190.18 n/a .000
04431 1987-000028 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04432 ROUTE CHANNEL -> 5.0 02:IA 140.66 .605 1987.0724.23.10 190.18 n/a .000
04433 [IAREC 6.00] SMIN:191.09; SMAX:323.73; SK: -030]
04434 [InterEventTime= 12.00]
04435 1987-000029 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04436 CONTINUOUS NASHDY 5.0 01:SOOTH-3 7.98 .050 1987.0724.22.20 189.99 337 .000
04437 [CN: 42.6; N: 3.00; Tm: .89]
04438 [IAREC 6.00] SMIN:141.94; SMAX:946.27; SK: -030]
04439 [InterEventTime= 12.00]
04440 1987-000030 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04441 ADD HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04442 + 5.0 02:SOOTH-3 7.98 .050 1987.0724.22.20 189.99 n/a .000
04443 + 5.0 01:Total 148.64 .639 1987.0724.23.05 190.27 n/a .000
04444 1987-000031 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04445 SAVE HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04446 + 5.0 01:26 148.64 .639 1987.0724.23.05 190.27 n/a .000
04447 [IAREC 6.00] SMIN:141.94; SMAX:946.27; SK: -030]
04448 [InterEventTime= 12.00]
04449 1987-000032 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04450 ROUTE CHANNEL -> 5.0 02:IA 148.64 .639 1987.0724.23.10 190.27 n/a .000
04451 [IAREC 6.00] SMIN:141.94; SMAX:946.27; SK: -030]
04452 [InterEventTime= 12.00]
04453 1987-000033 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04454 CONTINUOUS NASHDY 5.0 01:SOOTH-4 34.99 .069 1987.0724.22.35 189.83 336 .000
04455 [CN: 39.5; N: 3.00; Tm: 1.23]
04456 [IAREC 6.00] SMIN:161.62; SMAX:*****; SK: -030]
04457 [InterEventTime= 12.00]
04458 1987-000034 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04459 ADD HYD -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04460 + 5.0 02:SOOTH-4 14.99 .069 1987.0724.22.35 189.83 n/a .000
04461 + 5.0 01:Total 163.63 .696 1987.0724.23.10 190.14 n/a .000
04462 [IAREC 6.00] SMIN:161.62; SMAX:*****; SK: -030]
04463 [InterEventTime= 12.00]
04464 1987-000035 -----Dtain-ID:HYD-----AREHA-QPEARCS-TPeakDate_hh:mm-----RvM-R.C-----DWFFMS
04465 ROUTE CHANNEL -> 5.0 02:IA 140.66 .605 1987.0724.23.10 190.18 n/a .000
04466 #####
04467 #####
04468 #####
04469 #####
04470 #####
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06121 R1995-C00030 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06122 ADD HYD + 5.0 02:00H-1 140.64 1.263 1995.0603.10:05 205.21 n/a .000
06123 SIM + 5.0 02:00H-3 7.98 .104 1995.0603.9:20 204.13 n/a .000
06124 ROUTE CHANNEL -> 5.0 02:16A 148.64 1.436 1995.0603.10:05 205.25 n/a .000
06125 R1995-C00031 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06126 SAVE HYD 5.0 01:16 148.64 1.436 1995.0603.10:05 205.25 n/a .000
06127 Inm = 16.1996
06128 remark:16-Bearbrook Tributary Upstream of Thunder Road Crossing
06129 R1995-C00032 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06130 ROUTE CHANNEL -> 5.0 01:16A 148.64 1.436 1995.0603.10:05 205.25 n/a .000
06131 \* [RDZ=5.0] out-> 5.0 01:16A 148.64 1.431 1995.0603.10:15 205.25 n/a .000
06132 [1/S= 440 / 035]
06133 (Vmax= 706/Dmax= 440)
06134 R1995-C00033 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06135 CONTINUOUS NASHDY 5.0 01:16H-4 34.315 .039 1995.0603.9:40 202.62 487 .000
06136 [Cm= 39.5; Nr= 3.00; Tps= 1.23]
06137 [IAREC= 6.00; SMIN=168.62; SMAX=\*\*\*\*\*; SK= .030]
06138 [InterEventTime= 12.00]
06139 R1995-C00034 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06140 ADD HYD 5.0 02:00H-4 14.99 .153 1995.0603.9:40 202.62 n/a .000
06141 SIM + 5.0 02:00H-4 14.99 .153 1995.0603.9:40 202.62 n/a .000
06142 ROUTE CHANNEL -> 5.0 01:16A 148.64 1.436 1995.0603.10:10 204.95 n/a .000
06143 \*\*\*\*\*
06144 \*\*\*\*\*
06145 \*\*\*\*\*
06146 # CONTINUOUS RAINFALL DATA
06147 # DWDYND / DWDT DATA FILE 4.39 .017 1995.0731.16:25 116.21 n/a .000
06148 \*\*\*\*\*
06149 # STORMS
06150 \*\*\*\*\*
06151 \*\* END OF RUN : 1995
06152 \*\*\*\*\*
06153 \*\*\*\*\*
06154 \*\*\*\*\*
06155 \*\*\*\*\*
06156 \*\*\*\*\*
06157 \*\*\*\*\*
06158 \*\*\*\*\*
06159 RUM-Commands
06160 R1996-C00016 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06161 START [TERR= .00 hrs on 19950401]
06162 [NETOW= 2 ] (1=Imperial, 2=metric output)
06163 [NETOW= 0 ]
06164 [NETOW= 0 ]
06165 [ADIN= 199; ADIky= 9000; ADIpk= 9956]
06166 \*\*\*\*\*
06167 # DWDYND / DWDT DATA FILE 4.39 .017 1995.0731.16:25 116.21 n/a .000
06168 \*\*\*\*\*
06169 # Project Name: [THUNDER ROAD] Project Number: [2128]
06170 # Date : 04-28-2021
06171 # Modeller : [J.F.]
06172 # Company : JFSaInc.
06173 # License # : 2549237
06174 \*\*\*\*\*
06175 \*\*\*\*\*
06176 \*\*\*\*\*
06177 # Obtain International Airport - April 1st to October 31st.
06178 R1996-C00002 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06179 # READ ARE DATA
06180 [Filename = YOM\_1997\_2007.123 ]
06181 [Start\_date = 1996.0401; End\_date = 1996.1031]
06182 [DPR= 6.00; Length= 492.18; Metrics= 208; Dryhrs= 4086; PTO= 426.50]
06183 Maximum average rainfall intensities over
06184 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
06185 18.50 11.50 7.50 4.50 2.93 1.60 1.25 .69 1.25 mm/hr
06186 18.50 27.10 27.10 32.50 35.10 38.50 45.10 47.50 50.30 mm
06187 19960731 19960731 19960731 19960731 19960731 19960731 19960731 19960731 19960731
06188 Number of rainfall events per following interval time
06189 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
06190 111 87 79 63 53 31 26 19
06191 Number of events with at least the following durations
06192 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
06193 110 63 42 14 1 0 0 0 0
06194 R1996-C00003 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06195 COMPUTE API
06196 [ADIN= 50.00; ADIky= 9000; ADIpk= 9956]
06197 [ADIN= 50.00; ADIky= 9000; ADIpk= 9956]
06198 R1996-C00004 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06199 CONTINUOUS NASHDY 5.0 01:16H-1 34.70 .039 1996.0731.20:40 115.53 271 .000
06200 [Cm= 41.4; Nr= 3.00; Tps= 1.23]
06201 [IAREC= 6.00; SMIN=168.62; SMAX=\*\*\*\*\*; SK= .030]
06202 [InterEventTime= 12.00]
06203 R1996-C00005 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06204 CONTINUOUS NASHDY 5.0 01:16H-2 12.44 .045 1996.0731.16:40 116.75 274 .000
06205 [Cm= 41.4; Nr= 3.00; Tps= 1.23]
06206 [IAREC= 6.00; SMIN= 91.01; SMAX=606.70; SK= .030]
06207 [InterEventTime= 12.00]
06208 R1996-C00006 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06209 CONTINUOUS NASHDY 5.0 01:16H-1 2.36 .023 1996.0731.16:35 122.64 288 .000
06210 [Cm= 41.7; Nr= 3.00; Tps= 1.23]
06211 [IAREC= 6.00; SMIN= 25.21; SMAX=168.09; SK= .030]
06212 [InterEventTime= 12.00]
06213 R1996-C00007 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06214 ADD HYD + 5.0 02:00H-1 34.70 .039 1996.0731.20:40 115.53 n/a .000
06215 SIM + 5.0 02:00H-2 32.98 .045 1996.0731.16:40 116.75 n/a .000
06216 + 5.0 02:00H-1 2.36 .023 1996.0731.16:35 122.64 n/a .000
06217 SIM + 5.0 02:00H-1 49.51 .086 1996.0731.16:50 116.18 n/a .000
06218 R1996-C00008 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06219 ROUTE CHANNEL -> 5.0 02:21 49.51 .086 1996.0731.16:50 116.18 n/a .000
06220 \* [RDZ= 5.0] out-> 5.0 02:21 49.51 .086 1996.0731.16:50 116.18 n/a .000
06221 [1/S= 478 / 440 / 035]
06222 (Vmax= 376/Dmax= 440)
06223 R1996-C00009 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06224 CONTINUOUS NASHDY 5.0 01:16H-1 4.39 .017 1996.0731.17:00 117.62 276 .000
06225 [Cm= 40.4; Nr= 3.00; Tps= 1.23]
06226 [IAREC= 6.00; SMIN= 67.24; SMAX=448.24; SK= .030]
06227 [InterEventTime= 12.00]
06228 R1996-C00010 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06229 CONTINUOUS NASHDY 5.0 01:16H-2 3.61 .013 1996.0731.16:25 116.21 272 .000
06230 [Cm= 41.4; Nr= 3.00; Tps= 1.23]
06231 [IAREC= 6.00; SMIN=115.26; SMAX=768.40; SK= .030]
06232 [InterEventTime= 12.00]
06233 R1996-C00011 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06234 CONTINUOUS NASHDY 5.0 01:16A 3.84 .015 1996.0731.16:50 117.36 275 .000
06235 [Cm= 41.4; Nr= 3.00; Tps= 1.23]
06236 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
06237 [InterEventTime= 12.00]
06238 R1996-C00012 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06239 CONTINUOUS NASHDY 5.0 01:16A 5.29 .039 1996.0731.16:40 115.82 272 .000
06240 [Cm= 41.4; Nr= 3.00; Tps= 1.23]
06241 [IAREC= 6.00; SMIN=141.94; SMAX=946.27; SK= .030]
06242 [InterEventTime= 12.00]
06243 R1996-C00013 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06244 CONTINUOUS NASHDY 5.0 01:16A 1.21 .003 1996.0731.16:25 115.44 271 .000
06245 [Cm= 41.4; Nr= 3.00; Tps= 1.23]
06246 [IAREC= 6.00; SMIN=179.29; SMAX=\*\*\*\*\*; SK= .030]
06247 [InterEventTime= 12.00]
06248 R1996-C00014 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06249 ROUTE CHANNEL -> 5.0 02:16A 1.21 .003 1996.0731.16:25 115.44 n/a .000
06250 \* [RDZ= 5.0] out-> 5.0 02:16A 1.21 .002 1996.0731.16:40 115.44 n/a .000
06251 [1/S= 500 / 140 / 035]
06252 (Vmax= 078/Dmax= 140)
06253 R1996-C00015 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06254 CONTINUOUS NASHDY 5.0 01:16H-3 5.71 .031 1996.0731.16:20 117.36 275 .000
06255 [Cm= 41.4; Nr= 3.00; Tps= .89]
06256 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
06257 [InterEventTime= 12.00]
06258 R1996-C00016 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06259 ADD HYD + 5.0 02:01 49.51 .083 1996.0731.17:05 116.18 n/a .000
06260 + 5.0 02:01 4.70 .010 1996.0731.17:05 115.92 n/a .000
06261 + 5.0 02:01 3.61 .013 1996.0731.16:25 116.21 n/a .000
06262 + 5.0 02:01 3.84 .015 1996.0731.16:50 117.36 n/a .000
06263 + 5.0 02:01 5.29 .039 1996.0731.16:40 115.82 n/a .000
06264 + 5.0 02:01 1.21 .003 1996.0731.16:25 115.44 n/a .000
06265 + 5.0 02:01 4.70 .010 1996.0731.17:05 115.92 n/a .000
06266 SIM + 5.0 02:12 73.56 .167 1996.0731.16:45 116.38 n/a .000
06267 R1996-C00017 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06268 ROUTE CHANNEL -> 5.0 01:22 73.56 .167 1996.0731.16:45 116.38 n/a .000
06269 \* [RDZ= 5.0] out-> 5.0 01:22 73.56 .164 1996.0731.16:55 116.38 n/a .000
06270 [1/S= 359 / 560 / 035]
06271 (Vmax= 425/Dmax= 560)
06272 R1996-C00018 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06273 CONTINUOUS NASHDY 5.0 01:16A 21.43 .035 1996.0731.17:05 115.36 270 .000
06274 [Cm= 36.1; Nr= 3.00; Tps= 1.61]
06275 [IAREC= 6.00; SMIN=191.59; SMAX=\*\*\*\*\*; SK= .030]
06276 [InterEventTime= 12.00]
06277 R1996-C00019 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06278 CONTINUOUS NASHDY 5.0 01:16A 4.70 .010 1996.0731.17:05 115.92 272 .000
06279 [Cm= 44.6; Nr= 3.00; Tps= 1.72]
06280 [IAREC= 6.00; SMIN=141.94; SMAX=946.27; SK= .030]
06281 [InterEventTime= 12.00]
06282 R1996-C00020 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06283 CONTINUOUS NASHDY 5.0 01:12 9.14 .060 1996.0731.16:30 118.82 279 .000
06284 [Cm= 41.4; Nr= 3.00; Tps= 1.12]
06285 [IAREC= 6.00; SMIN= 41.4; SMAX=323.73; SK= .030]
06286 [InterEventTime= 12.00]
06287 R1996-C00021 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06288 ADD HYD 5.0 02:02 73.56 .164 1996.0731.16:55 116.38 n/a .000
06289 + 5.0 02:02 21.43 .035 1996.0731.17:05 115.36 n/a .000
06290 + 5.0 02:02 4.70 .010 1996.0731.17:05 115.92 n/a .000
06291 + 5.0 02:02 3.61 .013 1996.0731.16:25 116.21 n/a .000
06292 + 5.0 02:02 3.84 .015 1996.0731.16:50 117.36 n/a .000
06293 R1996-C00022 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06294 ROUTE CHANNEL -> 5.0 02:23 108.84 .264 1996.0731.16:50 116.36 n/a .000
06295 \* [RDZ= 5.0] out-> 5.0 02:23 108.84 .256 1996.0731.17:10 116.36 n/a .000
06296 [1/S= 396 / 305 / 035]
06297 (Vmax= 396/Dmax= 305)
06298 R1996-C00023 -----DtnID-ID-NHYD-----AREHA-QPEARqms-TpeakDate\_hh:mm-----RvM-R.C-----DWfms
06299 CONTINUOUS NASHDY 5.0 01:16H-1 20.21 .035 1996.0731.16:50 115.27 270 .000
06300 [Cm= 35.5; Nr= 3.00; Tps= 1.40]





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06841 [IAREC 6.00] SMIN: 25.21; SMAX:168.09; SK: -030]
06842 [InterEventTime: 12.00]
06843 R1999-C00007-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06844 ADD HYD + 5.0 02:RHT-1 34.70 .036 1999.0906.13:00 156.36 n/a .000
06845 SUM + 5.0 02:RHT-2 12.84 .040 1999.0906.10:25 156.61 n/a .000
06846 + 5.0 02:INT-1 2.36 .020 1999.0906.10:15 159.00 n/a .000
06847 [I/S= 487. / 440. / 035]
06848 R1999-C00008-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06849 ROUTE CHANNEL -> 5.0 02:IA 49.51 .084 1999.0906.10:40 156.60 n/a .000
06850 [I/S= 500. / 500. / 187. / 035]
06851 [I/S= 478. / 440. / 035]
06852 [I/S= 500. / 500. / 187. / 035]
06853 R1999-C00009-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06854 CONTINUOUS NASHDY 5.0 01:INT-1 4.39 .017 1999.0906.10:45 157.34 .370 .000
06855 [CN: 42.6; N: 3.00; Tm: .89]
06856 [IAREC 6.00] SMIN: 67.24; SMAX:448.24; SK: -030]
06857 [InterEventTime: 12.00]
06858 R1999-C00010-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06859 CONTINUOUS NASHDY 5.0 01:INT-2 3.61 .010 1999.0906.10:15 156.61 .369 .000
06860 [CN: 47.4; N: 3.00; Tm: .91]
06861 [IAREC 6.00] SMIN:11.26; SMAX:768.40; SK: -030]
06862 [InterEventTime: 12.00]
06863 R1999-C00011-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06864 CONTINUOUS NASHDY 5.0 01:IA 3.84 .014 1999.0906.10:35 157.04 .370 .000
06865 [CN: 48.4; N: 3.00; Tm: .91]
06866 [IAREC 6.00] SMIN: 73.13; SMAX:487.55; SK: -030]
06867 [InterEventTime: 12.00]
06868 R1999-C00012-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06869 CONTINUOUS NASHDY 5.0 01:IA 5.29 .012 1999.0906.10:25 156.46 .369 .000
06870 [CN: 42.6; N: 3.00; Tm: .89]
06871 [IAREC 6.00] SMIN:141.94; SMAX:946.27; SK: -030]
06872 [InterEventTime: 12.00]
06873 R1999-C00013-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06874 CONTINUOUS NASHDY 5.0 01:IA 1.21 .002 1999.0906.10:15 156.33 .368 .000
06875 [CN: 31.1; N: 3.00; Tm: .61]
06876 [IAREC 6.00] SMIN:179.29; SMAX:*****; SK: -030]
06877 [InterEventTime: 12.00]
06878 R1999-C00014-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06879 ROUTE CHANNEL -> 5.0 02:IA 1.21 .002 1999.0906.10:15 156.33 n/a .000
06880 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06881 [I/S= 500. / 500. / 187. / 035]
06882 [I/S= 500. / 500. / 187. / 035]
06883 R1999-C00015-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06884 CONTINUOUS NASHDY 5.0 01:INT-3 5.71 .024 1999.0906. 9:40 157.04 .370 .000
06885 [CN: 48.4; N: 3.00; Tm: .91]
06886 [IAREC 6.00] SMIN: 73.13; SMAX:487.55; SK: -030]
06887 [InterEventTime: 12.00]
06888 R1999-C00016-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06889 ADD HYD + 5.0 02:R1 49.51 .084 1999.0906.10:55 156.60 n/a .000
06890 + 5.0 02:INT-1 4.39 .017 1999.0906.10:45 157.34 n/a .000
06891 + 5.0 02:INT-2 3.61 .010 1999.0906.10:15 156.61 n/a .000
06892 + 5.0 02:IA 3.84 .014 1999.0906.10:35 157.04 n/a .000
06893 + 5.0 02:IA 3.84 .014 1999.0906.10:35 157.04 n/a .000
06894 + 5.0 02:IA 3.84 .014 1999.0906.10:35 157.04 n/a .000
06895 + 5.0 02:IA 3.84 .014 1999.0906.10:35 157.04 n/a .000
06896 + 5.0 02:IA 3.84 .014 1999.0906.10:35 157.04 n/a .000
06897 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06898 R1999-C00017-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06899 ROUTE CHANNEL -> 5.0 02:IA 73.56 .159 1999.0906.10:35 156.68 n/a .000
06900 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06901 [I/S= 500. / 500. / 187. / 035]
06902 [I/S= 500. / 500. / 187. / 035]
06903 CONTINUOUS NASHDY 5.0 01:IA 21.43 .034 1999.0906.10:45 156.30 .368 .000
06904 [CN: 31.1; N: 3.00; Tm: .61]
06905 [IAREC 6.00] SMIN: 15.91; SMAX:*****; SK: -030]
06906 [InterEventTime: 12.00]
06907 R1999-C00018-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06908 CONTINUOUS NASHDY 5.0 01:IA 4.70 .010 1999.0906.10:50 156.50 .369 .000
06909 [CN: 44.6; N: 3.00; Tm: .72]
06910 [IAREC 6.00] SMIN: 141.94; SMAX:946.27; SK: -030]
06911 [InterEventTime: 12.00]
06912 R1999-C00019-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06913 CONTINUOUS NASHDY 5.0 01:IA 9.14 .050 1999.0906.10:15 157.60 .371 .000
06914 [CN: 48.4; N: 3.00; Tm: .91]
06915 [IAREC 6.00] SMIN: 41.84; SMAX:323.73; SK: -030]
06916 [InterEventTime: 12.00]
06917 R1999-C00020-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06918 ADD HYD + 5.0 02:R1 73.56 .158 1999.0906.10:45 156.68 n/a .000
06919 + 5.0 02:IA 21.43 .034 1999.0906.10:45 156.30 n/a .000
06920 ROUTE CHANNEL -> 5.0 02:IA 4.70 .010 1999.0906.10:50 156.50 n/a .000
06921 + 5.0 02:IA 9.14 .050 1999.0906.10:15 157.60 n/a .000
06922 + 5.0 02:IA 9.14 .050 1999.0906.10:15 157.60 n/a .000
06923 R1999-C00022-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06924 ROUTE CHANNEL -> 5.0 02:IA 108.84 .194 1999.0906.10:35 156.67 n/a .000
06925 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06926 [I/S= 396. / 305. / 035]
06927 [I/S= 396. / 305. / 035]
06928 R1999-C00023-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06929 CONTINUOUS NASHDY 5.0 01:SOOTH-1 20.21 .033 1999.0906.10:35 156.26 .368 .000
06930 [CN: 31.1; N: 3.00; Tm: .61]
06931 [IAREC 6.00] SMIN:204.20; SMAX:*****; SK: -030]
06932 [InterEventTime: 12.00]
06933 R1999-C00024-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06934 ADD HYD + 5.0 02:R1 108.84 .194 1999.0906.10:55 156.67 n/a .000
06935 + 5.0 02:INT-1 4.39 .017 1999.0906.10:45 157.34 n/a .000
06936 + 5.0 02:IA 21.43 .034 1999.0906.10:50 156.61 n/a .000
06937 R1999-C00025-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06938 ROUTE CHANNEL -> 5.0 02:IA 129.05 .279 1999.0906.10:50 156.61 n/a .000
06939 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06940 [I/S= 482. / 410. / 035]
06941 [I/S= 501. / 501. / 247. / 035]
06942 R1999-C00026-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06943 CONTINUOUS NASHDY 5.0 01:SOOTH-2 11.61 .022 1999.0906.10:15 156.30 .368 .000
06944 [CN: 36.7; N: 3.00; Tm: .96]
06945 [IAREC 6.00] SMIN:151.09; SMAX:*****; SK: -030]
06946 [InterEventTime: 12.00]
06947 R1999-C00027-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06948 ADD HYD + 5.0 02:R1 129.05 .277 1999.0906.10:55 156.61 n/a .000
06949 + 5.0 02:SOOTH-2 11.61 .022 1999.0906.10:15 156.30 n/a .000
06950 + 5.0 01:Total 163.63 .237 1999.0906.11:00 156.58 n/a .000
06951 R1999-C00028-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06952 ROUTE CHANNEL -> 5.0 02:IA 140.66 .296 1999.0906.10:55 156.58 n/a .000
06953 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06954 [I/S= 482. / 410. / 035]
06955 [I/S= 482. / 410. / 035]
06956 R1999-C00029-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06957 CONTINUOUS NASHDY 5.0 01:SOOTH-3 7.98 .019 1999.0906.10:15 156.46 .369 .000
06958 [CN: 42.6; N: 3.00; Tm: .89]
06959 [IAREC 6.00] SMIN:141.94; SMAX:946.27; SK: -030]
06960 [InterEventTime: 12.00]
06961 R1999-C00030-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06962 ADD HYD + 5.0 02:R1 140.66 .296 1999.0906.11:00 156.58 n/a .000
06963 + 5.0 02:SOOTH-3 7.98 .019 1999.0906.10:15 156.46 n/a .000
06964 + 5.0 01:Total 148.64 .311 1999.0906.10:55 156.58 n/a .000
06965 R1999-C00031-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06966 SAVE HYD + 5.0 01:26 148.64 .311 1999.0906.10:55 156.58 n/a .000
06967 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06968 remark:J6-Bearbrook Tributary Upstream of Thunder Road Crossing
06969 R1999-C00032-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06970 ROUTE CHANNEL -> 5.0 02:IA 148.64 .310 1999.0906.11:05 156.58 n/a .000
06971 [IAREC 6.00] SMIN: 5.01; SMAX:*****; SK: -030]
06972 [I/S= 323. / 440. / 035]
06973 [I/S= 527. / 500. / 254. / 035]
06974 R1999-C00033-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06975 CONTINUOUS NASHDY 5.0 01:SOOTH-4 34.39 .030 1999.0906.11:25 156.36 .368 .000
06976 [CN: 39.5; N: 3.00; Tm: 1.23]
06977 [IAREC 6.00] SMIN:161.62; SMAX:*****; SK: -030]
06978 [InterEventTime: 12.00]
06979 R1999-C00034-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
06980 ADD HYD + 5.0 02:R1 148.64 .310 1999.0906.11:05 156.58 n/a .000
06981 + 5.0 02:SOOTH-4 14.99 .030 1999.0906.10:25 156.36 n/a .000
06982 + 5.0 01:Total 163.63 .237 1999.0906.11:00 156.56 n/a .000
06983 #####
06984 #####
06985 #####
06986 #####
06987 #####
06988 #####
06989 #####
06990 #####
06991 #####
06992 #####
06993 #####
06994 #####
06995 #####
06996 #####
06997 #####
06998 #####
06999 #####
07000 R2000-C00001-----DtmIn-ID:HYD-----AREHA-QPEA-GMS-TPeakDate_hh:mm-----RvM-R-C-----DWFFMS
07001 START
07002 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07003 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07004 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07005 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07006 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07007 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07008 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07009 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07010 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07011 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07012 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07013 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07014 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07015 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07016 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07017 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07018 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07019 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]
07020 [IAREC 6.00] SMIN: 0.00 hrs on 20000401]

```

072011 \*\* END OF RUN : 2002
072012 R2002:CO0001
072013 [ITER= 0.00 hrs on 20020401]
072014 [METH= 2 (1=imperial, 2=metric output)]
072015 [NFORM= 0]
072016 [RFORM= 2015]
072017 [RFORM= 2015]
072018 [RFORM= 2015]
072019 [RFORM= 2015]
072020 [RFORM= 2015]
072021 [RFORM= 2015]
072022 [RFORM= 2015]
072023 [RFORM= 2015]
072024 [RFORM= 2015]
072025 [RFORM= 2015]
072026 [RFORM= 2015]
072027 [RFORM= 2015]
072028 [RFORM= 2015]
072029 [RFORM= 2015]
072030 [RFORM= 2015]
072031 [RFORM= 2015]
072032 [RFORM= 2015]
072033 [RFORM= 2015]
072034 [RFORM= 2015]
072035 [RFORM= 2015]
072036 [RFORM= 2015]
072037 [RFORM= 2015]
072038 [RFORM= 2015]
072039 [RFORM= 2015]
072040 [RFORM= 2015]
072041 [RFORM= 2015]
072042 [RFORM= 2015]
072043 [RFORM= 2015]
072044 [RFORM= 2015]
072045 [RFORM= 2015]
072046 [RFORM= 2015]
072047 [RFORM= 2015]
072048 [RFORM= 2015]
072049 [RFORM= 2015]
072050 [RFORM= 2015]
072051 [RFORM= 2015]
072052 [RFORM= 2015]
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072056 [RFORM= 2015]
072057 [RFORM= 2015]
072058 [RFORM= 2015]
072059 [RFORM= 2015]
072060 [RFORM= 2015]
072061 [RFORM= 2015]
072062 [RFORM= 2015]
072063 [RFORM= 2015]
072064 [RFORM= 2015]
072065 [RFORM= 2015]
072066 [RFORM= 2015]
072067 [RFORM= 2015]
072068 [RFORM= 2015]
072069 [RFORM= 2015]
072070 [RFORM= 2015]
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072072 [RFORM= 2015]
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072080 [RFORM= 2015]
072081 [RFORM= 2015]
072082 [RFORM= 2015]
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072089 [RFORM= 2015]
072090 [RFORM= 2015]
072091 [RFORM= 2015]
072092 [RFORM= 2015]
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072094 [RFORM= 2015]
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072096 [RFORM= 2015]
072097 [RFORM= 2015]
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072099 [RFORM= 2015]
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072178 [RFORM= 2015]
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072195 [RFORM= 2015]
072196 [RFORM= 2015]
072197 [RFORM= 2015]
072198 [RFORM= 2015]
072199 [RFORM= 2015]
072200 [RFORM= 2015]







08281 \*\*\* WARNING: Requested start date is less than start date in file.  
08282 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08283 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08284 \*\*\* WARNING: Requested start date is less than start date in file.  
08285 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08286 \*\*\* WARNING: Requested start date is less than start date in file.  
08287 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08288 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08289 \*\*\* WARNING: Requested start date is less than start date in file.  
08290 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08291 \*\*\* WARNING: Requested start date is less than start date in file.  
08292 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08293 \*\*\* WARNING: Requested start date is less than start date in file.  
08294 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08295 \*\*\* WARNING: Requested start date is less than start date in file.  
08296 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08297 \*\*\* WARNING: Missing rainfall increments were set to 0.  
08298 Simulation ended on 2024-07-31 at 16:08:34  
08299 .....  
08300

```

1 20 Metric units / ID numbers OFF
2 *#*****
3 *# SWMHYMO / INPUT DATA FILE
4 *#*****
5 *# Project Name: [THUNDER ROAD] Project Number: [2128]
6 *# Date: [04-28-2021]
7 *# Modeller: [J.B]
8 *# Company: [JFSAinc.]
9 *# License #: [2549237]
10 *#*****
11 * Model Developed to assess the post development erosion/hydrologic conditions on the
12 Bear Brook
13 * tributary near 6150 Thunder Road
14 *#*****
15 START TZERO=[1967.0101], METOUT=[2], NSTORM=[0], NRUN=[1967]
16 *% [""] <-- storm filename, one per line for NSTORM time
17 *%-----|-----|
18 *# Ottawa International Airport - April 1st to October 31st
19 READ AES DATA AES_FILENAME=[ "YOW_1967_2007.123" ],
20 IELEM=[123], START_DATE=[0], END_DATE=[-213]
21 *%-----|-----|
22 COMPUTE API APII=[50], APIK=[0.90]/day
23 *%-----|-----|
24 * DRAINAGE AREAS NORTH OF HIGHWAY
25 *%-----|-----|
26 CONTINUOUS NASHYD NHYD=[ "NORTH-1" ], DT=[5](min), AREA=[34.701](ha),
27 DWF=[0](cms), CN/C=[38.1], IA=[4.67](mm), N=[3], TP=[4.12](hrs),
28 Continuous simulation parameters:
29 IaREcper=[6](hrs),
30 SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
31 InterEventTime=[12](hrs),
32 Baseflow simulation parameters:
33 BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
34 VHydCond=[.02](mm/hr), END=-1
35 *%-----|-----|
36 CONTINUOUS NASHYD NHYD=[ "NORTH-2" ], DT=[5](min), AREA=[12.444](ha),
37 DWF=[0](cms), CN/C=[53.0], IA=[4.67](mm), N=[3], TP=[1.29](hrs),
38 Continuous simulation parameters:
39 IaREcper=[6](hrs),
40 SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
41 InterEventTime=[12](hrs),
42 Baseflow simulation parameters:
43 BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
44 VHydCond=[.02](mm/hr), END=-1
45 *%-----|-----|
46 CONTINUOUS NASHYD NHYD=[ "HWY-1" ], DT=[5](min), AREA=[2.364](ha),
47 DWF=[0](cms), CN/C=[81.7], IA=[4.67](mm), N=[3], TP=[1.21](hrs),
48 Continuous simulation parameters:
49 IaREcper=[6](hrs),
50 SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
51 InterEventTime=[12](hrs),
52 Baseflow simulation parameters:
53 BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
54 VHydCond=[.02](mm/hr), END=-1
55 *%-----|-----|
56 *ADD AREAS UPSTREAM OF HIGHWAY
57 ADD HYD NHYDsum=[ "J1" ], NHYDs to add=[ "NORTH-1"+"NORTH-2"+"HWY-1" ]
58 *%-----|-----|
59 * ROUTE UPSTREAM FLOWS TO THUNDER ROAD
60 ROUTE CHANNEL NHYDout=[ "R1" ], NHYDin=[ "J1" ], RDT=[5](min),
61 CHLGTH=[.478](m), CHSLOPE=[0.44](%), FPSLOPE=[0.44](%),
62 SECNUM=[.1], NSEG=[.3]
63 ( SEGROUGH, SEGDIST (m))=[0.05, 2.49, -0.035, 8.73, 0.05, 26.18] NSEG
64 times
65 ( DISTANCE (m), ELEVATION (m))=[0,76.83]
66 [1.25,76.8]
67 [2.49,76.64]
68 [3.74,76.45]

```





```

132 ..... [ 0.0026,0.0164]
133 ..... [ 0.0028,0.0176]
134 ..... [ 0.0029,0.0405]
135 ..... [ 0.0030,0.042]
136 ..... [ 0.0031,0.0451]
137 ..... [ 0.0035,0.0576]
138 ..... [ 0.0039,0.0703]
139 ..... [ 0.0043,0.0832]
140 ..... [ 0.0044,0.0893]
141 ..... [ 0.1091,0.097]
142 ..... [ 0.4887,0.1104]
143 ..... [ 1.018,0.1239]
144 ..... [ 1.6597,0.1377]
145 ..... NHYDovf=[ "Pond3-Over" ],
146 *%-----|-----|
147 ADD HYD ..... NHYDsum=[ "Pond3-Ditch" ]NHYDs to add=[ "Pond3-Over"+"Pond3-Out" ]
148 *%-----|-----|
149 *Route runoff from north site lands through road side ditch (500m @ 0.14%)
150 ROUTE CHANNEL ..... NHYDout=[ "A3C-R" ], NHYDin=[ "Pond3-Out" ], RDT=[ 5 ](min),
151 ..... CHLGTH=[ 500 ](m), CHSLOPE=[ 0.14 ](%), FPSLOPE=[ 0.14 ](%),
152 ..... SECNUM=[ 1 ], NSEG=[ 3 ]
153 ..... ( SEGROUGH, SEGDIST (m))=[ 0.05, 2.95, -0.035, 7.38, 0.05, 10.33 ] NSEG
      times
154 ..... ( DISTANCE (m), ELEVATION (m))=[ 0.00, 76.58]
155 ..... [ 1.48, 76.57]
156 ..... [ 2.95, 76.49]
157 ..... [ 4.43, 76.15]
158 ..... [ 5.90, 76.11]
159 ..... [ 7.38, 76.58]
160 ..... [ 8.85, 76.95]
161 ..... [ 10.33, 77.20]
162 ..... [-1,-1]
163 *%-----|-----|
164 CONTINUOUS NASHYD ..... NHYD=[ "INT-3" ], DT=[ 5 ](min), AREA=[ 5.712 ](ha),
165 ..... DWF=[ 0 ](cms), CN/C=[ 58.5 ], IA=[ 4.67 ](mm), N=[ 3 ], TP=[ 0.89 ](hrs),
166 ..... Continuous simulation parameters:
167 ..... IaRECper=[ 6 ](hrs),
168 ..... SMIN=[ -1 ](mm), SMAX=[ -1 ](mm), SK=[ 0.03 ]/(mm),
169 ..... InterEventTime=[ 12 ](hrs),
170 ..... Baseflow simulation parameters:
171 ..... BaseFlowOption=[ 1 ], InitGWResVol=[ 12 ](mm), GWResK=[ 0.95 ](mm/day/mm),
172 ..... VHydCond=[ .02 ](mm/hr), END=-1
173 *%-----|-----|
174 ADD HYD ..... NHYDsum=[ "J2" ], NHYDs to
      add=[ "R1"+"INT-1"+"INT-2"+"INT-3"+"A3A"+"A3C-R" ]
175 *%-----|-----|
176 ROUTE CHANNEL ..... NHYDout=[ "R2" ], NHYDin=[ "J2" ], RDT=[ 5 ](min),
177 ..... CHLGTH=[ 359 ](m), CHSLOPE=[ 0.56 ](%), FPSLOPE=[ 0.56 ](%),
178 ..... SECNUM=[ 1 ], NSEG=[ 3 ]
179 ..... ( SEGROUGH, SEGDIST (m))=[ 0.05, 15.18, -0.035, 25.29, 0.05, 30.35 ]
      NSEG times
180 ..... ( DISTANCE (m), ELEVATION (m))=[ 0,77.2]
181 ..... [ 1.26,77.14]
182 ..... [ 2.53,77.09]
183 ..... [ 6.32,77.02]
184 ..... [ 7.59,77.01]
185 ..... [ 8.85,76.99]
186 ..... [ 11.38,76.96]
187 ..... [ 13.91,76.92]
188 ..... [ 15.18,76.86]
189 ..... [ 16.44,76.63]
190 ..... [ 17.71,76.28]
191 ..... [ 18.97,76.24]
192 ..... [ 20.23,76.23]
193 ..... [ 21.5,76.33]
194 ..... [ 22.76,76.62]
195 ..... [ 24.03,76.73]
196 ..... [ 25.29,76.8]
197 ..... [ 27.82,76.8]

```

```

198 ..... [29.09,76.81]
199 ..... [30.35,77]
200 ..... [-1,-1]
201 *%-----|-----
202 * DRAINAGE AREAS DOPWNSTREAM OF THUNDERROAD
203 *%-----|-----
204 CONTINUOUS NASHYD NHYD=["A1A"], DT=[5](min), AREA=[21.435](ha),
205 ..... DWF=[0](cms), CN/C=[36.1], IA=[4.67](mm), N=[3], TP=[1.68](hrs),
206 ..... Continuous simulation parameters:
207 ..... IaRECper=[6](hrs),
208 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
209 ..... InterEventTime=[12](hrs),
210 ..... Baseflow simulation parameters:
211 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
212 ..... VHydCond=[.02](mm/hr), END=-1
213 *%-----|-----
214 *Lumped subcatchment with parameters calibrated to match detailed PCSWMM model
215 CONTINUOUS STANDHYD NHYD=["Pond1-In"], DT=[5](min), AREA=[9.998](ha), XIMP=[0.38],
216 ..... TIMP=[0.74], DWF=[0](cms),
217 ..... LOSS=[1], Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr),
218 ..... DCAY=[4.14](/hr), F=[12](mm),
219 ..... Pervious areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[500](m),
220 ..... MNP=[0.25], SCP=[0](min),
221 ..... Impervious areas: IAimp=[1.57](mm), SLPI=[1.5](%), LGI=[250](m),
222 ..... MNI=[0.013], SCI=[0](min),
223 ..... Continuous simulation parameters:
224 ..... IaRECper=[12]hrs), IaRECimp=[12](hrs),
225 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.01]/(mm),
226 ..... InterEventTime=[24](hrs), END=-1
227 *%-----|-----
228 *SWM Pond Outflow Storage Curve
229 ROUTE RESERVOIR NHYDout=["Pond1-Out"], NHYDin=["Pond1-In"], RDT=[5](min),
230 ..... TABLE of (OUTFLOW-STORAGE) values
231 ..... (cms) - (ha-m)
232 ..... [ 0 , 0 ]
233 ..... [ 0.0096 , 0.001 ]
234 ..... [ 0.0115 , 0.002 ]
235 ..... [ 0.0131 , 0.003 ]
236 ..... [ 0.0136 , 0.004 ]
237 ..... [ 0.0141 , 0.005 ]
238 ..... [ 0.0146 , 0.006 ]
239 ..... [ 0.015 , 0.008 ]
240 ..... [ 0.0155 , 0.009 ]
241 ..... [ 0.0159 , 0.011 ]
242 ..... [ 0.0163 , 0.013 ]
243 ..... [ 0.0167 , 0.015 ]
244 ..... [ 0.0171 , 0.017 ]
245 ..... [ 0.0175 , 0.02 ]
246 ..... [ 0.0179 , 0.022 ]
247 ..... [ 0.0182 , 0.025 ]
248 ..... [ 0.0186 , 0.028 ]
249 ..... [ 0.0189 , 0.031 ]
250 ..... [ 0.0193 , 0.033 ]
251 ..... [ 0.0196 , 0.036 ]
252 ..... [ 0.02 , 0.039 ]
253 ..... [ 0.0203 , 0.042 ]
254 ..... [ 0.0206 , 0.046 ]
255 ..... [ 0.0209 , 0.049 ]
256 ..... [ 0.0213 , 0.052 ]
257 ..... [ 0.0216 , 0.056 ]
258 ..... [ 0.0219 , 0.059 ]
259 ..... [ 0.0222 , 0.063 ]
260 ..... [ 0.0225 , 0.067 ]
261 ..... [ 0.0228 , 0.071 ]
262 ..... [ 0.0231 , 0.076 ]
263 ..... [ 0.0233 , 0.08 ]
264 ..... [ 0.0236 , 0.085 ]
265 ..... [ 0.0239 , 0.09 ]
266 ..... [ 0.0242 , 0.095 ]

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262 ..... [ 0.0245 , 0.1 ]
263 ..... [ 0.0247 , 0.106 ]
264 ..... [ 0.025 , 0.111 ]
265 ..... [ 0.0253 , 0.117 ]
266 ..... [ 0.0255 , 0.122 ]
267 ..... [ 0.0258 , 0.128 ]
268 ..... [ 0.026 , 0.133 ]
269 ..... [ 0.0263 , 0.139 ]
270 ..... [ 0.0265 , 0.144 ]
271 ..... [ 0.0268 , 0.15 ]
272 ..... [ 0.027 , 0.156 ]
273 ..... [ 0.0273 , 0.162 ]
274 ..... [ 0.0275 , 0.168 ]
275 ..... [ 0.0278 , 0.174 ]
276 ..... [ 0.028 , 0.18 ]
277 ..... [ 0.0282 , 0.187 ]
278 ..... [ 0.0285 , 0.193 ]
279 ..... [ 0.0287 , 0.2 ]
280 ..... [ 0.0289 , 0.208 ]
281 ..... [ 0.0292 , 0.215 ]
282 ..... [ 0.0294 , 0.223 ]
283 ..... [ 0.0296 , 0.23 ]
284 ..... [ 0.0298 , 0.238 ]
285 ..... [ 0.0301 , 0.247 ]
286 ..... [ 0.0303 , 0.255 ]
287 ..... [ 0.0305 , 0.264 ]
288 ..... [ 0.0307 , 0.273 ]
289 ..... [ 0.0309 , 0.282 ]
290 ..... [ 0.0311 , 0.291 ]
291 ..... [ 0.0314 , 0.301 ]
292 ..... [ 0.0316 , 0.311 ]
293 ..... [ 0.0318 , 0.321 ]
294 ..... [ 0.032 , 0.331 ]
295 ..... [ 0.0322 , 0.341 ]
296 ..... [ 0.0324 , 0.352 ]
297 ..... [ 0.0326 , 0.362 ]
298 ..... [ 0.0328 , 0.373 ]
299 ..... [ 0.033 , 0.384 ]
300 ..... [ 0.0332 , 0.394 ]
301 ..... [ 0.0334 , 0.405 ]
302 ..... [ 0.0336 , 0.416 ]
303 ..... [ 0.0338 , 0.427 ]
304 ..... [ 0.034 , 0.438 ]
305 ..... [ 0.0342 , 0.448 ]
306 ..... [ 0.0344 , 0.459 ]
307 ..... [ 0.0346 , 0.47 ]
308 ..... [ 0.0348 , 0.481 ]
309 ..... [ 0.035 , 0.493 ]
310 ..... [ 0.0352 , 0.504 ]
311 ..... [ 0.0353 , 0.515 ]
312 ..... [ 0.0355 , 0.526 ]
313 ..... [ 0.0357 , 0.538 ]
314 ..... [ 0.0359 , 0.549 ]
315 ..... [ 0.0361 , 0.56 ]
316 ..... [ 0.0363 , 0.572 ]
317 ..... [ 0.0365 , 0.583 ]
318 ..... [ 0.0366 , 0.595 ]
319 ..... [ 0.0368 , 0.606 ]
320 ..... [ 0.037 , 0.618 ]
321 ..... [ 0.0372 , 0.63 ]
322 ..... [ 0.0374 , 0.641 ]
323 ..... [ 0.0375 , 0.653 ]
324 ..... [ 0.0377 , 0.665 ]
325 ..... [ 0.0379 , 0.677 ]
326 ..... NHYDovf=[ "Pond1-Over" ],
327 *%-----|-----|
328 CONTINUOUS NASHYD NHYD=[ "A2" ], DT=[ 5 ] (min), AREA=[ 9.144 ] (ha),
329 ..... DWF=[ 0 ] (cms), CN/C=[ 68.4 ], IA=[ 4.67 ] (mm), N=[ 3 ], TP=[ 1.12 ] (hrs),
330 ..... Continuous simulation parameters:

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331 ..... IaRECper=[6](hrs),
332 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
333 ..... InterEventTime=[12](hrs),
334 ..... Baseflow simulation parameters:
335 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
336 ..... VHydCond=[.02](mm/hr), END=-1
337 *%-----|-----|
338 ADD HYD ..... NHYDsum=["J3"], NHYDs to
add=["R2"+"A1A"+"A2"+"Pond1-Over"+"Pond1-Out"]
339 *%-----|-----|
340 ROUTE CHANNEL ..... NHYDout=["R3"], NHYDin=["J3"], RDT=[5](min),
341 ..... CHLGTH=[396](m), CHSLOPE=[0.305](%), FPSLOPE=[0.305](%),
342 ..... SECNUM=[1], NSEG=[3]
343 ..... (SEGROUGH, SEGDIST (m))=[0.05, 20.3, -0.035, 25.43, 0.05, 43.65]
NSEG times
344 ..... (DISTANCE (m), ELEVATION (m))=[0,75.94]
345 ..... [5.08,75.73]
346 ..... [10.15,75.63]
347 ..... [15.23,75.56]
348 ..... [20.3,75.36]
349 ..... [21.32,75.15]
350 ..... [22.33,75.04]
351 ..... [23.35,74.98]
352 ..... [24.36,75.13]
353 ..... [25.38,75.21]
354 ..... [30.45,75.36]
355 ..... [35.53,75.5]
356 ..... [40.61,75.85]
357 ..... [43.65,76.04]
358 ..... [-1,-1]
359 *%-----|-----|
360 CONTINUOUS NASHYD ..... NHYD=["SOUTH-1"], DT=[5](min), AREA=[20.21](ha),
361 ..... DWF=[0](cms), CN/C=[35.5], IA=[4.67](mm), N=[3], TP=[1.4](hrs),
362 ..... Continuous simulation parameters:
363 ..... IaRECper=[6](hrs),
364 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
365 ..... InterEventTime=[12](hrs),
366 ..... Baseflow simulation parameters:
367 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
368 ..... VHydCond=[.02](mm/hr), END=-1
369 *%-----|-----|
370 ADD HYD ..... NHYDsum=["J4"], NHYDs to add=["R3"+"SOUTH-1"]
371 *%-----|-----|
372 ROUTE CHANNEL ..... NHYDout=["R4"], NHYDin=["J4"], RDT=[5](min),
373 ..... CHLGTH=[482](m), CHSLOPE=[0.41](%), FPSLOPE=[0.41](%),
374 ..... SECNUM=[1], NSEG=[3]
375 ..... (SEGROUGH, SEGDIST (m))=[0.05, 20.48, -0.035, 24.1, 0.05, 40.97]
NSEG times
376 ..... (DISTANCE (m), ELEVATION (m))=[0.00, 75.19]
377 ..... [4.82, 75.02]
378 ..... [10.84, 74.46]
379 ..... [20.48, 73.88]
380 ..... [21.69, 73.71]
381 ..... [22.89, 73.79]
382 ..... [24.1, 74.07]
383 ..... [25.3, 74.18]
384 ..... [30.12, 74.6]
385 ..... [34.94, 74.69]
386 ..... [40.97, 75.14]
387 ..... [-1,-1]
388 *%-----|-----|
389 CONTINUOUS NASHYD ..... NHYD=["SOUTH-2"], DT=[5](min), AREA=[11.612](ha),
390 ..... DWF=[0](cms), CN/C=[36.7], IA=[4.67](mm), N=[3], TP=[0.96](hrs),
391 ..... Continuous simulation parameters:
392 ..... IaRECper=[6](hrs),
393 ..... SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
394 ..... InterEventTime=[12](hrs),
395 ..... Baseflow simulation parameters:
396 ..... BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),

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397 .....VHydCond=[.02](mm/hr), END=-1
398 *%-----|-----|
399 ADD HYD .....NHYDsum=["J5"], NHYDs to add=["R4"+"SOUTH-2"]
400 *%-----|-----|
401 ROUTE CHANNEL .....NHYDout=["R5"], NHYDin=["J5"], RDT=[5](min),
402 .....CHLGTH=[181](m), CHSLOPE=[0.5](%), FPSLOPE=[0.5](%),
403 .....SECNUM=[1], NSEG=[3]
404 .....(SEGROUGH, SEGDIST (m))=[0.05, 42.50, -0.035, 47.69, 0.05, 65.31]
.....NSEG times
405 .....(DISTANCE (m), ELEVATION (m))=[0.000, 75.10]
406 .....[10.37, 74.34]
407 .....[20.73, 73.72]
408 .....[30.06, 73.11]
409 .....[42.50, 72.86]
410 .....[45.61, 72.59]
411 .....[47.69, 72.82]
412 .....[60.13, 73.68]
413 .....[65.31, 74.98]
414 .....[-1,-1]
415 *%-----|-----|
416 CONTINUOUS NASHYD .....NHYD=["SOUTH-3"], DT=[5](min), AREA=[7.982](ha),
417 .....DWF=[0](cms), CN/C=[42.6], IA=[4.67](mm), N=[3], TP=[0.89](hrs),
418 .....Continuous simulation parameters:
419 .....IaRECper=[6](hrs),
420 .....SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
421 .....InterEventTime=[12](hrs),
422 .....Baseflow simulation parameters:
423 .....BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
424 .....VHydCond=[.02](mm/hr), END=-1
425 *%-----|-----|
426 ADD HYD .....NHYDsum=["J6"], NHYDs to add=["R5"+"SOUTH-3"]
427 *%-----|-----|
428 SAVE HYD .....NHYD=["J6"], # OF PCYCLES=[-1], ICASEsh=[1]
429 .....HYD_COMMENT=["J6-Bearbrook Tributary Upstream of Thunder Road
.....Crossing"]
430 *%-----|-----|
431 ROUTE CHANNEL .....NHYDout=["R6"], NHYDin=["J6"], RDT=[5](min),
432 .....CHLGTH=[323](m), CHSLOPE=[0.44](%), FPSLOPE=[0.44](%),
433 .....SECNUM=[1], NSEG=[3]
434 .....(SEGROUGH, SEGDIST (m))=[0.05, 20.48, -0.035, 24.1, 0.05, 40.97]
.....NSEG times
435 .....(DISTANCE (m), ELEVATION (m))=[0, 75.19]
436 .....[4.82, 75.02]
437 .....[10.84, 74.46]
438 .....[20.48, 73.88]
439 .....[21.69, 73.71]
440 .....[22.89, 73.79]
441 .....[24.1, 74.07]
442 .....[25.3, 74.18]
443 .....[30.12, 74.6]
444 .....[34.94, 74.69]
445 .....[40.97, 75.14]
446 .....[-1,-1]
447 *%-----|-----|
448 CONTINUOUS NASHYD .....NHYD=["SOUTH-4"], DT=[5](min), AREA=[14.985](ha),
449 .....DWF=[0](cms), CN/C=[39.5], IA=[4.67](mm), N=[3], TP=[1.23](hrs),
450 .....Continuous simulation parameters:
451 .....IaRECper=[6](hrs),
452 .....SMIN=[-1](mm), SMAX=[-1](mm), SK=[0.03]/(mm),
453 .....InterEventTime=[12](hrs),
454 .....Baseflow simulation parameters:
455 .....BaseFlowOption=[1], InitGWResVol=[12](mm), GWResK=[0.95](mm/day/mm),
456 .....VHydCond=[.02](mm/hr), END=-1
457 *%-----|-----|
458 ADD HYD .....NHYDsum=["Total"], NHYDs to add=["R6"+"SOUTH-4"]
459 *%-----|-----|
460 *#=====|=====|
461 * .....DESIGN STORMS
462 *#=====|=====|

```

```

463 *#####
464 *# CONTINUOUS RAINFALL DATA
465 *#####
466 *#*****
467 *# STORMS
468 *#*****
469 START ..... TZERO=[ 1968.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1968]
470 *%-----|
471 START ..... TZERO=[ 1969.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1969]
472 *%-----|
473 START ..... TZERO=[ 1970.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1970]
474 *%-----|
475 START ..... TZERO=[ 1971.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1971]
476 *%-----|
477 START ..... TZERO=[ 1972.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1972]
478 *%-----|
479 START ..... TZERO=[ 1973.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1973]
480 *%-----|
481 START ..... TZERO=[ 1974.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1974]
482 *%-----|
483 START ..... TZERO=[ 1975.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1975]
484 *%-----|
485 START ..... TZERO=[ 1976.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1976]
486 *%-----|
487 START ..... TZERO=[ 1977.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1977]
488 *%-----|
489 START ..... TZERO=[ 1978.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1978]
490 *%-----|
491 START ..... TZERO=[ 1979.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1979]
492 *%-----|
493 START ..... TZERO=[ 1980.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1980]
494 *%-----|
495 START ..... TZERO=[ 1981.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1981]
496 *%-----|
497 START ..... TZERO=[ 1982.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1982]
498 *%-----|
499 START ..... TZERO=[ 1983.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1983]
500 *%-----|
501 START ..... TZERO=[ 1984.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1984]
502 *%-----|
503 START ..... TZERO=[ 1985.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1985]
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505 START ..... TZERO=[ 1986.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1986]
506 *%-----|
507 START ..... TZERO=[ 1987.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1987]
508 *%-----|
509 START ..... TZERO=[ 1988.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1988]
510 *%-----|
511 START ..... TZERO=[ 1989.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1989]
512 *%-----|
513 START ..... TZERO=[ 1990.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1990]
514 *%-----|
515 START ..... TZERO=[ 1991.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1991]
516 *%-----|
517 START ..... TZERO=[ 1992.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1992]
518 *%-----|
519 START ..... TZERO=[ 1993.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1993]
520 *%-----|
521 START ..... TZERO=[ 1994.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1994]
522 *%-----|
523 START ..... TZERO=[ 1995.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1995]
524 *%-----|
525 START ..... TZERO=[ 1996.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1996]
526 *%-----|
527 START ..... TZERO=[ 1997.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1997]
528 *%-----|
529 START ..... TZERO=[ 1998.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1998]
530 *%-----|
531 START ..... TZERO=[ 1999.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 1999]

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532 *%-----|-----|
533 START ..... TZERO=[ 2000.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 2000]
534 *%-----|-----|
535 START ..... TZERO=[ 2002.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 2002]
536 *%-----|-----|
537 START ..... TZERO=[ 2003.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 2003]
538 *%-----|-----|
539 START ..... TZERO=[ 2004.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 2004]
540 *%-----|-----|
541 START ..... TZERO=[ 2006.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 2006]
542 *%-----|-----|
543 START ..... TZERO=[ 2007.0401] , METOUT=[ 2] , NSTORM=[ 0] , NRUN=[ 2007]
544 *%-----|-----|
545 FINISH
546
```

00001 .....
00002 .....
00003 SSSSS W M M M H H Y Y M M O O 222 000 11 5555 .....
00004 S W M M M M H H Y Y M M O O 2 0 0 11 5 .....
00005 SSSSS W M M M H H Y Y M M O O 2 0 0 11 5 Ver 5.500 .....
00006 S W M M M M H H Y Y M M O O 222 0 0 11 555 FEB 2015 .....
00007 SSSSS W M M M H H Y Y M M O O 2 0 0 11 5 .....
00008 .....
00009 StormWater Management Hydrologic Model 222 000 11 555 .....
00010 .....
00011 .....
00012 \*\*\*\*\* CTRMNO-81 and CTRMNO-89 \*\*\*\*\*
00013 .....
00014 .....
00015 .....
00016 .....
00017 \*\*\*\*\* distributed by: J.F. Sabourin and Associates Inc. \*\*\*\*\*
00018 \*\*\*\*\* Ottawa, Ontario: (613) 836-3884 \*\*\*\*\*
00019 \*\*\*\*\* Gatineau, Quebec: (819) 243-6888 \*\*\*\*\*
00020 \*\*\*\*\* E-mail: jsabourin@jfa.com \*\*\*\*\*
00021 \*\*\*\*\*
00022 \*\*\*\*\*
00023 \*\*\*\*\*
00024 \*\*\*\*\* Licensed user: JFSaInc. \*\*\*\*\*
00025 \*\*\*\*\* SERIAL#:2549237 \*\*\*\*\*
00026 \*\*\*\*\*
00027 \*\*\*\*\*
00028 \*\*\*\*\*
00029 \*\*\*\*\* PROGRAM ARRAY DIMENSIONS \*\*\*\*\*
00030 \*\*\*\*\* Maximum Value for ID numbers = 41 \*\*\*\*\*
00031 \*\*\*\*\* Max. number of rainfall points: 105408 \*\*\*\*\*
00032 \*\*\*\*\*
00033 \*\*\*\*\*
00034 \*\*\*\*\*
00035 \*\*\*\*\*
00036 \*\*\*\*\* S U M M A R Y O U T P U T \*\*\*\*\*
00037 \*\*\*\*\* RUN DATE: 2024-07-31 TIME: 20:01:32 RUN COUNTER: 000908 \*\*\*\*\*
00038 \*\*\*\*\* Input file: C:\Temp\202407-TRMNO\_V04\_0-Post-Cont\TRMNO\_V04\_0-Post-Cont.dat \*\*\*\*\*
00039 \*\*\*\*\* Output file: C:\Temp\202407-TRMNO\_V04\_0-Post-Cont\TRMNO\_V04\_0-Post-Cont.out \*\*\*\*\*
00040 \*\*\*\*\* Summary file: C:\Temp\202407-TRMNO\_V04\_0-Post-Cont\TRMNO\_V04\_0-Post-Cont.sum \*\*\*\*\*
00041 \*\*\*\*\* User comments: \*\*\*\*\*
00042 \*\*\*\*\* 1: \*\*\*\*\*
00043 \*\*\*\*\* 2: \*\*\*\*\*
00044 \*\*\*\*\* 3: \*\*\*\*\*
00045 \*\*\*\*\*
00046 \*\*\*\*\*
00047 \*\*\*\*\*
00048 \*\*\*\*\*
00049 \*\*\*\*\*
00050 \*\*\*\*\*
00051 \*\*\*\*\* SWMINFO / INPUT DATA FILE \*\*\*\*\*
00052 \*\*\*\*\* # Project Name [THUNDER ROAD] Project Number: [2128] \*\*\*\*\*
00053 \*\*\*\*\* # Date [04-28-2021] \*\*\*\*\*
00054 \*\*\*\*\* # Modeller [J.F.S.] \*\*\*\*\*
00055 \*\*\*\*\* # License # [2549237] \*\*\*\*\*
00056 \*\*\*\*\* # Company [JFSaInc.] \*\*\*\*\*
00057 \*\*\*\*\* # License # [2549237] \*\*\*\*\*
00058 \*\*\*\*\* # License # [2549237] \*\*\*\*\*
00059 \*\*\*\*\* # License # [2549237] \*\*\*\*\*
00060 \*\*\*\*\* # License # [2549237] \*\*\*\*\*
00061 \*\*\*\*\* \*\* END OF RUN : 1967 \*\*\*\*\*
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00361# 1968-C00010-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00362# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00363# [Impervious area: IAlimp=1.57;SLP=2.50;LGI= 0.50;MMH=.013;SICI= 0]
00364# [Previous area: IAperv=4.67;SLP=2.50;LGI= 0.50;MMH=.250;SICI= 0]
00365# [InterEventTime= 12.00]
00366# [Cm= 58.4; Nr= 3.00; Tp= 1.46]
00367# [IAREC= 6.00; SMIN=73.13; SMAX=487.55; SK= 030]
00368# [L/S/n= 120. / 440. / 035]
00369# [Vmax= 505;Dmax= 258]
00370# [IAREC= 6.00; SMIN=73.13; SMAX=487.55; SK= 030]
00371# 1968-C00012-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00372# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00373# [IMP= 64;TMP= 75]
00374# [Horton parameters: Fw= 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00375# [Previous area: IAperv=4.67;SLP=2.50;LGI= 0.50;MMH=.250;SICI= 0]
00376# [Impervious area: IAlimp=1.57;SLP=2.50;LGI= 0.50;MMH=.013;SICI= 0]
00377# [IAREC= 6.00; SMIN=73.13; SMAX=487.55; SK= 030]
00378# 1968-C00013-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00379# ROUTE RESERVOIR -> 5.0 02;Pond3-out 1.21 .009 1968.0817 5:00 268.97 n/a .000
00380# out <= 5.0 01;Pond3-out 1.21 .009 1968.0817 5:00 268.97 n/a .000
00381# overflow <= 5.0 03;Pond3-Over 0.00 .000 1968.0401 0:00 .00 n/a .000
00382# [MtsToSd=2.154E+00 n3, TotVolVol=0.000E+00 n3, N=ov= 0, TotDVol= 0 hrs]
00383# 1968-C00014-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00384# ADD HYD + 5.0 02;R2 68.26 .207 1968.0817 6:10 200.92 n/a .000
00385# + 5.0 02;R2A 21.43 .047 1968.0817 6:30 199.20 n/a .000
00386# + 5.0 02;Pond3-Over 10.00 .000 1968.0401 0:00 .00 n/a .000
00387# SIM= 5.0 01;Total 129.05 .396 1968.0817 6:30 198.59 n/a .000
00388# [IAREC= 6.00; SMIN=181.09; SMAX=946.27; SK= 030]
00389# [L/S/n= 323. / 440. / 035]
00390# [Vmax= 505;Dmax= 258]
00391# 1968-C00015-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00392# ROUTE CHANNEL -> 5.0 02;Pond3-out 1.21 .003 1968.0817 5:50 268.95 n/a .000
00393# [RDT= 5.00] out <= 5.0 01;A1C-R 1.21 .003 1968.0817 5:50 268.95 n/a .000
00394# [L/S/n= 181. / 500. / 035]
00395# [Vmax= 505;Dmax= 258]
00396# 1968-C00016-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00397# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00398# [Cm= 58.4; Nr= 3.00; Tp= .89]
00399# [IAREC= 6.00; SMIN=94.24; SMAX=946.27; SK= 798]
00400# [L/S/n= 120. / 440. / 035]
00401# [Vmax= 505;Dmax= 258]
00402# 1968-C00017-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00403# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00404# [IMP= 64;TMP= 75]
00405# [Horton parameters: Fw= 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00406# [Previous area: IAperv=4.67;SLP=2.50;LGI= 0.50;MMH=.250;SICI= 0]
00407# [Impervious area: IAlimp=1.57;SLP=2.50;LGI= 0.50;MMH=.013;SICI= 0]
00408# [IAREC= 6.00; SMIN=73.13; SMAX=487.55; SK= 030]
00409# [L/S/n= 120. / 440. / 035]
00410# [Vmax= 505;Dmax= 258]
00411# 1968-C00018-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00412# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00413# [IMP= 64;TMP= 75]
00414# [Horton parameters: Fw= 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00415# [Previous area: IAperv=4.67;SLP=2.50;LGI= 0.50;MMH=.250;SICI= 0]
00416# [Impervious area: IAlimp=1.57;SLP=2.50;LGI= 0.50;MMH=.013;SICI= 0]
00417# [IAREC= 6.00; SMIN=73.13; SMAX=487.55; SK= 030]
00418# [L/S/n= 120. / 440. / 035]
00419# [Vmax= 505;Dmax= 258]
00420# 1968-C00019-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00421# ROUTE RESERVOIR -> 5.0 02;Pond3-in 10.00 .525 1968.0817 5:00 178.28 n/a .000
00422# out <= 5.0 01;Pond3-out 10.00 .029 1968.0817 7:55 178.28 n/a .000
00423# overflow <= 5.0 00 1968.0817 0:00 .00 n/a .000
00424# [MtsToSd=2.154E+00 n3, TotVolVol=0.000E+00 n3, N=ov= 0, TotDVol= 0 hrs]
00425# 1968-C00020-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00426# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00427# [Cm= 58.4; Nr= 3.00; Tp= 1.21]
00428# [IAREC= 6.00; SMIN=181.09; SMAX=946.27; SK= 030]
00429# [L/S/n= 323. / 440. / 035]
00430# [Vmax= 505;Dmax= 258]
00431# 1968-C00021-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00432# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00433# [IMP= 64;TMP= 75]
00434# [Horton parameters: Fw= 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00435# [Previous area: IAperv=4.67;SLP=2.50;LGI= 0.50;MMH=.250;SICI= 0]
00436# [Impervious area: IAlimp=1.57;SLP=2.50;LGI= 0.50;MMH=.013;SICI= 0]
00437# [IAREC= 6.00; SMIN=73.13; SMAX=487.55; SK= 030]
00438# [L/S/n= 120. / 440. / 035]
00439# [Vmax= 505;Dmax= 258]
00440# 1968-C00022-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00441# ADD HYD + 5.0 02;R2 68.26 .207 1968.0817 6:10 200.92 n/a .000
00442# + 5.0 02;R2A 21.43 .047 1968.0817 6:30 199.20 n/a .000
00443# + 5.0 02;Pond3-Over 10.00 .000 1968.0401 0:00 .00 n/a .000
00444# SIM= 5.0 01;Total 129.05 .396 1968.0817 6:15 198.48 n/a .000
00445# [IAREC= 6.00; SMIN=181.09; SMAX=946.27; SK= 030]
00446# [L/S/n= 323. / 440. / 035]
00447# [Vmax= 505;Dmax= 258]
00448# 1968-C00023-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00449# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00450# [Cm= 58.4; Nr= 3.00; Tp= .89]
00451# [IAREC= 6.00; SMIN=94.24; SMAX=946.27; SK= 798]
00452# [L/S/n= 120. / 440. / 035]
00453# [Vmax= 505;Dmax= 258]
00454# 1968-C00024-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00455# ADD HYD + 5.0 02;R2 68.26 .207 1968.0817 6:10 200.92 n/a .000
00456# + 5.0 02;R2A 21.43 .047 1968.0817 6:30 199.20 n/a .000
00457# + 5.0 02;Pond3-Over 10.00 .000 1968.0401 0:00 .00 n/a .000
00458# SIM= 5.0 01;Total 129.05 .396 1968.0817 6:15 198.48 n/a .000
00459# [IAREC= 6.00; SMIN=181.09; SMAX=946.27; SK= 030]
00460# [L/S/n= 323. / 440. / 035]
00461# [Vmax= 505;Dmax= 258]
00462# 1968-C00025-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00463# ROUTE CHANNEL -> 5.0 02;R2 68.26 .207 1968.0817 6:10 200.92 n/a .000
00464# [RDT= 5.00] out <= 5.0 01;A1C-R 1.21 .003 1968.0817 5:50 268.95 n/a .000
00465# [L/S/n= 181. / 500. / 035]
00466# [Vmax= 505;Dmax= 258]
00467# 1968-C00026-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00468# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00469# [Cm= 58.4; Nr= 3.00; Tp= .89]
00470# [IAREC= 6.00; SMIN=94.24; SMAX=946.27; SK= 798]
00471# [L/S/n= 120. / 440. / 035]
00472# [Vmax= 505;Dmax= 258]
00473# 1968-C00027-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00474# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00475# [Cm= 58.4; Nr= 3.00; Tp= .89]
00476# [IAREC= 6.00; SMIN=94.24; SMAX=946.27; SK= 798]
00477# [L/S/n= 120. / 440. / 035]
00478# [Vmax= 505;Dmax= 258]
00479# 1968-C00028-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00480# ADD HYD + 5.0 02;R2 68.26 .207 1968.0817 6:10 200.92 n/a .000
00481# + 5.0 02;R2A 21.43 .047 1968.0817 6:30 199.20 n/a .000
00482# + 5.0 02;Pond3-Over 10.00 .000 1968.0401 0:00 .00 n/a .000
00483# SIM= 5.0 01;Total 129.05 .396 1968.0817 6:15 198.48 n/a .000
00484# [IAREC= 6.00; SMIN=181.09; SMAX=946.27; SK= 030]
00485# [L/S/n= 323. / 440. / 035]
00486# [Vmax= 505;Dmax= 258]
00487# 1968-C00029-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00488# ROUTE CHANNEL -> 5.0 02;R2 68.26 .207 1968.0817 6:10 200.92 n/a .000
00489# [RDT= 5.00] out <= 5.0 01;A1C-R 1.21 .003 1968.0817 5:50 268.95 n/a .000
00490# [L/S/n= 181. / 500. / 035]
00491# [Vmax= 505;Dmax= 258]
00492# 1968-C00030-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00493# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00494# [Cm= 58.4; Nr= 3.00; Tp= .89]
00495# [IAREC= 6.00; SMIN=94.24; SMAX=946.27; SK= 798]
00496# [L/S/n= 120. / 440. / 035]
00497# [Vmax= 505;Dmax= 258]
00498# 1968-C00031-----DRAIN-ID-NHYD-----AREHA-QPEARcms-TpeakDate\_hh:mm-----RvM-R.C-----DWFMcs
00499# CONTINUOUS STANDBY Fw 76.20(Frc=13.20;DCAV=1.14; P=\*\*\*\*)
00500# [Cm= 58.4; Nr= 3.00; Tp= .89]
00501# [IAREC= 6.00; SMIN=94.24; SMAX=946.27; SK= 798]
00502# [L/S/n= 120. / 440. / 035]
00503# [Vmax= 505;Dmax= 258]
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00721 SUM= 5.0 01>Total 163.63 .485 1969.0819 3.95 126.89 n/a .000
00722 \*\*\*\*\*
00723 \*\*\*\*\*
00724 \*\*\*\*\*
00725 # CONTINUOUS RAINFALL DATA
00726 \*\*\*\*\*
00727 \*\*\*\*\*
00728 # STORMS
00729 \*\*\*\*\*
00730 \*\* END OF RUN : 1969
00731 \*\*\*\*\*
00732 \*\*\*\*\*
00733 \*\*\*\*\*
00734 \*\*\*\*\*
00735 \*\*\*\*\*
00736 \*\*\*\*\*
00737 \*\*\*\*\*
00738 RUN#COMMAND#
00739 R1970-C0001-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00740 \*\*\*\*\*
00741 [TZERO = .00 hrs on 19700401]
00742 [INSTORM = 2 [Imperial, 2-meric output]]
00743 [INSTORM = 0]
00744 [RIN = 1970]
00745 \*\*\*\*\*
00746 # SWHYMO / INPUT DATA FILE
00747 \*\*\*\*\*
00748 # Project Name: [THUNDER ROAD] Project Number: [2128]
00749 # Date : [04-20-2021]
00750 # Modeller : [J.B]
00751 # Company : JFSAINC.
00752 # License #: 254927
00753 \*\*\*\*\*
00754 # \*\*\*\*\*
00755 # Ottawa International Airport - April list to October 31st
00756 \*\*\*\*\*
00757 R1970-C0002-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00758 # READ AS DATA
00759 [Filename = YOM\_1967\_2007\_123 ]
00760 [Start date = 1970.0401 EndDate = 1970.1031]
00761 [Dw 60.min Length= 5136.hrs: Wethrs= 281 Dryhrs= 4855: PTOV= 477.80]
00762 # Maximum average rainfall intensities over
00763 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
00764 35.30 36.40 36.60 36.60 43.50 43.50 43.50 69.90 71.20
00765 # Number of rainfall events per following interval time
00766 19700926 19700926 19700927 19700927 19700928 19700928 19700929 19700929 date
00767 \*\*\*\*\*
00768 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
00769 118 99 86 69 59 44 33 22
00770 # Number of events with at least the following durations
00771 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
00772 217 217 217 217 217 217 217 217 217
00773 R1970-C0003-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00774 # COMPUTE AP
00775 [APIini= 50.00: APIkdy= 9000: APIkdt= 9956]
00776 [APImax= 76.00: APIave= 23.75: APImin= 2.66]
00777 R1970-C0004-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00778 # CONTINUOUS NASHYD 5.0 01:SOOTH-1 34.70 .054 1970.0927.1:00 150.39 315 .000
00779 [Cm= 38.1 N= 3.00: Tm= 4.12]
00780 [IAREC= 6.00: SMIN=191.89: SMAX=\*\*\*\*\*: SK= .030]
00781 [InterEventTime= 12.00]
00782 R1970-C0005-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00783 # CONTINUOUS NASHYD 5.0 01:SOOTH-2 12.44 .083 1970.0926.2:10 151.68 317 .000
00784 [Cm= 51.0 N= 3.00: Tm= 1.29]
00785 [IAREC= 6.00: SMIN= 67.24: SMAX=606.70: SK= .030]
00786 [InterEventTime= 12.00]
00787 R1970-C0006-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00788 # CONTINUOUS NASHYD 5.0 01:SOOTH-3 2.36 .040 1970.0926.22:00 157.23 329 .000
00789 [Cm= 18.7 N= 3.00: Tm= 1.21]
00790 [IAREC= 6.00: SMIN= 168.99: SMAX=168.99: SK= .030]
00791 [InterEventTime= 12.00]
00792 R1970-C0007-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00793 # ADD HYD 5.0 02:SOOTH-1 34.70 .054 1970.0927.1:00 150.39 n/a .000
00794 # 5.0 02:SOOTH-2 12.44 .083 1970.0926.22:00 151.68 n/a .000
00795 # 5.0 02:SOOTH-3 2.36 .040 1970.0926.22:00 157.23 n/a .000
00796 # 5.0 01:21 49.51 .152 1970.0926.22:15 151.04 n/a .000
00797 R1970-C0008-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00798 # ROUTE CHANNEL -> 5.0 02:21 49.51 .152 1970.0926.22:15 151.04 n/a .000
00799 # [L/S= 478 / .440 / .035]
00800 # [Vmax = 441.Dmax= .197]
00801 R1970-C0009-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00802 # CONTINUOUS STANDYD 5.0 01:2NT-1 4.39 .030 1970.0926.22:30 152.59 319 .000
00803 [Cm= 64.4 N= 3.00: Tm= 1.66]
00804 [IAREC= 6.00: SMIN= 67.24: SMAX=448.24: SK= .030]
00805 [InterEventTime= 12.00]
00806 R1970-C0010-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00807 # CONTINUOUS STANDYD 5.0 01:2NT-2 3.61 .026 1970.0926.22:45 151.11 316 .000
00808 [Cm= 47.4 N= 3.00: Tm= .95]
00809 [IAREC= 6.00: SMIN= 768.40: SMAX=768.40: SK= .030]
00810 [InterEventTime= 12.00]
00811 R1970-C0011-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00812 # CONTINUOUS STANDYD 5.0 01:A3A 3.84 .027 1970.0926.22:00 152.32 319 .000
00813 [Cm= 58.4 N= 3.00: Tm= 1.46]
00814 [IAREC= 6.00: SMIN= 487.55: SK= .030]
00815 [InterEventTime= 12.00]
00816 R1970-C0012-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00817 # CONTINUOUS STANDYD 5.0 01:POnd3-in 1.21 .095 1970.0926.21:00 252.22 528 .000
00818 [XIMP= 64.TIMP= .75]
00819 [Noton parameters: Fw= 76.20:Fp= 13.20:DCAV=4.14: F=\*\*\*\*]
00820 [Previous area: APer= 4.67:SLP=2.50:LDP= 100. MHP= 250:SCP= .0]
00821 [Impervious area: IAlmp= 1.57:SLD=1.50:IM= 250. IMI=.013:SCI= .0]
00822 [IAREC= 12.00: IAREC= 12.00]
00823 R1970-C0013-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00824 # ROUTE RESERVOIR -> 5.0 02:POnd3-in 1.21 .095 1970.0926.21:00 252.22 n/a .000
00825 # out <= 5.0 01:POnd3-out 1.21 .093 1970.0926.22:05 252.20 n/a .000
00826 # overflow <= 5.0 03:POnd3-over 10.00 .060 1970.0926.21:00 180.66 n/a .000
00827 [MStoCsed=.3924E-01 m3, TotDvVol=.0000E+00 m3, N-Ofv= 0, TotDvOfv= 0 hrs]
00828 R1970-C0014-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00829 # ADD HYD 5.0 02:POnd3-over 10.00 .060 1970.0926.21:00 180.66 n/a .000
00830 # 5.0 02:POnd3-out 1.21 .093 1970.0926.22:05 252.20 n/a .000
00831 # 5.0 01:21 49.51 .152 1970.0926.22:15 151.04 n/a .000
00832 # 5.0 02:A3A 3.84 .027 1970.0926.22:00 152.32 n/a .000
00833 R1970-C0015-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00834 # ROUTE CHANNEL -> 5.0 02:POnd3-out 1.21 .093 1970.0926.22:05 252.20 n/a .000
00835 # [L/S= 5.00 / .140 / .035]
00836 # [Vmax = 397 / .560 / .035]
00837 R1970-C0016-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00838 # CONTINUOUS STANDYD 5.0 01:2NT-3 5.71 .062 1970.0926.21:45 152.32 319 .000
00839 [Cm= 18.7 N= 3.00: Tm= 1.21]
00840 [IAREC= 6.00: SMIN= 73.13: SMAX=487.55: SK= .030]
00841 [InterEventTime= 12.00]
00842 R1970-C0017-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00843 # ADD HYD 5.0 02:R1 49.51 .148 1970.0926.22:30 151.04 n/a .000
00844 # 5.0 02:R2 68.26 .272 1970.0926.22:15 153.10 n/a .000
00845 # 5.0 02:R3 3.61 .026 1970.0926.21:45 151.11 n/a .000
00846 # 5.0 02:R4 3.84 .027 1970.0926.22:00 152.32 n/a .000
00847 # 5.0 02:A3A 3.84 .027 1970.0926.22:00 152.32 n/a .000
00848 # 5.0 02:A3C 9.21 .003 1970.0927.5:00 252.20 n/a .000
00849 # 5.0 01:21 49.51 .152 1970.0926.22:15 151.04 n/a .000
00850 # 5.0 01:22 68.26 .272 1970.0926.22:15 153.10 n/a .000
00851 R1970-C0018-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00852 # ROUTE CHANNEL -> 5.0 02:21 49.51 .152 1970.0926.22:15 151.04 n/a .000
00853 # [L/S= 500 / .140 / .035]
00854 # [Vmax = 512.Dmax= .197]
00855 R1970-C0019-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00856 # CONTINUOUS NASHYD 5.0 01:A3A 3.84 .020 1971.0816.45 155.40 323 .000
00857 [Cm= 36.1 N= 3.00: Tm= 1.68]
00858 [IAREC= 6.00: SMIN=191.89: SMAX=\*\*\*\*\*: SK= .030]
00859 [InterEventTime= 12.00]
00860 R1970-C0020-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00861 # CONTINUOUS STANDYD 5.0 01:POnd3-in 10.00 .060 1970.0926.21:00 180.66 378 .000
00862 [XIMP= 64.TIMP= .75]
00863 [Noton parameters: Fw= 76.20:Fp= 13.20:DCAV=4.14: F=\*\*\*\*]
00864 [Previous area: APer= 4.67:SLP=2.50:LDP= 100. MHP= 250:SCP= .0]
00865 [Impervious area: IAlmp= 1.57:SLD=1.50:IM= 250. IMI=.013:SCI= .0]
00866 [IAREC= 12.00: IAREC= 12.00]
00867 R1970-C0021-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00868 # ROUTE RESERVOIR -> 5.0 02:POnd3-in 10.00 .060 1970.0926.21:00 180.66 n/a .000
00869 # out <= 5.0 01:POnd3-out 10.00 .060 1970.0926.21:00 180.66 n/a .000
00870 # overflow <= 5.0 03:POnd3-over 10.00 .060 1970.0401.0:00 .00 n/a .000
00871 [MStoCsed=.2122E-01 m3, TotDvVol=.0000E+00 m3, N-Ofv= 0, TotDvOfv= 0 hrs]
00872 R1970-C0022-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00873 # CONTINUOUS NASHYD 5.0 01:A3 9.14 .110 1970.0926.21:55 153.83 322 .000
00874 [Cm= 64.4 N= 3.00: Tm= 1.66]
00875 [IAREC= 6.00: SMIN= 48.56: SMAX=323.73: SK= .030]
00876 [InterEventTime= 12.00]
00877 R1970-C0023-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00878 # ADD HYD 5.0 02:R1 49.51 .148 1970.0926.22:30 151.04 n/a .000
00879 # 5.0 02:R2 68.26 .272 1970.0926.22:15 153.10 n/a .000
00880 # 5.0 02:A3A 3.84 .027 1970.0926.21:45 151.11 n/a .000
00881 # 5.0 02:A3C 9.21 .003 1970.0927.5:00 252.20 n/a .000
00882 # 5.0 01:21 49.51 .152 1970.0926.22:15 151.04 n/a .000
00883 # 5.0 01:22 68.26 .272 1970.0926.22:15 153.10 n/a .000
00884 R1970-C0024-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00885 # ROUTE CHANNEL -> 5.0 02:21 49.51 .148 1970.0926.22:15 151.04 n/a .000
00886 # [L/S= 396 / .305 / .035]
00887 # [Vmax = 421.Dmax= .197]
00888 R1970-C0025-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00889 # CONTINUOUS NASHYD 5.0 01:SOOTH-1 20.21 .066 1970.0926.22:15 150.11 314 .000
00890 [Cm= 18.7 N= 3.00: Tm= 1.21]
00891 [IAREC= 6.00: SMIN=204.20: SMAX=\*\*\*\*\*: SK= .030]
00892 [InterEventTime= 12.00]
00893 R1970-C0026-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00894 # ADD HYD 5.0 02:R1 49.51 .148 1970.0926.22:30 151.04 n/a .000
00895 # 5.0 02:R2 68.26 .272 1970.0926.22:15 153.10 n/a .000
00896 # 5.0 02:A3A 3.84 .027 1970.0926.21:45 151.11 n/a .000
00897 # 5.0 02:A3C 9.21 .003 1970.0927.5:00 252.20 n/a .000
00898 # 5.0 01:21 49.51 .152 1970.0926.22:15 151.04 n/a .000
00899 # 5.0 01:22 68.26 .272 1970.0926.22:15 153.10 n/a .000
00900 # 5.0 01:24 129.05 .517 1970.0926.22:30 154.33 n/a .000
00901 R1970-C0027-----DRAIN-ID-NHYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DMFms
00902 # ROUTE CHANNEL -> 5.0 02:24 129.05 .517 1970.0926.22:30 154.33 n/a .000
00903 \*\*\*\*\*
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01081 [Cm 36.1: N= 3.00: Tp: 1.61]
01082 [IAR6C 6.00: SMIN: 191.00: SMAX: *****: SK: -030]
01083 [InterEventTime= 12.00]
01084 19171-R1971-C0020-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01085 CONTINUOUS STANHYD 5.0 01:15:00 10.00 148.1971.0810.15:00 164.74 n/a .000
01086 [XIMP: 38:TMP: 74]
01087 [Previous area: IArea= 4.67:SLP:2.00:IDP: 500.0:NDP: 250:ICP: 0]
01088 [Impervious area: IArea= 1.57:SLP:2.40:IDP: 500.0:NDP: 250:ICP: 0]
01089 [Impervious area: IArea= 4.67:SLP:2.00:IDP: 500.0:NDP: 250:ICP: 0]
01090 [InterEventTime= 12.00]
01091 19171-R1971-C0021-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01092 ROUTE RESEVERVOIR 5.0 02:15:00 10.00 148.1971.0810.15:00 164.74 n/a .000
01093 out <= 5.0 01:15:00 10.00 .029 1971.0810.17:35 164.74 n/a .000
01094 overflow <= 5.0 01:15:00 10.00 .029 1971.0810.17:35 164.74 n/a .000
01095 [MStoStore= 49208.01 m3, TotOVVol= 0.000E+00 m3, N-Orv= 0, TotDirV= 0.0]
01096 19171-R1971-C0022-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01097 CONTINUOUS STANHYD 5.0 01:15:00 10.00 148.1971.0810.16:30 155.75 :324 .000
01098 [Cm 68.4: N= 3.00: Tp: 1.12]
01099 [IAR6C 6.00: SMIN: 48.56: SMAX: 323.73: SK: -030]
01100 [InterEventTime= 12.00]
01101 19171-R1971-C0023-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01102 ADD HYD 5.0 02:15:00 10.00 148.1971.0810.17:00 154.93 n/a .000
01103 + 5.0 02:15:00 10.00 .046 1971.0810.17:00 154.93 n/a .000
01104 + 5.0 02:15:00 10.00 .046 1971.0810.17:00 154.93 n/a .000
01105 ROUTE CHANNEL -> 5.0 02:15:00 10.00 .029 1971.0810.17:00 154.93 n/a .000
01106 + 5.0 02:15:00 10.00 .029 1971.0810.17:35 164.74 n/a .000
01107 [L/S= 482. / 410. / 035]
01108 19171-R1971-C0024-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01109 ROUTE CHANNEL -> 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01110 [L/S= 396. / 305. / 035]
01111 + 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01112 [Vmax: 528: Dmax: 277]
01113 19171-R1971-C0025-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01114 CONTINUOUS STANHYD 5.0 01:15:00 10.00 148.1971.0810.16:45 154.91 :322 .000
01115 [Cm 25.8: N= 3.00: Tp: 1.00]
01116 [IAR6C 6.00: SMIN: 204.20: SMAX: *****: SK: -030]
01117 [InterEventTime= 12.00]
01118 19171-R1971-C0026-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01119 ADD HYD 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01120 + 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01121 SUM= 5.0 01:15:00 10.00 .029 1971.0810.16:45 154.91 n/a .000
01122 ROUTE CHANNEL -> 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01123 + 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01124 [L/S= 422. / 410. / 035]
01125 [Vmax: 528: Dmax: 277]
01126 19171-R1971-C0027-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01127 CONTINUOUS STANHYD 5.0 01:15:00 10.00 148.1971.0810.16:25 154.93 :322 .000
01128 [Cm 36.7: N= 3.00: Tp: .96]
01129 [IAR6C 6.00: SMIN: 191.00: SMAX: *****: SK: -030]
01130 [InterEventTime= 12.00]
01131 19171-R1971-C0028-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01132 ADD HYD 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01133 + 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01134 SUM= 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.67 n/a .000
01135 ROUTE CHANNEL -> 5.0 01:15:00 10.00 .401 1971.0810.17:00 156.63 n/a .000
01136 [L/S= 482. / 410. / 035]
01137 19171-R1971-C0029-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01138 ROUTE CHANNEL -> 5.0 01:15:00 10.00 .401 1971.0810.17:00 156.63 n/a .000
01139 [L/S= 181. / 500. / 035]
01140 [Vmax: 503: Dmax: 290]
01141 19171-R1971-C0030-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01142 CONTINUOUS STANHYD 5.0 01:15:00 10.00 148.1971.0810.16:20 155.04 :322 .000
01143 [Cm 42.6: N= 3.00: Tp: .89]
01144 [IAR6C 6.00: SMIN: 141.94: SMAX: 946.27: SK: -030]
01145 [InterEventTime= 12.00]
01146 19171-R1971-C0031-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01147 ADD HYD 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.65 n/a .000
01148 + 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.65 n/a .000
01149 SUM= 5.0 02:15:00 10.00 .384 1971.0810.17:00 156.65 n/a .000
01150 19171-R1971-C0033-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01151 SAVE HYD 5.0 01:15:00 10.00 148.64 421 1971.0810.17:10 156.45 n/a .000
01152 [L/S= 482. / 410. / 035]
01153 [Vmax: 553: Dmax: 284]
01154 19171-R1971-C0035-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01155 CONTINUOUS STANHYD 5.0 01:15:00 10.00 148.64 421 1971.0810.16:35 154.87 :322 .000
01156 [Cm 35.1: N= 3.00: Tp: 1.12]
01157 [IAR6C 6.00: SMIN: 191.00: SMAX: *****: SK: -030]
01158 [InterEventTime= 12.00]
01159 19171-R1971-C0036-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01160 ADD HYD 5.0 02:15:00 10.00 .401 1971.0810.17:00 156.65 n/a .000
01161 + 5.0 02:15:00 10.00 .401 1971.0810.17:00 156.65 n/a .000
01162 SUM= 5.0 02:15:00 10.00 .401 1971.0810.17:00 156.65 n/a .000
01163 [L/S= 482. / 410. / 035]
01164 [Vmax: 553: Dmax: 284]
01165 19171-R1971-C0035-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01166 CONTINUOUS STANHYD 5.0 01:15:00 10.00 148.64 421 1971.0810.16:35 154.87 :322 .000
01167 [Cm 35.1: N= 3.00: Tp: 1.12]
01168 [IAR6C 6.00: SMIN: 191.00: SMAX: *****: SK: -030]
01169 [InterEventTime= 12.00]
01170 19171-R1971-C0036-----DtmIn-ID-NHYD-----AREHA-GPEARqms-TpeakDate_hh:mm-----RvM-R.C-----DWfms
01171 ADD HYD 5.0 02:15:00 10.00 .401 1971.0810.17:00 156.65 n/a .000
01172 + 5.0 02:15:00 10.00 .401 1971.0810.17:00 156.65 n/a .000
01173 SUM= 5.0 02:15:00 10.00 .401 1971.0810.17:00 156.65 n/a .000
01174 [L/S= 482. / 410. / 035]
01175 [Vmax: 553: Dmax: 284]
01176 *****
01177 ** END OF RUN : 1971
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01245 *****
01246 *****
01247 *****
01248 *****
01249 *****
01250 *****
01251 *****
01252 *****
01253 *****
01254 *****
01255 *****
01256 *****
01257 *****
01258 *****
01259 *****
01260 *****

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02521 *****
02522 RIN# COMMANDS
02523 R1978-C0001
02524 START
02525 [ZERO = .00 hrs on 19790401]
02526 [MOUTP= 2 (Imperial, 2-metric output)]
02527 [NUTRN= 0]
02528 [NUN= 1978 ]
02529 *****
02530 $ SMRYNO / INPUT DATA FILE
02531 #
02532 # Project Name (THUNDER ROAD) Project Number: (1218)
02533 # Date : 04-28-2021
02534 # Modeler : [ ]
02535 # Company : FSAInc.
02536 # License # : 2549237
02537 *****
02538 #
02539 #
02540 # Ottawa International Airport - April lat to October 31st.
02541 R1978-C0002
02542 *****
02543 $READ AREA DATA
02544 [Filename = YOM_1967_2007.123 ]
02545 [Start_date = 1978.0401; End_date = 1978.1031]
02546 [Dtr = 60 min; Length= 5136 hrs; WetRes= 340; DryRes= 4796; PTOF= 511.10]
02547 *****
02548 Maximum average rainfall intensities over
02549 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
02550 36.00 18.15 12.10 6.05 3.04 1.64 1.13 .87 .58 mm/hr
02551 36.00 36.30 36.30 36.30 39.40 40.60 41.60 41.60
02552 1978018 1978018 1978018 1978018 1978021 1978021
02553 Number of rainfall events per following interval time
02554 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
02555 143 118 109 89 62 50 43 38 25
02556 Number of events with at least the following durations
02557 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
02558 142 67 37 13 3 0 0 0 0
02559 *****
02560 R1978-C0003
02561 *****
02562 COMPUTE API
02563 [ApiIn= 50.00; ApiQty= 9000; ApiKdt= .9956]
02564 [ApiTime= 63.37; ApiVax= 910; ApiNm= 16740]
02565 R1978-C0004 *****
02566 CONTINUOUS STANBYD *****
02567 [Cm= 38.1; N= 3.00; Tp= 4.12]
02568 [IAREC= 6.00; SMIN=168.62; SMAX=*****; SK= .030]
02569 [InterEventTime= 12.00]
02570 *****
02571 R1978-C0005 *****
02572 CONTINUOUS STANBYD *****
02573 [Cm= 38.1; N= 3.00; Tp= 4.12]
02574 [IAREC= 6.00; SMIN= 25.21; SMAX=168.09; SK= .030]
02575 [InterEventTime= 12.00]
02576 *****
02577 ADD HYD *****
02578 [Cm= 38.1; N= 3.00; Tp= 4.12]
02579 [IAREC= 6.00; SMIN=168.62; SMAX=*****; SK= .030]
02580 *****
02581 R1978-C0008 *****
02582 ROUTE CHANNEL *****
02583 [RDY= 5.00] out-> 5.0 01:PM3- 49.51 .132 1978.0618.1830 166.61 n/a .000
02584 [L/S= 478 / .440 / .035]
02585 [Vmax = 494; Dmax= 153]
02586 R1978-C0009 *****
02587 CONTINUOUS STANBYD *****
02588 [Cm= 60.4; N= 3.00; Tp= 1.66]
02589 [IAREC= 6.00; SMIN= 67.24; SMAX=448.24; SK= .030]
02590 *****
02591 R1978-C0010 *****
02592 CONTINUOUS STANBYD *****
02593 [Cm= 47.4; N= 3.00; Tp= .95]
02594 [IAREC= 6.00; SMIN=115.26; SMAX=768.40; SK= .030]
02595 [InterEventTime= 12.00]
02596 *****
02597 R1978-C0011 *****
02598 CONTINUOUS STANBYD *****
02599 [Cm= 58.4; N= 3.00; Tp= 1.46]
02600 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02601 *****
02602 R1978-C0012 *****
02603 CONTINUOUS STANBYD *****
02604 [XIMP= 64; TIMP= 75]
02605 [Horton parameters: Fw= 76.20; Fc= 13.20; DCAV= 4.14; P= *****]
02606 [Previous area: IArea= 4.67; SLP= 2.0; LSG= 500; MPM= 250; SDC= .0]
02607 [Impervious area: IArea= 1.57; SLP= 2.50; LSG= 500; MPM= .013; SDC= .0]
02608 [IAREC= 12.00]
02609 *****
02610 R1978-C0013 *****
02611 ROUTE RESERVOIR *****
02612 out-> 5.0 01:PM3- 1.21 .000 1978.0618.1700 260.83 n/a .000
02613 overflow => 5.0 01:PM3-Over 0.00 1978.0401.0000 0.00 n/a n/a .000
02614 [NetSto= 254.2938E+00 m3; TotVol= 0.0000E+00 m3; N= 0; TotDroVol= 0.0 hrs]
02615 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02616 *****
02617 R1978-C0014 *****
02618 ADD HYD *****
02619 out-> 5.0 01:PM3-Over 0.00 1978.0401.0000 0.00 n/a n/a .000
02620 overflow => 5.0 01:PM3-Over 1.21 .000 1978.0618.1700 260.81 n/a .000
02621 [NetSto= 254.2938E+00 m3; TotVol= 0.0000E+00 m3; N= 0; TotDroVol= 0.0 hrs]
02622 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02623 *****
02624 R1978-C0015 *****
02625 CONTINUOUS STANBYD *****
02626 [Cm= 58.4; N= 3.00; Tp= 1.46]
02627 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02628 [InterEventTime= 12.00]
02629 *****
02630 R1978-C0017 *****
02631 ADD HYD *****
02632 [Cm= 58.4; N= 3.00; Tp= 1.46]
02633 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02634 *****
02635 R1978-C0018 *****
02636 CONTINUOUS STANBYD *****
02637 [Cm= 58.4; N= 3.00; Tp= 1.46]
02638 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02639 [InterEventTime= 12.00]
02640 *****
02641 R1978-C0019 *****
02642 CONTINUOUS STANBYD *****
02643 [XIMP= 64; TIMP= 75]
02644 [Horton parameters: Fw= 76.20; Fc= 13.20; DCAV= 4.14; P= *****]
02645 [Previous area: IArea= 4.67; SLP= 2.0; LSG= 500; MPM= 250; SDC= .0]
02646 [Impervious area: IArea= 1.57; SLP= 2.50; LSG= 500; MPM= .013; SDC= .0]
02647 [IAREC= 12.00]
02648 *****
02649 R1978-C0020 *****
02650 CONTINUOUS STANBYD *****
02651 [Cm= 58.4; N= 3.00; Tp= 1.46]
02652 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02653 *****
02654 R1978-C0021 *****
02655 ROUTE RESERVOIR *****
02656 out-> 5.0 01:PM3- 1.21 .000 1978.0618.1700 176.39 n/a .000
02657 overflow => 5.0 01:PM3-Over 0.00 1978.0401.0000 0.00 n/a n/a .000
02658 [NetSto= 214.348E+00 m3; TotVol= 0.0000E+00 m3; N= 0; TotDroVol= 0.0 hrs]
02659 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02660 *****
02661 R1978-C0022 *****
02662 CONTINUOUS STANBYD *****
02663 [Cm= 61.4; N= 3.00; Tp= 1.21]
02664 [IAREC= 6.00; SMIN= 43.66; SMAX=323.73; SK= .030]
02665 [InterEventTime= 12.00]
02666 *****
02667 R1978-C0023 *****
02668 ADD HYD *****
02669 [Cm= 61.4; N= 3.00; Tp= 1.21]
02670 [IAREC= 6.00; SMIN= 43.66; SMAX=323.73; SK= .030]
02671 *****
02672 R1978-C0024 *****
02673 CONTINUOUS STANBYD *****
02674 [Cm= 35.1; N= 3.00; Tp= 1.40]
02675 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02676 [InterEventTime= 12.00]
02677 *****
02678 R1978-C0026 *****
02679 ADD HYD *****
02680 [Cm= 35.1; N= 3.00; Tp= 1.40]
02681 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02682 [InterEventTime= 12.00]
02683 *****
02684 R1978-C0027 *****
02685 ROUTE CHANNEL *****
02686 [RDY= 5.00] out-> 5.0 01:PM3- 129.05 .464 1978.0618.1830 168.24 n/a .000
02687 [L/S= 482 / .410 / .035]
02688 [Vmax = 548; Dmax= 307]
02689 *****
02690 R1978-C0028 *****
02691 CONTINUOUS STANBYD *****
02692 [Cm= 20.2; N= 3.00; Tp= 1.60]
02693 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02694 [InterEventTime= 12.00]
02695 *****
02696 R1978-C0029 *****
02697 ADD HYD *****
02698 [Cm= 20.2; N= 3.00; Tp= 1.60]
02699 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02700 [InterEventTime= 12.00]
02701 *****
02702 R1978-C0031 *****
02703 CONTINUOUS STANBYD *****
02704 [Cm= 42.6; N= 3.00; Tp= .88]
02705 [IAREC= 6.00; SMIN= 191.09; SMAX=487.55; SK= .030]
02706 [InterEventTime= 12.00]
02707 *****
02708 R1978-C0032 *****
02709 ADD HYD *****
02710 [Cm= 42.6; N= 3.00; Tp= .88]
02711 [IAREC= 6.00; SMIN= 191.09; SMAX=487.55; SK= .030]
02712 [InterEventTime= 12.00]
02713 *****
02714 R1978-C0033 *****
02715 ROUTE CHANNEL *****
02716 [RDY= 5.00] out-> 5.0 01:PM3- 148.64 .507 1978.0618.1840 168.01 n/a .000
02717 [L/S= 323 / .440 / .035]
02718 [Vmax = 574; Dmax= 307]
02719 *****
02720 R1978-C0035 *****
02721 CONTINUOUS STANBYD *****
02722 [Cm= 39.5; N= 3.00; Tp= 1.23]
02723 [IAREC= 6.00; SMIN= 168.62; SMAX=*****; SK= .030]
02724 [InterEventTime= 12.00]
02725 *****
02726 R1978-C0036 *****
02727 ADD HYD *****
02728 [Cm= 39.5; N= 3.00; Tp= 1.23]
02729 [IAREC= 6.00; SMIN= 168.62; SMAX=*****; SK= .030]
02730 [InterEventTime= 12.00]
02731 *****
02732 R1978-C0038 *****
02733 ROUTE CHANNEL *****
02734 [RDY= 5.00] out-> 5.0 01:PM3- 148.64 .507 1978.0618.1840 168.01 n/a .000
02735 [L/S= 323 / .440 / .035]
02736 [Vmax = 574; Dmax= 307]
02737 *****
02738 R1978-C0039 *****
02739 CONTINUOUS STANBYD *****
02740 [Cm= 39.5; N= 3.00; Tp= 1.23]
02741 [IAREC= 6.00; SMIN= 168.62; SMAX=*****; SK= .030]
02742 [InterEventTime= 12.00]
02743 *****
02744 R1978-C0041 *****
02745 COMPUTE API
02746 [ApiIn= 50.00; ApiQty= 9000; ApiKdt= .9956]
02747 [ApiTime= 63.37; ApiVax= 910; ApiNm= 16740]
02748 *****
02749 R1978-C0042 *****
02750 CONTINUOUS STANBYD *****
02751 [Cm= 38.1; N= 3.00; Tp= 4.12]
02752 [IAREC= 6.00; SMIN= 168.62; SMAX=*****; SK= .030]
02753 [InterEventTime= 12.00]
02754 *****
02755 R1978-C0043 *****
02756 ROUTE RESERVOIR *****
02757 out-> 5.0 01:PM3- 1.21 .000 1978.0618.1700 260.83 n/a .000
02758 overflow => 5.0 01:PM3-Over 0.00 1978.0401.0000 0.00 n/a n/a .000
02759 [NetSto= 254.2938E+00 m3; TotVol= 0.0000E+00 m3; N= 0; TotDroVol= 0.0 hrs]
02760 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02761 *****
02762 R1978-C0044 *****
02763 CONTINUOUS STANBYD *****
02764 [Cm= 47.4; N= 3.00; Tp= .95]
02765 [IAREC= 6.00; SMIN= 115.26; SMAX=768.40; SK= .030]
02766 [InterEventTime= 12.00]
02767 *****
02768 R1978-C0045 *****
02769 ADD HYD *****
02770 [Cm= 47.4; N= 3.00; Tp= .95]
02771 [IAREC= 6.00; SMIN= 115.26; SMAX=768.40; SK= .030]
02772 [InterEventTime= 12.00]
02773 *****
02774 R1978-C0046 *****
02775 CONTINUOUS STANBYD *****
02776 [Cm= 81.7; N= 3.00; Tp= 1.21]
02777 [IAREC= 6.00; SMIN= 25.21; SMAX=168.09; SK= .030]
02778 [InterEventTime= 12.00]
02779 *****
02780 R1978-C0047 *****
02801 ADD HYD *****
02802 [Cm= 81.7; N= 3.00; Tp= 1.21]
02803 [IAREC= 6.00; SMIN= 25.21; SMAX=168.09; SK= .030]
02804 [InterEventTime= 12.00]
02805 *****
02806 R1978-C0048 *****
02807 CONTINUOUS STANBYD *****
02808 [Cm= 81.7; N= 3.00; Tp= 1.21]
02809 [IAREC= 6.00; SMIN= 25.21; SMAX=168.09; SK= .030]
02810 [InterEventTime= 12.00]
02811 *****
02812 R1978-C0049 *****
02813 ROUTE CHANNEL *****
02814 [RDY= 5.00] out-> 5.0 01:PM3- 148.64 .507 1978.0618.1840 168.01 n/a .000
02815 [L/S= 478 / .440 / .035]
02816 [Vmax = 478; Dmax= 153]
02817 *****
02818 R1978-C0050 *****
02819 CONTINUOUS STANBYD *****
02820 [Cm= 60.4; N= 3.00; Tp= 1.66]
02821 [IAREC= 6.00; SMIN= 67.24; SMAX=448.24; SK= .030]
02822 [InterEventTime= 12.00]
02823 *****
02824 R1978-C0051 *****
02825 CONTINUOUS STANBYD *****
02826 [Cm= 58.4; N= 3.00; Tp= 1.46]
02827 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02828 [InterEventTime= 12.00]
02829 *****
02830 R1978-C0052 *****
02831 CONTINUOUS STANBYD *****
02832 [XIMP= 64; TIMP= 75]
02833 [Horton parameters: Fw= 76.20; Fc= 13.20; DCAV= 4.14; P= *****]
02834 [Previous area: IArea= 4.67; SLP= 2.0; LSG= 500; MPM= 250; SDC= .0]
02835 [Impervious area: IArea= 1.57; SLP= 2.50; LSG= 500; MPM= .013; SDC= .0]
02836 [IAREC= 12.00]
02837 *****
02838 R1978-C0053 *****
02839 ROUTE RESERVOIR *****
02840 out-> 5.0 01:PM3- 1.21 .000 1978.0618.1700 176.39 n/a .000
02841 overflow => 5.0 01:PM3-Over 0.00 1978.0401.0000 0.00 n/a n/a .000
02842 [NetSto= 214.348E+00 m3; TotVol= 0.0000E+00 m3; N= 0; TotDroVol= 0.0 hrs]
02843 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02844 *****
02845 R1978-C0054 *****
02846 CONTINUOUS STANBYD *****
02847 [Cm= 58.4; N= 3.00; Tp= 1.46]
02848 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02849 [InterEventTime= 12.00]
02850 *****
02851 R1978-C0055 *****
02852 ADD HYD *****
02853 [Cm= 58.4; N= 3.00; Tp= 1.46]
02854 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02855 [InterEventTime= 12.00]
02856 *****
02857 R1978-C0056 *****
02858 CONTINUOUS STANBYD *****
02859 [Cm= 58.4; N= 3.00; Tp= 1.46]
02860 [IAREC= 6.00; SMIN= 73.13; SMAX=487.55; SK= .030]
02861 [InterEventTime= 12.00]
02862 *****
02863 R1978-C0057 *****
02864 ROUTE CHANNEL *****
02865 [RDY= 5.00] out-> 5.0 01:PM3- 129.05 .464 1978.0618.1830 168.24 n/a .000
02866 [L/S= 359 / .560 / .035]
02867 [Vmax = 548; Dmax= 307]
02868 *****
02869 R1978-C0058 *****
02870 CONTINUOUS STANBYD *****
02871 [Cm= 35.1; N= 3.00; Tp= 1.40]
02872 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02873 [InterEventTime= 12.00]
02874 *****
02875 R1978-C0059 *****
02876 ADD HYD *****
02877 [Cm= 35.1; N= 3.00; Tp= 1.40]
02878 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02879 [InterEventTime= 12.00]
02880 *****
02881 R1978-C0060 *****
02882 CONTINUOUS STANBYD *****
02883 [Cm= 35.1; N= 3.00; Tp= 1.40]
02884 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02885 [InterEventTime= 12.00]
02886 *****
02887 R1978-C0061 *****
02888 ROUTE CHANNEL *****
02889 [RDY= 5.00] out-> 5.0 01:PM3- 129.05 .464 1978.0618.1830 168.24 n/a .000
02890 [L/S= 359 / .560 / .035]
02891 [Vmax = 548; Dmax= 307]
02892 *****
02893 R1978-C0062 *****
02894 CONTINUOUS STANBYD *****
02895 [Cm= 35.1; N= 3.00; Tp= 1.40]
02896 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02897 [InterEventTime= 12.00]
02898 *****
02899 R1978-C0063 *****
02900 CONTINUOUS STANBYD *****
02901 [Cm= 35.1; N= 3.00; Tp= 1.40]
02902 [IAREC= 6.00; SMIN= 191.09; SMAX=*****; SK= .030]
02903 [InterEventTime= 12.00]
02904 *****

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02881> CONTINUOUS NASHYD 5.0 01:23 9.14 .143 1979.0616.14:55 327.96 489 .000
02882> [Cm 64.4# 3.00: Tps = 96]
02883> [IAREC 6.00: SMIN=48.56: SMAX=323.73: SK= .030]
02884> [InterEventTime= 12.00]
02885> R1979-C00025-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02886> ADD HYD + 5.0 02:83 68.26 .143 1979.0616.15:15 326.92 n/a .000
02887> [I/S/N= 500.7 / 140 / 038]
02888> [Vmax = 380.0Dmax= 158]
02889> [I/S/N= 500.7 / 140 / 038]
02890> [I/S/N= 500.7 / 140 / 038]
02891> SIMM = 5.0 02:13 108.84 .596 1979.0616.15:10 321.20 n/a .000
02892> [I/S/N= 500.7 / 140 / 038]
02893> ROUTE CHANNEL -> 5.0 02:13 108.84 .597 1979.0616.15:10 321.20 n/a .000
02894> [I/S/N= 500.7 / 140 / 038]
02895> [I/S/N= 500.7 / 140 / 038]
02896> [I/S/N= 500.7 / 140 / 038]
02897> R1979-C00026-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02898> CONTINUOUS NASHYD 5.0 01:SOOTH-1 20.21 .085 1979.0616.15:10 325.16 485 .000
02899> [Cm 35.5# 3.00: Tps = 140]
02900> [IAREC 6.00: SMIN=204.20: SMAX=\*\*\*\*\*: SK= .030]
02901> [InterEventTime= 12.00]
02902> R1979-C00028-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02903> ADD HYD + 5.0 02:83 68.26 .143 1979.0616.15:25 321.20 n/a .000
02904> [I/S/N= 500.7 / 140 / 038]
02905> [I/S/N= 500.7 / 140 / 038]
02906> R1979-C00027-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02907> ROUTE CHANNEL -> 5.0 02:14 129.05 .460 1979.0616.15:25 321.82 n/a .000
02908> [I/S/N= 500.7 / 140 / 038]
02909> [I/S/N= 482.7 / 410 / 035]
02910> [I/S/N= 482.7 / 410 / 035]
02911> R1979-C00029-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02912> CONTINUOUS NASHYD 5.0 01:SOOTH-2 11.61 .072 1979.0616.14:45 325.24 485 .000
02913> [Cm 36.71# 3.00: Tps = 96]
02914> [IAREC 6.00: SMIN=191.09: SMAX=\*\*\*\*\*: SK= .030]
02915> [InterEventTime= 12.00]
02916> R1979-C00029-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02917> ADD HYD + 5.0 02:SOOTH-2 11.61 .072 1979.0616.14:45 325.24 n/a .000
02918> [I/S/N= 500.7 / 140 / 038]
02919> [I/S/N= 500.7 / 140 / 038]
02920> R1979-C00030-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02921> CONTINUOUS NASHYD 5.0 01:25 140.66 .692 1979.0616.15:30 322.10 n/a .000
02922> [I/S/N= 500.7 / 140 / 035]
02923> ROUTE CHANNEL -> 5.0 02:15 140.66 .692 1979.0616.15:30 322.10 n/a .000
02924> [I/S/N= 500.7 / 140 / 035]
02925> [I/S/N= 500.7 / 140 / 035]
02926> [I/S/N= 500.7 / 140 / 035]
02927> R1979-C00031-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02928> CONTINUOUS NASHYD 5.0 01:SOOTH-3 7.98 .068 1979.0616.14:40 325.64 486 .000
02929> [Cm 42.7# 3.00: Tps = 96]
02930> [IAREC 6.00: SMIN=141.94: SMAX=94.27: SK= .030]
02931> [InterEventTime= 12.00]
02932> R1979-C00031-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02933> ADD HYD + 5.0 02:85 140.66 .691 1979.0616.15:35 322.10 n/a .000
02934> [I/S/N= 500.7 / 140 / 038]
02935> [I/S/N= 500.7 / 140 / 038]
02936> R1979-C00033-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02937> ROUTE CHANNEL -> 5.0 01:26 148.64 .729 1979.0616.15:30 322.29 n/a .000
02938> [I/S/N= 500.7 / 140 / 038]
02939> [I/S/N= 500.7 / 140 / 038]
02940> R1979-C00035-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02941> CONTINUOUS NASHYD 5.0 01:SOOTH-4 14.99 .083 1979.0616.15:00 325.40 486 .000
02942> [Cm 42.7# 3.00: Tps = 96]
02943> [IAREC 6.00: SMIN=168.62: SMAX=\*\*\*\*\*: SK= .030]
02944> [InterEventTime= 12.00]
02945> R1979-C00036-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02946> ADD HYD + 5.0 02:86 148.64 .729 1979.0616.15:40 322.29 n/a .000
02947> [I/S/N= 500.7 / 140 / 038]
02948> [I/S/N= 500.7 / 140 / 038]
02949> R1979-C00037-----DtmIn-ID:HYD-----AREHA-OPARMS-TPeakDate\_hh:mm-----RvM-R-C-----DWFMCS
02950> CONTINUOUS NASHYD 5.0 01:SOOTH-4 14.99 .083 1979.0616.15:00 325.40 n/a .000
02951> [I/S/N= 500.7 / 140 / 038]
02952> [I/S/N= 500.7 / 140 / 038]
02953> [I/S/N= 500.7 / 140 / 038]
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03059> [I/S/N= 500.7 / 140 / 038]
03060> [I/S/N= 500.7 / 140 / 038]







03961 CONTINUOUS NASHVD 5.0 01:30T-3 5.71 .039 1984.0813. 6:45 147.81 423 .000
03962 [Cm 26.1 W 3.00 Tps 96]
03963 [IAREC 6.00] SMIN=191.09; SMAX=487.55; SK = 030]
03964 [InterEventTime= 12.00]
03965 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
03966 ADD HYD + 5.0 02:02 49.51 .110 1984.0813. 8:05 147.56 n/a .000
03967 [I/S/N= 478./ 440./ 035]
03968 [I/S/N= 397./ 169.]
03969 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
03970 CONTINUOUS NASHVD 5.0 01:30T-1 4.39 .021 1984.0813. 6:50 147.49 n/a .000
03971 [Cm 60.4 W 3.00 Tps 1.68]
03972 [IAREC 6.00] SMIN=151.26; SMAX=448.24; SK = 030]
03973 [InterEventTime= 12.00]
03974 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
03975 ROUTE CHANNEL -> 5.0 02:02 68.26 .196 1984.0813. 7:35 148.27 n/a .000
03976 [RDY 5.00] out- 5.0 02:02 68.26 .196 1984.0813. 7:45 148.27 n/a .000
03977 [I/S/N= 359./ 560./ 035]
03978 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
03979 CONTINUOUS NASHVD 5.0 01:30T-1 21.43 .052 1984.0813. 8:05 147.31 422 .000
03980 [Cm 26.1 W 3.00 Tps 96]
03981 [IAREC 6.00] SMIN=191.09; SMAX=487.55; SK = 030]
03982 [InterEventTime= 12.00]
03983 R1984-C0020-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
03984 CONTINUOUS STANDEHD 5.0 01:30T-1 10.00 .220 1984.0812. 7:00 119.88 343 .000
03985 [Cm 36.1 W 3.00 Tps 96]
03986 [Horton parameters] Fw= 76.20; Fc= 13.20; DDAY= 4.14; P=\*\*\*\*]
03987 [Previous area: IAP= 4.67; IAP2= 2.50; LSP= 500. NHD= 250; IBCP= 0]
03988 [Impervious area: IAIM= 1.57; IAI2= 1.50; LSI= 250. MNI= 013; IBC= 0]
03989 [IAREC 6.00] SMIN=191.09; SMAX=487.55; SK = 030]
03990 [InterEventTime= 12.00]
03991 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
03992 ROUTE RESERVOIR -> 5.0 02:02:01 10.00 .220 1984.0812. 7:00 119.88 n/a .000
03993 [RDY 5.00] out- 5.0 02:02:01 10.00 .220 1984.0812. 7:15 119.88 n/a .000
03994 [NetOutflow= 11568.01 m3. TotSOVVol= 0.000E+00 m3. N-OvF= 0. TotDwVof= 0. hrs]
03995 [IAREC 6.00] SMIN=191.09; SMAX=487.55; SK = 030]
03996 [InterEventTime= 12.00]
03997 R1984-C0022-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
03998 CONTINUOUS NASHVD 5.0 01:30 9.14 .068 1984.0813. 7:05 148.60 425 .000
03999 [Cm 42.6 W 3.00 Tps 96]
04000 [IAREC 6.00] SMIN=141.94; SMAX=946.27; SK = 030]
04001 [InterEventTime= 12.00]
04002 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04003 ADD HYD + 5.0 02:02 68.26 .196 1984.0813. 7:45 148.27 n/a .000
04004 [I/S/N= 478./ 440./ 035]
04005 [I/S/N= 397./ 169.]
04006 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04007 CONTINUOUS NASHVD 5.0 01:30T-1 10.00 .024 1984.0812. 9:15 139.88 n/a .000
04008 [RDY 5.00] out- 5.0 02:03 108.84 .330 1984.0813. 7:35 145.50 n/a .000
04009 [I/S/N= 181./ 500./ 035]
04010 R1984-C0024-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04011 ROUTE CHANNEL -> 5.0 02:23 108.84 .330 1984.0813. 7:35 145.50 n/a .000
04012 [RDY 5.00] out- 5.0 01:83 108.84 .325 1984.0813. 7:55 145.50 n/a .000
04013 [I/S/N= 181./ 500./ 035]
04014 CONTINUOUS NASHVD 5.0 01:30T-1 20.21 .052 1984.0813. 7:35 147.30 422 .000
04015 [Cm 35.5 W 3.00 Tps 1.40]
04016 [IAREC 6.00] SMIN=141.94; SMAX=946.27; SK = 030]
04017 [InterEventTime= 12.00]
04018 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04019 ADD HYD + 5.0 02:03 108.84 .325 1984.0813. 7:55 145.50 n/a .000
04020 [I/S/N= 359./ 560./ 035]
04021 R1984-C0022-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04022 ROUTE CHANNEL -> 5.0 02:02:01 11.61 .039 1984.0813. 6:50 147.31 422 .000
04023 [Cm 36.1 W 3.00 Tps 96]
04024 [IAREC 6.00] SMIN=191.09; SMAX=487.55; SK = 030]
04025 [InterEventTime= 12.00]
04026 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04027 CONTINUOUS NASHVD 5.0 01:30T-2 11.61 .039 1984.0813. 6:50 147.31 422 .000
04028 [Cm 36.1 W 3.00 Tps 96]
04029 [IAREC 6.00] SMIN=191.09; SMAX=487.55; SK = 030]
04030 [InterEventTime= 12.00]
04031 R1984-C0029-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04032 ADD HYD + 5.0 02:02:01 11.61 .039 1984.0813. 6:50 147.31 n/a .000
04033 [I/S/N= 359./ 560./ 035]
04034 R1984-C0030-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04035 ROUTE CHANNEL -> 5.0 02:25 140.66 .400 1984.0813. 8:05 145.91 n/a .000
04036 [RDY 5.00] out- 5.0 02:25 140.66 .400 1984.0813. 8:10 145.91 n/a .000
04037 [I/S/N= 181./ 500./ 035]
04038 [I/S/N= 323./ 440./ 035]
04039 R1984-C0031-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04040 CONTINUOUS NASHVD 5.0 01:30T-3 7.98 .035 1984.0813. 6:45 147.41 422 .000
04041 [Cm 42.6 W 3.00 Tps 96]
04042 [IAREC 6.00] SMIN=141.94; SMAX=946.27; SK = 030]
04043 [InterEventTime= 12.00]
04044 R1984-C0018-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04045 ADD HYD + 5.0 02:03 140.66 .400 1984.0813. 8:10 145.91 n/a .000
04046 [I/S/N= 359./ 560./ 035]
04047 [I/S/N= 323./ 440./ 035]
04048 R1984-C0033-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04049 CONTINUOUS NASHVD 5.0 01:30T-3 148.64 .423 1984.0813. 8:05 145.99 n/a .000
04050 [I/S/N= 181./ 500./ 035]
04051 [I/S/N= 323./ 440./ 035]
04052 R1984-C0034-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04053 ROUTE CHANNEL -> 5.0 02:06 148.64 .423 1984.0813. 8:05 145.99 n/a .000
04054 [RDY 5.00] out- 5.0 02:06 148.64 .422 1984.0813. 8:15 145.99 n/a .000
04055 [I/S/N= 323./ 440./ 035]
04056 [I/S/N= 323./ 440./ 035]
04057 R1984-C0035-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04058 CONTINUOUS NASHVD 5.0 01:30T-4 14.99 .047 1984.0813. 7:20 147.35 422 .000
04059 [Cm 26.1 W 3.00 Tps 96]
04060 [IAREC 6.00] SMIN=161.62; SMAX=511.62; SK = 030]
04061 [InterEventTime= 12.00]
04062 R1984-C0036-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04063 ADD HYD + 5.0 02:08 148.64 .422 1984.0813. 8:15 145.99 n/a .000
04064 [I/S/N= 323./ 440./ 035]
04065 [I/S/N= 323./ 440./ 035]
04066 R1984-C0037-2-----DtmIn-ID-NHVD-----AREHA-OPEARCS-TpeakDate\_hh:mm-----RvM-R-C-----DWFMCS
04067 CONTINUOUS NASHVD 5.0 01:30T-1 163.63 .463 1984.0813. 8:10 146.11 n/a .000
04068 [I/S/N= 181./ 500./ 035]
04069 [I/S/N= 323./ 440./ 035]
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04681 R1987C00025 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04682 CONTINUOUS NASHVD 20.21 .075 1987.0724.22:45 189.68 .336 .000
04683 [CR# 35.51 N# 3.001 Tpe = 1.40]
04684 [IAREC# 6.00: SMIN=204.20: SMAX=***** SK# -030]
04685 [InterEventTime= 12.00]
04686 R1987C00026 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04687 ADD HYD + 5.0 02:SOOTH-1 20.21 .075 1987.0724.22:45 189.68 n/a .000
04688 [L/S/m= 323 / 440(.035)]
04689 [Vmax = 572:Imax= 126]
04690 R1987C00027 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04691 ROUTE CHANNEL -> 5.0 02:SOOTH-2 129.05 .555 1987.0724.22:55 191.61 n/a .000
04692 [RDY# 5.00] out-< 5.0 02:185 129.05 .555 1987.0724.22:55 191.61 n/a .000
04693 [L/S/m= 482 / 410(.035)]
04694 [Vmax = 572:Imax= 126]
04695 R1987C00028 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04696 CONTINUOUS NASHVD 5.0 01:SOOTH-2 11.61 .056 1987.0724.22:25 189.73 .336 .000
04697 [CR# 26.75 N# 3.001 Tpe = .96]
04698 [IAREC# 6.00: SMIN=191.09: SMAX=***** SK# -030]
04699 [InterEventTime= 12.00]
04700 R1987C00029 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04701 ADD HYD + 5.0 02:SOOTH-1 129.05 .547 1987.0724.23:10 191.61 n/a .000
04702 [L/S/m= 323 / 440(.035)]
04703 SIM# 5.0 01:25 140.66 .589 1987.0724.23:05 191.45 n/a .000
04704 R1987C00030 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04705 ROUTE CHANNEL -> 5.0 01:25 140.66 .589 1987.0724.23:05 191.45 n/a .000
04706 [RDY# 5.00] out-< 5.0 01:25 140.66 .589 1987.0724.23:05 191.45 n/a .000
04707 [L/S/m= 181 / 500(.035)]
04708 [Vmax = 542:Imax= .290]
04709 R1987C00031 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04710 CONTINUOUS NASHVD 5.0 01:SOOTH-3 7.98 .050 1987.0724.23:10 189.39 n/a .000
04711 [CR# 42.61 N# 3.001 Tpe = .89]
04712 [IAREC# 6.00: SMIN=141.84: SMAX=446.27: SK# -030]
04713 [InterEventTime= 12.00]
04714 R1987C00032 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04715 ADD HYD + 5.0 02:SOOTH-3 140.66 .589 1987.0724.23:05 191.45 n/a .000
04716 [L/S/m= 323 / 440(.035)]
04717 SIM# 5.0 02:SOOTH-3 7.98 .050 1987.0724.23:10 189.39 n/a .000
04718 R1987C00033 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04719 SAVE HYD + 5.0 01:26 148.64 .623 1987.0724.23:05 191.37 n/a .000
04720 [L/S/m= 323 / 440(.035)]
04721 [Vmax = 601:Imax= .135]
04722 R1987C00034 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04723 CONTINUOUS NASHVD 5.0 01:SOOTH-4 14.99 .069 1987.0724.22:35 189.83 .336 .000
04724 [CR# 39.51 N# 3.001 Tpe = 1.21]
04725 [IAREC# 6.00: SMIN=161.00: SMAX=***** SK# -030]
04726 [InterEventTime= 12.00]
04727 R1987C00035 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04728 ADD HYD + 5.0 02:SOOTH-4 14.99 .069 1987.0724.22:35 189.83 .336 .000
04729 [L/S/m= 323 / 440(.035)]
04730 SIM# 5.0 02:SOOTH-4 14.99 .069 1987.0724.22:35 189.83 .336 .000
04731 R1987C00036 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04732 ROUTE CHANNEL -> 5.0 02:26 148.64 .623 1987.0724.23:05 191.37 n/a .000
04733 [RDY# 5.00] out-< 5.0 02:26 148.64 .623 1987.0724.23:05 191.37 n/a .000
04734 [L/S/m= 323 / 440(.035)]
04735 [Vmax = 601:Imax= .135]
04736 R1987C00037 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04737 CONTINUOUS NASHVD 5.0 01:SOOTH-4 14.99 .069 1987.0724.22:35 189.83 .336 .000
04738 [CR# 39.51 N# 3.001 Tpe = 1.21]
04739 [IAREC# 6.00: SMIN=161.00: SMAX=***** SK# -030]
04740 [InterEventTime= 12.00]
04741 R1987C00038 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04742 ADD HYD + 5.0 02:SOOTH-4 14.99 .069 1987.0724.22:35 189.83 .336 .000
04743 [L/S/m= 323 / 440(.035)]
04744 SIM# 5.0 02:SOOTH-4 14.99 .069 1987.0724.22:35 189.83 .336 .000
04745 R1987C00039 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04746 ROUTE CHANNEL -> 5.0 02:26 148.64 .623 1987.0724.23:05 191.37 n/a .000
04747 [RDY# 5.00] out-< 5.0 02:26 148.64 .623 1987.0724.23:05 191.37 n/a .000
04748 [L/S/m= 323 / 440(.035)]
04749 [Vmax = 601:Imax= .135]
04750 R1988C00001 -----DRAIN-ID-NHVD-----AREHA-GPEARMS-TpeakDate_hh:mm-----RvM-R-C-----DWFM00
04751 START [ZERO = .00 hrs on 19890401]
04752 [NETOUT# 2 / 1(Imperial, 2=metric output)]
04753 [RIN# 1988]
04754 [SMWINFO / INPUT DATA FILE]
04755 *****
04756 *****
04757 *****
04758 *****
04759 *****
04760 *****
04761 *****
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04763 *****
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05401 R1990-C00036-----DRAIN-ID:HYD-----AREA#A-GPEA#GMS-TpeakDate\_hh:mm-----R#M-R-C...DWFOCS
05402 ADD HYD + 5.0 02:SOOTH-2 14.99 .071 1990.0720.14:15 242.37 n/a .000
05403 SIM# 5.0 01:TOTAL 163.63 .727 1990.0720.14:45 241.24 n/a .000
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05761 [Vmax :618;Dmax: 211]
05762 R1992-C0018-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05763 CONTINUOUS NASHYD 5.0 01:01A 21.43 .123 1992.0717.20:00 220.94 4.00 .000
05764 [Cm:38.1;N:3.00;Tm:1.68]
05765 [IAREC:6.00;SMIN:148.64;SMAX:323.73;SEK:.030]
05766 [InterEventTime:12.00]
05767 R1992-C0019-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05768 CONTINUOUS STANDYD 5.0 01:01P-1n 10.00 .594 1992.0804.14:00 206.72 3.75 .000
05769 [XIMP:38;TIMP:74]
05770 [Horton parameters: Pw=76.20;Fw=13.20;DCAY4:14;P=\*\*\*\*]
05771 [Previous area: Aperc=4.67;SLP2:2.00;LDP:500;MNM:250;SCP: .0]
05772 [Impervious area: IAlp=1.57;SLP2:2.00;LDP: 250;MNM:013;DCT: .0]
05773 [IARECimp:12.00;IARECPer:12.00]
05774 R1992-C0020-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05775 ROUTE RESERVOIR -> 5.0 02:01P-1n 10.00 .594 1992.0804.14:00 206.73 n/a .000
05776 [MxStoUsed=.2529;M=0.0;TotDVol=.0000;M=0.0;N-OvF= 0;TotDVolF=0.0h]
05777 [MxStoUsed=.2529;M=0.0;TotDVol=.0000;M=0.0;N-OvF= 0;TotDVolF=0.0h]
05778 R1992-C0021-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05779 CONTINUOUS NASHYD 5.0 01:01A 21.43 .123 1992.0717.20:00 220.94 4.00 .000
05780 [Cm:38.1;N:3.00;Tm:1.68]
05781 [IAREC:6.00;SMIN:148.64;SMAX:323.73;SEK:.030]
05782 [InterEventTime:12.00]
05783 R1992-C0022-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05784 ADD HYD 5.0 02:01A 21.43 .123 1992.0717.20:00 220.94 n/a .000
05785 [L/S= 520. / 500 / 038]
05786 [Vmax :618;Dmax: 211]
05787 R1992-C0023-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05788 CONTINUOUS NASHYD 5.0 01:01P-1n 10.00 .594 1992.0804.14:00 206.73 n/a .000
05789 [MxStoUsed=.2529;M=0.0;TotDVol=.0000;M=0.0;N-OvF= 0;TotDVolF=0.0h]
05790 R1992-C0024-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05791 ROUTE CHANNEL -> 5.0 01:01P-1n 10.00 .594 1992.0804.14:00 206.73 n/a .000
05792 [L/S= 520. / 500 / 038]
05793 [RDY:5.00 out-> 5.0 01:01 108.84 .780 1992.0717.19:50 220.65 n/a .000]
05794 [L/S= 596. / 305 / 035]
05795 [Vmax :488;Dmax: 191]
05796 R1992-C0025-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05797 CONTINUOUS NASHYD 5.0 01:01P-1n 10.00 .594 1992.0804.14:00 220.65 n/a .000
05798 [Cm:35.5;N:3.00;Tm:1.40]
05799 [IAREC:6.00;SMIN:204.20;SMAX:467.55;SEK:.030]
05800 [InterEventTime:12.00]
05801 R1992-C0026-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05802 ADD HYD 5.0 02:01P-1n 10.00 .594 1992.0804.14:00 220.65 n/a .000
05803 [L/S= 520. / 500 / 038]
05804 [Vmax :488;Dmax: 191]
05805 R1992-C0027-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05806 ROUTE CHANNEL -> 5.0 02:01A 129.05 .592 1992.0717.19:50 220.68 n/a .000
05807 [RDY:5.00 out-> 5.0 01:01 129.05 .592 1992.0717.19:50 220.68 n/a .000]
05808 [L/S= 482. / 410 / 035]
05809 [Vmax :629;Dmax: 191]
05810 R1992-C0028-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05811 CONTINUOUS NASHYD 5.0 01:01P-2 11.61 .090 1992.0717.19:20 220.94 4.00 .000
05812 [Cm:36.7;N:3.00;Tm:.96]
05813 [IAREC:6.00;SMIN:191.09;SMAX:467.55;SEK:.030]
05814 [InterEventTime:12.00]
05815 R1992-C0029-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05816 ADD HYD 5.0 02:01A 129.05 .593 1992.0717.20:00 220.68 n/a .000
05817 [L/S= 520. / 500 / 038]
05818 [Vmax :488;Dmax: 191]
05819 R1992-C0030-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05820 ROUTE CHANNEL -> 5.0 01:01P-1n 10.00 .594 1992.0717.19:50 220.70 n/a .000
05821 [RDY:5.00 out-> 5.0 01:01 140.66 .966 1992.0717.20:00 220.70 n/a .000]
05822 [L/S= 520. / 500 / 038]
05823 [Vmax :642;Dmax: 197]
05824 R1992-C0031-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05825 CONTINUOUS NASHYD 5.0 01:01P-3 7.98 .080 1992.0717.19:15 221.03 4.00 .000
05826 [Cm:42.6;N:3.00;Tm:.89]
05827 [IAREC:6.00;SMIN:148.64;SMAX:467.55;SEK:.030]
05828 [InterEventTime:12.00]
05829 R1992-C0032-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05830 ADD HYD 5.0 02:01P-3 7.98 .080 1992.0717.19:15 221.03 n/a .000
05831 [L/S= 520. / 500 / 038]
05832 [Vmax :488;Dmax: 191]
05833 R1992-C0033-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05834 SAVE HYD 5.0 01:01P 148.64 1.028 1992.0717.19:55 220.72 n/a .000
05835 [Vmax :36;Dmax: 192]
05836 [remark:JF-Bearbrook Tributary Upstream of Thunder Road Crossing]
05837 R1992-C0034-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05838 ROUTE CHANNEL -> 5.0 02:01P 148.64 1.028 1992.0717.19:55 220.72 n/a .000
05839 [RDY:5.00 out-> 5.0 01:01 148.64 1.024 1992.0717.20:05 220.72 n/a .000]
05840 [L/S= 323. / 440 / 038]
05841 [Vmax :667;Dmax: 407]
05842 R1992-C0035-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05843 CONTINUOUS NASHYD 5.0 01:01P-4 14.99 .114 1992.0717.19:20 220.97 4.00 .000
05844 [Cm:39.5;N:3.00;Tm:1.21]
05845 [IAREC:6.00;SMIN:148.64;SMAX:323.73;SEK:.030]
05846 [InterEventTime:12.00]
05847 R1992-C0036-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05848 ADD HYD 5.0 02:01P 148.64 1.024 1992.0717.20:05 220.72 n/a .000
05849 [L/S= 520. / 500 / 038]
05850 [Vmax :488;Dmax: 191]
05851 R1992-C0037-----DtmIn-ID:HYD-----AREHA-GPEARms-TpeakDate\_hh:mm-----RvM-R-C-----DWfms
05852 ROUTE CHANNEL -> 5.0 02:01P-4 14.99 .114 1992.0717.19:20 220.97 n/a .000
05853 [RDY:5.00 out-> 5.0 01:01 163.63 1.130 1992.0717.20:00 220.74 n/a .000]
05854 [L/S= 482. / 410 / 035]
05855 [Vmax :297;Dmax: 178]
05856 ##### CONTINUOUS RAINFALL DATA #####
05857 ##### STORM #####
05858 ##### END OF RUN : 1992 #####
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06121 124 104 90 71 56 42 33 28 19
06122 Number of events with at least the following durations
06123 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
06124 1 23 66 42 11 1 0 0 0 0
06125 R1994-C00003
06126 COMPUTE API
06127 [APItime= 97.84; APIday= 9000; APIdate= 9956]
06128 [APImax= 97.84; APIave= 27.87; APImin= 6.14]
06129 R1994-C00004 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06130 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1145 193.76 377 0
06131 [Cm= 81.7; N= 3.00; Tp= 4.12]
06132 [IAREC= 6.00; SMIN= 67.24; SMAX= 606.70; SK= 030]
06133 [InterEventTime= 12.00]
06134 R1994-C00005 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06135 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1145 193.76 377 0
06136 [Cm= 81.7; N= 3.00; Tp= 4.12]
06137 [IAREC= 6.00; SMIN= 67.24; SMAX= 606.70; SK= 030]
06138 [InterEventTime= 12.00]
06139 R1994-C00006 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06140 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1145 193.76 377 0
06141 [Cm= 81.7; N= 3.00; Tp= 4.12]
06142 [IAREC= 6.00; SMIN= 67.24; SMAX= 606.70; SK= 030]
06143 [InterEventTime= 12.00]
06144 R1994-C00007 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06145 ADD HYD + 5.0 02:10HRT-1 12.44 .048 1994.0627.1145 193.76 n/a .000
06146 [Cm= 81.7; N= 3.00; Tp= 4.12]
06147 [IAREC= 6.00; SMIN= 67.24; SMAX= 606.70; SK= 030]
06148 [InterEventTime= 12.00]
06149 R1994-C00008 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06150 ROUTE CHANNEL -> 5.0 01:10HRT-1 49.51 .099 1994.0627.1215 193.57 n/a .000
06151 [RDY= 5.00] out= 5.0 01:10 49.51 .099 1994.0627.1215 193.57 n/a .000
06152 [L/S= 478 / 440 / 035]
06153 [Vmax= .392; Dmax= .146]
06154 R1994-C00009 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06155 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1215 194.05 377 0
06156 [Cm= 60.4; N= 3.00; Tp= 1.61]
06157 [IAREC= 6.00; SMIN= 47.24; SMAX= 448.24; SK= 030]
06158 [InterEventTime= 12.00]
06159 R1994-C00010 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06160 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1215 193.57 376 0
06161 [Cm= 47.4; N= 3.00; Tp= .95]
06162 [IAREC= 6.00; SMIN= 47.24; SMAX= 448.24; SK= 030]
06163 [InterEventTime= 12.00]
06164 R1994-C00011 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06165 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1215 193.56 377 0
06166 [Cm= 84.4; N= 3.00; Tp= 1.46]
06167 [IAREC= 6.00; SMIN= 48.75; SMAX= 487.55; SK= 030]
06168 [InterEventTime= 12.00]
06169 R1994-C00012 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06170 CONTINUOUS STANDHYD 5.0 01:10Pnd3-In 10.00 .267 1994.0629.1300 270.84 527 0
06171 [XIMP= 64; TIMP= 75]
06172 [Horton parameters: Fo= 76.20; Pce= 13.20; DCAV= 1.41; P= \*\*\*\*]
06173 [Previous area: IArea= 4.67; SLP= 2.50; LSP= 10.00; NHP= 250; IBCP= .0]
06174 [Impervious area: IArea= 1.57; SLP= 1.50; LSP= 10.00; NHP= 250; IBCP= .0]
06175 [IARECimp= 12.00; IAREC= 12.00]
06176 R1994-C00013 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06177 ROUTE RESERVOIR -> 5.0 02:10Pnd3-Out 1.21 .000 1994.0601.0000 0.00 n/a .000
06178 [MsdToSeed= .5774E-01 m3; TotVol= 0.0000E+00 m3; N-Ov= 0; TotDurVol= 0 hrs]
06179 [InterEventTime= 12.00]
06180 R1994-C00014 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06181 ADD HYD + 5.0 02:10HRT-1 1.21 .000 1994.0627.1205 270.92 n/a .000
06182 [Cm= 81.7; N= 3.00; Tp= 4.12]
06183 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06184 [InterEventTime= 12.00]
06185 R1994-C00015 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06186 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1205 270.92 n/a .000
06187 [Cm= 81.7; N= 3.00; Tp= 4.12]
06188 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06189 [InterEventTime= 12.00]
06190 R1994-C00016 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06191 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1205 270.92 n/a .000
06192 [Cm= 81.7; N= 3.00; Tp= 4.12]
06193 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06194 [InterEventTime= 12.00]
06195 R1994-C00017 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06196 ADD HYD + 5.0 02:10HRT-1 1.21 .000 1994.0627.1205 270.92 n/a .000
06197 [Cm= 81.7; N= 3.00; Tp= 4.12]
06198 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06199 [InterEventTime= 12.00]
06200 R1994-C00018 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06201 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1205 270.92 n/a .000
06202 [Cm= 81.7; N= 3.00; Tp= 4.12]
06203 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06204 [InterEventTime= 12.00]
06205 R1994-C00019 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06206 ROUTE CHANNEL -> 5.0 02:10 68.26 .173 1994.0627.1205 195.01 n/a .000
06207 [RDY= 5.00] out= 5.0 02:10 68.26 .173 1994.0627.1205 195.01 n/a .000
06208 [L/S= 359 / 560 / 035]
06209 [Vmax= .493; Dmax= .247]
06210 R1994-C00020 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06211 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1210 193.36 377 0
06212 [Cm= 84.4; N= 3.00; Tp= 1.46]
06213 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06214 [InterEventTime= 12.00]
06215 R1994-C00021 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06216 CONTINUOUS STANDHYD 5.0 01:10Pnd3-In 10.00 .267 1994.0629.1300 190.67 371 0
06217 [XIMP= 64; TIMP= 74]
06218 [Horton parameters: Fo= 76.20; Pce= 13.20; DCAV= 1.41; P= \*\*\*\*]
06219 [Previous area: IArea= 4.67; SLP= 2.50; LSP= 10.00; NHP= 250; IBCP= .0]
06220 [Impervious area: IArea= 1.57; SLP= 1.50; LSP= 10.00; NHP= 250; IBCP= .0]
06221 [IARECimp= 12.00; IAREC= 12.00]
06222 R1994-C00022 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06223 ROUTE RESERVOIR -> 5.0 02:10Pnd3-Out 1.21 .000 1994.0629.1300 190.67 n/a .000
06224 [MsdToSeed= .5774E-01 m3; TotVol= 0.0000E+00 m3; N-Ov= 0; TotDurVol= 0 hrs]
06225 [InterEventTime= 12.00]
06226 R1994-C00023 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06227 CONTINUOUS NASHDY 5.0 01:10 1.21 .000 1994.0627.1205 194.07 n/a .000
06228 [Cm= 60.4; N= 3.00; Tp= 1.61]
06229 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06230 [InterEventTime= 12.00]
06231 R1994-C00024 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06232 ADD HYD + 5.0 02:10HRT-1 1.21 .000 1994.0627.1205 194.07 n/a .000
06233 [Cm= 60.4; N= 3.00; Tp= 1.61]
06234 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06235 [InterEventTime= 12.00]
06236 R1994-C00025 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06237 CONTINUOUS NASHDY 5.0 01:10 1.21 .000 1994.0627.1205 194.07 n/a .000
06238 [Cm= 60.4; N= 3.00; Tp= 1.61]
06239 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06240 [InterEventTime= 12.00]
06241 R1994-C00026 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06242 ROUTE CHANNEL -> 5.0 02:10 108.84 .294 1994.0627.1205 194.22 n/a .000
06243 [RDY= 5.00] out= 5.0 02:10 108.84 .294 1994.0627.1205 194.22 n/a .000
06244 [L/S= 386 / 305 / 035]
06245 [Vmax= .393; Dmax= .271]
06246 R1994-C00027 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06247 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1205 193.27 376 0
06248 [Cm= 35.1; N= 3.00; Tp= 1.40]
06249 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06250 [InterEventTime= 12.00]
06251 R1994-C00028 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06252 ADD HYD + 5.0 02:10HRT-1 1.21 .000 1994.0627.1205 194.22 n/a .000
06253 [Cm= 35.1; N= 3.00; Tp= 1.40]
06254 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06255 [InterEventTime= 12.00]
06256 R1994-C00029 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06257 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1205 194.07 n/a .000
06258 [Cm= 35.1; N= 3.00; Tp= 1.40]
06259 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06260 [InterEventTime= 12.00]
06261 R1994-C00030 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06262 ADD HYD + 5.0 02:10HRT-1 1.21 .000 1994.0627.1205 194.07 n/a .000
06263 [Cm= 35.1; N= 3.00; Tp= 1.40]
06264 [IAREC= 6.00; SMIN= 48.75; SMAX= 448.24; SK= 030]
06265 [InterEventTime= 12.00]
06266 R1994-C00031 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06267 ROUTE CHANNEL -> 5.0 02:10 140.66 .353 1994.0627.1205 194.01 n/a .000
06268 [RDY= 5.00] out= 5.0 02:10 140.66 .353 1994.0627.1205 194.01 n/a .000
06269 [L/S= 181 / 500 / 035]
06270 [Vmax= .493; Dmax= .247]
06271 R1994-C00032 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06272 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1210 193.44 376 0
06273 [Cm= 42.6; N= 3.00; Tp= .89]
06274 [IAREC= 6.00; SMIN= 44.94; SMAX= 946.27; SK= 030]
06275 [InterEventTime= 12.00]
06276 R1994-C00033 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06277 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1210 193.44 376 0
06278 [Cm= 42.6; N= 3.00; Tp= .89]
06279 [IAREC= 6.00; SMIN= 44.94; SMAX= 946.27; SK= 030]
06280 [InterEventTime= 12.00]
06281 R1994-C00034 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06282 ADD HYD + 5.0 02:10HRT-1 1.21 .000 1994.0627.1210 193.44 376 0
06283 [Cm= 42.6; N= 3.00; Tp= .89]
06284 [IAREC= 6.00; SMIN= 44.94; SMAX= 946.27; SK= 030]
06285 [InterEventTime= 12.00]
06286 R1994-C00035 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06287 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1210 193.44 376 0
06288 [Cm= 42.6; N= 3.00; Tp= .89]
06289 [IAREC= 6.00; SMIN= 44.94; SMAX= 946.27; SK= 030]
06290 [InterEventTime= 12.00]
06291 R1994-C00036 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06292 ADD HYD + 5.0 02:10HRT-1 1.21 .000 1994.0627.1210 193.44 376 0
06293 [Cm= 42.6; N= 3.00; Tp= .89]
06294 [IAREC= 6.00; SMIN= 44.94; SMAX= 946.27; SK= 030]
06295 [InterEventTime= 12.00]
06296 R1994-C00037 -----DtmIn-ID-NHYD-----AREHA-GPEARCS-TpeakDate\_hh:mm-----Rvm-R.C-----DWFCMS
06297 CONTINUOUS NASHDY 5.0 01:10HRT-1 3.16 .049 1994.0627.1210 193.51 n/a .000
06298 [Cm= 42.6; N= 3.00; Tp= .89]
06299 [IAREC= 6.00; SMIN= 44.94; SMAX= 946.27; SK= 030]
06300 [InterEventTime= 12.00]
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06481 [Cm 36.7: No 3.00: Tm .96]
06482 [IARC6 6.00: SMIN=181.94: SMAX=946.27: SK= .030]
06483 [InterEventTime= 12.00]
06484 1995-1995C0029 -----UTM-IN:ID:HYD-----AREHA-QPEARCS-TpeakDate\_hh:mm-----RvM-R.C-----DWFCMS

06841: (Horton parameters: Pw= 76.20;Pc= 13.20;DCAV=4.14; P=\*\*\*\*)
06842: [Previous area: IAPer= 4.67;SLP2=2.00;LDP= 50.0;MHP= 250;ISCP= 0]
06843: [Impervious area: IAIMp= 1.57;SLP2=2.00;LDP= 50.0;MHP= 250;ISCP= 0]
06844: [IARECLimp= 12.00; IAREC= 12.00]
06845: AREA-A-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06846: ROUTE RESERVOIR -> 5.0 02:Pond3-in 1.21 .007 1997.0622 3.30 167.29 n/a .000
06847: out <= 5.0 02:Pond3-out 1.21 .003 1997.0622 4.10 167.28 n/a .000
06848: overflow <= 5.0 02:Pond3-over 0.00 .000 1997.0401 0.00 0.00 n/a .000
06849: [Multistored:1968-01 m3, TotVolVol=0.0000+0.00 m3, N-Ov= 0, TotDurOv= 0 hrs]
06850: ADD HYD + 5.0 02:SOOTH-1 10.00 .000 1997.0401 0.00 0.00 n/a .000
06851: [L/S= 389 / 3567.035]
06852: (Vmax :.074;Dmax :.038)
06853: SIMM = 5.0 02:Pond-Diltc 1.21 .003 1997.0622 4.10 167.28 n/a .000
06854: 1997:0018-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06855: ROUTE CHANNEL -> 5.0 02:Pond3-in 1.21 .003 1997.0622 4.10 167.28 n/a .000
06856: [RDV= 5.00] out <= 5.0 02:IAIC-R 1.21 .003 1997.0503 17.05 167.28 n/a .000
06857: [L/S= 389 / 3567.035]
06858: (Vmax :.074;Dmax :.038)
06859: 1997:0019-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06860: CONTINUOUS NASHYD + 5.0 02:SOOTH-1 10.00 .000 1997.0622 4.40 95.37 289 .000
06861: [Cm= 58.5; N= 3.00; Tp= .89]
06862: [IAREC= 6.00; SMIN=73.1; SMAX=487.55; SK= .030]
06863: [InterEventTime= 12.00]
06864: 1997:0020-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06865: ADD HYD + 5.0 02:INT-1 4.39 .005 1997.0503 15.35 96.09 n/a .000
06866: + 5.0 02:INT-2 3.61 .003 1997.0622 4.40 95.45 n/a .000
06867: + 5.0 02:INT-3 5.71 .008 1997.0622 4.40 95.97 n/a .000
06868: + 5.0 02:IAIC 3.84 .004 1997.0503 15.30 95.97 n/a .000
06869: + 5.0 02:IAIC-R 1.21 .003 1997.0622 4.10 167.28 n/a .000
06870: SIMM = 5.0 02:INT 68.26 .046 1997.0503 15.30 96.82 n/a .000
06871: 1997:0021-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06872: ROUTE CHANNEL -> 5.0 02:INT 68.26 .046 1997.0503 15.30 96.82 n/a .000
06873: [RDV= 5.00] out <= 5.0 02:IAIC 68.26 .046 1997.0503 15.30 96.82 n/a .000
06874: [L/S= 389 / 3567.035]
06875: (Vmax :.260;Dmax :.068)
06876: 1997:0022-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06877: CONTINUOUS NASHYD 5.0 01:ALIA 21.43 .010 1997.0503 15.40 95.08 286 .000
06878: [Cm= 31.1; N= 3.00; Tp= 1.68]
06879: [IAREC= 6.00; SMIN=191.09; SMAX=323.73; SK= .030]
06880: [InterEventTime= 12.00]
06881: 1997:0023-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06882: CONTINUOUS STANBYD 5.0 01:Pond-1 10.00 .135 1997.0622 4.40 101.73 306 .000
06883: [XIMP= 38;TIMP= 74]
06884: (Horton parameters: Pw= 76.20;Pc= 13.20;DCAV=4.14; P=\*\*\*\*)
06885: [Previous area: IAPer= 4.67;SLP2=2.00;LDP= 50.0;MHP= 250;ISCP= 0]
06886: [Impervious area: IAIMp= 1.57;SLP2=2.00;LDP= 50.0;MHP= 250;ISCP= 0]
06887: [IARECLimp= 12.00; IAREC= 12.00]
06888: AREA-A-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06889: ROUTE RESERVOIR -> 5.0 02:Pond3-in 1.21 .004 1998.0227 10.00 218.65 n/a .000
06890: out <= 5.0 02:Pond3-out 1.21 .003 1998.0227 9.05 218.63 n/a .000
06891: overflow <= 5.0 03:Pond3-over 0.00 .000 1998.0404 0.00 0.00 n/a .000
06892: [Multistored: 4745E-01 m3, TotVolVol=0.0000+0.00 m3, N-Ov= 0, TotDurOv= 0 hrs]
06893: ADD HYD + 5.0 02:SOOTH-1 10.00 .000 1997.0622 4.25 101.73 n/a .000
06894: [L/S= 389 / 3567.035]
06895: (Vmax :.074;Dmax :.038)
06896: SIMM = 5.0 02:Pond-Diltc 1.21 .003 1998.0227 9.05 218.63 n/a .000
06897: 1997:0024-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06898: ROUTE CHANNEL -> 5.0 02:Pond3-in 1.21 .003 1998.0227 9.05 218.63 n/a .000
06899: [RDV= 5.00] out <= 5.0 02:IAIC-R 1.21 .003 1998.0611 11.35 218.63 n/a .000
06900: [L/S= 389 / 3567.035]
06901: (Vmax :.074;Dmax :.038)
06902: 1997:0025-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06903: CONTINUOUS NASHYD 5.0 01:Pond-Over 20.21 .010 1997.0503 15.25 95.05 286 .000
06904: [Cm= 35.5; N= 3.00; Tp= 1.40]
06905: [IAREC= 6.00; SMIN=204.20; SMAX=340.00; SK= .030]
06906: [InterEventTime= 12.00]
06907: 1997:0026-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06908: ADD HYD + 5.0 02:SOOTH-1 10.00 .000 1997.0503 15.25 95.05 n/a .000
06909: + 5.0 02:SOOTH-2 10.00 .000 1997.0503 15.45 96.82 n/a .000
06910: SIMM = 5.0 02:INT 129.05 .097 1997.0503 15.45 96.82 n/a .000
06911: 1997:0027-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06912: ROUTE CHANNEL -> 5.0 02:INT 129.05 .097 1997.0503 15.45 96.82 n/a .000
06913: [RDV= 5.00] out <= 5.0 02:IAIC 129.05 .096 1997.0503 16.00 96.82 n/a .000
06914: [L/S= 482 / 4107.035]
06915: (Vmax :.369;Dmax :.141)
06916: 1997:0028-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06917: CONTINUOUS NASHYD 5.0 01:SOOTH-2 11.61 .007 1997.0622 4.45 95.08 286 .000
06918: [Cm= 36.7; N= 3.00; Tp= .96]
06919: [IAREC= 6.00; SMIN=191.09; SMAX=323.73; SK= .030]
06920: [InterEventTime= 12.00]
06921: 1997:0029-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06922: ADD HYD + 5.0 02:IA 129.05 .096 1997.0503 16.00 96.82 n/a .000
06923: + 5.0 02:SOOTH-2 11.61 .007 1997.0622 4.45 95.08 n/a .000
06924: SIMM = 5.0 02:INT 140.66 .101 1997.0503 15.55 96.49 n/a .000
06925: 1997:0030-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06926: ROUTE CHANNEL -> 5.0 02:IA 140.66 .101 1997.0503 15.55 96.49 n/a .000
06927: [RDV= 5.00] out <= 5.0 02:IAIC 140.66 .100 1997.0503 16.00 96.49 n/a .000
06928: [L/S= 503 / 4410.035]
06929: (Vmax :.334;Dmax :.147)
06930: 1997:0031-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06931: CONTINUOUS NASHYD 5.0 01:SOOTH-3 7.98 .007 1997.0622 4.40 95.37 287 .000
06932: [Cm= 42.6; N= 3.00; Tp= .89]
06933: [IAREC= 6.00; SMIN=94.84; SMAX=446.27; SK= .030]
06934: [InterEventTime= 12.00]
06935: 1997:0032-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06936: ADD HYD + 5.0 02:SOOTH-1 10.00 .000 1997.0503 16.00 96.49 n/a .000
06937: + 5.0 02:SOOTH-3 7.98 .007 1997.0622 4.40 95.27 n/a .000
06938: SIMM = 5.0 02:INT 148.64 .105 1997.0503 16.00 96.43 n/a .000
06939: 1997:0033-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06940: SAVE HYD + 5.0 02:INT 148.64 .105 1997.0503 16.00 96.43 n/a .000
06941: [IAREC= 6.00; SMIN=94.84; SMAX=446.27; SK= .030]
06942: [InterEventTime= 12.00]
06943: 1997:0034-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06944: ADD HYD + 5.0 02:INT 148.64 .105 1997.0503 16.00 96.43 n/a .000
06945: + 5.0 02:SOOTH-3 7.98 .007 1997.0622 4.40 95.27 n/a .000
06946: SIMM = 5.0 02:INT 148.64 .104 1997.0503 16.05 96.43 n/a .000
06947: [L/S= 323 / 4447.035]
06948: (Vmax :.390;Dmax :.165)
06949: 1997:0035-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06950: CONTINUOUS NASHYD 5.0 01:SOOTH-4 14.99 .009 1997.0503 15.20 95.16 287 .000
06951: [Cm= 35.5; N= 3.00; Tp= 1.21]
06952: [IAREC= 6.00; SMIN=191.09; SMAX=323.73; SK= .030]
06953: [InterEventTime= 12.00]
06954: 1997:0036-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06955: ADD HYD + 5.0 02:INT 148.64 .104 1997.0503 16.05 96.43 n/a .000
06956: + 5.0 02:SOOTH-4 14.99 .009 1997.0503 15.20 95.16 n/a .000
06957: SIMM = 5.0 02:INT 163.63 .112 1997.0503 16.05 96.31 n/a .000
06958: [L/S= 389 / 3567.035]
06959: (Vmax :.334;Dmax :.147)
06960: 1997:0037-->-----DtmIn-DHYND-----AREHA-QPEARMS-TPeakDate\_hh:mm--Rvmm-R-C--DWPMs
06961: CONTINUOUS RAINFALL DATA
06962: #####
06963: #####
06964: #####
06965: #####
06966: #####
06967: #####
06968: #####
06969: #####
06970: #####
06971: #####
06972: #####
06973: #####
06974: \*\* END OF RUN : 1997
06975:
06976:
06977:
06978:
06979:
06980:
06981:
06982:
06983: RINN-COMMANDS
06984: START [L.S.]
06985: [TRES= 0 hr from 19980401]
06986: [NETOUT= 2 (Imperial, 2-metric output)]
06987: [NETIME= 0]
06988: [NIN= 1998]
06989: #####
06990: #####
06991: #####
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06998: #####
06999: #####
07000: #####
07001: RINN-COMMANDS
07002: #####
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08281 [InterEventTime= 12.00]
08282 R2004-C00024 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08283 ADD HYD + 5.0 02:85 140.66 2.910 2004.0909.15:05 239.30 n/a .000
08284 [I/S/n= 394 / 440 / 035]
08285 SIM= 5.0 02:30HWT-3 1.98 .192 2004.0909.11:20 237.32 n/a .000
08286 R2004-C00033 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08287 SAYS HYD + 5.0 01:26 148.64 3.097 2004.0909.15:05 239.19 n/a .000
08288 [I/S/n= 394 / 440 / 035]
08289 [I/S/n= 394 / 440 / 035]
08290 R2004-C00034 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08291 ROUTE CHANNEL -> 5.0 02:26 148.64 3.097 2004.0909.15:05 239.19 n/a .000
08292 [I/S/n= 394 / 440 / 035]
08293 SIM= 5.0 01:26 148.64 3.093 2004.0909.15:10 239.19 n/a .000
08294 [I/S/n= 394 / 440 / 035]
08295 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .324 2004.0909.15:10 236.78 413 .000
08296 [I/S/n= 394 / 440 / 035]
08297 [I/S/n= 394 / 440 / 035]
08298 [I/S/n= 394 / 440 / 035]
08299 [I/S/n= 394 / 440 / 035]
08300 R2004-C00036 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08301 ADD HYD + 5.0 02:86 148.64 3.093 2004.0909.15:10 239.19 n/a .000
08302 [I/S/n= 394 / 440 / 035]
08303 SIM= 5.0 01:Total 163.63 3.417 2004.0909.15:10 238.97 n/a .000
08304 [I/S/n= 394 / 440 / 035]
08305 [I/S/n= 394 / 440 / 035]
08306 [I/S/n= 394 / 440 / 035]
08307 # CONTINUOUS RAINFALL DATA
08308 #####
08309 #####
08310 # STORMS
08311 \*\*\*\*\*
08312 \*\* END OF RUN : 2006
08313
08314
08315
08316
08317
08318
08319
08320 RvNm-COMMANDS
08321 R2006-C00001 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08322 START
08323 [TZERO = .00 hrs on 20060401]
08324 [METOPT= 2 (1=Imperial, 2=metric output)]
08325 [METOPT= 0]
08326 [MUNIT = 2006]
08327 #####
08328 # SMOOTHY / INPUT DATA FILE
08329 \*\*\*\*\*
08330 # Project Name: [THUNDER ROAD] Project Number: [2128]
08331 # Date : [04-28-2021]
08332 # Modeler : [J.F. Sabourin]
08333 # Company : [JFSaInc.]
08334 # License #: [254923]
08335 \*\*\*\*\*
08336 # \*\*\*\*\*
08337 # \*\*\*\*\*
08338 # Ottawa International Airport - April list to October 31st
08339 R2006-C00002 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08340 # READ AS5 DATA
08341 [Filename = YOM\_1967\_2007\_123 ]
08342 [Start Date = 2006.0401 End Date = 2006.1031]
08343 [Dwf 60 min Length= 811.6 hrs; WetHrs= 4771 DryHrs= 4635; PTO= 723.40]
08344 [Maximum average rainfall intensities over
08345 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
08346 16.90 10.60 9.23 6.07 3.84 2.11 1.49 1.32 1.03 mm/hr
08347 16.90 10.60 9.23 6.07 3.84 2.11 1.49 1.32 1.03 mm/hr
08348 20060901 20060903 20060903 20060903 20060903 20060904 20060904 20060904 20060904
08349 Number of rainfall events per following interevent time
08350 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
08351 141 113 98 74 60 47 40 30 21
08352 Number of events with at least the following durations
08353 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
08354 140 88 58 22 9 0 0 0 0
08355 R2006-C00003 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08356 COMPUTE API
08357 [ApiIn= 50.00; APIdly= 9000; APIdxc= 9956]
08358 [ApiMax= 85.47; APIdly= 32.83; APIdxc= 8.90]
08359 R2006-C00004 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08360 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .324 2006.0801.6:30 284.48 394 .000
08361 [I/S/n= 394 / 440 / 035]
08362 [I/S/n= 394 / 440 / 035]
08363 [I/S/n= 394 / 440 / 035]
08364 R2006-C00005 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08365 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .324 2006.0801.6:30 284.48 394 .000
08366 [I/S/n= 394 / 440 / 035]
08367 [I/S/n= 394 / 440 / 035]
08368 [I/S/n= 394 / 440 / 035]
08369 R2006-C00006 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08370 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .324 2006.0801.6:30 284.48 394 .000
08371 [I/S/n= 394 / 440 / 035]
08372 [I/S/n= 394 / 440 / 035]
08373 [I/S/n= 394 / 440 / 035]
08374 R2006-C00007 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08375 ADD HYD + 5.0 01:20HWT-2 12.44 .077 2006.0801.3:55 286.55 n/a .000
08376 [I/S/n= 394 / 440 / 035]
08377 [I/S/n= 394 / 440 / 035]
08378 SIM= 5.0 01:21 49.51 .147 2006.0801.4:00 285.62 n/a .000
08379 R2006-C00008 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08380 ROUTE CHANNEL -> 5.0 01:81 49.51 .143 2006.0801.4:15 285.62 n/a .000
08381 [I/S/n= 394 / 440 / 035]
08382 [I/S/n= 394 / 440 / 035]
08383 [I/S/n= 394 / 440 / 035]
08384 R2006-C00009 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08385 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .324 2006.0801.4:10 287.47 398 .000
08386 [I/S/n= 394 / 440 / 035]
08387 [I/S/n= 394 / 440 / 035]
08388 [I/S/n= 394 / 440 / 035]
08389 R2006-C00010 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08390 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .324 2006.0801.4:10 287.47 398 .000
08391 [I/S/n= 394 / 440 / 035]
08392 [I/S/n= 394 / 440 / 035]
08393 [I/S/n= 394 / 440 / 035]
08394 R2006-C00011 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08395 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .324 2006.0801.4:10 287.47 398 .000
08396 [I/S/n= 394 / 440 / 035]
08397 [I/S/n= 394 / 440 / 035]
08398 [I/S/n= 394 / 440 / 035]
08399 R2006-C00012 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08400 CONTINUOUS STANHYD 5.0 01:20HWT-4 14.99 .324 2006.0801.3:00 392.47 443 .000
08401 [I/S/n= 394 / 440 / 035]
08402 [I/S/n= 394 / 440 / 035]
08403 [I/S/n= 394 / 440 / 035]
08404 [I/S/n= 394 / 440 / 035]
08405 [I/S/n= 394 / 440 / 035]
08406 R2006-C00013 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08407 ROUTE RESERVOIR -> 5.0 02:10HWT-3 1.21 .003 2006.0801.3:45 392.93 n/a .000
08408 out = 5.0 01:20HWT-3 1.21 .003 2006.0801.3:45 392.93 n/a .000
08409 overlow = 5.0 03:20HWT-Over 0.00 .000 2006.0402.0:00 .00 n/a .000
08410 [I/S/n= 394 / 440 / 035]
08411 R2006-C00014 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08412 ADD HYD + 5.0 02:10HWT-3 1.21 .003 2006.0801.3:45 392.93 n/a .000
08413 [I/S/n= 394 / 440 / 035]
08414 SIM= 5.0 01:21 49.51 .147 2006.0801.4:00 285.62 n/a .000
08415 R2006-C00015 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08416 ROUTE CHANNEL -> 5.0 02:10HWT-3 1.21 .003 2006.0801.3:45 392.93 n/a .000
08417 [I/S/n= 394 / 440 / 035]
08418 [I/S/n= 394 / 440 / 035]
08419 [I/S/n= 394 / 440 / 035]
08420 R2006-C00016 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08421 CONTINUOUS NASHDY 5.0 01:20HWT-3 1.21 .003 2006.0801.3:35 287.47 397 .000
08422 [I/S/n= 394 / 440 / 035]
08423 [I/S/n= 394 / 440 / 035]
08424 [I/S/n= 394 / 440 / 035]
08425 R2006-C00017 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08426 ADD HYD + 5.0 02:81 49.51 .143 2006.0801.4:15 285.62 n/a .000
08427 [I/S/n= 394 / 440 / 035]
08428 [I/S/n= 394 / 440 / 035]
08429 [I/S/n= 394 / 440 / 035]
08430 [I/S/n= 394 / 440 / 035]
08431 [I/S/n= 394 / 440 / 035]
08432 [I/S/n= 394 / 440 / 035]
08433 R2006-C00018 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08434 ROUTE CHANNEL -> 5.0 02:22 68.26 .263 2006.0801.3:55 287.90 n/a .000
08435 [I/S/n= 394 / 440 / 035]
08436 [I/S/n= 394 / 440 / 035]
08437 [I/S/n= 394 / 440 / 035]
08438 R2006-C00019 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08439 CONTINUOUS NASHDY 5.0 01:13A 21.43 .061 2006.0801.4:15 284.41 393 .000
08440 [I/S/n= 394 / 440 / 035]
08441 [I/S/n= 394 / 440 / 035]
08442 [I/S/n= 394 / 440 / 035]
08443 R2006-C00020 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08444 CONTINUOUS STANHYD 5.0 01:20HWT-3 1.21 .003 2006.0801.3:00 253.68 351 .000
08445 [I/S/n= 394 / 440 / 035]
08446 [I/S/n= 394 / 440 / 035]
08447 [I/S/n= 394 / 440 / 035]
08448 [I/S/n= 394 / 440 / 035]
08449 [I/S/n= 394 / 440 / 035]
08450 [I/S/n= 394 / 440 / 035]
08451 [I/S/n= 394 / 440 / 035]
08452 [I/S/n= 394 / 440 / 035]
08453 [I/S/n= 394 / 440 / 035]
08454 [I/S/n= 394 / 440 / 035]
08455 [I/S/n= 394 / 440 / 035]
08456 [I/S/n= 394 / 440 / 035]
08457 [I/S/n= 394 / 440 / 035]
08458 [I/S/n= 394 / 440 / 035]
08459 [I/S/n= 394 / 440 / 035]
08460 R2006-C00021 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08461 ADD HYD + 5.0 02:82 68.26 .263 2006.0801.4:05 287.90 n/a .000
08462 [I/S/n= 394 / 440 / 035]
08463 [I/S/n= 394 / 440 / 035]
08464 [I/S/n= 394 / 440 / 035]
08465 [I/S/n= 394 / 440 / 035]
08466 [I/S/n= 394 / 440 / 035]
08467 [I/S/n= 394 / 440 / 035]
08468 [I/S/n= 394 / 440 / 035]
08469 [I/S/n= 394 / 440 / 035]
08470 [I/S/n= 394 / 440 / 035]
08471 [I/S/n= 394 / 440 / 035]
08472 [I/S/n= 394 / 440 / 035]
08473 [I/S/n= 394 / 440 / 035]
08474 [I/S/n= 394 / 440 / 035]
08475 [I/S/n= 394 / 440 / 035]
08476 [I/S/n= 394 / 440 / 035]
08477 [I/S/n= 394 / 440 / 035]
08478 [I/S/n= 394 / 440 / 035]
08479 [I/S/n= 394 / 440 / 035]
08480 [I/S/n= 394 / 440 / 035]
08481 R2006-C00022 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08482 ROUTE CHANNEL -> 5.0 02:24 129.05 .489 2006.0801.4:15 284.22 n/a .000
08483 [I/S/n= 394 / 440 / 035]
08484 [I/S/n= 394 / 440 / 035]
08485 [I/S/n= 394 / 440 / 035]
08486 R2006-C00023 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08487 CONTINUOUS NASHDY 5.0 01:20HWT-2 11.61 .049 2006.0801.3:40 284.41 393 .000
08488 [I/S/n= 394 / 440 / 035]
08489 [I/S/n= 394 / 440 / 035]
08490 [I/S/n= 394 / 440 / 035]
08491 R2006-C00024 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08492 ADD HYD + 5.0 02:84 129.05 .489 2006.0801.4:25 284.22 n/a .000
08493 [I/S/n= 394 / 440 / 035]
08494 [I/S/n= 394 / 440 / 035]
08495 [I/S/n= 394 / 440 / 035]
08496 [I/S/n= 394 / 440 / 035]
08497 [I/S/n= 394 / 440 / 035]
08498 [I/S/n= 394 / 440 / 035]
08499 [I/S/n= 394 / 440 / 035]
08500 R2006-C00025 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08501 CONTINUOUS NASHDY 5.0 01:20HWT-3 7.98 .046 2006.0801.3:35 285.11 394 .000
08502 [I/S/n= 394 / 440 / 035]
08503 [I/S/n= 394 / 440 / 035]
08504 [I/S/n= 394 / 440 / 035]
08505 R2006-C00026 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08506 ADD HYD + 5.0 02:85 140.66 .512 2006.0801.4:25 284.23 n/a .000
08507 [I/S/n= 394 / 440 / 035]
08508 [I/S/n= 394 / 440 / 035]
08509 [I/S/n= 394 / 440 / 035]
08510 [I/S/n= 394 / 440 / 035]
08511 [I/S/n= 394 / 440 / 035]
08512 [I/S/n= 394 / 440 / 035]
08513 R2006-C00027 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08514 ROUTE CHANNEL -> 5.0 02:26 148.64 .540 2006.0801.4:20 284.28 n/a .000
08515 [I/S/n= 394 / 440 / 035]
08516 [I/S/n= 394 / 440 / 035]
08517 [I/S/n= 394 / 440 / 035]
08518 R2006-C00028 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08519 CONTINUOUS NASHDY 5.0 01:20HWT-4 14.99 .059 2006.0801.3:50 284.68 394 .000
08520 [I/S/n= 394 / 440 / 035]
08521 [I/S/n= 394 / 440 / 035]
08522 [I/S/n= 394 / 440 / 035]
08523 R2006-C00029 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08524 ADD HYD + 5.0 02:86 148.64 .536 2006.0801.4:30 284.28 n/a .000
08525 [I/S/n= 394 / 440 / 035]
08526 [I/S/n= 394 / 440 / 035]
08527 [I/S/n= 394 / 440 / 035]
08528 [I/S/n= 394 / 440 / 035]
08529 [I/S/n= 394 / 440 / 035]
08530 [I/S/n= 394 / 440 / 035]
08531 [I/S/n= 394 / 440 / 035]
08532 [I/S/n= 394 / 440 / 035]
08533 # STORMS
08534 \*\*\*\*\*
08535 \*\* END OF RUN : 2006
08536
08537
08538
08539
08540
08541
08542
08543 RvNm-COMMANDS
08544 R2007-C00001 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08545 START
08546 [TZERO = .00 hrs on 20070401]
08547 [METOPT= 2 (1=Imperial, 2=metric output)]
08548 [METOPT= 0]
08549 [MUNIT = 2007]
08550 #####
08551 # SMOOTHY / INPUT DATA FILE
08552 \*\*\*\*\*
08553 # Project Name: [THUNDER ROAD] Project Number: [2128]
08554 # Date : [04-28-2021]
08555 # Modeler : [J.F. Sabourin]
08556 # Company : [JFSaInc.]
08557 # License #: [254923]
08558 # \*\*\*\*\*
08559 # \*\*\*\*\*
08560 # Ottawa International Airport - April list to October 31st
08561 # READ AS5 DATA
08562 [Filename = YOM\_1967\_2007\_123 ]
08563 [Start Date = 2007.0401 End Date = 2007.1031]
08564 [Dwf 60 min Length= 5136 hrs; WetHrs= 4171 DryHrs= 4719; PTO= 550.70]
08565 [Maximum average rainfall intensities over
08566 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
08567 23.20 13.60 .80 13.20 5.63 2.82 1.90 1.45 97 mm/hr
08568 23.20 13.60 .80 13.20 5.63 2.82 1.90 1.45 97 mm/hr
08569 20070829 20070829 20070720 20070720 20070721 20070721 20070720 20070721
08570 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
08571 158 120 109 82 64 49 36 29 20
08572 Number of events with at least the following durations
08573 1 hr 2 hrs 3 hrs 6 hrs 12 hrs 24 hrs 36 hrs 48 hrs 72 hrs
08574 147 81 53 31 21 15 10 7 5
08575 R2007-C00003 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08576 COMPUTE API
08577 [ApiIn= 50.00; APIdly= 9000; APIdxc= 9956]
08578 [ApiMax= 86.91; APIdly= 25.42; APIdxc= 4.68]
08579 R2007-C00004 -----DtmIn-ID-INHYD-----AREHA-QPEARCS-TPeakDate\_hh:mm-----RvNm-R.C-----DWPFMS
08580 CONTINUOUS NASHDY 5.0 01:20HWT-1 34.70 .141 2007.0720.15:20 170.87 310 .000
08581 [I/S/n= 394 / 440 / 035]
08582 [I/S/n= 394 / 440 / 035]
08583 [I/S/n= 394 / 440 / 035]
08584 [I/S/n= 394 / 440 / 035]
08585 [I/S/n= 394 / 440 / 035]
08586 [I/S/n= 394 / 440 / 035]
08587 [I/S/n= 394 / 440 / 035]
08588 [I/S/n= 394 / 440 / 035]
08589 [I/S/n= 394 / 440 / 035]
08590 [I/S/n= 394 / 440 / 035]
08591 [I/S/n= 394 / 440 / 035]
08592 [I/S/n= 394 / 440 / 035]
08593 [I/S/n= 394 / 440 / 035]
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08596 [I/S/n= 394 / 440 / 035]
08597 [I/S/n= 394 / 440 / 035]
08598 [I/S/n= 394 / 440 / 035]
08599 [I/S/n= 394 / 440 / 035]
08600 [I/S/n= 394 / 440 / 035]
08601 [I/S/n= 394 / 440 / 035]
08602 [I/S/n= 394 / 440 / 035]
08603 [I/S/n= 394 / 440 / 035]
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08609 [I/S/n= 394 / 440 / 035]
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08614 [I/S/n= 394 / 440 / 035]
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08621 [I/S/n= 394 / 440 / 035]
08622 [I/S/n= 394 / 440 / 035]
08623 [I/S/n= 394 / 440 / 035]
08624 [I/S/n= 394 / 440 / 035]
08625 [I/S/n= 394 / 440 / 035]
08626 [I/S/n= 394 / 440 / 035]
08627 [I/S/n= 394 / 440 / 035]
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08630 [I/S/n= 394 / 440 / 035]
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08632 [I/S/n= 394 / 440 / 035]
08633 [I/S/n= 394 / 440 / 035]
08634 [I/S/n= 394 / 440 / 035]
08635 [I/S/n= 394 / 440 / 035]
08636 [I/S/n= 394 / 440 / 035]
08637 [I/S/n= 394 / 440 / 035]
08638 [I/S/n= 394 / 440 / 035]
08639 [I/S/n= 394 / 440 / 035]
08640 [I/S/n= 394 / 440 / 035]

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08641 [L/S# 500 / .140 / .035]
08642 [Vmax .44]
08643 R2007:C00016-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08644 CONTINUOUS STANBYD 5.0 01:30T-3 5.71 .057 2007.0720.1125 172.29 .313 .000
08645 [C# 15.1# N# 3.001 Tpe 1.68]
08646 [I#REC# 6.00 S#MIN# 73.13 S#MAX#487.55# EK# -030]
08647 [InterVntTime# 12.00]
08648 R2007:C00017-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08649 ADD HYD 5.0 02:R1 49.51 .251 2007.0720.1355 171.38 n/a .000
08650 + 5.0 02:INT-1 4.39 .041 2007.0720.1320 172.49 n/a .000
08651 + 5.0 02:INT-2 3.61 .027 2007.0720.1130 171.39 n/a .000
08652 SIM# 5.0 01:R1 5.71 .057 2007.0720.1125 172.29 n/a .000
08653 + 5.0 02:IAA 1.84 .035 2007.0720.1150 172.29 n/a .000
08654 + 5.0 02:IAIC-R 1.21 .003 2007.0720.1500 279.70 n/a .000
08655 SIM# 5.0 01:R1 68.26 .398 2007.0720.1330 173.48 n/a .000
08656 R2007:C00018-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08657 ROUTE CHANNEL -> 5.0 01:R2 68.26 .398 2007.0720.1330 173.48 n/a .000
08658 [RDZ 5.00] out- 5.0 01:R2 68.26 .398 2007.0720.1330 173.48 n/a .000
08659 [L/S# 199 / .560 / .035]
08660 [Vmax .584]
08661 R2007:C00019-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08662 CONTINUOUS STANBYD 5.0 01:R1A 21.43 .104 2007.0720.1330 170.74 .310 .000
08663 [C# 36.1# N# 3.001 Tpe 1.68]
08664 [I#REC# 6.00 S#MIN#191.09# S#MAX#***** EK# -030]
08665 [InterVntTime# 12.00]
08666 R2007:C00020-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08667 CONTINUOUS STANBYD 5.0 01:R1out-in 10.00 .280 2007.0829.1800 181.21 .329 .000
08668 [XIMP# 38"TIMP# 74"]
08669 [Horton parameters] Pw= 76.20Tpc= 13.20/DCW#4.14 Pw***
08670 [InterVntTime# 12.00] [Area# 4.62] [S#P# 2.0] [L#P# 500] [J#M# 250] [S#C# 0]
08671 [I#REC# 6.00 S#MIN# 1.57] [S#P# 2.0] [L#P# 500] [J#M# 250] [S#C# 0]
08672 [InterVntTime# 12.00]
08673 R2007:C00021-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08674 ROUTE RESERVOIR -> 5.0 02:R1out-in 10.00 .280 2007.0829.1800 181.21 n/a .000
08675 out <= 5.0 01:R1out-out 10.00 .029 2007.0720.1400 181.21 n/a .000
08676 overflow <= 5.0 03:R1out-Over 0.00 .000 2007.0401.0000 .00 n/a .000
08677 [Method# 22.0] [C# 15.1# N# 3.001 Tpe 1.68] [I#REC# 6.00 S#MIN# 1.57] [S#P# 2.0] [L#P# 500] [J#M# 250] [S#C# 0]
08678 R2007:C00022-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08679 CONTINUOUS STANBYD 5.0 01:R2 9.14 .109 2007.0720.1130 173.50 .315 .000
08680 [C# 48.4# N# 3.001 Tpe 1.68]
08681 [I#REC# 6.00 S#MIN# 48.56 S#MAX#323.73# EK# -030]
08682 [InterVntTime# 12.00]
08683 R2007:C00023-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08684 ADD HYD 5.0 02:R2 68.26 .398 2007.0720.1335 173.48 n/a .000
08685 + 5.0 02:IAA 21.43 .104 2007.0720.1340 173.14 n/a .000
08686 + 5.0 02:IA 9.14 .109 2007.0720.1130 173.50 n/a .000
08687 + 5.0 02:IAIC-Over 0.00 .000 2007.0401.0000 .00 n/a .000
08688 + 5.0 02:R1out-out 10.00 .029 2007.0720.1400 181.21 n/a .000
08689 SIM# 5.0 01:R2 108.84 .624 2007.0720.1330 173.65 n/a .000
08690 R2007:C00024-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08691 ROUTE CHANNEL -> 5.0 02:R3 108.84 .624 2007.0720.1330 173.65 n/a .000
08692 [RDZ 5.00] out- 5.0 02:R3 108.84 .624 2007.0720.1335 173.65 n/a .000
08693 [L/S# 396 / .305 / .035]
08694 [Vmax .444]
08695 [I#REC# 6.00 S#MIN# 191.09# S#MAX#***** EK# -030]
08696 CONTINUOUS STANBYD 5.0 01:R1out-1 20.21 .094 2007.0720.1325 170.67 .310 .000
08697 [C# 15.1# N# 3.001 Tpe 1.68]
08698 [I#REC# 6.00 S#MIN# 204.20# S#MAX#***** EK# -030]
08699 [InterVntTime# 12.00]
08700 R2007:C00025-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08701 ADD HYD 5.0 02:R3 108.84 .624 2007.0720.1335 173.65 n/a .000
08702 + 5.0 02:IAA 21.43 .104 2007.0720.1340 173.14 n/a .000
08703 SIM# 5.0 01:R4 129.05 .717 2007.0720.1335 173.18 n/a .000
08704 R2007:C00027-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08705 ROUTE CHANNEL -> 5.0 02:R4 129.05 .717 2007.0720.1335 173.18 n/a .000
08706 [RDZ 5.00] out- 5.0 01:R4 129.05 .717 2007.0720.1340 173.18 n/a .000
08707 [L/S# 492 / .418 / .035]
08708 [Vmax .598]
08709 R2007:C00028-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08710 CONTINUOUS STANBYD 5.0 01:R1out-2 31.63 .060 2007.0720.1130 170.74 .310 .000
08711 [C# 36.1# N# 3.001 Tpe .96]
08712 [I#REC# 6.00 S#MIN#141.94# S#MAX#946.27# EK# -030]
08713 [InterVntTime# 12.00]
08714 R2007:C00029-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08715 Add HYD 5.0 01:R1out-2 31.63 .060 2007.0720.1130 170.74 n/a .000
08716 + 5.0 02:R1out-2 11.61 .060 2007.0720.1130 170.74 n/a .000
08717 SIM# 5.0 01:R4 140.66 .772 2007.0720.1335 172.88 n/a .000
08718 R2007:C00030-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08719 ROUTE CHANNEL -> 5.0 02:R5 140.66 .772 2007.0720.1335 172.88 n/a .000
08720 [RDZ 5.00] out- 5.0 01:R4 140.66 .772 2007.0720.1335 172.88 n/a .000
08721 [L/S# 181 / .500 / .035]
08722 [Vmax .587]
08723 R2007:C00031-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08724 CONTINUOUS STANBYD 5.0 01:R1out-3 7.98 .052 2007.0720.1130 171.09 .311 .000
08725 [C# 42.6# N# 3.001 Tpe 1.68]
08726 [I#REC# 6.00 S#MIN#141.94# S#MAX#946.27# EK# -030]
08727 [InterVntTime# 12.00]
08728 R2007:C00032-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08729 ADD HYD 5.0 02:R5 140.66 .772 2007.0720.1335 172.88 n/a .000
08730 + 5.0 02:R1out-3 7.98 .052 2007.0720.1130 171.09 n/a .000
08731 SIM# 5.0 01:R6 148.64 .819 2007.0720.1325 172.88 n/a .000
08732 R2007:C00033-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08733 SAVE HYD 5.0 01:R6 148.64 .819 2007.0720.1325 172.88 n/a .000
08734 [L/S# 223 / .440 / .035]
08735 [Vmax .632]
08736 R2007:C00034-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08737 ROUTE CHANNEL -> 5.0 01:R6 148.64 .819 2007.0720.1325 172.88 n/a .000
08738 [RDZ 5.00] out- 5.0 01:R6 148.64 .819 2007.0720.1335 172.88 n/a .000
08739 [L/S# 181 / .500 / .035]
08740 [Vmax .632]
08741 R2007:C00035-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08742 CONTINUOUS STANBYD 5.0 01:R1out-4 14.99 .082 2007.0720.1145 170.87 .310 .000
08743 [C# 39.5# N# 3.001 Tpe 1.23]
08744 [I#REC# 6.00 S#MIN#166.62# S#MAX#***** EK# -030]
08745 [InterVntTime# 12.00]
08746 R2007:C00036-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08747 Add HYD 5.0 02:R6 148.64 .819 2007.0720.1335 172.88 n/a .000
08748 + 5.0 02:R1out-4 14.99 .082 2007.0720.1145 170.87 n/a .000
08749 SIM# 5.0 01:Total 163.63 .899 2007.0720.1330 172.68 n/a .000
08750 =====
08751 =====
08752 =====
08753 # CONTINUOUS RAINFALL DATA
08754 # =====
08755 # *****
08756 # STORMS
08757 # *****
08758 R2007:C00002-----DtlIn-ID:HYD-----AREBA-QPEARms-TpeakDate_hh:mm-----RvM-R-C-----DWPFms
08759 FINISH
08760 =====
08761 # *****
08762 # WARNING# ERROR# NOTE#
08763 # *****
08764 R1967:C00002 READ AES DATA
08765 ** WARNING: Requested start date is less than start date in file.
08766 R1967:C00001 CONTINUOUS STANBYD
08767 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08768 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08769 R1969:C00002 READ AES DATA
08770 ** WARNING: Missing rainfall increments were set to 0.
08771 R1969:C00001 CONTINUOUS STANBYD
08772 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08773 R1970:C00002 READ AES DATA
08774 ** WARNING: Missing rainfall increments were set to 0.
08775 R1970:C00012 CONTINUOUS STANBYD
08776 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08777 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08778 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08779 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08780 R1974:C00002 READ AES DATA
08781 ** WARNING: Missing rainfall increments were set to 0.
08782 R1974:C00012 CONTINUOUS STANBYD
08783 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08784 R1975:C00002 READ AES DATA
08785 ** WARNING: Requested start date is less than start date in file.
08786 R1975:C00001 CONTINUOUS STANBYD
08787 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08788 R1976:C00002 READ AES DATA
08789 ** WARNING: Missing rainfall increments were set to 0.
08790 R1976:C00012 CONTINUOUS STANBYD
08791 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08792 ** NOTE: The previous area has no runoff.
08793 R1977:C00002 READ AES DATA
08794 ** WARNING: Missing rainfall increments were set to 0.
08795 R1977:C00012 CONTINUOUS STANBYD
08796 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08797 R1978:C00002 READ AES DATA
08798 ** WARNING: Missing rainfall increments were set to 0.
08799 R1978:C00012 CONTINUOUS STANBYD
08800 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08801 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08802 R1980:C00002 READ AES DATA
08803 ** WARNING: Missing rainfall increments were set to 0.
08804 R1980:C00012 CONTINUOUS STANBYD
08805 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08806 ** NOTE: The previous area has no runoff.
08807 R1981:C00002 READ AES DATA
08808 ** WARNING: Missing rainfall increments were set to 0.
08809 R1981:C00012 CONTINUOUS STANBYD
08810 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08811 R1982:C00002 READ AES DATA
08812 ** WARNING: Missing rainfall increments were set to 0.
08813 R1982:C00012 CONTINUOUS STANBYD
08814 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08815 R1983:C00002 READ AES DATA
08816 ** WARNING: Missing rainfall increments were set to 0.
08817 R1983:C00012 CONTINUOUS STANBYD
08818 ** WARNING: Storage Coefficient is smaller than DTI Use a smaller DT or a larger area.
08819 ** NOTE: The previous area has no runoff.
08820 R1984:C00002 READ AES DATA

```

# Appendix D

## Oil and Grit Separators



### Detailed Stormceptor Sizing Report – WS-1-39

Project Information & Location			
<b>Project Name</b>	6160 Thunder Rd.	<b>Project Number</b>	200578
<b>City</b>	Ottawa	<b>State/ Province</b>	Ontario
<b>Country</b>	Canada	<b>Date</b>	5/17/2023
Designer Information		EOR Information (optional)	
<b>Name</b>	Brandon O'Leary	<b>Name</b>	Virginia Johnson
<b>Company</b>	Rinker	<b>Company</b>	LRL Associates Ltd.
<b>Phone #</b>	905-630-0359	<b>Phone #</b>	613-915-9503
<b>Email</b>	brandon.oleary@rinkerpipe.com	<b>Email</b>	vjohnson@lrl.ca

#### Stormwater Treatment Recommendation

The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

<b>Site Name</b>	WS-1-39
<b>Recommended Stormceptor Model</b>	EFO6
<b>TSS Removal (%) Provided</b>	83
<b>Particle Size Distribution (PSD)</b>	Fine Distribution
<b>Rainfall Station</b>	OTTAWA MACDONALD-CARTIER INT'L A

The recommended Stormceptor model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

EFO Sizing Summary			
EFO Model	% TSS Removal Provided	% Runoff Volume Captured Provided	Standard EFO Hydrocarbon Storage Capacity
EFO4	72	88	265 L (70 gal)
<b>EFO6</b>	<b>83</b>	<b>99</b>	<b>610 L (160 gal)</b>
EFO8	88	99	1070 L (280 gal)
EFO10	91	99	1670 L (440 gal)
EFO12	97	99	2475 L (655 gal)
Parallel Units / MAX	Custom	Custom	Custom

**For Stormceptor Specifications and Drawings Please Visit:**  
<http://www.imbriumsystems.com/technical-specifications>

## OVERVIEW

**Stormceptor® EF** is a continuation and evolution of the most globally recognized oil-grit separator (OGS) stormwater treatment technology - **Stormceptor®**. Also known as a hydrodynamic separator, the enhanced flow Stormceptor EF is a high performing oil-grit separator that effectively removes a wide variety of pollutants from stormwater and snowmelt runoff at higher flow rates as compared to the original Stormceptor. Stormceptor EF captures and retains sediment (TSS), free oils, gross pollutants and other pollutants that attach to particles, such as nutrients and metals. Stormceptor EF's patent-pending treatment and scour prevention technology and internal bypass ensures sediment is retained during all rainfall events.

### Design Methodology

Stormceptor is sized using PCSWMM for Stormceptor, a continuous simulation model based on US EPA SWMM. The program calculates hydrology using local historical rainfall data and specified site parameters. With US EPA SWMM's precision, every Stormceptor unit is designed to achieve a defined water quality objective. The TSS removal data presented follows US EPA guidelines to reduce the average annual TSS load. The Stormceptor's unit process for TSS removal is settling. The settling model calculates TSS removal by analyzing:

- Site parameters
- Continuous historical rainfall data, including duration, distribution, peaks & inter-event dry periods
- Particle size distribution, and associated settling velocities (Stokes Law, corrected for drag)
- TSS load
- Detention time of the system

Hydrology Analysis	
PCSWMM for Stormceptor calculates annual hydrology with the US EPA SWMM and local continuous historical rainfall data. Performance calculations of Stormceptor are based on the average annual removal of TSS for the selected site parameters. The Stormceptor is engineered to capture sediment particles by treating the required average annual runoff volume, ensuring positive removal efficiency is maintained during each rainfall event, and preventing negative removal efficiency (scour). Smaller recurring storms account for the majority of rainfall events and average annual runoff volume, as observed in the historical rainfall data analyses presented in this section.	

Rainfall Station			
<b>State/Province</b>	Ontario	<b>Total Number of Rainfall Events</b>	4093
<b>Rainfall Station Name</b>	OTTAWA MACDONALD-CARTIER INT'L A	<b>Total Rainfall (mm)</b>	20978.1
<b>Station ID #</b>	6000	<b>Average Annual Rainfall (mm)</b>	567.0
<b>Coordinates</b>	45°19'N, 75°40'W	<b>Total Evaporation (mm)</b>	1657.0
<b>Elevation (ft)</b>	370	<b>Total Infiltration (mm)</b>	5442.4
<b>Years of Rainfall Data</b>	37	<b>Total Rainfall that is Runoff (mm)</b>	13878.7

Notes	
<ul style="list-style-type: none"> <li>• Stormceptor performance estimates are based on simulations using PCSWMM for Stormceptor, which uses the EPA Rainfall and Runoff modules.</li> <li>• Design estimates listed are only representative of specific project requirements based on total suspended solids (TSS) removal defined by the selected PSD, and based on stable site conditions only, after construction is completed.</li> <li>• For submerged applications or sites specific to spill control, please contact your local Stormceptor representative for further design assistance.</li> </ul>	

### ONLINE APPLICATION

Stormceptor EF's internal bypass and patent-pending scour prevention technology has demonstrated very effective retention of pollutants in third-party testing and verification following the Canadian ETV's **Procedure for Laboratory Testing of Oil-Grit Separators**. Sediment scour prevention demonstrated an effluent concentration of less than 10 mg/L for sediment particles ranging from 1 to 1,000 microns, even during peak influent flow rates associated with infrequent high intensity storm events. While Stormceptor EF will capture oil, only the Stormceptor EFO configuration has been third-party tested and verified to retain greater than 99% of captured oil. Based on these verified performance attributes, the most efficient and widely accepted application of Stormceptor EF is an online configuration, which allows all upstream conveyance flows to enter and exit the unit. The online application eliminates the need for costly additional bypass structures, piping and installation expense.

**FLOW ENTRANCE OPTIONS**

**Single Inlet Pipe** – A common design which includes one inlet pipe and one outlet pipe. A 90-degree (maximum) bend is also accepted with this configuration.

**Inlet Grate** – Allows surface runoff to enter the unit from grade. The inlet grate option can also be used in conjunction with one inlet pipe or multiple inlet pipes. A removable flow deflector is added in the Stormceptor EF4/EFO4.

Maximum Pipe Diameter		
Model	Inlet (in/mm)	Outlet (in/mm)
EF4 / EFO4	24 / 610	24 / 610
EF6 / EFO6	36 / 915	36 / 915
EF8 / EFO8	48 / 1220	48 / 1220
EF10 / EFO10	72 / 1828	72 / 1828
EF12 / EFO12	72 / 1828	72 / 1828

**Multiple Inlet Pipe** – Allows for multiple inlet pipes of various diameters to enter the unit.

Maximum Pipe Diameter		
Model	Inlet (in/mm)	Outlet (in/mm)
EF4 / EFO4	18 / 457	24 / 610
EF6 / EFO6	30 / 762	36 / 915
EF8 / EFO8	42 / 1067	48 / 1220
EF10 / EFO10	60 / 1524	72 / 1828
EF12 / EFO12	60 / 1524	72 / 1828



Drainage Area		Up Stream Storage	
Total Area (ha)	10.00	Storage (ha-m)	Discharge (cms)
Imperviousness %	74.00	0.0000	0.000
		0.2061	0.022
		0.3279	0.026
		0.5930	0.032

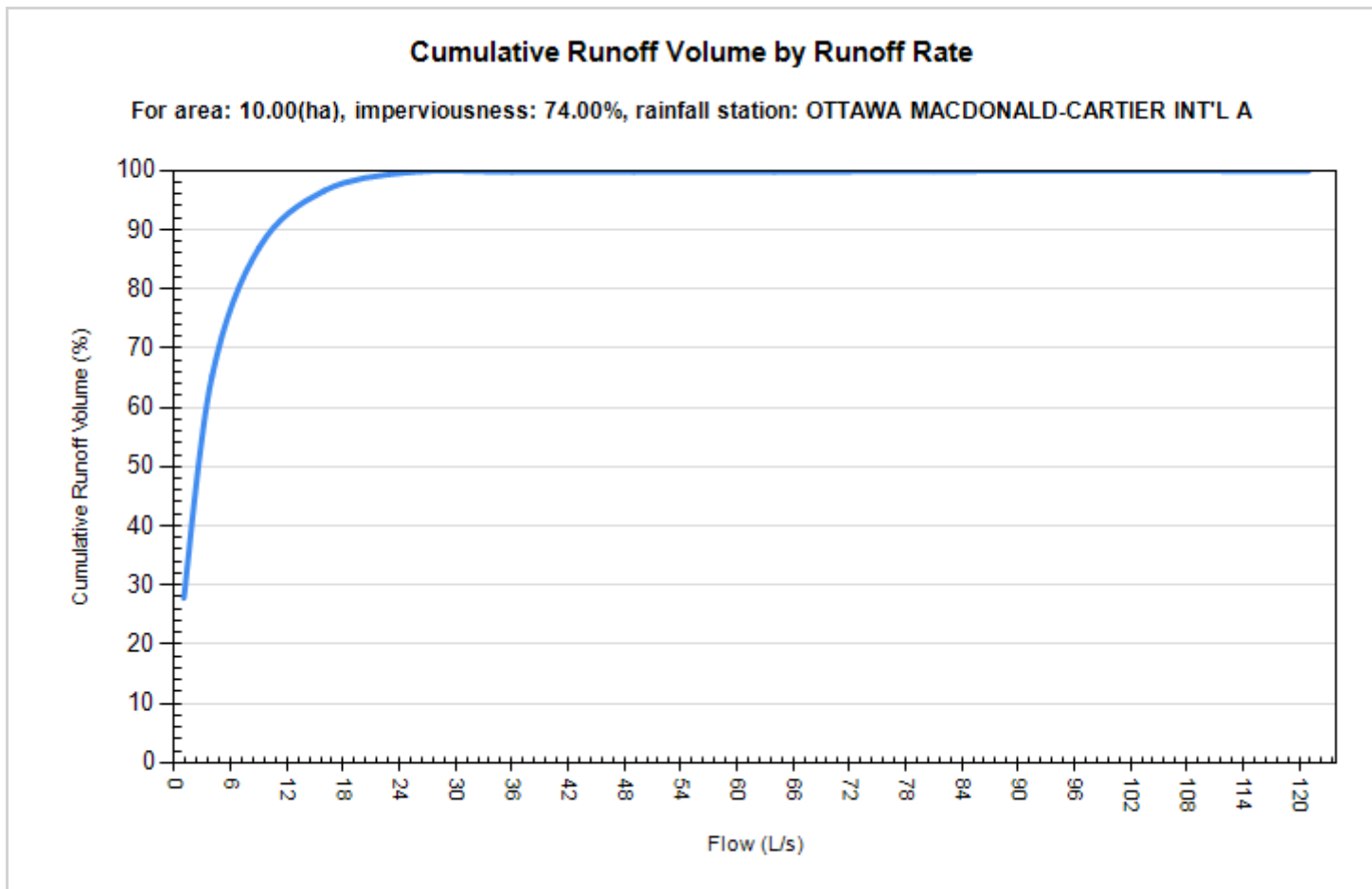
Up Stream Flow Diversion		Design Details	
Max. Flow to Stormceptor (cms)		Stormceptor Inlet Invert Elev (m)	
		Stormceptor Outlet Invert Elev (m)	
		Stormceptor Rim Elev (m)	
		Normal Water Level Elevation (m)	
		Pipe Diameter (mm)	
		Pipe Material	
		Multiple Inlets (Y/N)	No
		Grate Inlet (Y/N)	No

Water Quality Objective	
TSS Removal (%)	80.0
Runoff Volume Capture (%)	90.00
Oil Spill Capture Volume (L)	
Peak Conveyed Flow Rate (L/s)	32.00
Water Quality Flow Rate (L/s)	20.00

Particle Size Distribution (PSD)		
Removing the smallest fraction of particulates from runoff ensures the majority of pollutants, such as metals, hydrocarbons and nutrients are captured. The table below identifies the Particle Size Distribution (PSD) that was selected to define TSS removal for the Stormceptor design.		
Fine Distribution		
Particle Diameter (microns)	Distribution %	Specific Gravity
20.0	20.0	1.30
60.0	20.0	1.80
150.0	20.0	2.20
400.0	20.0	2.65
2000.0	20.0	2.65

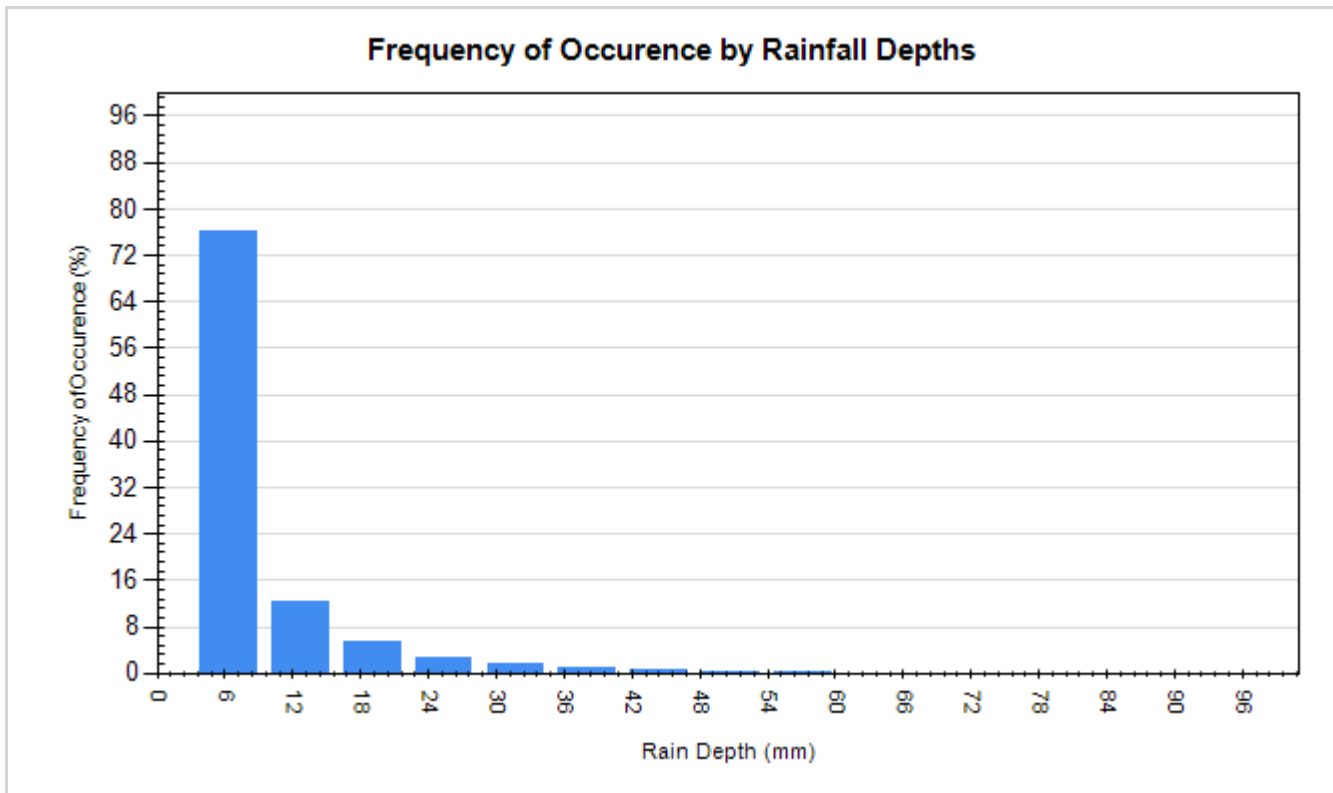
<b>Site Name</b>		WS-1-39	
<b>Site Details</b>			
<b>Drainage Area</b>		<b>Infiltration Parameters</b>	
Total Area (ha)	10.00	Horton's equation is used to estimate infiltration	
Imperviousness %	74.00	Max. Infiltration Rate (mm/hr)	61.98
Oil Spill Capture Volume (L)		Min. Infiltration Rate (mm/hr)	10.16
		Decay Rate (1/sec)	0.00055
		Regeneration Rate (1/sec)	0.01
<b>Surface Characteristics</b>		<b>Evaporation</b>	
Width (m)	632.00	Daily Evaporation Rate (mm/day)	2.54
Slope %	2	<b>Dry Weather Flow</b>	
Impervious Depression Storage (mm)	0.508	Dry Weather Flow (L/s)	0
Pervious Depression Storage (mm)	5.08		
Impervious Manning's n	0.015		
Pervious Manning's n	0.25		
<b>Maintenance Frequency</b>		<b>Winter Months</b>	
Maintenance Frequency (months) >	12	Winter Infiltration	0
<b>TSS Loading Parameters</b>			
TSS Loading Function		Build Up/ Wash-off	
<b>Buildup/Wash-off Parameters</b>		<b>TSS Availability Parameters</b>	
Target Event Mean Conc. (EMC) mg/L	125	Availability Constant A	0.057
Exponential Buildup Power	0.40	Availability Factor B	0.04
Exponential Washoff Exponent	0.20	Availability Exponent C	1.10
		Min. Particle Size Affected by Availability (micron)	400

Cumulative Runoff Volume by Runoff Rate			
Runoff Rate (L/s)	Runoff Volume (m³)	Volume Over (m³)	Cumulative Runoff Volume (%)
1	386840	1004826	27.8
4	906169	490108	65.2
9	1208098	182261	86.9
16	1343630	47577	96.6
25	1385946	4655	99.7
36	1388007	2542	99.8
49	1388159	2390	99.8
64	1388327	2221	99.8
81	1388509	2034	99.9
100	1388707	1836	99.9
121	1388907	1634	99.9





Rainfall Event Analysis				
Rainfall Depth (mm)	No. of Events	Percentage of Total Events (%)	Total Volume (mm)	Percentage of Annual Volume (%)
6.35	3113	76.1	5230	24.9
12.70	501	12.2	4497	21.4
19.05	225	5.5	3469	16.5
25.40	105	2.6	2317	11.0
31.75	62	1.5	1765	8.4
38.10	35	0.9	1206	5.8
44.45	28	0.7	1163	5.5
50.80	12	0.3	557	2.7
57.15	7	0.2	378	1.8
63.50	1	0.0	63	0.3
69.85	1	0.0	64	0.3
76.20	1	0.0	76	0.4
82.55	0	0.0	0	0.0
88.90	1	0.0	84	0.4
95.25	0	0.0	0	0.0
101.60	0	0.0	0	0.0



Stormceptor® EF Sizing Report

<b>Imbrium® Systems</b>		<b>ESTIMATED NET ANNUAL SEDIMENT (TSS) LOAD REDUCTION</b>		08/13/2024														
Province:	Ontario	Project Name:	6160 Thunder Rd.															
City:	Ottawa	Project Number:	200578															
Nearest Rainfall Station:	OTTAWA CDA RCS	Designer Name:	Brandon O'Leary															
Climate Station Id:	6105978	Designer Company:	Rinker															
Years of Rainfall Data:	20	Designer Email:	brandon.oleary@rinkerpipe.com															
Site Name:	WS-40	Designer Phone:	905-630-0359															
Drainage Area (ha):	1.23	EOR Name:	Virginia Johnson															
Runoff Coefficient 'c':	0.74	EOR Company:	LRL Associates Ltd.															
Particle Size Distribution:	Fine	EOR Email:	vjohnson@lrl.ca															
Target TSS Removal (%):	80.0	EOR Phone:	613-915-9503															
Required Water Quality Runoff Volume Capture (%):	90.0	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"><b>Net Annual Sediment (TSS) Load Reduction Sizing Summary</b></th> </tr> <tr> <th>Stormceptor Model</th> <th>TSS Removal Provided (%)</th> </tr> </thead> <tbody> <tr> <td style="background-color: yellow;">EFO4</td> <td style="background-color: yellow;">94</td> </tr> <tr> <td>EFO6</td> <td>100</td> </tr> <tr> <td>EFO8</td> <td>100</td> </tr> <tr> <td>EFO10</td> <td>100</td> </tr> <tr> <td>EFO12</td> <td>100</td> </tr> </tbody> </table>			<b>Net Annual Sediment (TSS) Load Reduction Sizing Summary</b>		Stormceptor Model	TSS Removal Provided (%)	EFO4	94	EFO6	100	EFO8	100	EFO10	100	EFO12	100
<b>Net Annual Sediment (TSS) Load Reduction Sizing Summary</b>																		
Stormceptor Model	TSS Removal Provided (%)																	
EFO4	94																	
EFO6	100																	
EFO8	100																	
EFO10	100																	
EFO12	100																	
Oil / Fuel Spill Risk Site?	Yes																	
Upstream Flow Control?	Yes																	
Upstream Orifice Control Flow Rate to Stormceptor (L/s):	4																	
Peak Conveyance (maximum) Flow Rate (L/s):	4																	
<p><b>Recommended Stormceptor EFO Model:</b> <span style="background-color: yellow;">EFO4</span></p> <p><b>Estimated Net Annual Sediment (TSS) Load Reduction (%):</b> <span style="background-color: yellow;">94</span></p> <p><b>Water Quality Runoff Volume Capture (%):</b> <span style="background-color: yellow;">&gt; 90</span></p>																		



Stormceptor® **EF** Sizing Report

**THIRD-PARTY TESTING AND VERIFICATION**

► **Stormceptor® EF and Stormceptor® EFO** are the latest evolutions in the Stormceptor® oil-grit separator (OGS) technology series, and are designed to remove a wide variety of pollutants from stormwater and snowmelt runoff. These technologies have been third-party tested in accordance with the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators** and performance has been third-party verified in accordance with the **ISO 14034 Environmental Technology Verification (ETV)** protocol.

**PERFORMANCE**

► **Stormceptor® EF and EFO** remove stormwater pollutants through gravity separation and floatation, and feature a patent-pending design that generates positive removal of total suspended solids (TSS) throughout each storm event, including high-intensity storms. Captured pollutants include sediment, free oils, and sediment-bound pollutants such as nutrients, heavy metals, and petroleum hydrocarbons. Stormceptor is sized to remove a high level of TSS from the frequent rainfall events that contribute the vast majority of annual runoff volume and pollutant load. The technology incorporates an internal bypass to convey excessive stormwater flows from high-intensity storms through the device without resuspension and washout (scour) of previously captured pollutants. Proper routine maintenance ensures high pollutant removal performance and protection of downstream waterways.

**PARTICLE SIZE DISTRIBUTION (PSD)**

► The **Canadian ETV PSD** shown in the table below was used, or in part, for this sizing. This is the identical PSD that is referenced in the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators** for both sediment removal testing and scour testing. The Canadian ETV PSD contains a wide range of particle sizes in the sand and silt fractions, and is considered reasonably representative of the particle size fractions found in typical urban stormwater runoff.

Particle Size (µm)	Percent Less Than	Particle Size Fraction (µm)	Percent
1000	100	500-1000	5
500	95	250-500	5
250	90	150-250	15
150	75	100-150	15
100	60	75-100	10
75	50	50-75	5
50	45	20-50	10
20	35	8-20	15
8	20	5-8	10
5	10	2-5	5
2	5	<2	5



Stormceptor® EF Sizing Report

Upstream Flow Controlled Results

Rainfall Intensity (mm / hr)	Percent Rainfall Volume (%)	Cumulative Rainfall Volume (%)	Flow Rate (L/s)	Flow Rate (L/min)	Surface Loading Rate (L/min/m <sup>2</sup> )	Removal Efficiency (%)	Incremental Removal (%)	Cumulative Removal (%)
0.50	8.6	8.6	1.27	76.0	63.0	100	8.6	8.6
1.00	91.4	100.0	2.53	152.0	127.0	93	85.3	93.9
2.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
3.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
4.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
5.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
6.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
7.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
8.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
9.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
10.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
11.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
12.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
13.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
14.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
15.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
16.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
17.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
18.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
19.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
20.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
21.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
22.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
23.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
24.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
25.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
30.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
35.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
40.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
45.00	0.0	100.0	4.00	240.0	200.0	83	0.0	93.9
<b>Estimated Net Annual Sediment (TSS) Load Reduction =</b>								<b>94 %</b>

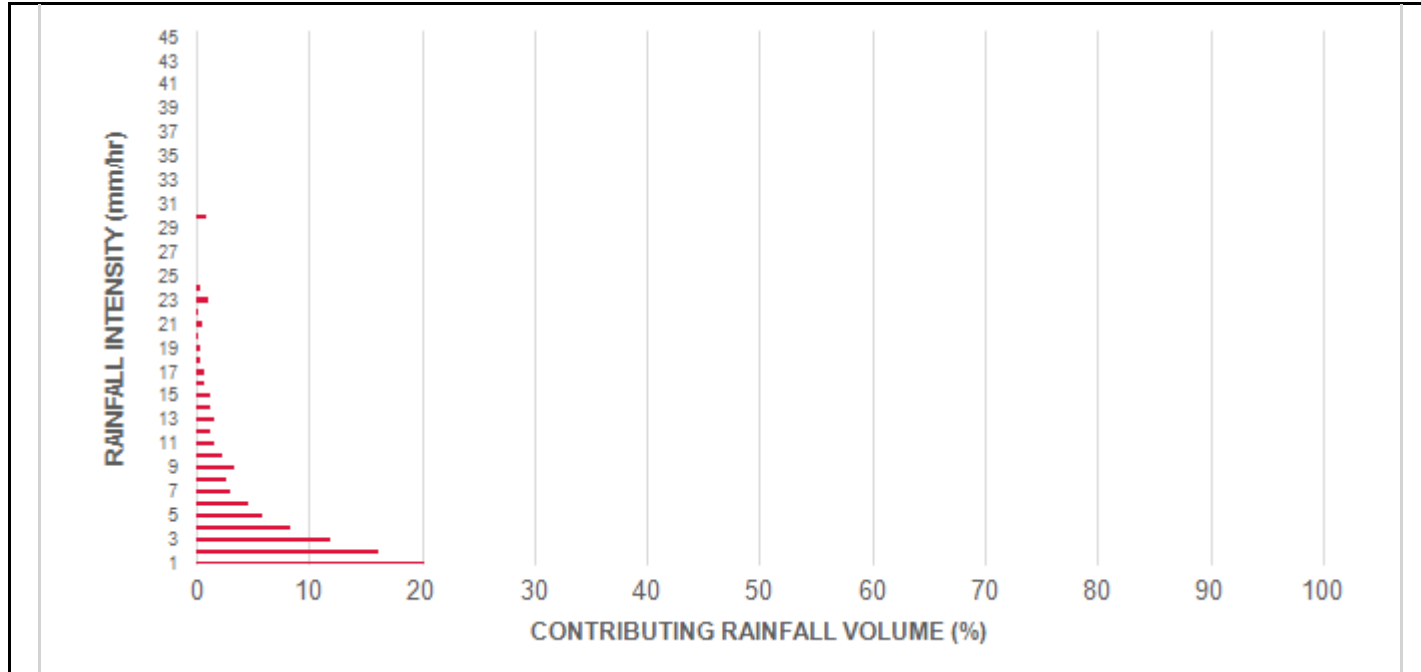
Climate Station ID: 6105978 Years of Rainfall Data: 20



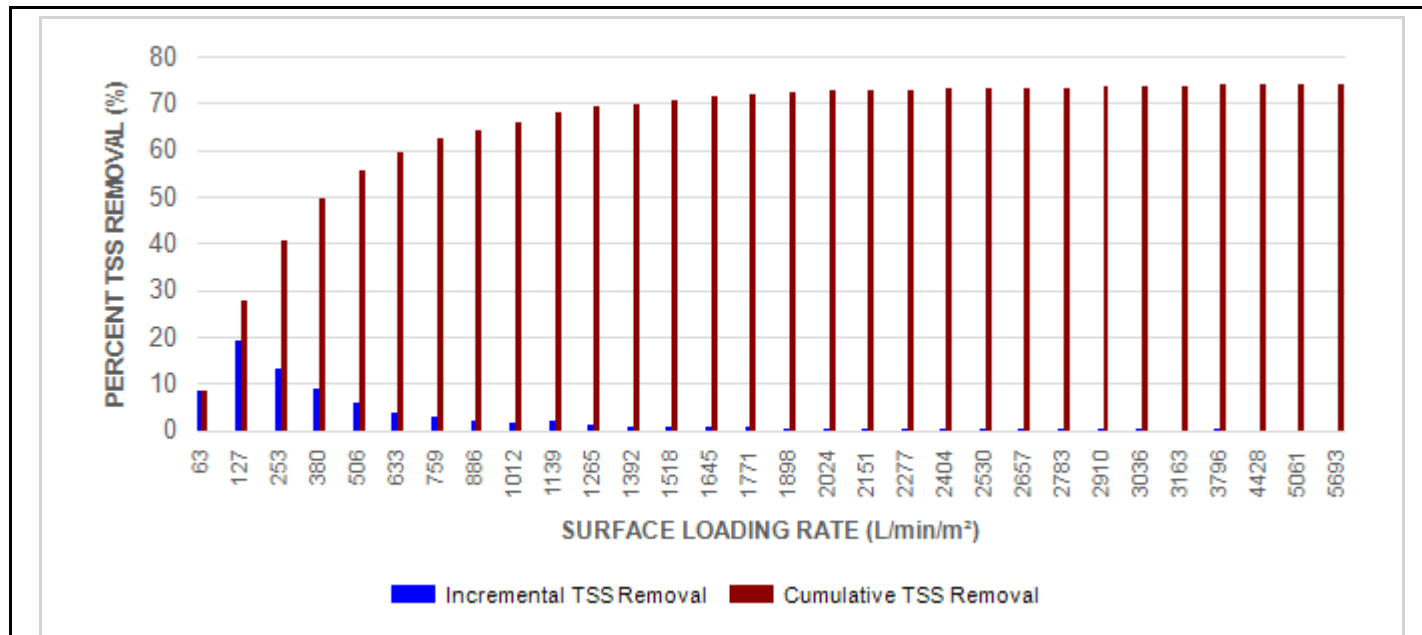


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RAINFALL DATA FROM OTTAWA CDA RCS RAINFALL STATION



INCREMENTAL AND CUMULATIVE TSS REMOVAL FOR THE RECOMMENDED STORMCEPTOR® MODEL



Stormceptor® EF Sizing Report

Maximum Pipe Diameter / Peak Conveyance

Stormceptor EF / EFO	Model Diameter		Min Angle Inlet / Outlet Pipes	Max Inlet Pipe Diameter		Max Outlet Pipe Diameter		Peak Conveyance Flow Rate	
	(m)	(ft)		(mm)	(in)	(mm)	(in)	(L/s)	(cfs)
EF4 / EFO4	1.2	4	90	609	24	609	24	425	15
EF6 / EFO6	1.8	6	90	914	36	914	36	990	35
EF8 / EFO8	2.4	8	90	1219	48	1219	48	1700	60
EF10 / EFO10	3.0	10	90	1828	72	1828	72	2830	100
EF12 / EFO12	3.6	12	90	1828	72	1828	72	2830	100

**SCOUR PREVENTION AND ONLINE CONFIGURATION**

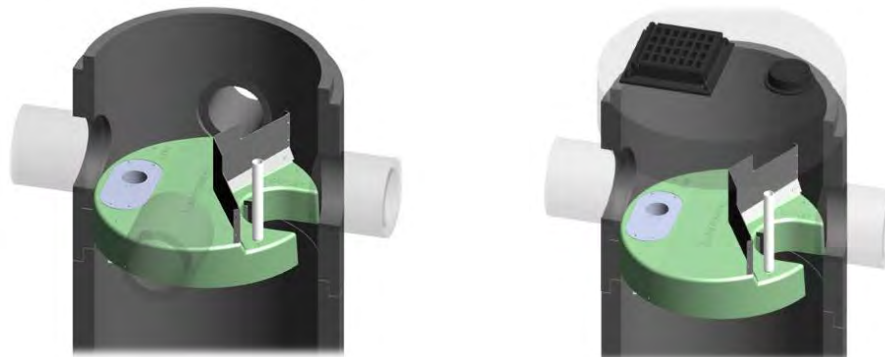
► Stormceptor® EF and EFO feature an internal bypass and superior scour prevention technology that have been demonstrated in third-party testing according to the scour testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**, and the exceptional scour test performance has been third-party verified in accordance with the ISO 14034 ETV protocol. As a result, Stormceptor EF and EFO are approved for online installation, eliminating the need for costly additional bypass structures, piping, and installation expense.

**DESIGN FLEXIBILITY**

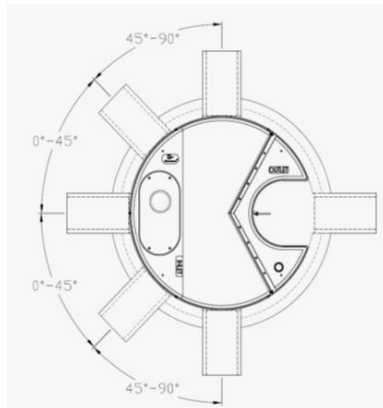
► Stormceptor® EF and EFO offers design flexibility in one simplified platform, accepting stormwater flow from a single inlet pipe or multiple inlet pipes, and/or surface runoff through an inlet grate. The device can also serve as a junction structure, accommodate a 90-degree inlet-to-outlet bend angle, and can be modified to ensure performance in submerged conditions.

**OIL CAPTURE AND RETENTION**

► While Stormceptor® EF will capture and retain oil from dry weather spills and low intensity runoff, Stormceptor® EFO has demonstrated superior oil capture and greater than 99% oil retention in third-party testing according to the light liquid re-entrainment testing provisions of the Canadian ETV **Procedure for Laboratory Testing of Oil-Grit Separators**. Stormceptor EFO is recommended for sites where oil capture and retention is a requirement.



Stormceptor® EF Sizing Report



**INLET-TO-OUTLET DROP**

Elevation differential between inlet and outlet pipe inverts is dictated by the angle at which the inlet pipe(s) enters the unit.

0° - 45° : The inlet pipe is 1-inch (25mm) higher than the outlet pipe.

45° - 90° : The inlet pipe is 2-inches (50mm) higher than the outlet pipe.

**HEAD LOSS**

The head loss through Stormceptor EF is similar to that of a 60-degree bend structure. The applicable K value for calculating minor losses through the unit is 1.1.

For submerged conditions the applicable K value is 3.0.

**Pollutant Capacity**

Stormceptor EF / EFO	Model Diameter		Depth (Outlet Pipe Invert to Sump Floor)		Oil Volume		Recommended Sediment Maintenance Depth *		Maximum Sediment Volume *		Maximum Sediment Mass **	
	(m)	(ft)	(m)	(ft)	(L)	(Gal)	(mm)	(in)	(L)	(ft³)	(kg)	(lb)
EF4 / EFO4	1.2	4	1.52	5.0	265	70	203	8	1190	42	1904	5250
EF6 / EFO6	1.8	6	1.93	6.3	610	160	305	12	3470	123	5552	15375
EF8 / EFO8	2.4	8	2.59	8.5	1070	280	610	24	8780	310	14048	38750
EF10 / EFO10	3.0	10	3.25	10.7	1670	440	610	24	17790	628	28464	78500
EF12 / EFO12	3.6	12	3.89	12.8	2475	655	610	24	31220	1103	49952	137875

\*Increased sump depth may be added to increase sediment storage capacity

\*\* Average density of wet packed sediment in sump = 1.6 kg/L (100 lb/ft³ )

Feature	Benefit	Feature Appeals To
Patent-pending enhanced flow treatment and scour prevention technology	Superior, verified third-party performance	Regulator, Specifying & Design Engineer
Third-party verified light liquid capture and retention for EFO version	Proven performance for fuel/oil hotspot locations	Regulator, Specifying & Design Engineer, Site Owner
Functions as bend, junction or inlet structure	Design flexibility	Specifying & Design Engineer
Minimal drop between inlet and outlet	Site installation ease	Contractor
Large diameter outlet riser for inspection and maintenance	Easy maintenance access from grade	Maintenance Contractor & Site Owner

**STANDARD STORMCEPTOR EF/EFO DRAWINGS**

For standard details, please visit <http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef>

**STANDARD STORMCEPTOR EF/EFO SPECIFICATION**

For specifications, please visit <http://www.imbriumsystems.com/stormwater-treatment-solutions/stormceptor-ef>



**Stormceptor® EF Sizing Report**



## STANDARD PERFORMANCE SPECIFICATION FOR “OIL GRIT SEPARATOR” (OGS) STORMWATER QUALITY TREATMENT DEVICE

### PART 1 – GENERAL

#### 1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, and designing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, with third-party testing results and a Statement of Verification in accordance with ISO 14034 Environmental Management – Environmental Technology Verification (ETV).

#### 1.2 REFERENCE STANDARDS & PROCEDURES

ISO 14034:2016 Environmental management – Environmental technology verification (ETV)

Canadian Environmental Technology Verification (ETV) Program’s **Procedure for Laboratory Testing of Oil-Grit Separators**

#### 1.3 SUBMITTALS

1.3.1 All submittals, including sizing reports & shop drawings, shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail all OGS components, elevations, and sequence of construction.

1.3.2 Alternative devices shall have features identical to or greater than the specified device, including: treatment chamber diameter, treatment chamber wet volume, sediment storage volume, and oil storage volume.

1.3.3 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be signed and sealed by a local registered Professional Engineer, based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record.

### PART 2 – PRODUCTS

#### 2.1 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a protected volume for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The minimum sediment & petroleum hydrocarbon storage capacity shall be as follows:

2.1.1	4 ft (1219 mm) Diameter OGS Units:	1.19 m <sup>3</sup> sediment / 265 L oil
	6 ft (1829 mm) Diameter OGS Units:	3.48 m <sup>3</sup> sediment / 609 L oil
	8 ft (2438 mm) Diameter OGS Units:	8.78 m <sup>3</sup> sediment / 1,071 L oil
	10 ft (3048 mm) Diameter OGS Units:	17.78 m <sup>3</sup> sediment / 1,673 L oil
	12 ft (3657 mm) Diameter OGS Units:	31.23 m <sup>3</sup> sediment / 2,476 L oil

## PART 3 – PERFORMANCE & DESIGN

### 3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality treatment device shall remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

### 3.2 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in the sizing report for the specified device. Sizing of the OGS shall be determined by use of a minimum ten (10) years of local historical rainfall data provided by Environment Canada. Sizing shall also be determined by use of the sediment removal performance data derived from the ISO 14034 ETV third-party verified laboratory testing data from testing conducted in accordance with the Canadian ETV protocol Procedure for Laboratory Testing of Oil-Grit Separators, as follows:

3.2.1 Sediment removal efficiency for a given surface loading rate and its associated flow rate shall be based on sediment removal efficiency demonstrated at the seven (7) tested surface loading rates specified in the protocol, ranging 40 L/min/m<sup>2</sup> to 1400 L/min/m<sup>2</sup>, and as stated in the ISO 14034 ETV Verification Statement for the OGS device.

3.2.2 Sediment removal efficiency for surface loading rates between 40 L/min/m<sup>2</sup> and 1400 L/min/m<sup>2</sup> shall be based on linear interpolation of data between consecutive tested surface loading rates.

3.2.3 Sediment removal efficiency for surface loading rates less than the lowest tested surface loading rate of 40 L/min/m<sup>2</sup> shall be assumed to be identical to the sediment removal efficiency at 40 L/min/m<sup>2</sup>. No extrapolation shall be allowed that results in a sediment removal efficiency that is greater than that demonstrated at 40 L/min/m<sup>2</sup>.

3.2.4 Sediment removal efficiency for surface loading rates greater than the highest tested surface loading rate of 1400 L/min/m<sup>2</sup> shall assume zero sediment removal for the portion of flow that exceeds 1400 L/min/m<sup>2</sup>, and shall be calculated using a simple proportioning formula, with 1400 L/min/m<sup>2</sup> in the numerator and the higher surface loading rate in the denominator, and multiplying the resulting fraction times the sediment removal efficiency at 1400 L/min/m<sup>2</sup>.

The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 2.1.

### 3.3 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of third-party scour testing conducted in

## Stormceptor<sup>®</sup> EF Sizing Report

accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**.

3.3.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m<sup>2</sup>.

### 3.4 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid Re-entrainment Simulation Testing in accordance with the Canadian ETV **Program's Procedure for Laboratory Testing of Oil-Grit Separators**, with results reported within the Canadian ETV or ISO 14034 ETV verification. This re-entrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to assess whether light liquids captured after a spill are effectively retained at high flow rates.

3.4.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m<sup>2</sup> to 2600 L/min/m<sup>2</sup>) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**. However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.

# STANDARD SPECIFICATION FOR “OIL GRIT SEPARATOR” (OGS) STORMWATER QUALITY TREATMENT DEVICE WITH THIRD-PARTY VERIFIED LIGHT LIQUID RE-ENTRAINMENT SIMULATION PERFORMANCE TESTING RESULTS

## PART 1 – GENERAL

### 1.1 WORK INCLUDED

This section specifies requirements for selecting, sizing, designing, maintaining, and constructing an underground Oil Grit Separator (OGS) device for stormwater quality treatment, **specifically an OGS device that has been third-party tested for oil and fuel retention capability using a protocol for light liquid re-entrainment simulation testing, with testing results and a Statement of Verification in accordance with all the provisions of ISO 14034 Environmental Management – Environmental Technology Verification (ETV)**. Work includes supply and installation of concrete bases, precast sections, and the appropriate precast section with OGS internal components correctly installed within the system, watertight sealed to the precast concrete prior to arrival to the project site.

### 1.2 REFERENCE STANDARDS

#### 1.2.1 For Canadian projects only, the following reference standards apply:

CAN/CSA-A257.4-14: Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections, and Fittings Using Rubber Gaskets

CAN/CSA-A257.4-14: Precast Reinforced Circular Concrete Manhole Sections, Catch Basins, and Fittings

CAN/CSA-S6-00: Canadian Highway Bridge Design Code

#### 1.2.2 For ALL projects, the following reference standards apply:

ASTM D-4097: Contact Molded Glass Fiber Reinforced Chemical Resistant Tanks

ASTM C 478: Specification for Precast Reinforced Concrete Manhole Sections

ASTM C 443: Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets

ASTM C 891: Standard Practice for Installation of Underground Precast Concrete Utility Structures

ASTM D2563: Standard Practice for Classification of Visual Defects in Reinforced Plastics

### 1.3 SHOP DRAWINGS

1.3.1 Shop drawings shall be submitted upon request with each order to the contractor then forwarded to the Engineer of Record for review and acceptance. Shop drawings shall detail the precast concrete components and OGS internal components prior to shipment, including the sequence for installation.

1.3.2 Unless directed otherwise by the Engineer of Record, OGS stormwater quality treatment product substitutions or alternatives submitted within ten days prior to project bid shall not be accepted. All alternatives or substitutions submitted shall be based on the exact same criteria detailed in Section 3, in entirety, subject to review and approval by the Engineer of Record. Any and all changes to project cost estimates, bonding amounts, plan check fees for revision of approved documents, or design impacts due to regulatory requirements as a result of a product substitution shall be coordinated by the Contractor with the Engineer of Record.

### 1.4 HANDLING AND STORAGE

Prevent damage to materials during storage and handling.



1.4.1 OGS internal components supplied by the Manufacturer for attachment to the precast concrete vessel shall be pre-fabricated, bolted to the precast and watertight sealed to the precast vessel surface prior to site delivery to ensure Manufacturer's internal assembly process and quality control processes are fully adhered to, and to prevent materials damage on site.

1.4.2 Follow all instructions including the sequence for installation in the shop drawings during installation.

## **PART 2 – PRODUCTS**

### **2.1 GENERAL**

2.1.1 The OGS vessel shall be cylindrical and constructed from precast concrete riser and slab components.

2.1.2 The precast concrete OGS internal components shall include a fiberglass insert bolted and watertight sealed inside the precast concrete vessel, prior to site delivery. Primary internal components that are to be anchored and watertight sealed to the precast concrete vessel shall be done so only by the Manufacturer prior to arrival at the job site to ensure product quality.

2.1.3 The OGS shall be allowed to be specified and have the ability to function as a 240-degree bend structure in the stormwater drainage system, or as a junction structure.

2.1.4 The OGS to be specified shall have the capability to accept influent flow from an inlet grate and an inlet pipe.

### **2.2 PRECAST CONCRETE SECTIONS**

All precast concrete components shall be designed and manufactured to meet highway loading conditions per State/Provincial or local requirements.

### **2.3 GASKETS**

Only profile neoprene or nitrile rubber gaskets that are oil resistant shall be accepted. For Canadian projects only, gaskets shall be in accordance to CSA A257.4-14. Mastic sealants, butyl tape/rope or Conseal CS-101 alone are not acceptable gasket materials.

### **2.4 JOINTS**

The concrete joints shall be watertight and meet the design criteria according to ASTM C-990. For projects where joints require gaskets, the concrete joints shall be watertight and oil resistant and meet the design criteria according to ASTM C-443. Mastic sealants or butyl tape/rope alone are not an acceptable alternative.

### **2.5 FRAMES AND COVERS**

Frames and covers shall be manufactured in accordance with State/Provincial or local requirements for inspection and maintenance access purposes. A minimum of one cover, at least 22-inch (560 mm) in diameter, shall be clearly embossed with the OGS manufacturer's product name to properly identify this asset's purpose is for stormwater quality treatment.

### **2.6 PRECAST CONCRETE**

All precast concrete components shall conform to the appropriate CSA or ASTM specifications.

### **2.7 FIBERGLASS**

The fiberglass portion of the OGS device shall be constructed in accordance with ASTM D2563, and in accordance with the PS15-69 manufacturing standard, and shall only be installed, bolted and watertight sealed to the precast concrete by the Manufacturer prior to arrival at the project site to ensure product quality.

## 2.8 OGS POLLUTANT STORAGE

The OGS device shall include a sump for sediment storage, and a fiberglass insert for the capture and storage of petroleum hydrocarbons and buoyant gross pollutants. The total sediment storage capacity shall be a minimum 40 ft<sup>3</sup> (1.1 m<sup>3</sup>). The total petroleum hydrocarbon storage capacity shall be a minimum 50 gallons (189 liters). The access opening to the sump of the OGS device for periodic inspection and maintenance purposes shall be a minimum 16 inches (406 mm) in diameter.

## 2.9 LADDERS

Ladder rungs shall be provided upon request or to comply with State/Provincial or local requirements.

## 2.10 INSPECTION

All precast concrete sections shall be level and inspected to ensure dimensions, appearance, integrity of internal components, and quality of the product meets State/Provincial or local specifications and associated standards.

# **PART 3 – PERFORMANCE & DESIGN**

## 3.1 GENERAL

The OGS stormwater quality treatment device shall be verified in accordance with ISO 14034:2016 Environmental management – Environmental technology verification (ETV). The OGS stormwater quality treatment device shall remove oil, sediment and gross pollutants from stormwater runoff during frequent wet weather events, and retain these pollutants during less frequent high flow wet weather events below the insert within the OGS for later removal during maintenance. The Manufacturer shall have at least ten (10) years of local experience, history and success in engineering design, manufacturing and production and supply of OGS stormwater quality treatment device systems, acceptable to the Engineer of Record.

## 3.2 HYDROLOGY AND RUNOFF VOLUME

The OGS device shall be engineered, designed and sized to treat a minimum of 90 percent of the average annual runoff volume, unless otherwise stated by the Engineer of Record, using historical rainfall data. Rainfall data sets should be comprised of a minimum 15-years of rainfall data or a longer continuous period if available for a given location, but in all cases a minimum 5-year period of rainfall data.

## 3.3 ANNUAL (TSS) SEDIMENT LOAD AND STORAGE CAPACITY

The OGS device shall be capable of removing and have sufficient storage capacity for the calculated annual total suspended solids (TSS) mass load and volume without scouring previously captured pollutants prior to maintenance being required. The annual (TSS) sediment load and volume transported from the drainage area should be calculated and compared to the OGS device's available storage capacity by the specifying Engineer to ensure adequate capacity between maintenance cycles. Sediment loadings shall be determined by land use and defined as a minimum of 450 kg (992 lb) of sediment (TSS) per impervious hectare of drainage area per year, or greater based on land use, as noted in Table 1 below.

Annual sediment volume calculations shall be performed using the projected average annual treated runoff volume, a typical sediment bulk density of 1602 kg/m<sup>3</sup> (100 lbs/ft<sup>3</sup>) and an assumed Event Mean Concentration (EMC) of 125 mg/L TSS in the runoff, or as otherwise determined by the Engineer of Record.

Example calculation for a 1.3-hectares parking lot site:

- 1.28 meters of rainfall depth, per year
- 1.3 hectares of 100% impervious drainage area
- EMC of 125 mg/L TSS in runoff
- Treatment of 90% of the average annual runoff volume
- Target average annual TSS removal rate of 60% by OGS

Annual Runoff Volume:

- 1.28 m rain depth x 1.3 ha x 10,000 m<sup>2</sup>/ha= 16,640 m<sup>3</sup> of runoff volume
- 16,640 m<sup>3</sup> x 1000 L/m<sup>3</sup> = 16,640,000 L of runoff volume
- 16,640,000 L x 0.90 = 14,976,000 L to be treated by OGS unit

Annual Sediment Mass and Sediment Volume Load Calculation:

- 14,976,000 L x 125 mg/L x kg/1,000,000 mg = 1,872 kg annual sediment mass
- 1,872 kg x m<sup>3</sup>/1602 kg = 1.17 m<sup>3</sup> annual sediment volume
- 1.17 m<sup>3</sup> x 60% TSS removal rate by OGS = 0.70 m<sup>3</sup> minimum expected annual storage requirement in OGS

As a guideline, the U.S. EPA has determined typical annual sediment loads per drainage area for various sites by land use (see Table 1). Certain States, Provinces and local jurisdictions have also established such guidelines.

Table 1 – Annual Mass Sediment Loading by Land Use								
	Commercial	Parking Lot	Residential			Highways	Industrial	Shopping Center
			High	Med.	Low			
(lbs/acre/yr)	1,000	400	420	250	10	880	500	440
(kg/hectare/yr)	1,124	450	472	281	11	989	562	494

Source: U.S. EPA Stormwater Best Management Practice Design Guide Volume 1, Appendix D, Table D-1, Burton and Pitt 2002

### 3.4 SIZING METHODOLOGY

The OGS device shall be engineered, designed and sized to provide stormwater quality treatment based on treating a minimum of 90 percent of the average annual runoff volume and a minimum removal of an annual average 60% of the sediment (TSS) load based on the Particle Size Distribution (PSD) specified in Table 2, Section 3.5, and based on third-party performance testing conducted in accordance with the Canadian Environmental Technology Verification (ETV) Program's **Procedure for Laboratory Testing of Oil-Grit Separators**. Sizing of the OGS shall be determined by use of a minimum ten (10) years of local historical rainfall data provided by Environment Canada. Sizing shall also be determined by use of the sediment removal performance data derived from the ISO 14034 ETV third-party verified laboratory testing data from testing conducted in accordance with the Canadian ETV protocol *Procedure for Laboratory Testing of Oil-Grit Separators*, as follows:

3.4.1 Sediment removal efficiency for a given surface loading rate and its associated flow rate shall be based on sediment removal efficiency demonstrated at the seven (7) tested surface loading rates specified in the protocol, ranging 40 L/min/m<sup>2</sup> to 1400 L/min/m<sup>2</sup>, and as stated in the ISO 14034 ETV Verification Statement for the OGS device.

3.4.2 Sediment removal efficiency for surface loading rates between 40 L/min/m<sup>2</sup> and 1400 L/min/m<sup>2</sup> shall be based on linear interpolation of data between consecutive tested surface loading rates.

3.4.3 Sediment removal efficiency for surface loading rates less than the lowest tested surface loading rate of 40 L/min/m<sup>2</sup> shall be assumed to be identical to the sediment removal efficiency at 40 L/min/m<sup>2</sup>. No extrapolation shall be allowed that results in a sediment removal efficiency that is greater than that demonstrated at 40 L/min/m<sup>2</sup>.

3.4.4 Sediment removal efficiency for surface loading rates greater than the highest tested surface loading rate of 1400 L/min/m<sup>2</sup> shall assume zero sediment removal for the portion of flow that exceeds 1400 L/min/m<sup>2</sup>, and shall be calculated using a simple proportioning formula, with 1400 L/min/m<sup>2</sup> in the numerator and the higher surface loading rate in the denominator, and multiplying the resulting fraction times the sediment removal efficiency at 1400 L/min/m<sup>2</sup>.

The OGS device shall also have sufficient annual sediment storage capacity as specified and calculated in Section 3.3.

3.4.5 The Peclet Number is not an approved method or model for calculating TSS removal, sizing, or scaling OGS devices.

3.4.6 If an alternate OGS device is proposed, supporting documentation shall be submitted that demonstrates:

- Canadian ETV or ISO 14034 ETV Verification Statement which verifies third-party performance testing conducted in accordance with the **Procedure for Laboratory Testing of Oil-Grit Separators**, including the Light Liquid Re-entrainment Simulation Testing.
- Equal or better sediment (TSS) removal of the PSD specified in Table 2 at equivalent surface loading rates, as compared to the OGS device specified herein.
- Equal or better Light Liquid Re-entrainment Simulation Test results (using low-density polyethylene beads as a surrogate for light liquids such as oil and fuel) at equivalent surface loading rates, as compared to the OGS device specified herein. However, an alternative OGS device shall not be allowed as a substitute if the Light Liquid Re-entrainment Simulation Test was performed with screening components within the OGS device that are effective at retaining the low-density polyethylene beads, but would not be expected to retain light liquids such as oil and fuel.
- Equal or greater sediment storage capacity, as compared to the OGS device specified herein.
- Supporting documentation shall be signed and sealed by a local registered Professional Engineer. All costs associated with preparing and certifying this documentation shall be born solely by the Contractor.

### 3.5 PARTICLE SIZE DISTRIBUTION (PSD) FOR SIZING

The OGS device shall be sized to achieve the Engineer-specified average annual percent sediment (TSS) removal based solely on the test sediment used in the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**. This test sediment is comprised of inorganic ground silica with a specific gravity of 2.65, uniformly mixed, and containing a broad range of particle sizes as specified in Table 2. No alternative PSDs or deviations from Table 2 shall be accepted.

<b>Table 2</b> <b>Canadian ETV Program Procedure for Laboratory</b> <b>Testing of Oil-Grit Separators</b> <b>Particle Size Distribution (PSD) of Test Sediment</b>		
Particle Diameter (Microns)	% by Mass of All Particles	Specific Gravity
1000	5%	2.65
500	5%	2.65
250	15%	2.65
150	15%	2.65
100	10%	2.65
75	5%	2.65
50	10%	2.65
20	15%	2.65
8	10%	2.65
5	5%	2.65
2	5%	2.65



### 3.6 CANADIAN ETV or ISO 14034 ETV VERIFICATION OF SCOUR TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party scour testing conducted and have in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**. This scour testing is conducted with the device pre-loaded with test sediment comprised of the particle size distribution (PSD) illustrated in Table 2.

3.6.1 To be acceptable for on-line installation, the OGS device must demonstrate an average scour test effluent concentration less than 10 mg/L at each surface loading rate tested, up to and including 2600 L/min/m<sup>2</sup>.

Data generated from laboratory scour testing performed with an OGS device pre-loaded with a coarser PSD than in Table 2 (i.e. the coarser PSD has no particles in the 1-micron to 50-micron size range, or the D<sub>50</sub> of the test sediment exceeds 75 microns) shall not be acceptable for the determination of the device's suitability for on-line installation.

### 3.7 DESIGN ACCOUNTING FOR BYPASS

3.7.1 The OGS device shall be specified to achieve the TSS removal performance and water quality objectives without washout of previously captured pollutants. The OGS device shall also have sufficient hydraulic conveyance capacity to convey the peak storm event, in accordance with hydraulic conditions per the Engineer of Record. To ensure this is achieved, there are two design options with associated requirements:

3.7.1.1 The OGS device shall be placed **off-line** with an upstream diversion structure (typically in an upstream manhole) that only allows the water quality volume to be diverted to the OGS device, and excessive flows diverted downstream around the OGS device to prevent high flow washout of pollutants previously captured. This design typically incorporates a triangular layout including an upstream bypass manhole with an appropriately engineered weir wall, the OGS device, and a downstream junction manhole, which is connected to both the OGS device and bypass structure. In this case with an external bypass required, the OGS device manufacturer must provide calculations and designs for all structures, piping and any other required material applicable to the proper functioning of the system, stamped by a Professional Engineer.

3.7.1.2 Alternatively, OGS devices in compliance with Section 3.6 shall be acceptable for an **on-line** design configuration, thereby eliminating the requirement for an upstream bypass manhole and downstream junction manhole.

3.7.2 The OGS device shall also have sufficient hydraulic conveyance capacity to convey the peak storm event, in accordance with hydraulic conditions per the Engineer of Record. If an alternate OGS device is proposed, supporting documentation shall be submitted that demonstrates equal or better hydraulic conveyance capacity as compared to the OGS device specified herein. This documentation shall be signed and sealed by a local registered Professional Engineer. All costs associated with preparing and certifying this documentation shall be born solely by the Contractor.

### 3.8 LIGHT LIQUID RE-ENTRAINMENT SIMULATION TESTING

The OGS device shall have Canadian ETV or ISO 14034 ETV Verification of completed third-party Light Liquid Re-entrainment Simulation Testing in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**, with results reported within the Canadian ETV or ISO 14034 ETV verification. This re-entrainment testing is conducted with the device pre-loaded with low density polyethylene (LDPE) plastic beads as a surrogate for light liquids such as oil and fuel. Testing is conducted on the same OGS unit tested for sediment removal to assess whether light liquids captured after a spill are effectively retained at high flow rates.

3.8.1 For an OGS device to be an acceptable stormwater treatment device on a site where vehicular traffic occurs and the potential for an oil or fuel spill exists, the OGS device must have reported verified performance results of greater than 99% cumulative retention of LDPE plastic beads for the five specified surface loading rates (ranging 200 L/min/m<sup>2</sup> to 2600 L/min/m<sup>2</sup>) in accordance with the Light Liquid Re-entrainment Simulation Testing within the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**. However, an OGS device shall not be allowed if the Light Liquid Re-entrainment Simulation Testing was performed with screening components within the OGS device that are effective at retaining the LDPE plastic beads, but would not be expected to retain light liquids such as oil and fuel.

### 3.9 PETROLEUM HYDROCARBONS AND FLOATABLES STORAGE CAPACITY

Petroleum hydrocarbons and floatables storage capacity in the OGS device shall be a minimum 50 gallons (189 Liters), or more as specified.

3.9.1 The OGS device shall have gasketed precast concrete joints that are watertight, and oil resistant and meet the design criteria according to ASTM C-443 to provide safe oil and other hydrocarbon materials storage and ground water protection. Mastic sealants or butyl tape/rope alone are not an acceptable alternative.

### 3.10 SURFACE LOADING RATE SCALING OF DIFFERENT MODEL SIZES

The reference device for scaling shall be an OGS device that has been third-party tested in accordance with the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**. Other model sizes of the tested device shall only be scaled such that the claimed TSS removal efficiency of the scaled device shall be no greater than the TSS removal efficiency of the tested device at identical **surface loading rates** (flow rate divided by settling surface area). The depth of other model sizes of the tested device shall be scaled in accordance with the depth scaling provisions within Section 6.0 of the Canadian ETV Program's **Procedure for Laboratory Testing of Oil-Grit Separators**.

3.10.1 The Peclet Number and volumetric scaling are not approved methods for scaling OGS devices.

## **PART 4 – INSPECTION & MAINTENANCE**

The OGS manufacturer shall provide an Owner's Manual upon request. Maintenance shall be performed by a professional service provider who has experience in cleaning OGS devices and has been trained and certified in applicable health and safety practices, including confined space entry procedures.

- 4.1 A Quality Assurance Plan that provides inspection for a minimum of 5 years shall be included with the OGS stormwater quality device, and written into the Environmental Compliance Approval (ECA) or the appropriate State/Provincial or local approval document.
- 4.2 OGS device inspection shall include determination of sediment depth and presence of petroleum hydrocarbons below the insert. Inspection shall be easily conducted from finished grade through a frame and cover of at least 22 inch (560 mm) in diameter.
- 4.3 Inspection and pollutant removal shall be conducted periodically. For routine maintenance cleaning activities, pollutant removal shall typically utilize a truck equipped with vacuum apparatus, and shall be easily conducted from finished grade through a frame and cover of at least 22-inches (560 mm) in diameter.
- 4.4 Diameter of the maintenance access opening to the lower chamber and sump shall be scaled consistently across all model sizes, and shall be 1/3 the inside diameter of the OGS structure, or larger.
- 4.5 No confined space entry shall be required for routine inspection and maintenance cleaning activities.

- 4.6 For OGS model sizes of diameter 72 inches (1828 mm) and greater, the access opening to the OGS device's lower chamber and sump shall be large enough to allow a maintenance worker to enter the lower chamber to facilitate non-routine maintenance cleaning activities and repairs, as needed.
- 4.7 The orifice-containing component (i.e. drop pipe, duct, chute, etc.) of the OGS device used to control flow rate into the lower chamber shall be removable from the insert to facilitate cleaning, repair, or replacement of the orifice-containing component, as needed.

## **PART 5 – EXECUTION**

### **5.1 PRECAST CONCRETE INSTALLATION**

The installation of the precast concrete OGS stormwater quality treatment device shall conform to ASTM C 891, ASTM C 478, ASTM C 443, CAN/CSA-A257.4-14, CAN/CSA-A257.4-14, CAN/CSA-S6-00 and all highway, State/Provincial, or local specifications for the construction of manholes. Selected sections of a general specification that are applicable are summarized below. The Contractor shall furnish all labor, equipment and materials necessary to offload, assemble as needed the OGS internal components as specified in the Shop Drawings.

### **5.2 EXCAVATION**

5.2.1 Excavation for the installation of the OGS stormwater quality treatment device shall conform to highway, State/Provincial or local specifications. Topsoil that is removed during the excavation for the OGS stormwater quality treatment device shall be stockpiled in designated areas and not be mixed with subsoil or other materials. Topsoil stockpiles and the general site preparation for the installation of the OGS stormwater quality device shall conform to highway, State/Provincial or local specifications.

5.2.2 The OGS device shall not be installed on frozen ground. Excavation shall extend a minimum of 12 inch (300 mm) from the precast concrete surfaces plus an allowance for shoring and bracing where required. If the bottom of the excavation provides an unsuitable foundation additional excavation may be required.

5.2.3 In areas with a high water table, continuous dewatering shall be provided to ensure that the excavation is stable and free of water.

### **5.3 BACKFILLING**

Backfill material shall conform to highway, State/Provincial or local specifications. Backfill material shall be placed in uniform layers not exceeding 12 inches (300 mm) in depth and compacted to highway, State/Provincial or local specifications.

### **5.4 OGS WATER QUALITY DEVICE CONSTRUCTION SEQUENCE**

5.4.1 The precast concrete OGS stormwater quality treatment device is installed and leveled in sections in the following sequence:

- aggregate base
- base slab, or base
- riser section(s) (if required)
- riser section w/ pre-installed fiberglass insert
- upper riser section(s)
- internal OGS device components
- connect inlet and outlet pipes
- riser section, top slab and/or transition (if required)
- frame and access cover

5.4.2 The precast concrete base shall be placed level at the specified grade. The entire base shall be in contact with the underlying compacted granular material. Subsequent sections, complete with oil resistant, watertight joint seals, shall be installed in accordance with the precast concrete manufacturer's recommendations.

5.4.3 Adjustment of the OGS stormwater quality treatment device can be performed by lifting the upper sections free of the excavated area, re-leveling the base, and re-installing the sections. Damaged sections and gaskets shall be repaired or replaced as necessary. Once the OGS stormwater quality treatment device has been constructed, any lift holes must be plugged with mortar.

#### 5.5 DROP PIPE AND OIL INSPECTION PIPE

Once the upper precast concrete riser has been attached to the lower precast concrete riser section, the OGS device Drop Pipe and Oil Inspection Pipe must be attached, and watertight sealed to the fiberglass insert using Sikaflex 1a. Installation instructions and required materials shall be provided by the OGS manufacturer.

#### 5.6 INLET AND OUTLET PIPES

Inlet and outlet pipes shall be securely set using grout or approved pipe seals (flexible boot connections, where applicable) so that the structure is watertight. Non-secure inlets and outlets will result in improper performance.

#### 5.7 FRAME AND COVER OR FRAME AND GRATE INSTALLATION

Precast concrete adjustment units shall be installed to set the frame and cover/grate at the required elevation. The adjustment units shall be laid in a full bed of mortar with successive units being joined using sealant recommended by the manufacturer. Frames for the cover/grate should be set in a full bed of mortar at the elevation specified.

5.7.1 A minimum of one cover, at least 22-inch (560 mm) in diameter, shall be clearly embossed with the OGS device brand or product name to properly identify this asset's purpose is for stormwater quality treatment.