

Hydrogen Ready Power Plant Project Environmental Screening and Review Report

APPENDIX 17.4 Storm Water Management Study Report

November 8, 2021

Prepared by: Francis C. Itliong, P.Eng.
Reviewed by: Bruce E. Holbein, Ph.D.
Approved by: Raman Raghavan, P.Eng

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Table of Contents

1.0	Introduction.....	1
2.0	Existing Conditions.....	2
3.0	Proposed Post Development Conditions.....	3
3.1	Developed Area	3
4.0	Cooling Tower Basin Design Criteria.....	5
5.0	Quality Control	7
6.0	On-Site Storage Requirements and Major Overland Flow	8
7.0	Project Cut and Fill Balance Analysis	9
8.0	Conclusions.....	10
	List of Figures	11
	Figure1: Site Plan.....	12
	Figure 2: Site Topography Map.....	13
	Figure 3: Pre-Development Drainage Area	14
	Figure 4: Post Development Drainage Area	15
	Figure 5: Post Development Storm Flow.....	16
	Figure 6: Catch Basin System.....	17
	Figure 7: Cooling Tower Sectional View	18
	Figure 8: Proposed Cut and Fill Balance	19
	APPENDIX A - VISUAL OTTHYMO RESULTS.....	20
	PRE-DEVELOPMENT RESULTS	21
	POST-DEVELOPMENT RESULTS.....	22
	APPENDIX B - SAMPLE CALCULATION.....	23
	ON-SITE PONDING STORAGE CALCULATION	24

1.0 Introduction

This report sets out the storm water management measures associated with the Hydrogen Ready Power Project. The proposed project will consist of a 600 MW clean electrical generation facility to be located in St. Clair Township on the south side of Oil Springs Line approximately 0.6 km west of Highway 40 and 0.9 km east of Greenfield Road. The proposed location will be on the existing property of the Greenfield South Power Corporation's Green Electron Power Plant (GEPP), 477 Oil Springs Line and south of the existing GEPP. The property is an industrially zoned land, where electricity generation is permitted and in an area that is designated for heavy industrial uses.

The proposed power generating facility will consist of buildings, structures and paved areas which will cover about 7.92% of the 36.5 ha property as shown in **Figure 1**.

The storm water plan will be managed in accordance with the latest revision of the Ministry of Environment guideline, "Stormwater Management Planning and Design Manual". The overall approach to storm water management is that any precipitation falling outside the developed area (87.61% of the property) will continue to drain as sheet flow overland to Government Drain No. 10, and storm water from the developed area will be collected in storm water catch basins and directed to the cooling tower basin where it will be consumed as part of the plant process. Any storm water delivered to the cooling tower basin will displace municipal water that would otherwise be needed to make up water losses from the cooling tower. Precipitation from all storm events including the regional storm will be contained on site with no storm water discharge to the natural environment.

This report describes and evaluates the existing and post-development storm water flows and indicates how post-development flows will be managed. Storm water storage requirements for the cooling tower basin were calculated with Visual OTTHYMO v.6.0 using the Soil Conservation Service (SCS) Type II storm distributions for events ranging from the 2-year to the 100-year with durations of 24 hours, and storage requirements determined by the most critical storm. The SCS events were derived from the Sarnia Airport precipitation data provided by the Atmospheric Environmental Services' IDF90 publication. A time of concentration of 15 minutes was used for all storm events. The Hurricane Hazel Storm Event Standard was used for the regional storm analysis. Ponding volumes on site were calculated using the Modified Rational Method.

2.0 Existing Conditions

Presently, the land is owned by Greenfield South Power Corporation. Oil Springs Line bounds the north of the property and a railway track bounds the west. The overall surrounding lands are used for agricultural purposes. Government Drain No. 10 enters the property on the north-west corner and runs through the property in south-east direction, where it drains to Coyle Drain. Coyle Drain drains into Clay Creek. Clay Creek is a tributary to the St. Clair River. Presently, storm water runoff from the property flows generally along Government Drain No. 10. Lands to the north generally drain to the McPherson Drain No. 1 and 2.

The pre-existing topographic information for the proposed development was taken from the final grading and landscaping plan 402-11-L18 as provided by Greenfield South Power Corporation to the St. Clair Regin Conservation Authority (SCRCA) in 2017 to complete their permit requirements for the GSPC project development (see **Figure 2**).

Part of the land (4.47%) is occupied by GSPC’s Green Electron Power Plant (GEPP). The remaining 95.53% of the land has been use largely for crop production. Tile drainage has been installed on the property north of the GEPP buildings to just south of the vegetated berm by a tenant farmer to improve drainage for crop production. Tile drainage could not be installed south of the GEPP plant due to available collection elevation differentials and therefore cropping suitability for this portion of the property which encompasses the entire proposed development land has been marginal. Forested and protected lands cover the southern portion of the property.

The Greenfield South property has an area of 36.5 ha, and the borehole logs examined show a topsoil of dark brown clayey silt, brown silt with some clay, glacial till. Bedrock formation are limestone of the Upper and Middle Devonian age of the Hamilton Group and Kettle Formation (LVM, Geotechnical Engineering Report, September 7, 2012). A Curve Number (CN) value of 80 was selected to represent existing soils.

The pre-development condition was modeled for numerous events and is summarized in **Table 1**.

TABLE 1
Pre-Development Conditions (2.89 ha)

Event	Total Rainfall (mm)	Total Runoff		Peak Flow (m ³ /s)
		Amount (mm)	Coefficient	
2 yr 24 hr SCS Type II	56.01	22.68	0.405	0.161
5 yr 24 hr SCS Type II	70.95	33.535	0.473	0.240
10 yr 24 hr SCS Type II	80.62	41.026	0.509	0.294
25 yr 24 hr SCS Type II	93.19	51.175	0.549	0.367
50 yr 24 hr SCS Type II	102.59	59.009	0.575	0.423
100 yr 24 hr SCS Type II	111.57	66.652	0.597	0.478

3.0 Proposed Post Development Conditions

When the site is constructed, all of the runoff from the newly developed area will be conveyed to the cooling tower basin. When the plant is in operation, runoff conveyed to the cooling tower basin will be consumed in the plant process. The available cooling tower basin storage capacity when the plant is operating is approximately 6905.9 m³. Surface drainage for all areas outside of the developed area will remain as per pre-development conditions.

The post development drainage area conveyed to the cooling tower basins are shown on **Figure 4** and are summarized in **Table 2**.

TABLE 2
Post Development Drainage Area to the Cooling Tower Basins

	Drainage Area (ha)	Imperviousness (%)
Green Electron Power Plant	2.98	98

3.1 Developed Area

Storm water from the developed area (shown in **Figure 5**) will be collected in a storm water catch basin system and directed to the cooling tower basin where it will be consumed as part of the plant process. The catch basin systems will consist from 300 to 600 mm diameter pipes sloped at 0.75 %, resulting in a total capacity of 1.05 m³/s. There will be no inlet control devices (ICDs) that will limit flows into the system. The peak flow rate for the developed area draining to the site for the 100-year event was 1.07 m³/s (from VO6 output), which is just 2% above the conveyance capacity of the system.

The catch basin system (**Figure 5**) will collect storm water runoff of the developed power plant area (see **Figure 1**).

The system will convey flow by gravity to a dedicated two pumping gallery (2.4 m diameter x 4.2 m deep concrete holding tank) integral with the last catch basin in the system (Holding Tanks HT1 and HT2). The storm water will be pumped from each of the two storm water pumping galleries into the cooling tower basin. Also included in each of the holding tanks will be a 600 mm diameter overflow pipe. This pipe will be used when the capacity of the pumps is exceeded.

Each pumping gallery will have one submersible pump. Under normal rainfall conditions, the pump will be operated by level switch activation, as the water level in the pumping station gallery reaches pre-determined level. The total capacity of all pumps will be 0.102 m³/s. In the event that the capacity of all the pumps is exceeded, then the overflow pipes will start to convey flows to the cooling tower basin. The capacity of each of the overflow pipes will be 0.525 m³/s. The maximum flow to be conveyed to the

cooling tower basin is 1.152 m³/s when the pumps are functioning and 1.05 m³/s in the unlikely event that the pumps are not working.

When the plant is in operation, the total available storage on site is 8355.7 m³, with 6905.9 m³ in the cooling tower basin and 1449.8 m³ on-site storage (detailed in **Section 4** and **5** below). If a 100-year 24-hour event was to occur, the estimated runoff is 3102 m³. Therefore, any runoff will be contained in the cooling tower basin.

The system was also assessed for a regional event. For the purposes of this report, the Hurricane Hazel Flood Event Standard was used to assess a regional storm event. **Table 3** shows the rainfall distribution, runoff volume, storage on site over a 48-hour period. A total drainage area of 2.89 ha was used as was a runoff coefficient of 0.96 (100 yr 24 hr runoff coefficient from VO6). The total available storage on site consisted of the cooling tower basin, catch basin system volume and ponding on site (detailed below in **Section 5**).

TABLE 3
Regional Storm Data

Rainfall Amount (mm)	Duration	Cumulative Runoff Amount (m ³)			
		Total	Storage on Site	Available Storage on Site	Overflow
73	First 36 hr	2028	2028	8355.7	0
6	37th hour	2195	2195		0
4	38th hour	2306	2306		0
6	39th hour	2473	2473		0
13	40th hour	2834	2834		0
17	41st hour	3306	3306		0
13	42nd hour	3668	3668		0
23	43rd hour	4307	4307		0
13	44th hour	4668	4668		0
13	45th hour	5030	5030		0
53	46th hour	6502	6502		0
38	47th hour	7558	7558		0
13	48th hour	7920	7920		0

As can be seen, the site will store 100% of the runoff from a regional storm event.

Based on the long-term historical annual average rainfall (1981 to 2010) and an annual total average of 0.770 m (as recorded at Sarnia Airport by Environment Canada), the cooling tower would receive a total of about 8901 m³ of storm water, based on a lower runoff coefficient of 0.4, recognizing that saturation of soils will not occur for the majority of rainfall events for the year.

The asphalt paved areas will be contained with a minimum 150 mm high concrete curb. This curbing arrangement will ensure that storm water will not enter in any of the building facilities in the event that the catch basin system capacity is temporarily exceeded.

Storm water from the power plant building roof (no flow control) will be directed to the catch basin systems. The connection pipe to the catch basin systems will be below grade to prevent icing on the driveways during winter months. There will be one 6-inch diameter storm water drain risers and one, 8-inch diameter storm water drain risers from the roof for the main power plant building (**Figure 6**). **Table 4** below lists the storm water drain risers and identifies their respective locations and connections to the storm water catch basin systems.

**TABLE 4
Building Roof Drains**

Storm Water Drain Riser	Drain Size (in)	Location	Connection To
A	8	E Wall Steam Turbine Hall	Storm MH4
B	6	SW Corner Control Room	Storm MH8

Storm water falling on the two Hydrogen Ready Gas Turbine - Heat Recovery Steam Generator (HRSG) equipment will drain naturally down the sides of the equipment and will be collected by the catch basin system. There will be no specific storm water catchments system installed on the equipment.

4.0 Cooling Tower Basin Design Criteria

The cooling tower is designed to cool circulating water (CW) that is returning from the condenser where it has been used to condense the steam exhausting from the steam turbo-generator. The CW is cooled by cascading it down through the cooling tower while at the same time passing air up through the cooling tower so as to cause evaporative cooling of CW as efficiently as possible.

The internals of the cooling tower consist of a labyrinth-like packing or fill. The fill provides a large surface area for air-water contact to enable efficient evaporative cooling of the CW as it cascades downward through the fill. The cooled CW cascades down into the concrete cooling tower basin. The cooled CW is collected in the sump of the cooling tower pump house and pumped back through the condenser to close the circulating water (CW) loop.

The upward flowing air with its captured water vapour is discharged from the top of the cooling tower to the atmosphere by large horizontally rotating fans located inside stacks on the top of the cooling tower.

Water is lost from the cooling tower during operation primarily through evaporation (water vapour), with lesser amounts of drift (entrained water droplets) and also by controlled blow down to the sanitary sewer. The latter removal is needed to counteract the steady buildup of minerals in the cooling tower water as evaporation occurs (mainly

calcium and magnesium) that naturally occur in supply water. Makeup water is added to the cooling tower to offset the evaporative, blow down and drift losses.

Table 5 shows the typical breakdown of cooling tower water consumption during active facility operation at 7 °C design dry bulb conditions. During the summer, higher dry bulb conditions will occur and the rate of water consumption will increase. The cooling tower will begin operating just prior to plant start up and will be stopped just after plant shutdown.

TABLE 5
Cooling Tower Water Losses at 7 °C Dry Bulb Temperature

Water Flow Type	Volumetric Flow Rate at 7 °C (m ³ /hr)
Cooling Tower Evaporation and Drift Loss	444.61
Cooling Tower Blow Down	49.25
Total Make-Up Flow	493.85

Small amounts of conditioning chemicals will be added to the circulating water to maintain a near neutral pH (to prevent mineral deposition) and to suppress microbial growth (primarily algae). Sulphuric acid and scale inhibitors will be used to control mineral deposition, and sodium hypochlorite (laundry bleach) will be used to control biological growth through maintaining a small residual free available chlorine level, i.e., similar to swimming pool control systems.

The cooling tower basin, shown in cross section in **Figure 7** will have a total volume of approximately 10789.2 m³. This volume includes 3883.3 m³ representing the normal operating volume of CW water. This substantial balance of 6905.9 m³ represents the normally empty free-board. This large freeboard capacity has been selected to accommodate storm water collection needs and **Table 6** shows the various components comprising this total freeboard surge capacity.

TABLE 6
Cooling Tower Free-board Volumes

Free-Board Cooling Tower Capacity		
1. Cooling Tower Basin Free Board Volume:	6550.6	m ³
2. Pump House Sump Free Board Volume:	355.3	m ³
Total Cooling Tower Free-Board Capacity =	6905.9	m³

This large freeboard surge capacity will be available continuously to accommodate storm water flows. The quantity of normal water usage through blow down, evaporation and drift loss is sufficiently high to maintain the free-board volume available for storm water catchment (see **Table 6** above). It is estimated that the total water losses (evaporation, blow down, and drift loss) and thus water make-up requirement will be 493.85 m³/h. Thus, any utilization of freeboard capacity for storm water retention in the system will have a draw down rate of 493.85 m³/h during facility operation (see below for additional discussion of rate of return of retention capacity).

Table 7 below shows the relationship between the estimated various storm event runoff volumes and the required facility operating hours to completely consume all of the storm water collected to the surge volume of the cooling basin. The post development runoff volumes identified in **Table 3** are use below.

TABLE 7
Storm Water Consumption

Storm Event	Runoff Volume (m ³)	Cooling Tower Basin Free-Board Capacity (m ³)	Total Cooling Tower Water Usage Rate At 7°C (m ³ /hr)	Required Power Plant Operating Hours to Consume Runoff Volume (hr)
2 yr 24 hr SCS Type II	1495	6905.9	493.85	3.1
5 yr 24 hr SCS Type II	1927			4.0
10 yr 24 hr SCS Type II	2207			4.5
25 yr 24 hr SCS Type II	2570			5.2
50 yr 24 hr SCS Type II	2842			5.8
100 yr 24 hr SCS Type II	3102			6.3

It is evident from **Table 7**, that the power plant operation can consume the total 24 hour, 100 year storm runoff in less than 8 hours. Given the plant is expected to operate at least 12 hours per week, the cooling tower will readily consume all of the collected storm water delivered to it during normal projected operations so as to ensure rapid return of full storm water design retention capacity.

5.0 Quality Control

The cooling tower basin is a steel reinforced concrete structure which will require very little maintenance. Approximately every 5 years, the cooling tower basin will be drained by turning off the make-up water to allow for 4 – 8 hours of inspection and removal of any dirt and debris that may have accumulated in the basin. Such infrequent

maintenance will only proceed if the prevailing weather forecast indicates a suitable period of storm event free access.

Storm water falling inside the transformer oil containment dyke will be collected by a separate catch basin and will then be directed to an oil separator. Clean useable water from the oil separator will be discharged to the sanitary system. Oily water collected from the oil separator will be disposed off-site by a licensed liquid waste recycling/disposal contractor.

All chemicals that will be used for HRSG and cooling tower water treatment will be stored indoors with concrete containment.

6.0 On-Site Storage Requirements and Major Overland Flow

As previously indicated, the pumping capacity to the cooling tower basin will not be sufficient for the 100 year storm event. In that event, runoff will be stored on site until it is conveyed to the cooling tower basin (with both the pumps and the overflow pipes). As previously indicated, the maximum conveyance rate to the cooling tower basin will occur when the pumps are working, and this rate will total approximately 1.152 m³/s. The Modified Rational Method was used to calculate the peak surface storage volume required. Two volumes were calculated, one with the peak conveyance rate of 1.152 m³/s to the cooling tower basin (pumps and overflow pipes) and a rate of 1.05 m³/s (pumps not functioning). For both conditions, a runoff coefficient of 0.96 was used (runoff coefficient from the 100 year event). **Tables 8** and **9** indicate the maximum on-site storage volumes required.

TABLE 8
Maximum 100-year Storm Site Ponding – Discharge Rate of 1.152 m³/s

Duration (min)	100 yr Storm Intensity (mm/h)	Total Runoff To Cooling Tower Free-board (m ³)	Total Pumping Capacity (m ³)	Ponding Volume (m ³)
5	261.6	606	345	261
10	182.4	845	690	155
15	146.4	1017	1035	-18

TABLE 9
Maximum 100-year Storm Site Ponding – Discharge Rate of 1.05 m³/s

Duration (min)	100 yr Storm Intensity (mm/h)	Total Runoff To Cooling Tower Free-board (m ³)	Total Conveyance Capacity (m ³)	Ponding Volume (m ³)
5	261.6	606	30	575
10	182.4	845	61	784
15	146.4	1017	91	926
30	93.2	1295	182	1113
60	53.3	1481	363	1118
120	30.8	1709	727	982
360	13.1	2181	2180	1
720	7.6	2532	4361	-1829

As can be seen in **Tables 8 and 9**, the peak surface storage volume required is 261 m³, and 1118 m³ for when the pumps are working and not, respectively. This excess runoff can be stored on site until such time as the conveyance system can discharge all of the runoff to the cooling tower basin. Runoff will be stored in ponding areas located at the catch basins. The total available storage at these ponding areas has been calculated to be 1359 m³. The spill crests for these ponding areas are at a maximum 0.30 m above the catch basin rim elevations, thus resulting in a maximum ponding depth of 0.30 m on site.

In addition to this storage, the available storage in the catch basin system was calculated at 91 m³, totaling 1450 m³ of available on-site storage outside of the cooling tower basin. Therefore, all runoff from the 100 year event can be contained on site. Calculations for the on-site storage are attached.

7.0 Project Cut and Fill Balance Analysis

The regional floodplain elevation for the overall site and surrounding lands was established at 187.6 m by Riggs Engineering Ltd. in their April 2013 Floodplain and Hydrotechnical Assessment Report and this provided the basis for the final elevation of 188.0 m as used for the existing Green Electron Power Plant. This is to ensure that structures were well above the maximum regional floodplain elevation. For the proposed Hydrogen Ready Power Plant, the same 188.0 m floor elevation will be used for buildings, equipment and structures and therefore approximately 13,439 m³ of fill will be added below the regional floodplain elevation of 187.6 m (see Figure 8). The majority of this fill will be required to raise the existing surface grade around the proposed buildings, equipment and structures and the required access and egress routes throughout the site.

In addition to surface grading, the development will likely require additional fill to be brought onsite. This surface grading and additional fill will be offset by removal of an offsetting volume. This balance will be achieved through a combination of removal of fill to off-site locations or by removal of fill from areas below the flood elevation and adding fill to pre-existing land features already above the regional flood line. This is to ensure that the net effects to storm water overland flow will remain unchanged. At the conclusion of construction, final as-built topographical surveys will confirm adherence to the proposed cut and fill balance development plan.

8.0 Conclusions

Based on the above analysis, the following conclusions can be made:

- The stormwater management system has been generally designed in accordance with the Ministry of Environment guideline, "Stormwater Management Planning and Design Manual".
- The proposed use of the cooling tower and catch basin system for storm water management will reliably provide acceptable mitigation of all storm events.
- The cooling tower and catch basin system can adequately contain all storm water from all storm events including the Hurricane Hazel event. There will be no discharge of storm water to the natural environment from the developed area.

List of Figures

Figure1: Site Plan

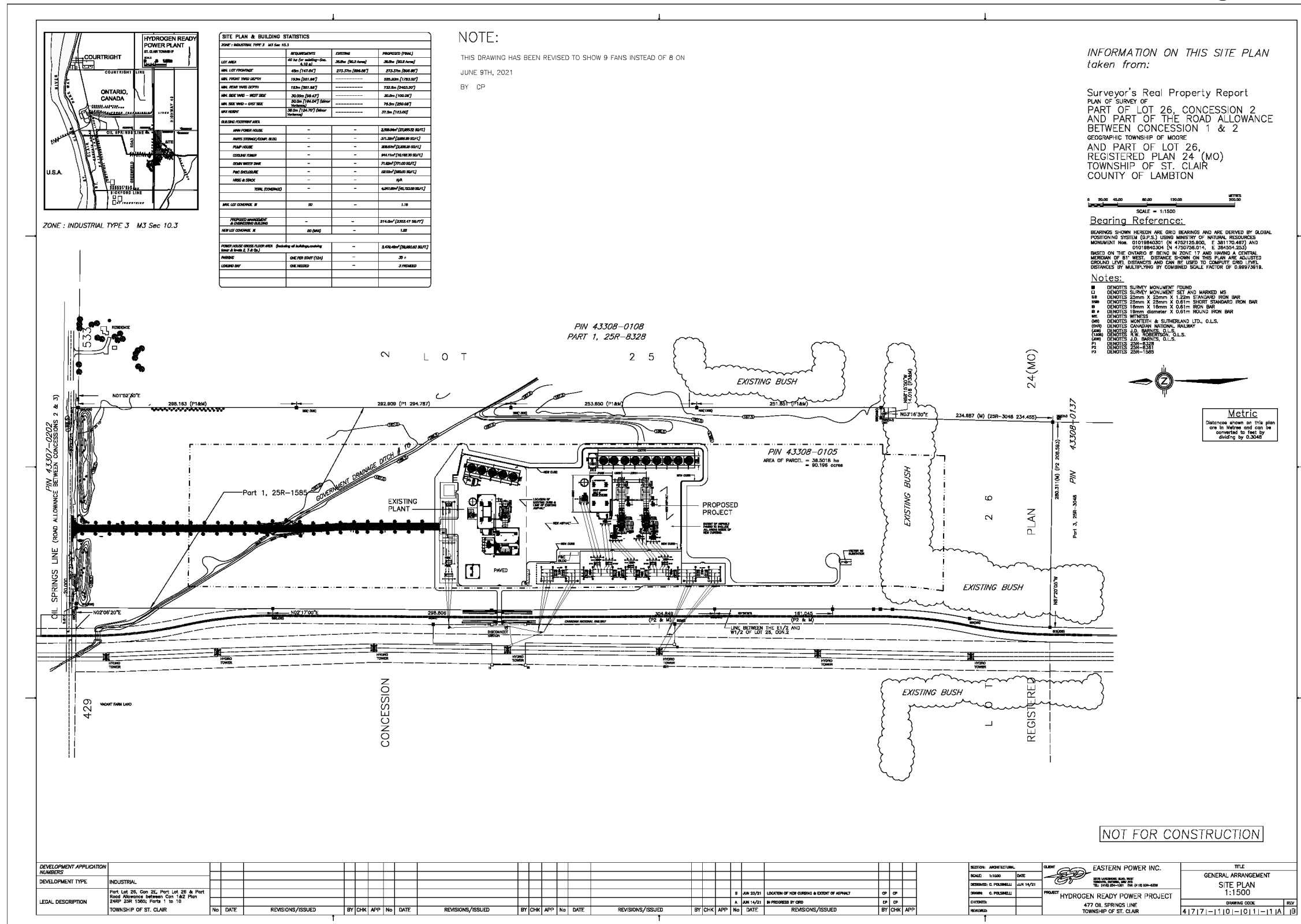


Figure 2: Site Topography Map

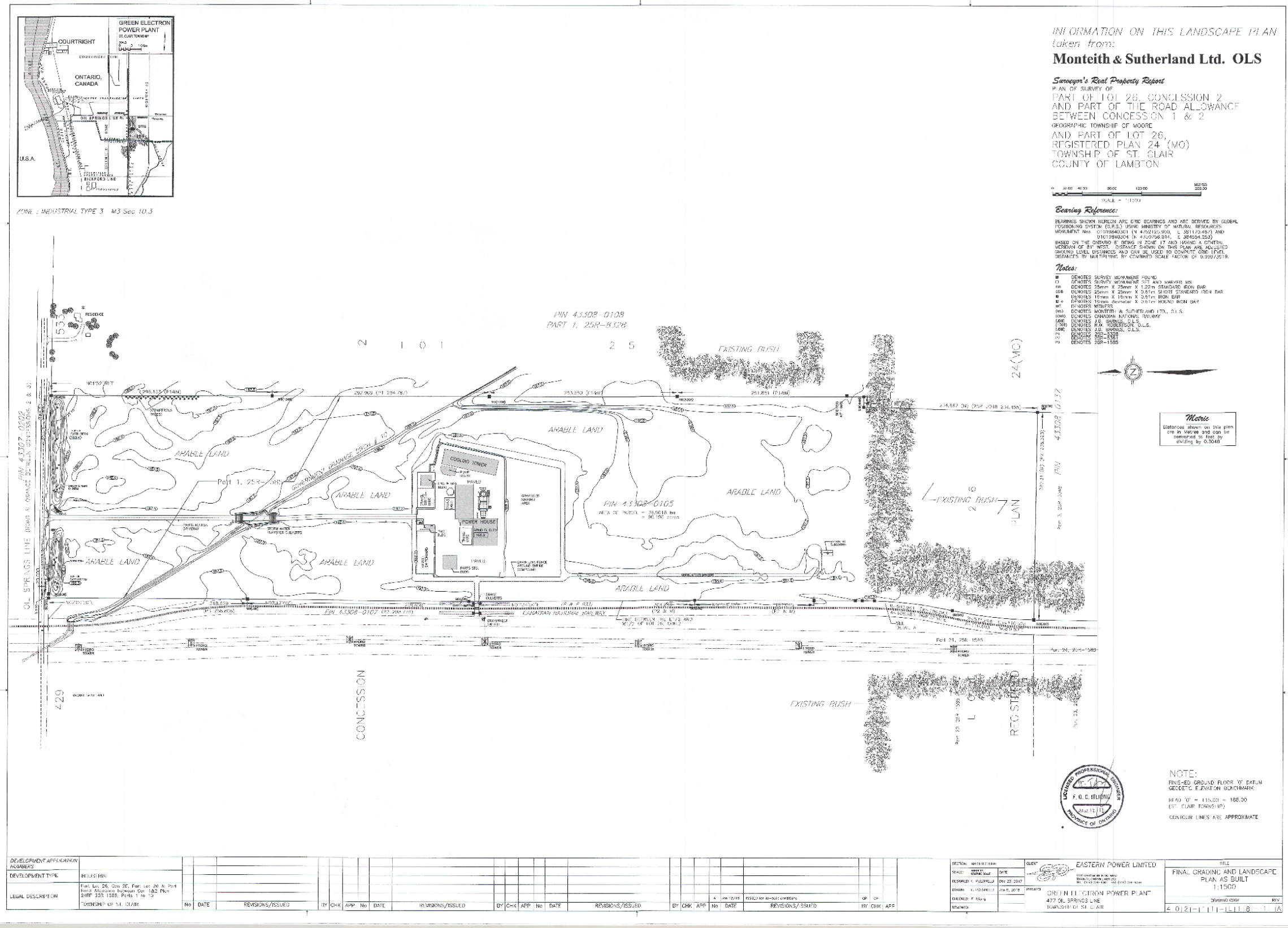
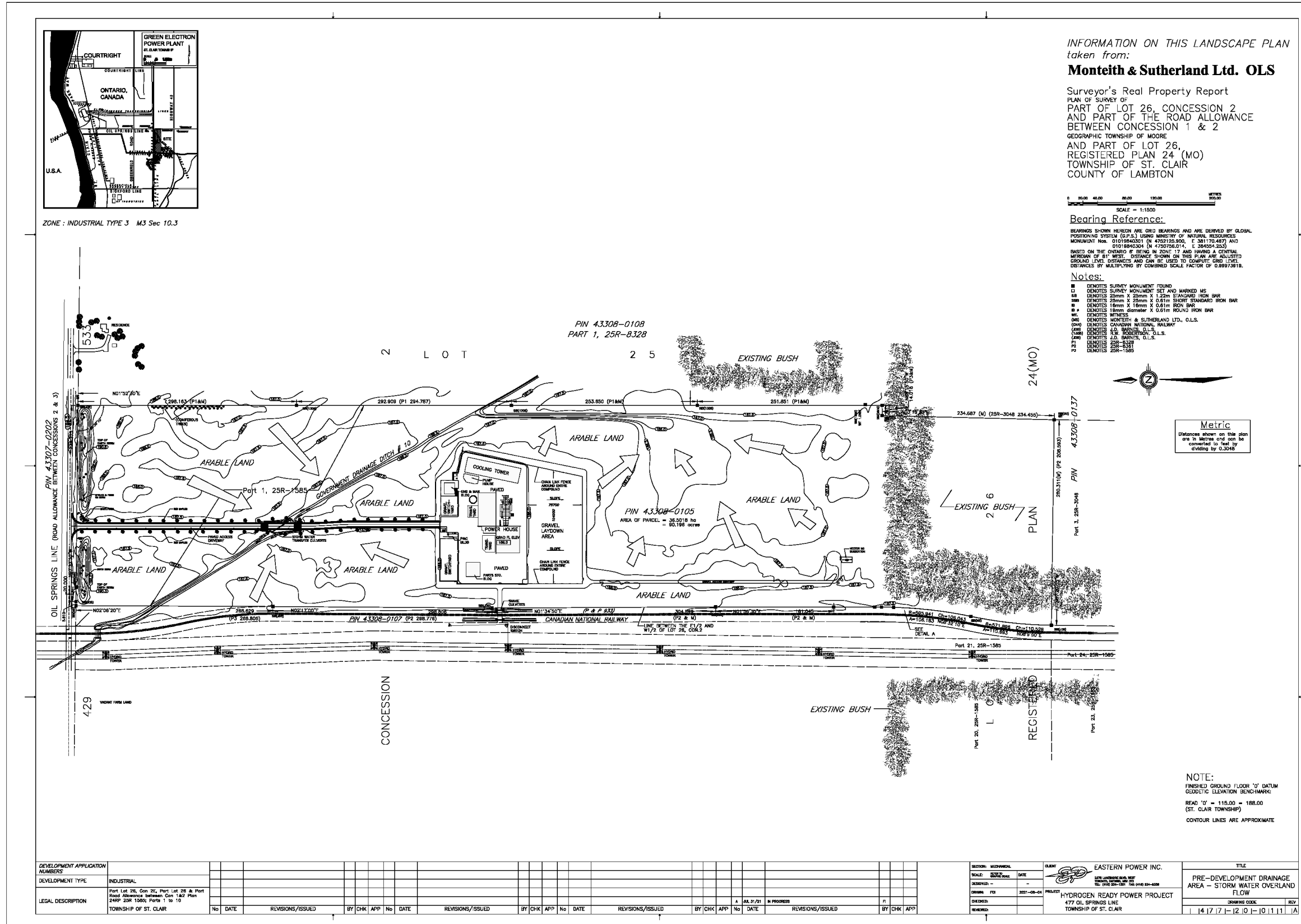


Figure 3: Pre-Development Drainage Area



APPENDIX A - VISUAL OTTHYMO RESULTS

PRE-DEVELOPMENT RESULTS

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VV    I   SSSSS UUUUU A   A   LLLLL

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000   T   T   H   H   Y   M   M   000

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***** D E T A I L E D O U T P U T *****

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DATE: 07-30-2021 TIME: 09:40:03

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COMMENTS: _____

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hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.02	12.75	6.53	19.00	0.92
0.50	0.57	6.75	1.05	13.00	4.49	19.25	0.89
0.75	0.58	7.00	1.08	13.25	3.80	19.50	0.85
1.00	0.59	7.25	1.11	13.50	3.21	19.75	0.82
1.25	0.61	7.50	1.13	13.75	2.84	20.00	0.78
1.50	0.62	7.75	1.16	14.00	2.49	20.25	0.75
1.75	0.64	8.00	1.19	14.25	2.22	20.50	0.72
2.00	0.65	8.25	1.22	14.50	2.02	20.75	0.72
2.25	0.66	8.50	1.31	14.75	1.93	21.00	0.71
2.50	0.68	8.75	1.44	15.00	1.82	21.25	0.70
2.75	0.69	9.00	1.59	15.25	1.73	21.50	0.70
3.00	0.71	9.25	1.72	15.50	1.63	21.75	0.69
3.25	0.72	9.50	1.79	15.75	1.54	22.00	0.68
3.50	0.74	9.75	1.79	16.00	1.43	22.25	0.68
3.75	0.75	10.00	1.91	16.25	1.34	22.50	0.67
4.00	0.76	10.25	2.12	16.50	1.27	22.75	0.66
4.25	0.78	10.50	2.42	16.75	1.24	23.00	0.65
4.50	0.80	10.75	2.74	17.00	1.20	23.25	0.65
4.75	0.83	11.00	3.20	17.25	1.17	23.50	0.64
5.00	0.85	11.25	3.74	17.50	1.13	23.75	0.63
5.25	0.88	11.50	4.73	17.75	1.10	24.00	0.63
5.50	0.91	11.75	6.02	18.00	1.06	24.25	0.62
5.75	0.94	12.00	24.55	18.25	1.03		
6.00	0.97	12.25	60.59	18.50	0.99		
6.25	0.99	12.50	9.60	18.75	0.96		

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| Ia (mm)= 5.00 |
| U.H. Tp(hrs)= 0.20 |
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| # of Linear Res.(N)= 3.00 |

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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.99	12.250	60.59	18.33	0.99
0.167	0.00	6.250	0.99	12.333	9.60	18.42	0.99
0.250	0.00	6.333	1.02	12.417	9.60	18.50	0.99
0.333	0.57	6.417	1.02	12.500	9.60	18.58	0.96
0.417	0.57	6.500	1.02	12.583	6.53	18.67	0.96
0.500	0.57	6.583	1.05	12.667	6.53	18.75	0.96
0.583	0.58	6.667	1.05	12.750	6.53	18.83	0.92
0.667	0.58	6.750	1.05	12.833	4.49	18.92	0.92
0.750	0.58	6.833	1.08	12.917	4.49	19.00	0.92
0.833	0.59	6.917	1.08	13.000	4.49	19.08	0.89
0.917	0.59	7.000	1.08	13.083	3.80	19.17	0.89
1.000	0.59	7.083	1.11	13.167	3.80	19.25	0.89
1.083	0.61	7.167	1.11	13.250	3.80	19.33	0.85
1.167	0.61	7.250	1.11	13.333	3.21	19.42	0.85
1.250	0.61	7.333	1.13	13.417	3.21	19.50	0.85
1.333	0.62	7.417	1.13	13.500	3.21	19.58	0.82
1.417	0.62	7.500	1.13	13.583	2.84	19.67	0.82
1.500	0.62	7.583	1.16	13.667	2.84	19.75	0.82
1.583	0.64	7.667	1.16	13.750	2.84	19.83	0.78
1.667	0.64	7.750	1.16	13.833	2.49	19.92	0.78
1.750	0.64	7.833	1.19	13.917	2.49	20.00	0.78
1.833	0.65	7.917	1.19	14.000	2.49	20.08	0.75
1.917	0.65	8.000	1.19	14.083	2.22	20.17	0.75
2.000	0.65	8.083	1.22	14.167	2.22	20.25	0.75
2.083	0.66	8.167	1.22	14.250	2.22	20.33	0.72
2.167	0.66	8.250	1.22	14.333	2.02	20.42	0.72
2.250	0.66	8.333	1.31	14.417	2.02	20.50	0.72
2.333	0.68	8.417	1.31	14.500	2.02	20.58	0.72
2.417	0.68	8.500	1.31	14.583	1.93	20.67	0.72
2.500	0.68	8.583	1.44	14.667	1.93	20.75	0.72
2.583	0.69	8.667	1.44	14.750	1.93	20.83	0.71
2.667	0.69	8.750	1.44	14.833	1.82	20.92	0.71
2.750	0.69	8.833	1.59	14.917	1.82	21.00	0.71
2.833	0.71	8.917	1.59	15.000	1.82	21.08	0.70
2.917	0.71	9.000	1.59	15.083	1.73	21.17	0.70
3.000	0.71	9.083	1.72	15.167	1.73	21.25	0.70
3.083	0.72	9.167	1.72	15.250	1.73	21.33	0.70
3.167	0.72	9.250	1.72	15.333	1.63	21.42	0.70
3.250	0.72	9.333	1.79	15.417	1.63	21.50	0.70
3.333	0.74	9.417	1.79	15.500	1.63	21.58	0.69
3.417	0.74	9.500	1.79	15.583	1.54	21.67	0.69
3.500	0.74	9.583	1.79	15.667	1.54	21.75	0.69
3.583	0.75	9.667	1.79	15.750	1.54	21.83	0.68
3.667	0.75	9.750	1.79	15.833	1.43	21.92	0.68
3.750	0.75	9.833	1.91	15.917	1.43	22.00	0.68
3.833	0.76	9.917	1.91	16.000	1.43	22.08	0.68
3.917	0.76	10.000	1.91	16.083	1.34	22.17	0.68
4.000	0.76	10.083	2.12	16.167	1.34	22.25	0.68
4.083	0.78	10.167	2.12	16.250	1.34	22.33	0.67
4.167	0.78	10.250	2.12	16.333	1.27	22.42	0.67
4.250	0.78	10.333	2.42	16.417	1.27	22.50	0.67
4.333	0.80	10.417	2.42	16.500	1.27	22.58	0.66
4.417	0.80	10.500	2.42	16.583	1.24	22.67	0.66
4.500	0.80	10.583	2.74	16.667	1.24	22.75	0.66
4.583	0.83	10.667	2.74	16.750	1.24	22.83	0.65
4.667	0.83	10.750	2.74	16.833	1.20	22.92	0.65
4.750	0.83	10.833	3.20	16.917	1.20	23.00	0.65
4.833	0.85	10.917	3.20	17.000	1.20	23.08	0.65
4.917	0.85	11.000	3.20	17.083	1.17	23.17	0.65
5.000	0.85	11.083	3.74	17.167	1.17	23.25	0.65
5.083	0.88	11.167	3.74	17.250	1.17	23.33	0.64
5.167	0.88	11.250	3.74	17.333	1.13	23.42	0.64
5.250	0.88	11.333	4.73	17.417	1.13	23.50	0.64
5.333	0.91	11.417	4.73	17.500	1.13	23.58	0.63
5.417	0.91	11.500	4.73	17.583	1.10	23.67	0.63
5.500	0.91	11.583	6.02	17.667	1.10	23.75	0.63
5.583	0.94	11.667	6.02	17.750	1.10	23.83	0.63
5.667	0.94	11.750	6.02	17.833	1.06	23.92	0.63
5.750	0.94	11.833	24.55	17.917	1.06	24.00	0.63
5.833	0.97	11.917	24.55	18.000	1.06	24.08	0.62
5.917	0.97	12.000	24.55	18.083	1.03	24.17	0.62
6.000	0.97	12.083	60.58	18.167	1.03	24.25	0.62
6.083	0.99	12.167	60.59	18.250	1.03		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.161 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 22.680
 TOTAL RAINFALL (mm)= 56.010

RUNOFF COEFFICIENT = 0.405

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.26	12.250	76.75	18.33	1.25
0.167	0.00	6.250	1.26	12.333	12.17	18.42	1.25
0.250	0.00	6.333	1.30	12.417	12.16	18.50	1.25
0.333	0.72	6.417	1.30	12.500	12.16	18.58	1.21
0.417	0.72	6.500	1.30	12.583	8.28	18.67	1.21
0.500	0.72	6.583	1.33	12.667	8.28	18.75	1.21
0.583	0.74	6.667	1.33	12.750	8.28	18.83	1.17
0.667	0.74	6.750	1.33	12.833	5.69	18.92	1.16
0.750	0.74	6.833	1.37	12.917	5.69	19.00	1.16
0.833	0.75	6.917	1.37	13.000	5.69	19.08	1.12
0.917	0.75	7.000	1.37	13.083	4.81	19.17	1.12
1.000	0.75	7.083	1.40	13.167	4.81	19.25	1.12
1.083	0.77	7.167	1.40	13.250	4.81	19.33	1.08
1.167	0.77	7.250	1.40	13.333	4.07	19.42	1.08
1.250	0.77	7.333	1.44	13.417	4.07	19.50	1.08
1.333	0.79	7.417	1.44	13.500	4.07	19.58	1.03
1.417	0.79	7.500	1.44	13.583	3.59	19.67	1.03
1.500	0.79	7.583	1.47	13.667	3.59	19.75	1.03
1.583	0.81	7.667	1.47	13.750	3.59	19.83	0.99
1.667	0.81	7.750	1.47	13.833	3.15	19.92	0.99
1.750	0.81	7.833	1.51	13.917	3.15	20.00	0.99
1.833	0.82	7.917	1.51	14.000	3.15	20.08	0.95
1.917	0.82	8.000	1.51	14.083	2.81	20.17	0.95
2.000	0.82	8.083	1.54	14.167	2.81	20.25	0.95
2.083	0.84	8.167	1.54	14.250	2.81	20.33	0.92
2.167	0.84	8.250	1.54	14.333	2.56	20.42	0.92
2.250	0.84	8.333	1.65	14.417	2.56	20.50	0.92
2.333	0.86	8.417	1.65	14.500	2.56	20.58	0.91
2.417	0.86	8.500	1.65	14.583	2.44	20.67	0.91
2.500	0.86	8.583	1.82	14.667	2.44	20.75	0.91
2.583	0.88	8.667	1.82	14.750	2.44	20.83	0.90
2.667	0.88	8.750	1.82	14.833	2.31	20.92	0.90
2.750	0.88	8.833	2.01	14.917	2.31	21.00	0.90
2.833	0.90	8.917	2.01	15.000	2.31	21.08	0.89
2.917	0.90	9.000	2.01	15.083	2.19	21.17	0.89
3.000	0.90	9.083	2.18	15.167	2.19	21.25	0.89
3.083	0.91	9.167	2.18	15.250	2.19	21.33	0.88
3.167	0.91	9.250	2.18	15.333	2.06	21.42	0.88
3.250	0.91	9.333	2.27	15.417	2.06	21.50	0.88
3.333	0.93	9.417	2.27	15.500	2.06	21.58	0.87
3.417	0.93	9.500	2.27	15.583	1.95	21.67	0.87
3.500	0.93	9.583	2.27	15.667	1.95	21.75	0.87
3.583	0.95	9.667	2.27	15.750	1.95	21.83	0.86
3.667	0.95	9.750	2.27	15.833	1.81	21.92	0.86
3.750	0.95	9.833	2.42	15.917	1.81	22.00	0.86
3.833	0.97	9.917	2.42	16.000	1.81	22.08	0.86
3.917	0.97	10.000	2.42	16.083	1.70	22.17	0.86
4.000	0.97	10.083	2.69	16.167	1.70	22.25	0.86
4.083	0.98	10.167	2.69	16.250	1.70	22.33	0.85
4.167	0.98	10.250	2.69	16.333	1.61	22.42	0.85
4.250	0.98	10.333	3.06	16.417	1.61	22.50	0.85
4.333	1.01	10.417	3.06	16.500	1.61	22.58	0.84
4.417	1.01	10.500	3.06	16.583	1.57	22.67	0.84
4.500	1.01	10.583	3.47	16.667	1.57	22.75	0.84
4.583	1.05	10.667	3.47	16.750	1.57	22.83	0.83
4.667	1.05	10.750	3.47	16.833	1.52	22.92	0.83
4.750	1.05	10.833	4.06	16.917	1.52	23.00	0.83
4.833	1.08	10.917	4.06	17.000	1.52	23.08	0.82
4.917	1.08	11.000	4.06	17.083	1.48	23.17	0.82
5.000	1.08	11.083	4.74	17.167	1.48	23.25	0.82
5.083	1.12	11.167	4.74	17.250	1.48	23.33	0.81
5.167	1.12	11.250	4.74	17.333	1.43	23.42	0.81
5.250	1.12	11.333	5.99	17.417	1.43	23.50	0.81
5.333	1.15	11.417	5.99	17.500	1.43	23.58	0.80
5.417	1.15	11.500	5.99	17.583	1.39	23.67	0.80
5.500	1.15	11.583	7.63	17.667	1.39	23.75	0.80
5.583	1.19	11.667	7.63	17.750	1.39	23.83	0.79
5.667	1.19	11.750	7.63	17.833	1.34	23.92	0.79
5.750	1.19	11.833	31.09	17.917	1.34	24.00	0.79
5.833	1.22	11.917	31.10	18.000	1.34	24.08	0.78
5.917	1.22	12.000	31.10	18.083	1.30	24.17	0.78
6.000	1.22	12.083	76.74	18.167	1.30	24.25	0.78
6.083	1.26	12.167	76.75	18.250	1.30		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.240 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 33.535
 TOTAL RAINFALL (mm)= 70.950

RUNOFF COEFFICIENT = 0.473

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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V V I SSSSS U U A L (v 6.2.2006)
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V V I SS U U A A L
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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\f720968d-fbf8-472d-a61b-c9a68a0a006c\d7454d7a-9d
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\f720968d-fbf8-472d-a61b-c9a68a0a006c\d7454d7a-9d

DATE: 07-30-2021 TIME: 09:40:03

USER:

COMMENTS: _____

 ** SIMULATION : 10yr 24hr 15min SCS Type II **

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| READ STORM | Filename: C:\Users\Francis\AppData\Local\Temp\ee371ec9-de85-4fb7-91ec-3b80decf223f\93729559
| Ptotal= 80.62 mm | Comments: 10yr 24hr 15min SCS Type II
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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.47	12.75	9.40	19.00	1.32
0.50	0.82	6.75	1.51	13.00	6.47	19.25	1.28
0.75	0.84	7.00	1.55	13.25	5.46	19.50	1.22
1.00	0.86	7.25	1.59	13.50	4.62	19.75	1.18
1.25	0.88	7.50	1.63	13.75	4.08	20.00	1.12
1.50	0.90	7.75	1.67	14.00	3.58	20.25	1.07
1.75	0.92	8.00	1.71	14.25	3.19	20.50	1.04
2.00	0.94	8.25	1.75	14.50	2.91	20.75	1.03
2.25	0.96	8.50	1.88	14.75	2.77	21.00	1.02
2.50	0.98	8.75	2.07	15.00	2.63	21.25	1.01
2.75	1.00	9.00	2.28	15.25	2.49	21.50	1.00
3.00	1.02	9.25	2.48	15.50	2.35	21.75	0.99
3.25	1.04	9.50	2.58	15.75	2.21	22.00	0.98
3.50	1.06	9.75	2.58	16.00	2.06	22.25	0.97
3.75	1.08	10.00	2.75	16.25	1.93	22.50	0.96
4.00	1.10	10.25	3.06	16.50	1.83	22.75	0.95
4.25	1.12	10.50	3.48	16.75	1.78	23.00	0.94
4.50	1.15	10.75	3.94	17.00	1.73	23.25	0.93
4.75	1.19	11.00	4.61	17.25	1.68	23.50	0.92
5.00	1.23	11.25	5.39	17.50	1.63	23.75	0.91
5.25	1.27	11.50	6.81	17.75	1.58	24.00	0.90
5.50	1.31	11.75	8.67	18.00	1.53	24.25	0.89
5.75	1.35	12.00	35.34	18.25	1.48		
6.00	1.39	12.25	87.21	18.50	1.43		
6.25	1.43	12.50	13.82	18.75	1.38		

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| CALIB | Area (ha)= 2.89 | Curve Number (CN)= 80.0
| NASHYD ( 0001) | Ia (mm)= 5.00 | # of Linear Res.(N)= 3.00
| ID= 1 DT= 5.0 min | U.H. Tp(hrs)= 0.20
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.43	12.250	87.21	18.33	1.43
0.167	0.00	6.250	1.43	12.333	13.82	18.42	1.43
0.250	0.00	6.333	1.47	12.417	13.82	18.50	1.43
0.333	0.82	6.417	1.47	12.500	13.82	18.58	1.38
0.417	0.82	6.500	1.47	12.583	9.40	18.67	1.38
0.500	0.82	6.583	1.51	12.667	9.40	18.75	1.38
0.583	0.84	6.667	1.51	12.750	9.40	18.83	1.32
0.667	0.84	6.750	1.51	12.833	6.47	18.92	1.32
0.750	0.84	6.833	1.55	12.917	6.47	19.00	1.32
0.833	0.86	6.917	1.55	13.000	6.47	19.08	1.28
0.917	0.86	7.000	1.55	13.083	5.46	19.17	1.28
1.000	0.86	7.083	1.59	13.167	5.46	19.25	1.28
1.083	0.88	7.167	1.59	13.250	5.46	19.33	1.22
1.167	0.88	7.250	1.59	13.333	4.62	19.42	1.22
1.250	0.88	7.333	1.63	13.417	4.62	19.50	1.22
1.333	0.90	7.417	1.63	13.500	4.62	19.58	1.18
1.417	0.90	7.500	1.63	13.583	4.08	19.67	1.18
1.500	0.90	7.583	1.67	13.667	4.08	19.75	1.18
1.583	0.92	7.667	1.67	13.750	4.08	19.83	1.12
1.667	0.92	7.750	1.67	13.833	3.58	19.92	1.12
1.750	0.92	7.833	1.71	13.917	3.58	20.00	1.12
1.833	0.94	7.917	1.71	14.000	3.58	20.08	1.07
1.917	0.94	8.000	1.71	14.083	3.19	20.17	1.07
2.000	0.94	8.083	1.75	14.167	3.19	20.25	1.07
2.083	0.96	8.167	1.75	14.250	3.19	20.33	1.04
2.167	0.96	8.250	1.75	14.333	2.91	20.42	1.04
2.250	0.96	8.333	1.88	14.417	2.91	20.50	1.04
2.333	0.98	8.417	1.88	14.500	2.91	20.58	1.03
2.417	0.98	8.500	1.88	14.583	2.77	20.67	1.03
2.500	0.98	8.583	2.07	14.667	2.77	20.75	1.03
2.583	1.00	8.667	2.07	14.750	2.77	20.83	1.02
2.667	1.00	8.750	2.07	14.833	2.63	20.92	1.02
2.750	1.00	8.833	2.28	14.917	2.63	21.00	1.02
2.833	1.02	8.917	2.28	15.000	2.63	21.08	1.01
2.917	1.02	9.000	2.28	15.083	2.49	21.17	1.01
3.000	1.02	9.083	2.48	15.167	2.49	21.25	1.01
3.083	1.04	9.167	2.48	15.250	2.49	21.33	1.00
3.167	1.04	9.250	2.48	15.333	2.35	21.42	1.00
3.250	1.04	9.333	2.58	15.417	2.35	21.50	1.00
3.333	1.06	9.417	2.58	15.500	2.35	21.58	0.99
3.417	1.06	9.500	2.58	15.583	2.21	21.67	0.99
3.500	1.06	9.583	2.58	15.667	2.21	21.75	0.99
3.583	1.08	9.667	2.58	15.750	2.21	21.83	0.98
3.667	1.08	9.750	2.58	15.833	2.06	21.92	0.98
3.750	1.08	9.833	2.75	15.917	2.06	22.00	0.98
3.833	1.10	9.917	2.75	16.000	2.06	22.08	0.97
3.917	1.10	10.000	2.75	16.083	1.93	22.17	0.97
4.000	1.10	10.083	3.06	16.167	1.93	22.25	0.97
4.083	1.12	10.167	3.06	16.250	1.93	22.33	0.96
4.167	1.12	10.250	3.06	16.333	1.83	22.42	0.96
4.250	1.12	10.333	3.48	16.417	1.83	22.50	0.96
4.333	1.15	10.417	3.48	16.500	1.83	22.58	0.95
4.417	1.15	10.500	3.48	16.583	1.78	22.67	0.95
4.500	1.15	10.583	3.94	16.667	1.78	22.75	0.95
4.583	1.19	10.667	3.94	16.750	1.78	22.83	0.94
4.667	1.19	10.750	3.94	16.833	1.73	22.92	0.94
4.750	1.19	10.833	4.61	16.917	1.73	23.00	0.94
4.833	1.23	10.917	4.61	17.000	1.73	23.08	0.93
4.917	1.23	11.000	4.61	17.083	1.68	23.17	0.93
5.000	1.23	11.083	5.39	17.167	1.68	23.25	0.93
5.083	1.27	11.167	5.39	17.250	1.68	23.33	0.92
5.167	1.27	11.250	5.39	17.333	1.63	23.42	0.92
5.250	1.27	11.333	6.81	17.417	1.63	23.50	0.92
5.333	1.31	11.417	6.81	17.500	1.63	23.58	0.91
5.417	1.31	11.500	6.81	17.583	1.58	23.67	0.91
5.500	1.31	11.583	8.67	17.667	1.58	23.75	0.91
5.583	1.35	11.667	8.67	17.750	1.58	23.83	0.90
5.667	1.35	11.750	8.67	17.833	1.53	23.92	0.90
5.750	1.35	11.833	35.33	17.917	1.53	24.00	0.90
5.833	1.39	11.917	35.34	18.000	1.53	24.08	0.89
5.917	1.39	12.000	35.34	18.083	1.48	24.17	0.89
6.000	1.39	12.083	87.20	18.167	1.48	24.25	0.89
6.083	1.43	12.167	87.21	18.250	1.48		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.294 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 41.026
 TOTAL RAINFALL (mm)= 80.620

RUNOFF COEFFICIENT = 0.509

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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V V I SSSSS U U A L (v 6.2.2006)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

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000 TTTTT TTTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\f720968d-fbf8-472d-a61b-c9a68a0a006c\14e9a1fb-5a
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\f720968d-fbf8-472d-a61b-c9a68a0a006c\14e9a1fb-5a

DATE: 07-30-2021 TIME: 09:40:03

USER:

COMMENTS: _____

 ** SIMULATION : 25yr 24hr 15min SCS Type II **

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-----
| READ STORM | Filename: C:\Users\Francis\AppData
|             | ata\Local\Temp\
| Ptotal= 93.19 mm | ee371ec9-de85-4fb7-91ec-3b80decf223f\31cbb72b
|             | Comments: 25yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.70	12.75	10.87	19.00	1.53
0.50	0.94	6.75	1.75	13.00	7.48	19.25	1.47
0.75	0.97	7.00	1.79	13.25	6.31	19.50	1.41
1.00	0.99	7.25	1.84	13.50	5.35	19.75	1.36
1.25	1.01	7.50	1.89	13.75	4.72	20.00	1.30
1.50	1.04	7.75	1.93	14.00	4.14	20.25	1.24
1.75	1.06	8.00	1.98	14.25	3.69	20.50	1.21
2.00	1.08	8.25	2.03	14.50	3.36	20.75	1.19
2.25	1.11	8.50	2.17	14.75	3.21	21.00	1.18
2.50	1.13	8.75	2.39	15.00	3.04	21.25	1.17
2.75	1.15	9.00	2.64	15.25	2.88	21.50	1.16
3.00	1.18	9.25	2.86	15.50	2.71	21.75	1.15
3.25	1.20	9.50	2.98	15.75	2.56	22.00	1.14
3.50	1.22	9.75	2.98	16.00	2.38	22.25	1.12
3.75	1.25	10.00	3.18	16.25	2.23	22.50	1.11
4.00	1.27	10.25	3.53	16.50	2.11	22.75	1.10
4.25	1.29	10.50	4.02	16.75	2.06	23.00	1.09
4.50	1.33	10.75	4.56	17.00	2.00	23.25	1.08
4.75	1.37	11.00	5.33	17.25	1.94	23.50	1.07
5.00	1.42	11.25	6.23	17.50	1.88	23.75	1.05
5.25	1.47	11.50	7.87	17.75	1.82	24.00	1.04
5.50	1.52	11.75	10.02	18.00	1.76	24.25	1.03
5.75	1.56	12.00	40.85	18.25	1.71		
6.00	1.61	12.25	100.80	18.50	1.65		
6.25	1.65	12.50	15.97	18.75	1.59		

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| CALIB |
| NASHYD ( 0001) | Area (ha)= 2.89 Curve Number (CN)= 80.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
|             | U.H. Tp(hrs)= 0.20
-----

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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.65	12.250	100.80	18.33	1.65
0.167	0.00	6.250	1.65	12.333	15.98	18.42	1.65
0.250	0.00	6.333	1.70	12.417	15.97	18.50	1.65
0.333	0.94	6.417	1.70	12.500	15.97	18.58	1.59
0.417	0.94	6.500	1.70	12.583	10.87	18.67	1.59
0.500	0.94	6.583	1.75	12.667	10.87	18.75	1.59
0.583	0.97	6.667	1.75	12.750	10.87	18.83	1.53
0.667	0.97	6.750	1.75	12.833	7.48	18.92	1.53
0.750	0.97	6.833	1.79	12.917	7.48	19.00	1.53
0.833	0.99	6.917	1.79	13.000	7.48	19.08	1.47
0.917	0.99	7.000	1.79	13.083	6.31	19.17	1.47
1.000	0.99	7.083	1.84	13.167	6.31	19.25	1.47
1.083	1.01	7.167	1.84	13.250	6.31	19.33	1.41
1.167	1.01	7.250	1.84	13.333	5.35	19.42	1.41
1.250	1.01	7.333	1.89	13.417	5.35	19.50	1.41
1.333	1.04	7.417	1.89	13.500	5.35	19.58	1.36
1.417	1.04	7.500	1.89	13.583	4.72	19.67	1.36
1.500	1.04	7.583	1.93	13.667	4.72	19.75	1.36
1.583	1.06	7.667	1.93	13.750	4.72	19.83	1.30
1.667	1.06	7.750	1.93	13.833	4.14	19.92	1.30
1.750	1.06	7.833	1.98	13.917	4.14	20.00	1.30
1.833	1.08	7.917	1.98	14.000	4.14	20.08	1.24
1.917	1.08	8.000	1.98	14.083	3.69	20.17	1.24
2.000	1.08	8.083	2.03	14.167	3.69	20.25	1.24
2.083	1.11	8.167	2.03	14.250	3.69	20.33	1.21
2.167	1.11	8.250	2.03	14.333	3.36	20.42	1.21
2.250	1.11	8.333	2.17	14.417	3.36	20.50	1.21
2.333	1.13	8.417	2.17	14.500	3.36	20.58	1.19
2.417	1.13	8.500	2.17	14.583	3.21	20.67	1.19
2.500	1.13	8.583	2.39	14.667	3.21	20.75	1.19
2.583	1.15	8.667	2.39	14.750	3.21	20.83	1.18
2.667	1.15	8.750	2.39	14.833	3.04	20.92	1.18
2.750	1.15	8.833	2.64	14.917	3.04	21.00	1.18
2.833	1.18	8.917	2.64	15.000	3.04	21.08	1.17
2.917	1.18	9.000	2.64	15.083	2.88	21.17	1.17
3.000	1.18	9.083	2.86	15.167	2.88	21.25	1.17
3.083	1.20	9.167	2.86	15.250	2.88	21.33	1.16
3.167	1.20	9.250	2.86	15.333	2.71	21.42	1.16
3.250	1.20	9.333	2.98	15.417	2.71	21.50	1.16
3.333	1.22	9.417	2.98	15.500	2.71	21.58	1.15
3.417	1.22	9.500	2.98	15.583	2.56	21.67	1.15
3.500	1.22	9.583	2.98	15.667	2.56	21.75	1.15
3.583	1.25	9.667	2.98	15.750	2.56	21.83	1.14
3.667	1.25	9.750	2.98	15.833	2.38	21.92	1.14
3.750	1.25	9.833	3.18	15.917	2.38	22.00	1.14
3.833	1.27	9.917	3.18	16.000	2.38	22.08	1.12
3.917	1.27	10.000	3.18	16.083	2.23	22.17	1.12
4.000	1.27	10.083	3.53	16.167	2.23	22.25	1.12
4.083	1.29	10.167	3.53	16.250	2.23	22.33	1.11
4.167	1.29	10.250	3.53	16.333	2.11	22.42	1.11
4.250	1.29	10.333	4.02	16.417	2.11	22.50	1.11
4.333	1.33	10.417	4.02	16.500	2.11	22.58	1.10
4.417	1.33	10.500	4.02	16.583	2.06	22.67	1.10
4.500	1.33	10.583	4.56	16.667	2.06	22.75	1.10
4.583	1.37	10.667	4.56	16.750	2.06	22.83	1.09
4.667	1.37	10.750	4.56	16.833	2.00	22.92	1.09
4.750	1.37	10.833	5.33	16.917	2.00	23.00	1.09
4.833	1.42	10.917	5.33	17.000	2.00	23.08	1.08
4.917	1.42	11.000	5.33	17.083	1.94	23.17	1.08
5.000	1.42	11.083	6.23	17.167	1.94	23.25	1.08
5.083	1.47	11.167	6.23	17.250	1.94	23.33	1.07
5.167	1.47	11.250	6.23	17.333	1.88	23.42	1.07
5.250	1.47	11.333	7.87	17.417	1.88	23.50	1.07
5.333	1.52	11.417	7.87	17.500	1.88	23.58	1.05
5.417	1.52	11.500	7.87	17.583	1.82	23.67	1.05
5.500	1.52	11.583	10.02	17.667	1.82	23.75	1.05
5.583	1.56	11.667	10.02	17.750	1.82	23.83	1.04
5.667	1.56	11.750	10.02	17.833	1.76	23.92	1.04
5.750	1.56	11.833	40.84	17.917	1.76	24.00	1.04
5.833	1.61	11.917	40.85	18.000	1.76	24.08	1.03
5.917	1.61	12.000	40.85	18.083	1.71	24.17	1.03
6.000	1.61	12.083	100.80	18.167	1.71	24.25	1.03
6.083	1.65	12.167	100.80	18.250	1.71		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.367 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 51.175
 TOTAL RAINFALL (mm)= 93.190

RUNOFF COEFFICIENT = 0.549

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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V V I SSSSS U U A L (v 6.2.2006)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

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000 TTTTT TTTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\f720968d-fbf8-472d-a61b-c9a68a0a006c\bdb19e25-25
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\f720968d-fbf8-472d-a61b-c9a68a0a006c\bdb19e25-25

DATE: 07-30-2021 TIME: 09:40:03

USER:

COMMENTS: _____

 ** SIMULATION : 50yr 24hr 15min SCS Type II **

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-----
| READ STORM | Filename: C:\Users\Francis\AppData
|             | ata\Local\Temp\
| Ptotal=102.59 mm | ee371ec9-de85-4fb7-91ec-3b80decf223f\
|             | e4587964
|             | Comments: 50yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.87	12.75	11.97	19.00	1.68
0.50	1.04	6.75	1.92	13.00	8.23	19.25	1.62
0.75	1.06	7.00	1.98	13.25	6.95	19.50	1.56
1.00	1.09	7.25	2.03	13.50	5.88	19.75	1.50
1.25	1.11	7.50	2.08	13.75	5.20	20.00	1.43
1.50	1.14	7.75	2.13	14.00	4.55	20.25	1.37
1.75	1.17	8.00	2.18	14.25	4.06	20.50	1.33
2.00	1.19	8.25	2.23	14.50	3.70	20.75	1.32
2.25	1.22	8.50	2.39	14.75	3.53	21.00	1.30
2.50	1.25	8.75	2.64	15.00	3.34	21.25	1.29
2.75	1.27	9.00	2.90	15.25	3.17	21.50	1.28
3.00	1.29	9.25	3.15	15.50	2.99	21.75	1.26
3.25	1.32	9.50	3.28	15.75	2.81	22.00	1.25
3.50	1.35	9.75	3.28	16.00	2.62	22.25	1.24
3.75	1.37	10.00	3.50	16.25	2.45	22.50	1.22
4.00	1.40	10.25	3.89	16.50	2.33	22.75	1.21
4.25	1.42	10.50	4.42	16.75	2.27	23.00	1.20
4.50	1.46	10.75	5.01	17.00	2.20	23.25	1.19
4.75	1.51	11.00	5.87	17.25	2.14	23.50	1.17
5.00	1.57	11.25	6.85	17.50	2.07	23.75	1.16
5.25	1.61	11.50	8.67	17.75	2.01	24.00	1.15
5.50	1.67	11.75	11.03	18.00	1.94	24.25	1.13
5.75	1.72	12.00	44.97	18.25	1.88		
6.00	1.77	12.25	110.97	18.50	1.81		
6.25	1.82	12.50	17.58	18.75	1.75		

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| CALIB |
| NASHYD ( 0001) | Area (ha)= 2.89 Curve Number (CN)= 80.0
| ID= 1 DT= 5.0 min | Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
|             | U.H. Tp(hrs)= 0.20
-----

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.82	12.250	110.97	18.33	1.81
0.167	0.00	6.250	1.82	12.333	17.59	18.42	1.81
0.250	0.00	6.333	1.87	12.417	17.58	18.50	1.81
0.333	1.04	6.417	1.87	12.500	17.58	18.58	1.75
0.417	1.04	6.500	1.87	12.583	11.97	18.67	1.75
0.500	1.04	6.583	1.92	12.667	11.97	18.75	1.75
0.583	1.06	6.667	1.92	12.750	11.97	18.83	1.68
0.667	1.06	6.750	1.92	12.833	8.23	18.92	1.68
0.750	1.06	6.833	1.98	12.917	8.23	19.00	1.68
0.833	1.09	6.917	1.98	13.000	8.23	19.08	1.62
0.917	1.09	7.000	1.98	13.083	6.95	19.17	1.62
1.000	1.09	7.083	2.03	13.167	6.95	19.25	1.62
1.083	1.11	7.167	2.03	13.250	6.95	19.33	1.56
1.167	1.11	7.250	2.03	13.333	5.88	19.42	1.56
1.250	1.11	7.333	2.08	13.417	5.88	19.50	1.56
1.333	1.14	7.417	2.08	13.500	5.88	19.58	1.50
1.417	1.14	7.500	2.08	13.583	5.20	19.67	1.50
1.500	1.14	7.583	2.13	13.667	5.20	19.75	1.50
1.583	1.17	7.667	2.13	13.750	5.20	19.83	1.43
1.667	1.17	7.750	2.13	13.833	4.56	19.92	1.43
1.750	1.17	7.833	2.18	13.917	4.55	20.00	1.43
1.833	1.19	7.917	2.18	14.000	4.55	20.08	1.37
1.917	1.19	8.000	2.18	14.083	4.06	20.17	1.37
2.000	1.19	8.083	2.23	14.167	4.06	20.25	1.37
2.083	1.22	8.167	2.23	14.250	4.06	20.33	1.33
2.167	1.22	8.250	2.23	14.333	3.70	20.42	1.33
2.250	1.22	8.333	2.39	14.417	3.70	20.50	1.33
2.333	1.25	8.417	2.39	14.500	3.70	20.58	1.32
2.417	1.25	8.500	2.39	14.583	3.53	20.67	1.32
2.500	1.25	8.583	2.64	14.667	3.53	20.75	1.32
2.583	1.27	8.667	2.64	14.750	3.53	20.83	1.30
2.667	1.27	8.750	2.64	14.833	3.34	20.92	1.30
2.750	1.27	8.833	2.90	14.917	3.34	21.00	1.30
2.833	1.29	8.917	2.90	15.000	3.34	21.08	1.29
2.917	1.29	9.000	2.90	15.083	3.17	21.17	1.29
3.000	1.29	9.083	3.15	15.167	3.17	21.25	1.29
3.083	1.32	9.167	3.15	15.250	3.17	21.33	1.28
3.167	1.32	9.250	3.15	15.333	2.99	21.42	1.28
3.250	1.32	9.333	3.28	15.417	2.99	21.50	1.28
3.333	1.35	9.417	3.28	15.500	2.99	21.58	1.26
3.417	1.35	9.500	3.28	15.583	2.81	21.67	1.26
3.500	1.35	9.583	3.28	15.667	2.81	21.75	1.26
3.583	1.37	9.667	3.28	15.750	2.81	21.83	1.25
3.667	1.37	9.750	3.28	15.833	2.62	21.92	1.25
3.750	1.37	9.833	3.50	15.917	2.62	22.00	1.25
3.833	1.40	9.917	3.50	16.000	2.62	22.08	1.24
3.917	1.40	10.000	3.50	16.083	2.45	22.17	1.24
4.000	1.40	10.083	3.89	16.167	2.45	22.25	1.24
4.083	1.42	10.167	3.89	16.250	2.45	22.33	1.22
4.167	1.42	10.250	3.89	16.333	2.33	22.42	1.22
4.250	1.42	10.333	4.42	16.417	2.33	22.50	1.22
4.333	1.46	10.417	4.42	16.500	2.33	22.58	1.21
4.417	1.46	10.500	4.42	16.583	2.27	22.67	1.21
4.500	1.46	10.583	5.01	16.667	2.27	22.75	1.21
4.583	1.51	10.667	5.01	16.750	2.27	22.83	1.20
4.667	1.51	10.750	5.01	16.833	2.20	22.92	1.20
4.750	1.51	10.833	5.87	16.917	2.20	23.00	1.20
4.833	1.57	10.917	5.87	17.000	2.20	23.08	1.19
4.917	1.57	11.000	5.87	17.083	2.14	23.17	1.19
5.000	1.57	11.083	6.85	17.167	2.14	23.25	1.19
5.083	1.61	11.167	6.85	17.250	2.14	23.33	1.17
5.167	1.61	11.250	6.85	17.333	2.07	23.42	1.17
5.250	1.61	11.333	8.67	17.417	2.07	23.50	1.17
5.333	1.67	11.417	8.67	17.500	2.07	23.58	1.16
5.417	1.67	11.500	8.67	17.583	2.01	23.67	1.16
5.500	1.67	11.583	11.03	17.667	2.01	23.75	1.16
5.583	1.72	11.667	11.03	17.750	2.01	23.83	1.15
5.667	1.72	11.750	11.03	17.833	1.94	23.92	1.15
5.750	1.72	11.833	44.96	17.917	1.94	24.00	1.15
5.833	1.77	11.917	44.97	18.000	1.94	24.08	1.13
5.917	1.77	12.000	44.97	18.083	1.88	24.17	1.13
6.000	1.77	12.083	110.96	18.167	1.88	24.25	1.13
6.083	1.82	12.167	110.97	18.250	1.88		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.423 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 59.009
 TOTAL RAINFALL (mm)= 102.590

RUNOFF COEFFICIENT = 0.575

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.98	12.250	120.69	18.33	1.97
0.167	0.00	6.250	1.98	12.333	19.13	18.42	1.97
0.250	0.00	6.333	2.04	12.417	19.12	18.50	1.97
0.333	1.13	6.417	2.04	12.500	19.12	18.58	1.91
0.417	1.13	6.500	2.04	12.583	13.01	18.67	1.91
0.500	1.13	6.583	2.09	12.667	13.01	18.75	1.91
0.583	1.16	6.667	2.09	12.750	13.01	18.83	1.83
0.667	1.16	6.750	2.09	12.833	8.95	18.92	1.83
0.750	1.16	6.833	2.15	12.917	8.95	19.00	1.83
0.833	1.18	6.917	2.15	13.000	8.95	19.08	1.77
0.917	1.18	7.000	2.15	13.083	7.56	19.17	1.77
1.000	1.18	7.083	2.20	13.167	7.56	19.25	1.77
1.083	1.21	7.167	2.20	13.250	7.56	19.33	1.69
1.167	1.21	7.250	2.20	13.333	6.40	19.42	1.69
1.250	1.21	7.333	2.26	13.417	6.40	19.50	1.69
1.333	1.24	7.417	2.26	13.500	6.40	19.58	1.63
1.417	1.24	7.500	2.26	13.583	5.65	19.67	1.63
1.500	1.24	7.583	2.31	13.667	5.65	19.75	1.63
1.583	1.27	7.667	2.31	13.750	5.65	19.83	1.55
1.667	1.27	7.750	2.31	13.833	4.95	19.92	1.55
1.750	1.27	7.833	2.37	13.917	4.95	20.00	1.55
1.833	1.30	7.917	2.37	14.000	4.95	20.08	1.49
1.917	1.30	8.000	2.37	14.083	4.42	20.17	1.49
2.000	1.30	8.083	2.43	14.167	4.42	20.25	1.49
2.083	1.32	8.167	2.43	14.250	4.42	20.33	1.44
2.167	1.32	8.250	2.43	14.333	4.03	20.42	1.44
2.250	1.32	8.333	2.60	14.417	4.03	20.50	1.44
2.333	1.35	8.417	2.60	14.500	4.03	20.58	1.43
2.417	1.35	8.500	2.60	14.583	3.84	20.67	1.43
2.500	1.35	8.583	2.87	14.667	3.84	20.75	1.43
2.583	1.38	8.667	2.87	14.750	3.84	20.83	1.41
2.667	1.38	8.750	2.87	14.833	3.63	20.92	1.41
2.750	1.38	8.833	3.16	14.917	3.63	21.00	1.41
2.833	1.41	8.917	3.16	15.000	3.63	21.08	1.40
2.917	1.41	9.000	3.16	15.083	3.45	21.17	1.40
3.000	1.41	9.083	3.43	15.167	3.45	21.25	1.40
3.083	1.43	9.167	3.43	15.250	3.45	21.33	1.39
3.167	1.43	9.250	3.43	15.333	3.25	21.42	1.39
3.250	1.43	9.333	3.57	15.417	3.25	21.50	1.39
3.333	1.47	9.417	3.57	15.500	3.25	21.58	1.37
3.417	1.47	9.500	3.57	15.583	3.06	21.67	1.37
3.500	1.47	9.583	3.57	15.667	3.06	21.75	1.37
3.583	1.49	9.667	3.57	15.750	3.06	21.83	1.36
3.667	1.49	9.750	3.57	15.833	2.85	21.92	1.36
3.750	1.49	9.833	3.80	15.917	2.85	22.00	1.36
3.833	1.52	9.917	3.80	16.000	2.85	22.08	1.35
3.917	1.52	10.000	3.80	16.083	2.67	22.17	1.35
4.000	1.52	10.083	4.23	16.167	2.67	22.25	1.35
4.083	1.55	10.167	4.23	16.250	2.67	22.33	1.33
4.167	1.55	10.250	4.23	16.333	2.53	22.42	1.33
4.250	1.55	10.333	4.81	16.417	2.53	22.50	1.33
4.333	1.59	10.417	4.81	16.500	2.53	22.58	1.32
4.417	1.59	10.500	4.81	16.583	2.46	22.67	1.32
4.500	1.59	10.583	5.45	16.667	2.46	22.75	1.32
4.583	1.64	10.667	5.45	16.750	2.46	22.83	1.30
4.667	1.64	10.750	5.45	16.833	2.39	22.92	1.30
4.750	1.64	10.833	6.38	16.917	2.39	23.00	1.30
4.833	1.70	10.917	6.38	17.000	2.39	23.08	1.29
4.917	1.70	11.000	6.38	17.083	2.32	23.17	1.29
5.000	1.70	11.083	7.45	17.167	2.32	23.25	1.29
5.083	1.76	11.167	7.45	17.250	2.32	23.33	1.28
5.167	1.76	11.250	7.45	17.333	2.25	23.42	1.28
5.250	1.76	11.333	9.43	17.417	2.25	23.50	1.28
5.333	1.81	11.417	9.43	17.500	2.25	23.58	1.26
5.417	1.81	11.500	9.43	17.583	2.18	23.67	1.26
5.500	1.81	11.583	12.00	17.667	2.18	23.75	1.26
5.583	1.87	11.667	12.00	17.750	2.18	23.83	1.25
5.667	1.87	11.750	12.00	17.833	2.11	23.92	1.25
5.750	1.87	11.833	48.90	17.917	2.11	24.00	1.25
5.833	1.93	11.917	48.90	18.000	2.11	24.08	1.23
5.917	1.93	12.000	48.90	18.083	2.04	24.17	1.23
6.000	1.93	12.083	120.68	18.167	2.04	24.25	1.23
6.083	1.98	12.167	120.69	18.250	2.04		

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.478 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 66.652
 TOTAL RAINFALL (mm)= 111.570

RUNOFF COEFFICIENT = 0.597

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.553

PEAK FLOW (cms)= 0.384 (i)

TIME TO PEAK (hrs)= 10.000

RUNOFF VOLUME (mm)= 158.105

TOTAL RAINFALL (mm)= 212.000

RUNOFF COEFFICIENT = 0.746

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 FINISH
 =====

POST-DEVELOPMENT RESULTS

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=====
V   V   I   SSSSS U   U   A   L           (v 6.2.2006)
V   V   I   SS   U   U   A   A   L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A   L
VV    I   SSSSS UUUUU A   A   LLLLL

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    000   TTTTT   TTTTT   H   H   Y   Y   M   M   000   TM
O   O   T   T   H   H   Y   Y   MM  MM  O   O
O   O   T   T   H   H   Y   M   M   O   O
    000   T   T   H   H   Y   M   M   000

```

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eaa61fb3\320fc948-4b
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eaa61fb3\320fc948-4b

DATE: 07-30-2021 TIME: 10:04:54

USER:

COMMENTS: _____

 ** SIMULATION : 2yr 24hr 15min SCS Type II **

```

-----
| READ STORM |
| Ptotal= 56.01 mm |
|-----|
| Filename: C:\Users\Francis\AppData\Local\Temp\ |
| a4a79f7f-b389-42b3-abdb-cfbfc5110bd2\5dcd9fe |
| Comments: 2yr 24hr 15min SCS Type II |

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.01	12.75	8.07	19.00	1.01
0.50	0.62	6.75	1.01	13.00	4.14	19.25	1.01
0.75	0.62	7.00	1.01	13.25	4.14	19.50	1.01
1.00	0.62	7.25	1.01	13.50	3.02	19.75	1.01
1.25	0.62	7.50	1.23	13.75	3.02	20.00	1.01
1.50	0.62	7.75	1.23	14.00	2.35	20.25	1.01
1.75	0.62	8.00	1.23	14.25	2.35	20.50	0.67
2.00	0.62	8.25	1.23	14.50	1.68	20.75	0.67
2.25	0.62	8.50	1.46	14.75	1.68	21.00	0.67
2.50	0.73	8.75	1.46	15.00	1.68	21.25	0.67
2.75	0.73	9.00	1.57	15.25	1.68	21.50	0.67
3.00	0.73	9.25	1.57	15.50	1.68	21.75	0.67
3.25	0.73	9.50	1.79	15.75	1.68	22.00	0.67
3.50	0.73	9.75	1.79	16.00	1.68	22.25	0.67
3.75	0.73	10.00	2.02	16.25	1.68	22.50	0.67
4.00	0.73	10.25	2.02	16.50	1.01	22.75	0.67
4.25	0.73	10.50	2.58	16.75	1.01	23.00	0.67
4.50	0.90	10.75	2.58	17.00	1.01	23.25	0.67
4.75	0.90	11.00	3.47	17.25	1.01	23.50	0.67
5.00	0.90	11.25	3.47	17.50	1.01	23.75	0.67
5.25	0.90	11.50	5.38	17.75	1.01	24.00	0.67
5.50	0.90	11.75	5.38	18.00	1.01	24.25	0.67
5.75	0.90	12.00	16.58	18.25	1.01		
6.00	0.90	12.25	68.56	18.50	1.01		
6.25	0.90	12.50	8.07	18.75	1.01		

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-----
| CALIB |
| STANDHYD ( 0001) |
| ID= 1 DT= 5.0 min |
|-----|
| Area (ha)= 2.89 |
| Total Imp(%)= 98.00 | Dir. Conn.(%)= 35.00 |
|-----|
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 2.84 | 0.06 |
| Dep. Storage (mm)= 1.00 | 1.50 |

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Average slope (%)= 1.00 2.00
 Length (m)= 138.91 40.00
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	0.90	12.250	68.56	18.33	1.01
0.167	0.00	6.250	0.90	12.333	8.07	18.42	1.01
0.250	0.00	6.333	1.01	12.417	8.07	18.50	1.01
0.333	0.62	6.417	1.01	12.500	8.07	18.58	1.01
0.417	0.62	6.500	1.01	12.583	8.07	18.67	1.01
0.500	0.62	6.583	1.01	12.667	8.07	18.75	1.01
0.583	0.62	6.667	1.01	12.750	8.07	18.83	1.01
0.667	0.62	6.750	1.01	12.833	4.15	18.92	1.01
0.750	0.62	6.833	1.01	12.917	4.14	19.00	1.01
0.833	0.62	6.917	1.01	13.000	4.14	19.08	1.01
0.917	0.62	7.000	1.01	13.083	4.14	19.17	1.01
1.000	0.62	7.083	1.01	13.167	4.14	19.25	1.01
1.083	0.62	7.167	1.01	13.250	4.14	19.33	1.01
1.167	0.62	7.250	1.01	13.333	3.02	19.42	1.01
1.250	0.62	7.333	1.23	13.417	3.02	19.50	1.01
1.333	0.62	7.417	1.23	13.500	3.02	19.58	1.01
1.417	0.62	7.500	1.23	13.583	3.02	19.67	1.01
1.500	0.62	7.583	1.23	13.667	3.02	19.75	1.01
1.583	0.62	7.667	1.23	13.750	3.02	19.83	1.01
1.667	0.62	7.750	1.23	13.833	2.35	19.92	1.01
1.750	0.62	7.833	1.23	13.917	2.35	20.00	1.01
1.833	0.62	7.917	1.23	14.000	2.35	20.08	1.01
1.917	0.62	8.000	1.23	14.083	2.35	20.17	1.01
2.000	0.62	8.083	1.23	14.167	2.35	20.25	1.01
2.083	0.62	8.167	1.23	14.250	2.35	20.33	0.67
2.167	0.62	8.250	1.23	14.333	1.68	20.42	0.67
2.250	0.62	8.333	1.46	14.417	1.68	20.50	0.67
2.333	0.73	8.417	1.46	14.500	1.68	20.58	0.67
2.417	0.73	8.500	1.46	14.583	1.68	20.67	0.67
2.500	0.73	8.583	1.46	14.667	1.68	20.75	0.67
2.583	0.73	8.667	1.46	14.750	1.68	20.83	0.67
2.667	0.73	8.750	1.46	14.833	1.68	20.92	0.67
2.750	0.73	8.833	1.57	14.917	1.68	21.00	0.67
2.833	0.73	8.917	1.57	15.000	1.68	21.08	0.67
2.917	0.73	9.000	1.57	15.083	1.68	21.17	0.67
3.000	0.73	9.083	1.57	15.167	1.68	21.25	0.67
3.083	0.73	9.167	1.57	15.250	1.68	21.33	0.67
3.167	0.73	9.250	1.57	15.333	1.68	21.42	0.67
3.250	0.73	9.333	1.79	15.417	1.68	21.50	0.67
3.333	0.73	9.417	1.79	15.500	1.68	21.58	0.67
3.417	0.73	9.500	1.79	15.583	1.68	21.67	0.67
3.500	0.73	9.583	1.79	15.667	1.68	21.75	0.67
3.583	0.73	9.667	1.79	15.750	1.68	21.83	0.67
3.667	0.73	9.750	1.79	15.833	1.68	21.92	0.67
3.750	0.73	9.833	2.02	15.917	1.68	22.00	0.67
3.833	0.73	9.917	2.02	16.000	1.68	22.08	0.67
3.917	0.73	10.000	2.02	16.083	1.68	22.17	0.67
4.000	0.73	10.083	2.02	16.167	1.68	22.25	0.67
4.083	0.73	10.167	2.02	16.250	1.68	22.33	0.67
4.167	0.73	10.250	2.02	16.333	1.01	22.42	0.67
4.250	0.73	10.333	2.58	16.417	1.01	22.50	0.67
4.333	0.90	10.417	2.58	16.500	1.01	22.58	0.67
4.417	0.90	10.500	2.58	16.583	1.01	22.67	0.67
4.500	0.90	10.583	2.58	16.667	1.01	22.75	0.67
4.583	0.90	10.667	2.58	16.750	1.01	22.83	0.67
4.667	0.90	10.750	2.58	16.833	1.01	22.92	0.67
4.750	0.90	10.833	3.47	16.917	1.01	23.00	0.67
4.833	0.90	10.917	3.47	17.000	1.01	23.08	0.67
4.917	0.90	11.000	3.47	17.083	1.01	23.17	0.67
5.000	0.90	11.083	3.47	17.167	1.01	23.25	0.67
5.083	0.90	11.167	3.47	17.250	1.01	23.33	0.67
5.167	0.90	11.250	3.47	17.333	1.01	23.42	0.67
5.250	0.90	11.333	5.38	17.417	1.01	23.50	0.67
5.333	0.90	11.417	5.38	17.500	1.01	23.58	0.67
5.417	0.90	11.500	5.38	17.583	1.01	23.67	0.67
5.500	0.90	11.583	5.38	17.667	1.01	23.75	0.67
5.583	0.90	11.667	5.38	17.750	1.01	23.83	0.67
5.667	0.90	11.750	5.38	17.833	1.01	23.92	0.67
5.750	0.90	11.833	16.58	17.917	1.01	24.00	0.67
5.833	0.90	11.917	16.58	18.000	1.01	24.08	0.67
5.917	0.90	12.000	16.58	18.083	1.01	24.17	0.67
6.000	0.90	12.083	68.55	18.167	1.01	24.25	0.67
6.083	0.90	12.167	68.56	18.250	1.01		

Max.Eff.Inten.(mm/hr)=	68.56	2220.58	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.62 (ii)	6.23 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.25	0.15	
			TOTALS
PEAK FLOW (cms)=	0.19	0.31	0.504 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	55.01	49.86	51.66
TOTAL RAINFALL (mm)=	56.01	56.01	56.01
RUNOFF COEFFICIENT =	0.98	0.89	0.92

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
 Fo (mm/hr)= 50.00 K (1/hr)= 2.00
 Fc (mm/hr)= 7.50 Cum.Inf. (mm)= 0.00
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

=====
V   V   I   SSSSS U   U   A   L           (v 6.2.2006)
V   V   I   SS   U   U   A A   L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A   L
VV    I   SSSSS UUUUU A   A   LLLLL

```

```

000   TTTTT TTTTT H   H   Y   Y   M   M   000   TM
O   O   T   T   H   H   Y   Y   MM  MM  O   O
O   O   T   T   H   H   Y   M   M   O   O
000   T   T   H   H   Y   M   M   000

```

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eoad61fb3\3d1317e8-71
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eoad61fb3\3d1317e8-71

DATE: 07-30-2021 TIME: 10:04:55

USER:

COMMENTS: _____

 ** SIMULATION : 5yr 24hr 15min SCS Type II **

```

-----
| READ STORM |
| Ptotal= 70.95 mm |
|-----|
| Filename: C:\Users\Francis\AppData\Local\Temp\ |
| a4a79f7f-b389-42b3-abdb-cfbfc5110bd2\5073cd2d |
| Comments: 5yr 24hr 15min SCS Type II |

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.28	12.75	10.22	19.00	1.28
0.50	0.78	6.75	1.28	13.00	5.25	19.25	1.28
0.75	0.78	7.00	1.28	13.25	5.25	19.50	1.28
1.00	0.78	7.25	1.28	13.50	3.83	19.75	1.28
1.25	0.78	7.50	1.56	13.75	3.83	20.00	1.28
1.50	0.78	7.75	1.56	14.00	2.98	20.25	1.28
1.75	0.78	8.00	1.56	14.25	2.98	20.50	0.85
2.00	0.78	8.25	1.56	14.50	2.13	20.75	0.85
2.25	0.78	8.50	1.84	14.75	2.13	21.00	0.85
2.50	0.92	8.75	1.84	15.00	2.13	21.25	0.85
2.75	0.92	9.00	1.99	15.25	2.13	21.50	0.85
3.00	0.92	9.25	1.99	15.50	2.13	21.75	0.85
3.25	0.92	9.50	2.27	15.75	2.13	22.00	0.85
3.50	0.92	9.75	2.27	16.00	2.13	22.25	0.85
3.75	0.92	10.00	2.55	16.25	2.13	22.50	0.85
4.00	0.92	10.25	2.55	16.50	1.28	22.75	0.85
4.25	0.92	10.50	3.26	16.75	1.28	23.00	0.85
4.50	1.14	10.75	3.26	17.00	1.28	23.25	0.85
4.75	1.14	11.00	4.40	17.25	1.28	23.50	0.85
5.00	1.14	11.25	4.40	17.50	1.28	23.75	0.85
5.25	1.14	11.50	6.81	17.75	1.28	24.00	0.85
5.50	1.14	11.75	6.81	18.00	1.28	24.25	0.85
5.75	1.14	12.00	21.00	18.25	1.28		
6.00	1.14	12.25	86.84	18.50	1.28		
6.25	1.14	12.50	10.22	18.75	1.28		

```

-----
| CALIB |
| STANDHYD ( 0001) |
| ID= 1 DT= 5.0 min |
|-----|
| Area (ha)= 2.89 |
| Total Imp(%)= 98.00 | Dir. Conn.(%)= 35.00 |
|-----|
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 2.84 | 0.06 |
| Dep. Storage (mm)= 1.00 | 1.50 |

```


Average slope (%)= 1.00 2.00
 Length (m)= 138.91 40.00
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.14	12.250	86.84	18.33	1.28
0.167	0.00	6.250	1.14	12.333	10.23	18.42	1.28
0.250	0.00	6.333	1.28	12.417	10.22	18.50	1.28
0.333	0.78	6.417	1.28	12.500	10.22	18.58	1.28
0.417	0.78	6.500	1.28	12.583	10.22	18.67	1.28
0.500	0.78	6.583	1.28	12.667	10.22	18.75	1.28
0.583	0.78	6.667	1.28	12.750	10.22	18.83	1.28
0.667	0.78	6.750	1.28	12.833	5.25	18.92	1.28
0.750	0.78	6.833	1.28	12.917	5.25	19.00	1.28
0.833	0.78	6.917	1.28	13.000	5.25	19.08	1.28
0.917	0.78	7.000	1.28	13.083	5.25	19.17	1.28
1.000	0.78	7.083	1.28	13.167	5.25	19.25	1.28
1.083	0.78	7.167	1.28	13.250	5.25	19.33	1.28
1.167	0.78	7.250	1.28	13.333	3.83	19.42	1.28
1.250	0.78	7.333	1.56	13.417	3.83	19.50	1.28
1.333	0.78	7.417	1.56	13.500	3.83	19.58	1.28
1.417	0.78	7.500	1.56	13.583	3.83	19.67	1.28
1.500	0.78	7.583	1.56	13.667	3.83	19.75	1.28
1.583	0.78	7.667	1.56	13.750	3.83	19.83	1.28
1.667	0.78	7.750	1.56	13.833	2.98	19.92	1.28
1.750	0.78	7.833	1.56	13.917	2.98	20.00	1.28
1.833	0.78	7.917	1.56	14.000	2.98	20.08	1.28
1.917	0.78	8.000	1.56	14.083	2.98	20.17	1.28
2.000	0.78	8.083	1.56	14.167	2.98	20.25	1.28
2.083	0.78	8.167	1.56	14.250	2.98	20.33	0.85
2.167	0.78	8.250	1.56	14.333	2.13	20.42	0.85
2.250	0.78	8.333	1.84	14.417	2.13	20.50	0.85
2.333	0.92	8.417	1.84	14.500	2.13	20.58	0.85
2.417	0.92	8.500	1.84	14.583	2.13	20.67	0.85
2.500	0.92	8.583	1.84	14.667	2.13	20.75	0.85
2.583	0.92	8.667	1.84	14.750	2.13	20.83	0.85
2.667	0.92	8.750	1.84	14.833	2.13	20.92	0.85
2.750	0.92	8.833	1.99	14.917	2.13	21.00	0.85
2.833	0.92	8.917	1.99	15.000	2.13	21.08	0.85
2.917	0.92	9.000	1.99	15.083	2.13	21.17	0.85
3.000	0.92	9.083	1.99	15.167	2.13	21.25	0.85
3.083	0.92	9.167	1.99	15.250	2.13	21.33	0.85
3.167	0.92	9.250	1.99	15.333	2.13	21.42	0.85
3.250	0.92	9.333	2.27	15.417	2.13	21.50	0.85
3.333	0.92	9.417	2.27	15.500	2.13	21.58	0.85
3.417	0.92	9.500	2.27	15.583	2.13	21.67	0.85
3.500	0.92	9.583	2.27	15.667	2.13	21.75	0.85
3.583	0.92	9.667	2.27	15.750	2.13	21.83	0.85
3.667	0.92	9.750	2.27	15.833	2.13	21.92	0.85
3.750	0.92	9.833	2.55	15.917	2.13	22.00	0.85
3.833	0.92	9.917	2.55	16.000	2.13	22.08	0.85
3.917	0.92	10.000	2.55	16.083	2.13	22.17	0.85
4.000	0.92	10.083	2.55	16.167	2.13	22.25	0.85
4.083	0.92	10.167	2.55	16.250	2.13	22.33	0.85
4.167	0.92	10.250	2.55	16.333	1.28	22.42	0.85
4.250	0.92	10.333	3.26	16.417	1.28	22.50	0.85
4.333	1.14	10.417	3.26	16.500	1.28	22.58	0.85
4.417	1.14	10.500	3.26	16.583	1.28	22.67	0.85
4.500	1.14	10.583	3.26	16.667	1.28	22.75	0.85
4.583	1.14	10.667	3.26	16.750	1.28	22.83	0.85
4.667	1.14	10.750	3.26	16.833	1.28	22.92	0.85
4.750	1.14	10.833	4.40	16.917	1.28	23.00	0.85
4.833	1.14	10.917	4.40	17.000	1.28	23.08	0.85
4.917	1.14	11.000	4.40	17.083	1.28	23.17	0.85
5.000	1.14	11.083	4.40	17.167	1.28	23.25	0.85
5.083	1.14	11.167	4.40	17.250	1.28	23.33	0.85
5.167	1.14	11.250	4.40	17.333	1.28	23.42	0.85
5.250	1.14	11.333	6.81	17.417	1.28	23.50	0.85
5.333	1.14	11.417	6.81	17.500	1.28	23.58	0.85
5.417	1.14	11.500	6.81	17.583	1.28	23.67	0.85
5.500	1.14	11.583	6.81	17.667	1.28	23.75	0.85
5.583	1.14	11.667	6.81	17.750	1.28	23.83	0.85
5.667	1.14	11.750	6.81	17.833	1.28	23.92	0.85
5.750	1.14	11.833	21.00	17.917	1.28	24.00	0.85
5.833	1.14	11.917	21.00	18.000	1.28	24.08	0.85
5.917	1.14	12.000	21.00	18.083	1.28	24.17	0.85
6.000	1.14	12.083	86.83	18.167	1.28	24.25	0.85
6.083	1.14	12.167	86.84	18.250	1.28		

Max.Eff.Inten.(mm/hr)=	86.84	2814.89	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.29 (ii)	5.67 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.15	
			TOTALS
PEAK FLOW (cms)=	0.24	0.41	0.649 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	69.95	64.75	66.57
TOTAL RAINFALL (mm)=	70.95	70.95	70.95
RUNOFF COEFFICIENT =	0.99	0.91	0.94

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
 Fo (mm/hr)= 50.00 K (1/hr)= 2.00
 Fc (mm/hr)= 7.50 Cum.Inf. (mm)= 0.00
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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=====
V   V   I   SSSSS U   U   A   L           (v 6.2.2006)
V   V   I   SS   U   U   A A   L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A   L
VV    I   SSSSS UUUUU A   A   LLLLL

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000   TTTTT TTTTT H   H   Y   Y   M   M   000   TM
O   O   T   T   H   H   Y   Y   MM  MM  O   O
O   O   T   T   H   H   Y   M   M   O   O
000   T   T   H   H   Y   M   M   000

```

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\H5\b4e0c8d5-b9e7-4938-b70a-c32eaa61fb3\dee56e38-d1
 Summary filename: C:\Users\Francis\AppData\Local\Civica\H5\b4e0c8d5-b9e7-4938-b70a-c32eaa61fb3\dee56e38-d1

DATE: 07-30-2021 TIME: 10:04:55

USER:

COMMENTS: _____

 ** SIMULATION : 10yr 24hr 15min SCS Type II **

```

-----
| READ STORM | Filename: C:\Users\Francis\AppData\Local\Temp\
| Ptotal= 80.62 mm | a4a79f7f-b389-42b3-abdb-cfbfc5110bd2\e6aec790
| | Comments: 10yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.45	12.75	11.61	19.00	1.45
0.50	0.89	6.75	1.45	13.00	5.97	19.25	1.45
0.75	0.89	7.00	1.45	13.25	5.97	19.50	1.45
1.00	0.89	7.25	1.45	13.50	4.35	19.75	1.45
1.25	0.89	7.50	1.77	13.75	4.35	20.00	1.45
1.50	0.89	7.75	1.77	14.00	3.39	20.25	1.45
1.75	0.89	8.00	1.77	14.25	3.39	20.50	0.97
2.00	0.89	8.25	1.77	14.50	2.42	20.75	0.97
2.25	0.89	8.50	2.10	14.75	2.42	21.00	0.97
2.50	1.05	8.75	2.10	15.00	2.42	21.25	0.97
2.75	1.05	9.00	2.26	15.25	2.42	21.50	0.97
3.00	1.05	9.25	2.26	15.50	2.42	21.75	0.97
3.25	1.05	9.50	2.58	15.75	2.42	22.00	0.97
3.50	1.05	9.75	2.58	16.00	2.42	22.25	0.97
3.75	1.05	10.00	2.90	16.25	2.42	22.50	0.97
4.00	1.05	10.25	2.90	16.50	1.45	22.75	0.97
4.25	1.05	10.50	3.71	16.75	1.45	23.00	0.97
4.50	1.29	10.75	3.71	17.00	1.45	23.25	0.97
4.75	1.29	11.00	5.00	17.25	1.45	23.50	0.97
5.00	1.29	11.25	5.00	17.50	1.45	23.75	0.97
5.25	1.29	11.50	7.74	17.75	1.45	24.00	0.97
5.50	1.29	11.75	7.74	18.00	1.45	24.25	0.97
5.75	1.29	12.00	23.86	18.25	1.45		
6.00	1.29	12.25	98.68	18.50	1.45		
6.25	1.29	12.50	11.61	18.75	1.45		

```

-----
| CALIB |
| STANDHYD ( 0001) | Area (ha)= 2.89
| ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 35.00
-----

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```

Surface Area (ha)= 2.84 IMPERVIOUS PERVIOUS (i)
Dep. Storage (mm)= 1.00 0.06 1.50

```

Average slope (%)= 1.00 2.00
 Length (m)= 138.91 40.00
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.29	12.250	98.68	18.33	1.45
0.167	0.00	6.250	1.29	12.333	11.62	18.42	1.45
0.250	0.00	6.333	1.45	12.417	11.61	18.50	1.45
0.333	0.89	6.417	1.45	12.500	11.61	18.58	1.45
0.417	0.89	6.500	1.45	12.583	11.61	18.67	1.45
0.500	0.89	6.583	1.45	12.667	11.61	18.75	1.45
0.583	0.89	6.667	1.45	12.750	11.61	18.83	1.45
0.667	0.89	6.750	1.45	12.833	5.97	18.92	1.45
0.750	0.89	6.833	1.45	12.917	5.97	19.00	1.45
0.833	0.89	6.917	1.45	13.000	5.97	19.08	1.45
0.917	0.89	7.000	1.45	13.083	5.97	19.17	1.45
1.000	0.89	7.083	1.45	13.167	5.97	19.25	1.45
1.083	0.89	7.167	1.45	13.250	5.97	19.33	1.45
1.167	0.89	7.250	1.45	13.333	4.35	19.42	1.45
1.250	0.89	7.333	1.77	13.417	4.35	19.50	1.45
1.333	0.89	7.417	1.77	13.500	4.35	19.58	1.45
1.417	0.89	7.500	1.77	13.583	4.35	19.67	1.45
1.500	0.89	7.583	1.77	13.667	4.35	19.75	1.45
1.583	0.89	7.667	1.77	13.750	4.35	19.83	1.45
1.667	0.89	7.750	1.77	13.833	3.39	19.92	1.45
1.750	0.89	7.833	1.77	13.917	3.39	20.00	1.45
1.833	0.89	7.917	1.77	14.000	3.39	20.08	1.45
1.917	0.89	8.000	1.77	14.083	3.39	20.17	1.45
2.000	0.89	8.083	1.77	14.167	3.39	20.25	1.45
2.083	0.89	8.167	1.77	14.250	3.39	20.33	0.97
2.167	0.89	8.250	1.77	14.333	2.42	20.42	0.97
2.250	0.89	8.333	2.10	14.417	2.42	20.50	0.97
2.333	1.05	8.417	2.10	14.500	2.42	20.58	0.97
2.417	1.05	8.500	2.10	14.583	2.42	20.67	0.97
2.500	1.05	8.583	2.10	14.667	2.42	20.75	0.97
2.583	1.05	8.667	2.10	14.750	2.42	20.83	0.97
2.667	1.05	8.750	2.10	14.833	2.42	20.92	0.97
2.750	1.05	8.833	2.26	14.917	2.42	21.00	0.97
2.833	1.05	8.917	2.26	15.000	2.42	21.08	0.97
2.917	1.05	9.000	2.26	15.083	2.42	21.17	0.97
3.000	1.05	9.083	2.26	15.167	2.42	21.25	0.97
3.083	1.05	9.167	2.26	15.250	2.42	21.33	0.97
3.167	1.05	9.250	2.26	15.333	2.42	21.42	0.97
3.250	1.05	9.333	2.58	15.417	2.42	21.50	0.97
3.333	1.05	9.417	2.58	15.500	2.42	21.58	0.97
3.417	1.05	9.500	2.58	15.583	2.42	21.67	0.97
3.500	1.05	9.583	2.58	15.667	2.42	21.75	0.97
3.583	1.05	9.667	2.58	15.750	2.42	21.83	0.97
3.667	1.05	9.750	2.58	15.833	2.42	21.92	0.97
3.750	1.05	9.833	2.90	15.917	2.42	22.00	0.97
3.833	1.05	9.917	2.90	16.000	2.42	22.08	0.97
3.917	1.05	10.000	2.90	16.083	2.42	22.17	0.97
4.000	1.05	10.083	2.90	16.167	2.42	22.25	0.97
4.083	1.05	10.167	2.90	16.250	2.42	22.33	0.97
4.167	1.05	10.250	2.90	16.333	1.45	22.42	0.97
4.250	1.05	10.333	3.71	16.417	1.45	22.50	0.97
4.333	1.29	10.417	3.71	16.500	1.45	22.58	0.97
4.417	1.29	10.500	3.71	16.583	1.45	22.67	0.97
4.500	1.29	10.583	3.71	16.667	1.45	22.75	0.97
4.583	1.29	10.667	3.71	16.750	1.45	22.83	0.97
4.667	1.29	10.750	3.71	16.833	1.45	22.92	0.97
4.750	1.29	10.833	5.00	16.917	1.45	23.00	0.97
4.833	1.29	10.917	5.00	17.000	1.45	23.08	0.97
4.917	1.29	11.000	5.00	17.083	1.45	23.17	0.97
5.000	1.29	11.083	5.00	17.167	1.45	23.25	0.97
5.083	1.29	11.167	5.00	17.250	1.45	23.33	0.97
5.167	1.29	11.250	5.00	17.333	1.45	23.42	0.97
5.250	1.29	11.333	7.74	17.417	1.45	23.50	0.97
5.333	1.29	11.417	7.74	17.500	1.45	23.58	0.97
5.417	1.29	11.500	7.74	17.583	1.45	23.67	0.97
5.500	1.29	11.583	7.74	17.667	1.45	23.75	0.97
5.583	1.29	11.667	7.74	17.750	1.45	23.83	0.97
5.667	1.29	11.750	7.74	17.833	1.45	23.92	0.97
5.750	1.29	11.833	23.86	17.917	1.45	24.00	0.97
5.833	1.29	11.917	23.86	18.000	1.45	24.08	0.97
5.917	1.29	12.000	23.86	18.083	1.45	24.17	0.97
6.000	1.29	12.083	98.67	18.167	1.45	24.25	0.97
6.083	1.29	12.167	98.68	18.250	1.45		

Max.Eff.Inten.(mm/hr)=	98.68	3199.57	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.13 (ii)	5.39 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.16	
			TOTALS
PEAK FLOW (cms)=	0.28	0.47	0.743 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	79.62	74.41	76.23
TOTAL RAINFALL (mm)=	80.62	80.62	80.62
RUNOFF COEFFICIENT =	0.99	0.92	0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
 Fo (mm/hr)= 50.00 K (1/hr)= 2.00
 Fc (mm/hr)= 7.50 Cum.Inf. (mm)= 0.00
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

=====
V   V   I   SSSSS U   U   A   L           (v 6.2.2006)
V   V   I   SS   U   U   A A   L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A   L
VV    I   SSSSS UUUUU A   A   LLLLL

```

```

000   TTTTT TTTTT H   H   Y   Y   M   M   000   TM
O   O   T   T   H   H   Y   Y   MM  MM  O   O
O   O   T   T   H   H   Y   M   M   O   O
000   T   T   H   H   Y   M   M   000

```

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eaa61fb3\329f3508-58
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eaa61fb3\329f3508-58

DATE: 07-30-2021 TIME: 10:04:55

USER:

COMMENTS: _____

 ** SIMULATION : 25yr 24hr 15min SCS Type II **

```

-----
| READ STORM |
| Ptotal= 93.19 mm |
|-----|
Filename: C:\Users\Francis\AppData\Local\Temp\
a4a79f7f-b389-42b3-abdb-cfbfc5110bd2\92df94ad
Comments: 25yr 24hr 15min SCS Type II

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.68	12.75	13.42	19.00	1.68
0.50	1.03	6.75	1.68	13.00	6.90	19.25	1.68
0.75	1.03	7.00	1.68	13.25	6.90	19.50	1.68
1.00	1.03	7.25	1.68	13.50	5.03	19.75	1.68
1.25	1.03	7.50	2.05	13.75	5.03	20.00	1.68
1.50	1.03	7.75	2.05	14.00	3.91	20.25	1.68
1.75	1.03	8.00	2.05	14.25	3.91	20.50	1.12
2.00	1.03	8.25	2.05	14.50	2.80	20.75	1.12
2.25	1.03	8.50	2.42	14.75	2.80	21.00	1.12
2.50	1.21	8.75	2.42	15.00	2.80	21.25	1.12
2.75	1.21	9.00	2.61	15.25	2.80	21.50	1.12
3.00	1.21	9.25	2.61	15.50	2.80	21.75	1.12
3.25	1.21	9.50	2.98	15.75	2.80	22.00	1.12
3.50	1.21	9.75	2.98	16.00	2.80	22.25	1.12
3.75	1.21	10.00	3.35	16.25	2.80	22.50	1.12
4.00	1.21	10.25	3.35	16.50	1.68	22.75	1.12
4.25	1.21	10.50	4.29	16.75	1.68	23.00	1.12
4.50	1.49	10.75	4.29	17.00	1.68	23.25	1.12
4.75	1.49	11.00	5.78	17.25	1.68	23.50	1.12
5.00	1.49	11.25	5.78	17.50	1.68	23.75	1.12
5.25	1.49	11.50	8.95	17.75	1.68	24.00	1.12
5.50	1.49	11.75	8.95	18.00	1.68	24.25	1.12
5.75	1.49	12.00	27.58	18.25	1.68		
6.00	1.49	12.25	114.06	18.50	1.68		
6.25	1.49	12.50	13.42	18.75	1.68		

```

-----
| CALIB |
| STANDHYD ( 0001) |
| ID= 1 DT= 5.0 min |
|-----|
Area (ha)= 2.89
Total Imp(%)= 98.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.84 0.06
Dep. Storage (mm)= 1.00 1.50

```

Average slope (%)= 1.00 2.00
 Length (m)= 138.91 40.00
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.49	12.250	114.06	18.33	1.68
0.167	0.00	6.250	1.49	12.333	13.43	18.42	1.68
0.250	0.00	6.333	1.68	12.417	13.42	18.50	1.68
0.333	1.03	6.417	1.68	12.500	13.42	18.58	1.68
0.417	1.03	6.500	1.68	12.583	13.42	18.67	1.68
0.500	1.03	6.583	1.68	12.667	13.42	18.75	1.68
0.583	1.03	6.667	1.68	12.750	13.42	18.83	1.68
0.667	1.03	6.750	1.68	12.833	6.90	18.92	1.68
0.750	1.03	6.833	1.68	12.917	6.90	19.00	1.68
0.833	1.03	6.917	1.68	13.000	6.90	19.08	1.68
0.917	1.03	7.000	1.68	13.083	6.90	19.17	1.68
1.000	1.03	7.083	1.68	13.167	6.90	19.25	1.68
1.083	1.03	7.167	1.68	13.250	6.90	19.33	1.68
1.167	1.03	7.250	1.68	13.333	5.03	19.42	1.68
1.250	1.03	7.333	2.05	13.417	5.03	19.50	1.68
1.333	1.03	7.417	2.05	13.500	5.03	19.58	1.68
1.417	1.03	7.500	2.05	13.583	5.03	19.67	1.68
1.500	1.03	7.583	2.05	13.667	5.03	19.75	1.68
1.583	1.03	7.667	2.05	13.750	5.03	19.83	1.68
1.667	1.03	7.750	2.05	13.833	3.91	19.92	1.68
1.750	1.03	7.833	2.05	13.917	3.91	20.00	1.68
1.833	1.03	7.917	2.05	14.000	3.91	20.08	1.68
1.917	1.03	8.000	2.05	14.083	3.91	20.17	1.68
2.000	1.03	8.083	2.05	14.167	3.91	20.25	1.68
2.083	1.03	8.167	2.05	14.250	3.91	20.33	1.12
2.167	1.03	8.250	2.05	14.333	2.80	20.42	1.12
2.250	1.03	8.333	2.42	14.417	2.80	20.50	1.12
2.333	1.21	8.417	2.42	14.500	2.80	20.58	1.12
2.417	1.21	8.500	2.42	14.583	2.80	20.67	1.12
2.500	1.21	8.583	2.42	14.667	2.80	20.75	1.12
2.583	1.21	8.667	2.42	14.750	2.80	20.83	1.12
2.667	1.21	8.750	2.42	14.833	2.80	20.92	1.12
2.750	1.21	8.833	2.61	14.917	2.80	21.00	1.12
2.833	1.21	8.917	2.61	15.000	2.80	21.08	1.12
2.917	1.21	9.000	2.61	15.083	2.80	21.17	1.12
3.000	1.21	9.083	2.61	15.167	2.80	21.25	1.12
3.083	1.21	9.167	2.61	15.250	2.80	21.33	1.12
3.167	1.21	9.250	2.61	15.333	2.80	21.42	1.12
3.250	1.21	9.333	2.98	15.417	2.80	21.50	1.12
3.333	1.21	9.417	2.98	15.500	2.80	21.58	1.12
3.417	1.21	9.500	2.98	15.583	2.80	21.67	1.12
3.500	1.21	9.583	2.98	15.667	2.80	21.75	1.12
3.583	1.21	9.667	2.98	15.750	2.80	21.83	1.12
3.667	1.21	9.750	2.98	15.833	2.80	21.92	1.12
3.750	1.21	9.833	3.35	15.917	2.80	22.00	1.12
3.833	1.21	9.917	3.35	16.000	2.80	22.08	1.12
3.917	1.21	10.000	3.35	16.083	2.80	22.17	1.12
4.000	1.21	10.083	3.35	16.167	2.80	22.25	1.12
4.083	1.21	10.167	3.35	16.250	2.80	22.33	1.12
4.167	1.21	10.250	3.35	16.333	1.68	22.42	1.12
4.250	1.21	10.333	4.29	16.417	1.68	22.50	1.12
4.333	1.49	10.417	4.29	16.500	1.68	22.58	1.12
4.417	1.49	10.500	4.29	16.583	1.68	22.67	1.12
4.500	1.49	10.583	4.29	16.667	1.68	22.75	1.12
4.583	1.49	10.667	4.29	16.750	1.68	22.83	1.12
4.667	1.49	10.750	4.29	16.833	1.68	22.92	1.12
4.750	1.49	10.833	5.78	16.917	1.68	23.00	1.12
4.833	1.49	10.917	5.78	17.000	1.68	23.08	1.12
4.917	1.49	11.000	5.78	17.083	1.68	23.17	1.12
5.000	1.49	11.083	5.78	17.167	1.68	23.25	1.12
5.083	1.49	11.167	5.78	17.250	1.68	23.33	1.12
5.167	1.49	11.250	5.78	17.333	1.68	23.42	1.12
5.250	1.49	11.333	8.95	17.417	1.68	23.50	1.12
5.333	1.49	11.417	8.95	17.500	1.68	23.58	1.12
5.417	1.49	11.500	8.95	17.583	1.68	23.67	1.12
5.500	1.49	11.583	8.95	17.667	1.68	23.75	1.12
5.583	1.49	11.667	8.95	17.750	1.68	23.83	1.12
5.667	1.49	11.750	8.95	17.833	1.68	23.92	1.12
5.750	1.49	11.833	27.58	17.917	1.68	24.00	1.12
5.833	1.49	11.917	27.58	18.000	1.68	24.08	1.12
5.917	1.49	12.000	27.58	18.083	1.68	24.17	1.12
6.000	1.49	12.083	114.05	18.167	1.68	24.25	1.12
6.083	1.49	12.167	114.06	18.250	1.68		

Max.Eff.Inten.(mm/hr)=	114.06	3699.60	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.95 (ii)	5.08 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.28	0.16	
			TOTALS
PEAK FLOW (cms)=	0.32	0.55	0.866 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	92.19	86.96	88.79
TOTAL RAINFALL (mm)=	93.19	93.19	93.19
RUNOFF COEFFICIENT =	0.99	0.93	0.95

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
 Fo (mm/hr)= 50.00 K (1/hr)= 2.00
 Fc (mm/hr)= 7.50 Cum.Inf. (mm)= 0.00
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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V V I SSSSS U U A L (v 6.2.2006)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

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000 TTTTT TTTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eada61fb3\4e33cdb2-20
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eada61fb3\4e33cdb2-20

DATE: 07-30-2021 TIME: 10:04:55

USER:

COMMENTS: _____

 ** SIMULATION : 50yr 24hr 15min SCS Type II **

```

-----
| READ STORM | Filename: C:\Users\Francis\AppData\Local\Temp\
| Ptotal=102.59 mm | a4a79f7f-b389-42b3-abdb-cfbfc5110bd2\6ea4e79a
| | Comments: 50yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	1.85	12.75	14.77	19.00	1.85
0.50	1.13	6.75	1.85	13.00	7.59	19.25	1.85
0.75	1.13	7.00	1.85	13.25	7.59	19.50	1.85
1.00	1.13	7.25	1.85	13.50	5.54	19.75	1.85
1.25	1.13	7.50	2.26	13.75	5.54	20.00	1.85
1.50	1.13	7.75	2.26	14.00	4.31	20.25	1.85
1.75	1.13	8.00	2.26	14.25	4.31	20.50	1.23
2.00	1.13	8.25	2.26	14.50	3.08	20.75	1.23
2.25	1.13	8.50	2.67	14.75	3.08	21.00	1.23
2.50	1.33	8.75	2.67	15.00	3.08	21.25	1.23
2.75	1.33	9.00	2.87	15.25	3.08	21.50	1.23
3.00	1.33	9.25	2.87	15.50	3.08	21.75	1.23
3.25	1.33	9.50	3.28	15.75	3.08	22.00	1.23
3.50	1.33	9.75	3.28	16.00	3.08	22.25	1.23
3.75	1.33	10.00	3.69	16.25	3.08	22.50	1.23
4.00	1.33	10.25	3.69	16.50	1.85	22.75	1.23
4.25	1.33	10.50	4.72	16.75	1.85	23.00	1.23
4.50	1.64	10.75	4.72	17.00	1.85	23.25	1.23
4.75	1.64	11.00	6.36	17.25	1.85	23.50	1.23
5.00	1.64	11.25	6.36	17.50	1.85	23.75	1.23
5.25	1.64	11.50	9.85	17.75	1.85	24.00	1.23
5.50	1.64	11.75	9.85	18.00	1.85	24.25	1.23
5.75	1.64	12.00	30.37	18.25	1.85		
6.00	1.64	12.25	125.57	18.50	1.85		
6.25	1.64	12.50	14.77	18.75	1.85		

```

-----
| CALIB |
| STANDHYD ( 0001) | Area (ha)= 2.89
| ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 35.00
| |
| Surface Area (ha)= 2.84 IMPERVIOUS PERVIOUS (i)
| Dep. Storage (mm)= 1.00 0.06 1.50
-----

```

Average slope (%)= 1.00 2.00
 Length (m)= 138.91 40.00
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.64	12.250	125.57	18.33	1.85
0.167	0.00	6.250	1.64	12.333	14.79	18.42	1.85
0.250	0.00	6.333	1.85	12.417	14.77	18.50	1.85
0.333	1.13	6.417	1.85	12.500	14.77	18.58	1.85
0.417	1.13	6.500	1.85	12.583	14.77	18.67	1.85
0.500	1.13	6.583	1.85	12.667	14.77	18.75	1.85
0.583	1.13	6.667	1.85	12.750	14.77	18.83	1.85
0.667	1.13	6.750	1.85	12.833	7.59	18.92	1.85
0.750	1.13	6.833	1.85	12.917	7.59	19.00	1.85
0.833	1.13	6.917	1.85	13.000	7.59	19.08	1.85
0.917	1.13	7.000	1.85	13.083	7.59	19.17	1.85
1.000	1.13	7.083	1.85	13.167	7.59	19.25	1.85
1.083	1.13	7.167	1.85	13.250	7.59	19.33	1.85
1.167	1.13	7.250	1.85	13.333	5.54	19.42	1.85
1.250	1.13	7.333	2.26	13.417	5.54	19.50	1.85
1.333	1.13	7.417	2.26	13.500	5.54	19.58	1.85
1.417	1.13	7.500	2.26	13.583	5.54	19.67	1.85
1.500	1.13	7.583	2.26	13.667	5.54	19.75	1.85
1.583	1.13	7.667	2.26	13.750	5.54	19.83	1.85
1.667	1.13	7.750	2.26	13.833	4.31	19.92	1.85
1.750	1.13	7.833	2.26	13.917	4.31	20.00	1.85
1.833	1.13	7.917	2.26	14.000	4.31	20.08	1.85
1.917	1.13	8.000	2.26	14.083	4.31	20.17	1.85
2.000	1.13	8.083	2.26	14.167	4.31	20.25	1.85
2.083	1.13	8.167	2.26	14.250	4.31	20.33	1.23
2.167	1.13	8.250	2.26	14.333	3.08	20.42	1.23
2.250	1.13	8.333	2.67	14.417	3.08	20.50	1.23
2.333	1.33	8.417	2.67	14.500	3.08	20.58	1.23
2.417	1.33	8.500	2.67	14.583	3.08	20.67	1.23
2.500	1.33	8.583	2.67	14.667	3.08	20.75	1.23
2.583	1.33	8.667	2.67	14.750	3.08	20.83	1.23
2.667	1.33	8.750	2.67	14.833	3.08	20.92	1.23
2.750	1.33	8.833	2.87	14.917	3.08	21.00	1.23
2.833	1.33	8.917	2.87	15.000	3.08	21.08	1.23
2.917	1.33	9.000	2.87	15.083	3.08	21.17	1.23
3.000	1.33	9.083	2.87	15.167	3.08	21.25	1.23
3.083	1.33	9.167	2.87	15.250	3.08	21.33	1.23
3.167	1.33	9.250	2.87	15.333	3.08	21.42	1.23
3.250	1.33	9.333	3.28	15.417	3.08	21.50	1.23
3.333	1.33	9.417	3.28	15.500	3.08	21.58	1.23
3.417	1.33	9.500	3.28	15.583	3.08	21.67	1.23
3.500	1.33	9.583	3.28	15.667	3.08	21.75	1.23
3.583	1.33	9.667	3.28	15.750	3.08	21.83	1.23
3.667	1.33	9.750	3.28	15.833	3.08	21.92	1.23
3.750	1.33	9.833	3.69	15.917	3.08	22.00	1.23
3.833	1.33	9.917	3.69	16.000	3.08	22.08	1.23
3.917	1.33	10.000	3.69	16.083	3.08	22.17	1.23
4.000	1.33	10.083	3.69	16.167	3.08	22.25	1.23
4.083	1.33	10.167	3.69	16.250	3.08	22.33	1.23
4.167	1.33	10.250	3.69	16.333	1.85	22.42	1.23
4.250	1.33	10.333	4.72	16.417	1.85	22.50	1.23
4.333	1.64	10.417	4.72	16.500	1.85	22.58	1.23
4.417	1.64	10.500	4.72	16.583	1.85	22.67	1.23
4.500	1.64	10.583	4.72	16.667	1.85	22.75	1.23
4.583	1.64	10.667	4.72	16.750	1.85	22.83	1.23
4.667	1.64	10.750	4.72	16.833	1.85	22.92	1.23
4.750	1.64	10.833	6.36	16.917	1.85	23.00	1.23
4.833	1.64	10.917	6.36	17.000	1.85	23.08	1.23
4.917	1.64	11.000	6.36	17.083	1.85	23.17	1.23
5.000	1.64	11.083	6.36	17.167	1.85	23.25	1.23
5.083	1.64	11.167	6.36	17.250	1.85	23.33	1.23
5.167	1.64	11.250	6.36	17.333	1.85	23.42	1.23
5.250	1.64	11.333	9.85	17.417	1.85	23.50	1.23
5.333	1.64	11.417	9.85	17.500	1.85	23.58	1.23
5.417	1.64	11.500	9.85	17.583	1.85	23.67	1.23
5.500	1.64	11.583	9.85	17.667	1.85	23.75	1.23
5.583	1.64	11.667	9.85	17.750	1.85	23.83	1.23
5.667	1.64	11.750	9.85	17.833	1.85	23.92	1.23
5.750	1.64	11.833	30.36	17.917	1.85	24.00	1.23
5.833	1.64	11.917	30.37	18.000	1.85	24.08	1.23
5.917	1.64	12.000	30.37	18.083	1.85	24.17	1.23
6.000	1.64	12.083	125.56	18.167	1.85	24.25	1.23
6.083	1.64	12.167	125.57	18.250	1.85		

Max.Eff.Inten.(mm/hr)=	125.57	4073.53	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.84 (ii)	4.89 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.28	0.22	
			TOTALS
PEAK FLOW (cms)=	0.35	0.63	0.984 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	101.59	96.36	98.19
TOTAL RAINFALL (mm)=	102.59	102.59	102.59
RUNOFF COEFFICIENT =	0.99	0.94	0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
 Fo (mm/hr)= 50.00 K (1/hr)= 2.00
 Fc (mm/hr)= 7.50 Cum.Inf. (mm)= 0.00
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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=====
V   V   I   SSSSS U   U   A   L           (v 6.2.2006)
V   V   I   SS   U   U   A A   L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A   L
VV    I   SSSSS UUUUU A   A   LLLLL

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    000   TTTTT TTTTT H   H   Y   Y   M   M   000   TM
O   O   T   T   H   H   Y Y   MM MM O   O
O   O   T   T   H   H   Y   M   M   O   O
    000   T   T   H   H   Y   M   M   000

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eoad61fb3\5f2f8eb2-e6
 Summary filename: C:\Users\Francis\AppData\Local\Civica\vh5\b4e0c8d5-b9e7-4938-b70a-c32eoad61fb3\5f2f8eb2-e6

DATE: 07-30-2021 TIME: 10:04:55

USER:

COMMENTS: _____

 ** SIMULATION : 100yr 24hr 15min SCS Type II **

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-----
| READ STORM | Filename: C:\Users\Francis\AppData\Local\Temp\
|            | a4a79f7f-b389-42b3-abdb-cfbfc5110bd2\77911da2
| Ptotal=111.57 mm | Comments: 100yr 24hr 15min SCS Type II
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.25	0.00	6.50	2.01	12.75	16.07	19.00	2.01
0.50	1.23	6.75	2.01	13.00	8.26	19.25	2.01
0.75	1.23	7.00	2.01	13.25	8.26	19.50	2.01
1.00	1.23	7.25	2.01	13.50	6.02	19.75	2.01
1.25	1.23	7.50	2.45	13.75	6.02	20.00	2.01
1.50	1.23	7.75	2.45	14.00	4.69	20.25	2.01
1.75	1.23	8.00	2.45	14.25	4.69	20.50	1.34
2.00	1.23	8.25	2.45	14.50	3.35	20.75	1.34
2.25	1.23	8.50	2.90	14.75	3.35	21.00	1.34
2.50	1.45	8.75	2.90	15.00	3.35	21.25	1.34
2.75	1.45	9.00	3.12	15.25	3.35	21.50	1.34
3.00	1.45	9.25	3.12	15.50	3.35	21.75	1.34
3.25	1.45	9.50	3.57	15.75	3.35	22.00	1.34
3.50	1.45	9.75	3.57	16.00	3.35	22.25	1.34
3.75	1.45	10.00	4.02	16.25	3.35	22.50	1.34
4.00	1.45	10.25	4.02	16.50	2.01	22.75	1.34
4.25	1.45	10.50	5.13	16.75	2.01	23.00	1.34
4.50	1.79	10.75	5.13	17.00	2.01	23.25	1.34
4.75	1.79	11.00	6.92	17.25	2.01	23.50	1.34
5.00	1.79	11.25	6.92	17.50	2.01	23.75	1.34
5.25	1.79	11.50	10.71	17.75	2.01	24.00	1.34
5.50	1.79	11.75	10.71	18.00	2.01	24.25	1.34
5.75	1.79	12.00	33.02	18.25	2.01		
6.00	1.79	12.25	136.56	18.50	2.01		
6.25	1.79	12.50	16.07	18.75	2.01		

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| CALIB |
| STANDHYD ( 0001) | Area (ha)= 2.89
| ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 35.00
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Surface Area (ha)= 2.84 IMPERVIOUS PERVIOUS (i)
Dep. Storage (mm)= 1.00 1.50

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Average slope (%)= 1.00 2.00
 Length (m)= 138.91 40.00
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	6.167	1.79	12.250	136.56	18.33	2.01
0.167	0.00	6.250	1.79	12.333	16.08	18.42	2.01
0.250	0.00	6.333	2.01	12.417	16.07	18.50	2.01
0.333	1.23	6.417	2.01	12.500	16.07	18.58	2.01
0.417	1.23	6.500	2.01	12.583	16.07	18.67	2.01
0.500	1.23	6.583	2.01	12.667	16.07	18.75	2.01
0.583	1.23	6.667	2.01	12.750	16.07	18.83	2.01
0.667	1.23	6.750	2.01	12.833	8.26	18.92	2.01
0.750	1.23	6.833	2.01	12.917	8.26	19.00	2.01
0.833	1.23	6.917	2.01	13.000	8.26	19.08	2.01
0.917	1.23	7.000	2.01	13.083	8.26	19.17	2.01
1.000	1.23	7.083	2.01	13.167	8.26	19.25	2.01
1.083	1.23	7.167	2.01	13.250	8.26	19.33	2.01
1.167	1.23	7.250	2.01	13.333	6.03	19.42	2.01
1.250	1.23	7.333	2.45	13.417	6.02	19.50	2.01
1.333	1.23	7.417	2.45	13.500	6.02	19.58	2.01
1.417	1.23	7.500	2.45	13.583	6.02	19.67	2.01
1.500	1.23	7.583	2.45	13.667	6.02	19.75	2.01
1.583	1.23	7.667	2.45	13.750	6.02	19.83	2.01
1.667	1.23	7.750	2.45	13.833	4.69	19.92	2.01
1.750	1.23	7.833	2.45	13.917	4.69	20.00	2.01
1.833	1.23	7.917	2.45	14.000	4.69	20.08	2.01
1.917	1.23	8.000	2.45	14.083	4.69	20.17	2.01
2.000	1.23	8.083	2.45	14.167	4.69	20.25	2.01
2.083	1.23	8.167	2.45	14.250	4.69	20.33	1.34
2.167	1.23	8.250	2.45	14.333	3.35	20.42	1.34
2.250	1.23	8.333	2.90	14.417	3.35	20.50	1.34
2.333	1.45	8.417	2.90	14.500	3.35	20.58	1.34
2.417	1.45	8.500	2.90	14.583	3.35	20.67	1.34
2.500	1.45	8.583	2.90	14.667	3.35	20.75	1.34
2.583	1.45	8.667	2.90	14.750	3.35	20.83	1.34
2.667	1.45	8.750	2.90	14.833	3.35	20.92	1.34
2.750	1.45	8.833	3.12	14.917	3.35	21.00	1.34
2.833	1.45	8.917	3.12	15.000	3.35	21.08	1.34
2.917	1.45	9.000	3.12	15.083	3.35	21.17	1.34
3.000	1.45	9.083	3.12	15.167	3.35	21.25	1.34
3.083	1.45	9.167	3.12	15.250	3.35	21.33	1.34
3.167	1.45	9.250	3.12	15.333	3.35	21.42	1.34
3.250	1.45	9.333	3.57	15.417	3.35	21.50	1.34
3.333	1.45	9.417	3.57	15.500	3.35	21.58	1.34
3.417	1.45	9.500	3.57	15.583	3.35	21.67	1.34
3.500	1.45	9.583	3.57	15.667	3.35	21.75	1.34
3.583	1.45	9.667	3.57	15.750	3.35	21.83	1.34
3.667	1.45	9.750	3.57	15.833	3.35	21.92	1.34
3.750	1.45	9.833	4.02	15.917	3.35	22.00	1.34
3.833	1.45	9.917	4.02	16.000	3.35	22.08	1.34
3.917	1.45	10.000	4.02	16.083	3.35	22.17	1.34
4.000	1.45	10.083	4.02	16.167	3.35	22.25	1.34
4.083	1.45	10.167	4.02	16.250	3.35	22.33	1.34
4.167	1.45	10.250	4.02	16.333	2.01	22.42	1.34
4.250	1.45	10.333	5.13	16.417	2.01	22.50	1.34
4.333	1.79	10.417	5.13	16.500	2.01	22.58	1.34
4.417	1.79	10.500	5.13	16.583	2.01	22.67	1.34
4.500	1.79	10.583	5.13	16.667	2.01	22.75	1.34
4.583	1.79	10.667	5.13	16.750	2.01	22.83	1.34
4.667	1.79	10.750	5.13	16.833	2.01	22.92	1.34
4.750	1.79	10.833	6.92	16.917	2.01	23.00	1.34
4.833	1.79	10.917	6.92	17.000	2.01	23.08	1.34
4.917	1.79	11.000	6.92	17.083	2.01	23.17	1.34
5.000	1.79	11.083	6.92	17.167	2.01	23.25	1.34
5.083	1.79	11.167	6.92	17.250	2.01	23.33	1.34
5.167	1.79	11.250	6.92	17.333	2.01	23.42	1.34
5.250	1.79	11.333	10.71	17.417	2.01	23.50	1.34
5.333	1.79	11.417	10.71	17.500	2.01	23.58	1.34
5.417	1.79	11.500	10.71	17.583	2.01	23.67	1.34
5.500	1.79	11.583	10.71	17.667	2.01	23.75	1.34
5.583	1.79	11.667	10.71	17.750	2.01	23.83	1.34
5.667	1.79	11.750	10.71	17.833	2.01	23.92	1.34
5.750	1.79	11.833	33.02	17.917	2.01	24.00	1.34
5.833	1.79	11.917	33.02	18.000	2.01	24.08	1.34
5.917	1.79	12.000	33.02	18.083	2.01	24.17	1.34
6.000	1.79	12.083	136.55	18.167	2.01	24.25	1.34
6.083	1.79	12.167	136.56	18.250	2.01		

Max.Eff.Inten.(mm/hr)=	136.56	4430.76	
over (min)	5.00	5.00	
Storage Coeff. (min)=	2.75 (ii)	4.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	5.00	
Unit Hyd. peak (cms)=	0.28	0.22	
			TOTALS
PEAK FLOW (cms)=	0.38	0.69	1.073 (iii)
TIME TO PEAK (hrs)=	12.25	12.25	12.25
RUNOFF VOLUME (mm)=	110.57	105.34	107.17
TOTAL RAINFALL (mm)=	111.57	111.57	111.57
RUNOFF COEFFICIENT =	0.99	0.94	0.96

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
 Fo (mm/hr)= 50.00 K (1/hr)= 2.00
 Fc (mm/hr)= 7.50 Cum.Inf. (mm)= 0.00
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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=====
V   V   I   SSSSS U   U   A   L           (v 6.2.2006)
V   V   I   SS   U   U   A A   L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A   L
VV    I   SSSSS UUUUU A   A   LLLLL

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000   TTTTT TTTTT H   H   Y   Y   M   M   000   TM
O   O   T   T   H   H   Y   Y   MM  MM  O   O
O   O   T   T   H   H   Y   M   M   O   O
000   T   T   H   H   Y   M   M   000

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***** D E T A I L E D O U T P U T *****

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\vo2\voin.dat
 Output filename: C:\Users\Francis\AppData\Local\Civica\H5\b4e0c8d5-b9e7-4938-b70a-c32e6ad61fb3\ac840bc3-77
 Summary filename: C:\Users\Francis\AppData\Local\Civica\H5\b4e0c8d5-b9e7-4938-b70a-c32e6ad61fb3\ac840bc3-77

DATE: 07-30-2021 TIME: 10:04:55

USER:

COMMENTS: _____

 ** SIMULATION : Hazel **

```

-----
| READ STORM | Filename: C:\Users\Francis\AppData\Local\Temp\
| Ptotal=212.00 mm | a4a79f7f-b389-42b3-abdb-cfbfc5110bd2\89e2e223
| | Comments: Hazel
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
1.00	6.00	4.00	13.00	7.00	23.00	10.00	53.00
2.00	4.00	5.00	17.00	8.00	13.00	11.00	38.00
3.00	6.00	6.00	13.00	9.00	13.00	12.00	13.00

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-----
| CALIB |
| STANDHYD ( 0001) | Area (ha)= 2.89
| ID= 1 DT= 5.0 min | Total Imp(%)= 98.00 Dir. Conn.(%)= 35.00
-----

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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.84	0.06
Dep. Storage (mm)=	1.00	1.50
Average Slope (%)=	1.00	2.00
Length (m)=	138.91	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00

1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 1715.00
over (min) 5.00 10.00
Storage Coeff. (min)= 4.01 (ii) 6.91 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.14

PEAK FLOW (cms)= 0.15 0.28 *TOTALS*
TIME TO PEAK (hrs)= 10.00 10.00 0.425 (iii)
RUNOFF VOLUME (mm)= 211.00 208.53 209.39
TOTAL RAINFALL (mm)= 212.00 212.00 212.00
RUNOFF COEFFICIENT = 1.00 0.98 0.99

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
Fo (mm/hr)= 50.00 K (1/hr)= 2.00
Fc (mm/hr)= 7.50 Cum.Inf. (mm)= 0.00
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

FINISH
=====

APPENDIX B - SAMPLE CALCULATION

ON-SITE PONDING STORAGE CALCULATION

Eastern Power Inc.
Hydrogen Ready Power Project
On-Site Ponding Storage Calculation
Prepared by: FCI

Ponding ID	Area (m ²)	Ponding Volume (m ³)
CB1,2,3,4,5	9829.3	982.9
CB9	1092.4	109.2
CB13	2663.7	266.4
Total	13585.3	1358.5

Catch Basin	Length	Width	Depth	Radius	Half Circle	Volume (m3)
CB1	0.610	0.610	1.219	0.305	0.059423487	0.5
CB2	0.610	0.610	2.29	0.305	0.059423487	0.9
CB3	0.610	0.610	1.219	0.305	0.059423487	0.5
CB4	0.610	0.610	2.29	0.305	0.059423487	0.9
CB5	0.610	0.610	1.219	0.305	0.059423487	0.5
CB6	0.610	0.610	1.219	0.305	0.059423487	0.4
CB7	0.610	0.610	1.219	0.305	0.059423487	0.5
CB8	0.610	0.610	1.219	0.305	0.059423487	0.5
CB9	0.610	0.610	2.29	0.305	0.059423487	0.9
CB10	0.610	0.610	1.219	0.305	0.059423487	0.5
CB11	0.610	0.610	1.219	0.305	0.059423487	0.5
CB12	0.610	0.610	1.219	0.305	0.059423487	0.5
CB13	0.610	0.610	2.29	0.305	0.059423487	0.9
CB14						0.0
CB15						0.0
CB16						0.0
CB17	0.610	0.610	1.219	0.305	0.059423487	0.5
Catch Basin Total Volume						8.6

Manhole	Depth	Radius	Volume (m3)
MH1	2.083	0.500	1.6
MH2	2.388	0.500	1.9
MH3	2.72	0.500	2.1
MH4	2.366	0.500	1.9
MH5	2.388	0.500	1.9
MH6	2.434	0.500	1.9
MH7	2.845	0.500	2.2
Man Hole Total Volume			13.5

Pipe Segment (m)	Diameter (m)	Area (m ²)	Volume (m ³)
246.5	0.366	0.105	25.99
147.4	0.448	0.158	23.21
4.5	0.150	0.018	0.08
217.5	0.298	0.070	15.17
16.5	0.597	0.280	4.62
Storm Sewer Pipe Total Volume			69.08

Total Ponding	1358.5 m ³
Total CB system	91.2 m ³
TOTAL VOLUME	1449.8 m³