SERVICING & STORMWATER MANAGEMENT IMPLEMENTATION REPORT

428 LITTLE AVENUE

428 LITTLE INC.
CITY OF BARRIE, COUNTY OF SIMCOE

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CROZIER
CONSULTING ENGINEERS

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1.0 INTRODUCTION

C.F. Crozier & Associates Inc. (Crozier) was retained by 428 Little Inc. (Client) to prepare a Servicing and Stormwater Management Implementation Report and accompanying design drawings to support the Zoning By-Law Amendment and Site Plan Approval Applications for the development of 428 Little Avenue in the City of Barrie, County of Simcoe. The location of the proposed development is reflected on the key plan of Drawing 101A and the enclosed Site Plan prepared by Peter Higgins Architect Inc. included as Figure 1.

The 2.05 ha property is located at 428 Little Avenue and 237 Foster Drive in the City of Barrie, County of Simcoe herein referred to as the Subject Property. The site is bounded by a GO Transit (Metrolinx) railway corridor and Hurst Drive to the northeast, existing residential and park lands to the southwest, Foster Drive unopened right-of-way to the north and Little Avenue to the south.

2.0 SITE DESCRIPTION AND BACKGROUND

The subject development lands are currently characterized as undeveloped woodlot zoned R1, R2, R3, and R4. The proposed development is to be zoned RM2 and will consists of 50 townhouse units and 6 stacked townhome units (for a total of 56 residential units), an internal private roadway, above ground parking spaces, landscaped areas, bioretention cells, underground storage and a stormwater management attenuation pond. Refer to Figure 1 for the Site Plan.

The Subject Property is located in proximity to the boundary between Whiskey Creek and Lovers Creek subwatersheds. Due to changes in topography surrounding the site, there have been several variations in the delineation of the boundary. Further details regarding the subwatershed boundaries can be found in the Pre-Development Drainage Analysis prepared by Crozier (September 2018).

The soil type identified on the site using Simcoe County Soils Mapping (1959) is Sargent (Class AB), a gravelly sandy loan and Bondhead (Class AB), a sandy loam. Overall drainage from the site, with respect to the hydrologic soils group, is good. The subsurface conditions were determined to be mostly comprised of topsoil with sand and silt underlying based on the geotechnical investigation performed by WSP.

There is an existing slope along the northeast property line adjacent to the Metrolinx railway corridor. A slope stability assessment and geotechnical investigation were performed by WSP, the draft report is dated May 16, 2018. Metrolinx is proposing an expansion to the GO Transit which would involve an additional rail line within their right-of-way. The preliminary plan for the expansion includes constructing a retaining wall along the proposed 428 Little Avenue development. This retaining wall will be on Metrolinx's property and is not part of the 428 Little Avenue development.

The following reports and documents were considered as part of the review:

- 428 Little Avenue – Pre-Development Drainage Analysis prepared by C.F. Crozier & Associates Inc. (September 21, 2018);
- Draft 428 Little Avenue Geotechnical Investigation Report, prepared by WSP (May 16, 2018);
- Draft Drainage Master Plan – City of Barrie, prepared by C.C. Tatham & Associates Ltd. (March 21, 2018);
- Foster Drive Area Sanitary Servicing and Stormwater Management Class Environmental Assessment Report, prepared by R.J, Burnside & Associates Ltd. (December 14, 2015);
- Comprehensive Stormwater Management Master Plan – City of Barrie, prepared by Aquafor Beech Ltd. (November 8, 2016);
- Watershed Development Guidelines, prepared by Lake Simcoe Conservation Authority (April 24, 2015);

- Technical Guidelines for Stormwater Management, prepared by Lake Simcoe Conservation Authority (September 2016);
- Barrie Creeks, Lovers Creek, and Hewitt's Creek Subwatershed Plan, prepared by Lake Simcoe Conservation Authority (2012);
- Storm Drainage and Stormwater Management Policies and Design Guidelines, prepared by City of Barrie (December 2017);
- Guidelines for New Development in Proximity to Railway Operations, prepared by J.R. Coulter Associates Ltd. (May 2013); and
- Record Drawings provided by the City of Barrie for Foster Drive, Hurst Drive and Little Avenue.

3.0 SITE ACCESS

Based on the proposed site plan, vehicular access to the site will be provided in two locations, Foster Drive and Little Avenue. The Client intends to acquire the remnant property for the Foster Drive Right-of-Way (ROW) to provide private access to the site. The Little Avenue access will be a full moves access onto Little Avenue. This access meets the set back from the railway corridor and provides adequate sight distance for vehicles exiting on Little Avenue. The internal roadway will be a 6.4m private road, super-elevated with a 2.0% cross slope for drainage.

4.0 SANITARY SEWAGE SYSTEM

4.1 Existing Sanitary Sewer Infrastructure

Based on a review of the as-built drawings received from the City of Barrie, prepared by McCormick Rankin Corporation (January 1st, 2003, Drawing No. 2003-01-PP11) as well as the available City of Barrie GIS Mapping, a 250 mm diameter sanitary sewer exists along the southern property boundary along Little Avenue. The sanitary sewer begins at Maclaren Avenue and conveys the sanitary flow eastward, toward Hurst Drive, and then southward along an easement through the 431 Little Avenue property. Municipal sanitary sewers are not anticipated to exist within the Foster Drive, Maclaren Avenue and Hurst Drive roadways along the northern, western and eastern property limits of the site respectively. Sanitary servicing options for this area were reviewed in the Foster Drive Area Sanitary Servicing and Stormwater Management Class Environmental Assessment Report, prepared by R.J, Burnside & Associates Ltd. (December 14, 2015).

4.2 Design Sanitary Flow

To determine the proposed sanitary design flows, the City of Barrie Sanitary Sewage Collection System Policies and Design Guidelines (October 2017) was used. A unit sewage flow of 225 L/C-day was used with occupancy densities of 2.34 persons/unit for townhouse units. Infiltration flow and a peaking factor were applied to the unit sewage flow to obtain the total estimated design sewage flow. A summary of the estimated sanitary design flows is presented in Table 1.

Table 1: Estimated Sanitary Design

Average Flow (L/s)	Peaking Factor	Infiltration Flow (L/s)	Peak Flow (L/s)
0.34	4.13	0.21	1.64

The proposed 200mm diameter sanitary service was sized to convey the estimated peak sanitary flow of 1.64 L/s for the development, as determined by the City of Barrie Sanitary Sewer Design Criteria. The sanitary design flow calculations are provided in Appendix A.

4.3 Proposed Sanitary Servicing

The proposed 200 mm diameter internal sanitary sewer will connect to the existing municipal sanitary sewer system along Little Avenue. A connection will be made to an existing manhole (13117) near the southeastern corner of the subject property. The sewage flow will continue to be conveyed south through the 250 mm diameter sanitary sewer through the 431 Little Avenue property. The proposed sanitary sewers installed within the development are graded towards the southeast corner of the site at a minimum of 0.40% slope per City of Barrie standards with the initial length on pipe sloped at a minimum 1.0%. The proposed sanitary sewer with individual service connections for each unit will be designed per the City of Barrie standards and will follow the general alignment of the road. The sanitary sewer design sheet is provided in Appendix A.

Any sanitary flow ultimately discharged into the sanitary trunk sewer from Coxmill Road to Yonge Street will require a charge of $5,149.85 per hectare as per the Pre-Consultation for Rezoning Memorandum by the City of Barrie dated June 16, 2017.

5.0 WATER SUPPLY

5.1 Existing Potable Water Supply Infrastructure

Potable water for the development will be supplied by the City of Barrie municipal water distribution system. Based on a review of the City of Barrie as-constructed drawings (Drawing No. 2003-01-PP11 by McCormick Rankin Corporation and Drawing No. 2003-07-PP4) an existing 150 mm diameter PVC watermain fronts a portion of the northwestern property limits within the Maclaren Avenue Right-of-Way to the west. In addition, a 150 mm diameter PVC watermain fronts the southern property limits along the Little Avenue Right-of-way. Both the Little Avenue and Foster Drive watermains are within pressure zone 2S (Reduced) per the City of Barrie Municipal Drinking Water Legislation Map (February 2019).

5.2 Design Water Demand

The water demands for the proposed development were calculated with reference to the City of Barrie Water Transmission and Distribution Policies and Design Guidelines (2017) and the MOE Design Guidelines for Drinking-Water Systems (2008). An average daily water demand of 225 L/C-day was used with an occupancy density of 2.34 persons/unit was used for townhouse units. Table 2 summarizes the estimated water demands. Appendix B contains the water demand calculations.

Table 2: Estimated Design Water Demand

Proposed Population	Average Daily Residential (L/s)	Max Day Peak Factor	Maximum Daily Demand (L/s)	Peak Hour Factor	Peak Hourly Demand (L/s)
131	0.34	2.75	0.94	4.13	1.41

Using the City of Barrie design criteria for domestic water demand, the estimated average day water demand and peak hourly demand for the site will be 0.34 L/s and 1.41 L/s, respectively.

As stated in the City of Barrie guidelines section 4.3.1., a fire flowrate of 76 L/s is required for residential single-family streets. The fire flowrate was also calculated based on the Ontario Building Code requirements and the Fire Underwriters survey to confirm the design flowrate. The maximum fire flowrate was determined to be 117 L/s per the Fire Underwriters Survey. Refer to Appendix B for detailed fire flow calculations. Therefore, the total design flow, based on the maximum daily flow and fire flow, for the proposed development is expected to be **118 L/s**.

5.3 Proposed Servicing Strategy

The site will be serviced via two connections, one connection to the existing 150 mm diameter watermain located within the Maclaren Avenue Right-of-Way and one connection to the existing 150 mm diameter watermain located within Little Avenue Right-of-Way. The two connections to the municipal watermain will create a loop throughout subject site and provide watermain looping as required by the City of Barrie Standards. The internal water distribution network is proposed to be composed of a 150 mm polyvinyl chloride pipe (PVC) water service. The proposed watermain will have individual service connection for each unit and will follow the alignment of the internal roadways as per City of Barrie Standards.

The watermain design is illustrated on the General Servicing Plans (DWG 101A & 101B).

6.0 UTILITIES

Telephone, gas, cable and electrical utilities are all available in the local area. Coordination for extension of and connection to existing services will be undertaken as development approvals advance as part detailed design and utility coordination.

7.0 PROPOSED STORMWATER MANAGEMENT AND SITE DRAINAGE

7.1 Stormwater Management Criteria

Management of stormwater and site drainage for the proposed development must comply with the following policies and standards:

- The City of Barrie Storm Drainage and Stormwater Management Policies and Design Guidelines (2017).
- Lake Simcoe Region Conservation Authority (LSRCA) Technical Guidelines for Stormwater Management (2016).
- Lake Simcoe Region Conservation Authority Phosphorus Offsetting Policy (LSPOP) (2017).
- The Ministry of the Environment and Conservation and Parks (MECP) Stormwater Management Planning and Design Manual (2003).

We note that as the proposed development is not located within a regulated area and the site discharges to an existing Municipal sewer/ constructed drain, approval from the Lake Simcoe Region Conservation Authority (LSRCA) is not specifically required; however, the site falls under the jurisdiction of the Lake Simcoe Protection Plan.

The stormwater management criteria for the Subject Site include:

- Water Quantity Control
  - Post-Development peak flows to be controlled to Pre-Development peak flow rates and 100-Year Post-Development peak flows to be controlled to 5-Year Pre-Development peak flow rates where discharging to Municipal storm sewer.
- Water Quality Control
  - MECP 'Enhanced Level Protection'.
- Water Balance
  - Maintain pre-development annual infiltration volume.
- Water Volume Control
  - Retention of the 25 mm storm event on site, from the total impervious areas from the new development.
- Phosphorus
  - Zero Export Target.
- Erosion Control
  - Provided during construction.

The treatment train approach using bioretention, underground storage, dry pond and downstream flow rate controls allows the development to achieve the criteria noted above. Table 3 below summarizes the stormwater management strategies used to achieve the criteria stated above, with further details and description provided in the following sections.

Table 3: Stormwater Management Strategy Summary

Quantity		
Criteria	Post-development to pre-development peak flow rates	100-year post-development to 5-year pre-development peak flow rates
Method	Storage within underground storage system with downstream control structure and level spreader.	Storage within attenuation pond with downstream control structure.
Required	Whiskey Creek **409 m³** storage for post to pre control	Lovers Creek **847 m³** storage for post to pre control
Provided	Whiskey Creek **511 m³** in underground storage system	Lovers Creek **946 m³** in attenuation pond
Quality		
Criteria	80% TSS Removal - Enhanced Level Protection	
Method	Bioretention facilities sized per MOE Water Quality Volume (WQV) per Table 3.2 of the Stormwater Management Planning and Design Manual (March 2003).	
Required	Whiskey Creek **16.3 m³** WQV	Lovers Creek **25.1 m³** WQV
Provided	Whiskey Creek **95.8 m³** total WQV via infiltration	Lovers Creek **175.7 m³** total WQV via infiltration

Table 3(Continued): Stormwater Management Strategy Summary

Water Balance		
Criteria	Maintain pre-development infiltration volumes	
Method	Infiltration of the runoff from a 10 mm precipitation event via Bioretention Facilities	
Required	Whiskey Creek **36 m³** (0.59ha x 10 mm x 0.61)	Lovers Creek **62 m³** (1.03 ha x 10 mm x 0.60)
Provided	Whiskey Creek **95.8 m³** total infiltration via Bioretention Facilities	Lovers Creek **175.7 m³** total infiltration via Bioretention Facilities
Volume Control		
Criteria	On-site retention of 25 mm.	
Method	Infiltration of 25 mm of precipitation over the impervious area via Bioretention Facilities	
Required	Whiskey Creek **85 m³** (0.34 ha x 25 mm)	Lovers Creek **150 m³** (0.60 ha x 25 mm)
Provided	Whiskey Creek **95.8 m³** total infiltration via Bioretention Facilities	Lovers Creek **175.7 m³** total infiltration via Bioretention Facilities
Phosphorus		
Criteria	Zero Export Target	
Method	Bioretention Facilities without underdrain (i.e. infiltration)	
Required	Whiskey Creek 0.0 kg/year Phosphorus Export	Lovers Creek 0.0 kg/year Phosphorus Export
Provided	60% Phosphorus Removal via infiltration and 25% Phosphorus Removal via Underground Storage 0.234 kg/yr Phosphorus Export 0.234 kg/yr x 2.5 x $35,000/ kg/yr = $ 20,475.00	60% Phosphorus Removal via infiltration and 10% Phosphorus Removal via Attenuation Pond 0.490 kg/yr Phosphorus Export 0.490 kg/yr x 2.5 x $35,000/ kg/yr = $ 42,875.00

*See Appendix D for detailed design calculations.

7.2 Existing Drainage Conditions

In order to accurately determine onsite drainage flow routes, Crozier undertook a review of the topographic survey of the subject site. The subject lands are currently undeveloped and forested with a north-eastern sloping topography. Currently the subject site receives external drainage from the single-family homes abutting the southwestern property limits. Runoff from the subject site discharges uncontrolled and overland toward the Metrolinx corridor along the north-eastern property limits. The corridor acts as a drainage channel and ultimately discharges the runoff to Whiskey Creek near the intersection of the railway corridor and Minet's Point Road.

Crozier previously undertook a comprehensive review of historic drainage conditions for the site and determined that prior to the construction of the railway corridor a large portion of the site drained to Lovers Creek. In the Pre-Development Drainage Memo prepared by Crozier (September 2018), it was recommended that these historic drainage conditions be restored. For the purposes of this report, the historic conditions as described in the September 2018 Crozier memo are considered the pre-development condition.

The pre-development drainage was discretized into two catchments labelled as Catchments 101 and 102. These catchments were delineated per the historic drainage areas with Catchment 101 draining to Lovers Creek and Catchment 102 draining to Whiskey creek. Both catchments are predominantly woodland. There are also two external catchments which drain onto the Subject Site. Catchment EXT-1 drains overland to Catchment 102 and ultimately to Whiskey Creek. Whereas Catchment EXT-2 drains overland to Catchment 101 and ultimately to Lovers Creek. Catchment EXT-1 is composed of single-family detached dwellings and EXT-2 is composed of single-family detached dwellings and parkland.

The pre-development drainage conditions of the site are illustrated on the Pre-Development Drainage Plan (Figure 2).

7.3 Proposed Drainage Conditions

The proposed development consists of 50 townhouse units and 6 stacked townhome units (for a total of 56 residential units), an internal private roadway, above ground parking, landscaped areas, bioretention cells, underground storage and a stormwater management attenuation pond. In reference to the Drainage Memorandum prepared by C.F. Crozier & Associates (September 2018), the post-development drainage is proposed to mimic the historical split drainage pattern.

7.3.1 Whiskey Creek

Catchment EXT-1 drains overland to the rear-yards of the buildings within catchment 203 where there is an interceptor swale, which also collects the rear-yard drainage from the proposed townhomes. The swale is connected to a series of catchbasins which are sized to collect the 100-year flows and overland flow paths are provided around the townhome buildings for the rainfall events exceeding the 100-year storm event. The rear-yard storm sewer is connected to the underground storage chamber which is located beneath the amenity space and parking spaces. In the front of the buildings, in Catchment 203, the front yards and driveways drain towards the private roadway. The roadway is superelevated towards the northeast where it drains to the bioretention facilities. The two bioretention facilities are connected with overflow catchbasins. The overflow catchbasins are designed to accommodate the 100-year flows. The catchbasins are connected to the storm sewer system and the underground chamber. The underground chamber discharges via an orifice plate installed on the downstream side of CBMH#4, to a level spreader which creates sheet flow that drains towards the Metrolinx Corridor. For storm events exceeding the 100-year event, overland flow routes are provided to Foster Drive and the Metrolinx corridor.

No grading or alterations are proposed for Catchment 202 which continues to drain overland towards the Metrolinx corridor.

The post-development drainage conditions of the site are illustrated on the Post-Development Drainage Plan (Figure 3)

7.3.2 Lovers Creek

Catchment EXT-2 drains overland to the rear-yards of the buildings within catchment 201 where there is an interceptor swale, which collects the rear-yard drainage from the proposed townhomes. The swale is connected to a series of catchbasins which are sized to collect the 100-year flows and overland flow paths are provided around the townhome buildings for the rainfall events exceeding the 100-year event. The rear-yard storm sewer is connected to the attenuation pond. In the front of the buildings, in Catchment 201, The front yards and driveways drain towards the private roadway. The roadway is superelevated towards the northeast where it drains to the bioretention facilities. The bioretention facilities have overflow catchbasins which are connected to a storm sewer located beneath the private roadway. The overflow catchbasins are designed to accommodate the 100-year flows. The attenuation pond controls the peak flows up to the 100-year event. The outlet from the attenuation pond is connected to the municipal storm sewer within Little Avenue. For storm events exceeding the 100-year event, an overland flow route and an emergency spillway are provided to Little Avenue.

The post-development drainage conditions of the site are illustrated on the Post-Development Drainage Plan (Figure 3)

7.4 Stormwater Quantity Control

The LSRCA and City guidelines were referenced to determine the hydrologic parameters for the various catchment areas. A site walk was conducted by Crozier to confirm land cover and drainage patterns under existing conditions and WSP's geotechnical report was reviewed to determine soil conditions. Based on the above, the hydrologic parameters for pre and post development conditions were determined and are summarized in Tables 4 and 5 below. The detailed hydrologic parameter sheets for each catchment area are included in Appendix C.

Table 4: Pre-Development Hydrologic Parameters

Catchment Description	101	102	EXT-1	EXT-2
Drainage Area (ha)	1.49	0.66	0.45	0.95
Total Imperviousness (%)	0.0	0.0	30	5
Directly Connected Imperviousness (%)	0.0	0.0	5	0.0
Curve Number (CN)[2]	54	54	70	65
Time to Peak (hrs)	0.22	0.63	---	0.31

1. Curve number presented as utilized in VO modeling. CN reflects composite curve number for rural catchments modeled using NASHYD routine and curve number for pervious areas only for urban catchments using STANDHYD routine.

Table 5: Post-Development Hydrologic Parameters

Catchment Description	201	202	203	EXT-1	EXT-2
Drainage Area (ha)	1.03	0.53	0.59	0.45	0.95
Total Imperviousness (%)	50	0	60	30	0.0
Directly Connected Imperviousness (%)	30	0	30	5	0.0
Curve Number (CN)[2]	70	54	70	70	65
Time to Peak (hrs)	---	0.67	---	--	0.31

1. Curve number presented as utilized in VO modeling. CN reflects composite curve number for rural catchments modeled using NASHYD routine and curve number for pervious areas only for urban catchments using STANDHYD routine.

Stormwater quantity control was determined to be a requirement for site based on LSRCA and City of Barrie requirements. Post to Pre-development peak flow control has been provided for Catchment 203, which is part of the Whiskey Creek subwatershed, and 100-year post to 5-year pre-development

peak flow control has been provided for Catchment 201, which is part of the Lovers Creek subwatershed and discharges to the municipal storm sewer.

Visual OTTHYMO was selected as the hydrologic model used for modelling the project. This model software is an accepted model by the LSRCA and is used on similar projects throughout southern Ontario. Pre-development and post-development model scenarios were created to model the hydrology of the existing and proposed site drainage. The model schematics, full modelling results and output files are included in Appendix C. The hydrology was modeled with the 24-hour SCS Type II, 12-hour SCS Type II, 6-hour SCS Type II and 4-hour Chicago synthetic storms to ensure the quantity control objectives were achieved for each of the design storms for each return period.

An existing conditions model was developed to determine target release rates for post-development conditions and the various synthetic storms were modelled. A summary of the pre-development peak flow rates for each catchment is provided below in Table 6.

Table 6: Pre-Development Peak Flow Rates

	Catchment / Return Period	Pre-Development Peak Flow Rate (m^3/s)	
		Whiskey Creek	Lovers Creek
24-hr SCS Type II	2-yr	0.026	0.044
	5-yr	0.048	0.088
	10-yr	0.066	0.123
	25-yr	0.088	0.172
	50-yr	0.107	0.213
	100-yr	0.126	0.255
12-hr SCS Type II	2-yr	0.024	0.036
	5-yr	0.044	0.075
	10-yr	0.060	0.106
	25-yr	0.081	0.150
	50-yr	0.099	0.186
	100-yr	0.116	0.224
6-hr SCS Type II	2-yr	0.023	0.033
	5-yr	0.046	0.074
	10-yr	0.063	0.107
	25-yr	0.087	0.155
	50-yr	0.106	0.194
	100-yr	0.126	0.237
4-hr Chicago	2-yr	0.016	0.020
	5-yr	0.030	0.042
	10-yr	0.042	0.061
	25-yr	0.058	0.089
	50-yr	0.070	0.112
	100-yr	0.083	0.137

In order to mitigate the increase in peak flow rates due to the effects of urbanization, storage for stormwater runoff is required for the urban catchments. Catchments 201 and 203 were modelled with reservoirs to attenuate the peak flow rates and the required storage volumes were determined. Model outputs and a flow rate summary are included in Appendix C.

To ensure sufficient storage and peak flow attenuation were being provided, a stage-storage-discharge relationship was developed for the storage and outlet structures for both the underground storage chambers provided for the Whiskey Creek catchment and the attenuation pond provided for the Lovers Creek Catchment. These relationships were input into the VO model as route reservoir routines. The results are summarized in Table 7 below and the model output and stage-storage-discharge calculations are provided in Appendix C.

Table 7: Summary of "Post to Pre" Peak Flows and Storage Requirements

Whiskey Creek – Underground Storage				
Return Period (Years)	**Peak Flow Rate**		**Stormwater Management Facility**	
	Pre (m^3/s)	**Post (Controlled) (m^3/s)**	**Water Surface Elevation (masl)**	**Max Storage Volume (m^3)**
2	0.026	0.022	244.77	108
5	0.048	0.036	244.87	174
10	0.066	0.044	244.95	225
25	0.088	0.054	245.06	296
50	0.107	0.062	245.15	352
100	0.126	0.069	245.24	409
Regional				
Spill Elevation	N/A	N/A	245.46	N/A
Lovers Creek – Attenuation Pond				
Return Period (Years)	**Peak Flow Rate**		**Stormwater Management Facility**	
	Pre (m^3/s)	**Post (Controlled) (m^3/s)**	**Water Surface Elevation (masl)**	**Max Storage Volume (m^3)**
2	0.044	0.014	241.69	176
5	0.088	0.017	241.94	319
10	0.123	0.018	242.10	427
25	0.172	0.019	242.32	583
50	0.213	0.020	242.49	713
100	0.255	0.021	242.64	847
Regional			242.83	
Spill Elevation	N/A	N/A	242.80	N/A

*Based on the 24 Hour SCS Type II Storm Distribution

As indicated in Table 7, the 100-year high water level is below the emergency spillway invert for the attenuation pond and spill elevation for the underground storage system while still meeting quantity control requirements.

The outlet structure for the attenuation pond is composed of a hickenbottom riser to allow full drainage of the pond and prevent debris from entering the system that could plug the orifice control. The hickenbottom riser connects to a ditch inlet catchbasin which has its inlet 0.5m above the base of the pond. The catchbasin provides redundancy in the event that the hickenbottom riser should become plugged. An orifice plate is located on the downstream side of the catchbasin with an 85mm diameter orifice. The catchbasin is connected to the municipal storm sewer within Little Avenue.

The outlet structure for the underground storage is composed of an orifice plate located within a downstream control manhole. The orifice plate has 80mm and 140mm diameter orifices. The control manhole is connected to a level spreader which converts the discharge to sheet flow which drains towards the Metrolinx corridor replicating pre-development conditions.

7.5 Stormwater Quality Control

Per the City of Barrie standards, on-site stormwater quality control is required for the site. Water quality treatment is based on providing "enhanced level" treatment criteria (provide an annual total suspended solids removal efficiency of 80%) per the Ministry of Environment (MOE) Stormwater Management Planning & Design Manual (2003).

A preliminary screening of the most practical stormwater quality measures to implement on-site was undertaken. The use of bioretention cells, or similar Low Impact Development techniques, are the most practical quality control measure due to the nature of the expected runoff on the site and Agency requirements. The bioretention cells will be located at varying locations on the eastern strip of the site and provide treatment of the stormwater runoff from the impervious areas of the subject site.

Yard and portions of rooftop areas have not been directed to the bioretention facilities since the runoff from these areas is generally considered as 'clean' water. The bioretention facilities have been sized per the site volume control criteria which exceeds the water quality requirement for quality control. Please refer to Table 8 for the water quality volume requirements.

Table 8: Water Quality Volume

Subwatershed	Impervious Level	Catchment Area (ha)	MOE Water Quality Volume Required (m^3)	Infiltration Volume Provided (m^3)
Whiskey Creek	54%	0.48	16.3	95.8
Lovers Creek	52%	0.72	25.1	175.7
Total	**50%**	**1.20**	**41.4**	**271.5**

*Rear yard and roof top areas are considered Clean Water and are not included in the Water Quality Volume Calculation

7.6 Water Balance

The proposed development design included a water balance analysis and mitigation system, as per LSRCA Guidelines. Supporting documentation for the water balance is provided in Appendix D. A water balance assessment was completed for both the Whiskey Creek and Lovers Creek Catchments. Refer to Appendix D for the detailed water balance assessment. The results of the assessment are summarized in Table 9 below.

Table 9: Water Balance

Subwatershed	Pre-Development Infiltration Volume (m^3/yr)	Post-Development Infiltration Volume (m^3/yr)	Mitigation Infiltration Volume (m^3/yr)	Mitigation Sizing Design Storm (mm)	Mitigation Sizing Volume (m^3)	Infiltration Volume Provided (m^3)
Whiskey Creek	994	333	703	10	62	176
Lovers Creek	1,736	584	1,224	10	36	96
Total	**2,730**	**917**	**1,927**	**10**	**98**	**272**

The Geotechnical Investigation performed by WSP (May 2018) identified the subsurface soil to be predominantly sand and silt fill underlain by silty sand to silt till. An infiltration rate of 41mm/hr was used for design based on the Geotechnical Addendum Letter prepared by WSP (August 2018). Ground water was not encountered within any of the 6-meter-deep boreholes. The groundwater was estimated to be located 6 meters below the surface to ensure that the infiltration practices provide a 1-meter separation until further monitoring has been completed. The water balance objective is achieved via the bioretention facilities. These facilities have been sized per the volume control criteria which exceeds the water balance objective.

7.7 Volume Control

Per the LSRCA Stormwater Management Guidelines, volume control is required for developments that create more than 0.5 ha of new impervious area. As such a volume control target of 25 mm from precipitation events will be retained from all impervious areas. The volume control criteria was used to size all of the bioretention facilities throughout the proposed development. Each bioretention facility has been sized per the contributing impervious area. Table 10 below summarizes the bioretention sizing to meet the volume control criteria. Refer to Appendix D for detailed calculations.

Table 10: Volume Control Mitigation Sizing

Bioretention ID	Contributing Impervious Area (m^2)	Volume Control Infiltration Target (m^3)	Infiltration Volume Provided (m^3)
Whiskey Creek			
1	1,320	33	37
2	2,110	53	59
Total	**3,430**	**86**	**96**
Lovers Creek			
3	2,470	62	82
4	1,760	44	46
5	1,020	26	28
6	720	18	20
Total	**5,970**	**149**	**176**

7.8 Phosphorus

Due to high levels of phosphorus in Lake Simcoe, the change in phosphorus loading was examined to determine the difference between pre and post development loadings. Mitigation efforts have been made to the proposed site design to reduce the annual Total Phosphorus (TP) load, as per LSRCA Phosphorus Offset Policy.

The use of the dry pond, underground storage and infiltration (provided via the bioretention facilities) will allow the proposed development to mitigate the phosphorus loading as a best efforts attempt. Per the LSRCA guidelines and the MECP's Lake Simcoe Phosphorus Loading Development Tool, infiltration measures provide 60%, dry detention ponds provide 10% and underground storage provides 25% phosphorus removal efficiency. Detailed calculations regarding phosphorus loadings are provided in Appendix D. Table 11 below summarizes the phosphorus loading for the proposed development.

Table 11: Phosphorus

Subwatershed	Phosphorus Export Target (kg/yr)	Post-Development Phosphorus Loading without Mitigation (kg/yr)	Post Development Phosphorus Loading with Mitigation (kg/yr)
Whiskey Creek	0.0	0.779	0.234
Lovers Creek	0.0	1.360	0.490
Total	**0.0**	**2.139**	**0.724**

8.0 EROSION AND SEDIMENT CONTROLS

Erosion and sediment controls will be implemented prior to the commencement of any site servicing works and maintained throughout construction until the site is stabilized or as directed by the Engineer, LSRCA and/or The City of Barrie. Controls are to be inspected regularly, after each significant rainfall, and maintained in proper working condition. The proposed erosion and sediment controls include silt fencing, silt sacks, dust suppression, and mud mats. Refer to DWG 104 for the Erosion and Sediment Control Plan. The need for additional controls will be based on the field conditions, at the discretion of the Engineer and implemented as necessary.

- **Silt fencing:** Silt fence will be installed where required to intercept sheet flow. Heavy duty silt fence will be located around the downstream side of the work zone limits. It should be noted that additional silt fencing may be added based on field decisions by the Site Engineer and Owner prior to, during and following construction.

- **Silt Sacks:** The silt sacks will be installed in all catchbasins prior to and maintained during construction.

- **Stone Mud Mat:** A mud mat will be maintained at the site entrance until base asphalt is placed to limit mud tracking from the site onto Little Avenue and the surrounding municipal roadway network. The Contractor shall ensure mud mat maintenance (cleaning / additional stone) is completed on an as needed basis to ensure proper operation.

- **Erosion Prevention:** During earthwork activities the General Contractor will ensure that the prevention of erosion of exposed soils. Possible measures include the use of straw mulch, erosion control blankets, or terraseeding.

- **Interceptor Swales:** Drainage will be conveyed by a series of interceptor ditches and swales. The drainage swales will be strategically placed onsite to direct runoff to the erosion and sediment controls. These swales will include flow check dams and rip-rap as required.

- **Excavated Sediment Trap:** Excavated sediment trap(s) or basins may be required to remove sediment from runoff before the runoff discharges to receiving conveyance routes.

- **Dust Suppression:** The Contractor will be responsible for ensuring dust suppression is maintained by the use of water or calcium chloride, or other methods approved by the Engineer as required.

9.0 CONCLUSIONS & RECOMMENDATIONS

Based on the foregoing we conclude that the proposed residential development can be adequately serviced.

1. Access to the site will be provided via Little Avenue and Foster Drive.

2. The 200 mm diameter internal sanitary sewer will connect to the existing 250 mm diameter sanitary sewer within Little Avenue.

3. A 150 mm diameter watermain internal to the development will connect to the existing 150 mm diameter watermain on Little Avenue and the existing 150 mm diameter watermain with Foster Drive to provide a looped system.

4. Existing utility plants are located in proximity to the site and utility providers have been contacted to confirm adequate capacity to service the proposed development.

5. Stormwater quantity objectives for the Whiskey Creek Catchment will be through the use of underground storage and orifice control to provide post to pre-development peak flow control. The stormwater discharge will pass through a level spreader and outlet to the Metrolinx corridor as sheet flow.

6. Stormwater quantity objectives for the Lovers Creek Catchment will be through the use of an attenuation pond and orifice control to provide 100-year post to 5-year pre-development peak flow control. The stormwater will discharge to the municipal storm sewer located within Little Avenue.

7. Stormwater quality objectives will be met using bioretention facilities to achieve 80% TSS removal to provide 'Enhanced Level Protection'.

8. Water balance targets will be met using bioretention facilities to maintain pre-development annual infiltration volumes.

9. Stormwater volume control objectives will be achieved using bioretention facilities to infiltrate 25 mm from impervious areas.

10. Phosphorus removal will provide best efforts through the use of various BMPs.

11. Erosion and sediment controls will be implemented prior to construction to minimize the disturbance of adjacent lands and watercourse caused by construction activities.

Based on the above, we recommend approval of the Zoning By-law Amendment and Site Plan Approval for the subject lands from the perspective of engineering servicing and stormwater management requirements.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.

Jim G. Koutroubis, P.Eng.
Associate

C.F. CROZIER & ASSOCIATES INC.

Mathew Lemieux, E.I.T.

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APPENDIX A

Sanitary Servicing Calculations

Demand Calculations
Sanitary Sewer Design Sheet

CROZIER
CONSULTING ENGINEERS

Project: 428 Little Avenue
Project No.: 0892-4560
Date: November 20, 2019
By: ML
Check By:

428 Little Avenue - Sanitary Design Criteria

Developed Site Area		2.15	ha
Number of Residential Units			
Townhouse		56	units
	TOTAL:	**56**	**units**
Persons Per Residential Unit (City of Barrie Design Guidelines)			
Townhouse		2.34	persons/unit
Residential Population		131	persons
Unit Sewage flows			
Residential (City of Barrie Design Guidelines)		225	L/C-day
Infiltration (City of Barrie Design Guidelines)		0.1	L/s/ha
Total Design Sewage Flows			
Infiltration/Inflow Residential		0.22	L/sec
Average Daily Residential Flow		0.34	L/sec
Residential Peak Factor	(Harmon Formula)	4.13	
Total Peak Daily Flow		**1.62**	**L/sec**

428 Little Avenue

0892-4560

SANITARY SEWER DESIGN SHEET

CROZIER CONSULTING ENGINEERS

Unit Type	PPU
Single & Semi Detached	
Townhome & Appartment	2.34

Mannings "n":	0.013
Peak Factor (M):	1+(14/4+(P/1000)^0.5)
Residential Avg. Daily/Capita Flow (L/cap.d):	225
Commercial Avg. Daily/Capita Flow (m^3/ha.d):	28
Institutional Avg. Daily/Capita Flow (L/s.UNIT):	1000
Infiltration Q (L/ha.s):	0.1

DESIGNED BY:	ML
CHECKED BY:	
DATE:	2019.11.20
REVISION NO.:	0
REVISED BY:	
DATE:	

CATCHMENT I.D.	FROM MH NO	TO MH NO	AREA (Ha)	TOWNHOME/APARTMENT UNITS	POP.	TOTAL TRIB. POP.	RESIDENTIAL PEAK FACTOR	RESIDENTIAL AVG. FLOW (l/s)	MAX FLOW (l/s)	INFILT. (l/s)	TOTAL INFILT. (l/s)	TOTAL FLOW (l/s)	LENGTH (m)	PIPE DIAM. (mm)	UPPER INV. EL.	LOWER INV. EL.	UPPER OBV. EL.	LOWER OBV. EL.	SLOPE (%)	CAP. (l/s)	CAP. (%)	FULL FLOW VELOCITY (m/s)	GROUND UPPER	GROUND LOWER	COVER UPPER	COVER LOWER
1	MH#6	MH#5	0.28	4	9	9	4.42	0.02	0.11	0.03	0.03	**0.14**	27.3	200	243.67	243.40	243.87	243.60	1.00%	**32.80**	**0.41%**	1.04	246.14	246.05	2.27	2.45
2	MH#5	MH#4	0.59	19	44	54	4.31	0.14	0.60	0.06	0.09	**0.69**	107.8	200	243.37	242.83	243.57	243.03	0.50%	**23.19**	**2.98%**	0.74	246.05	247.18	2.48	4.15
3	MH#4	MH#3	0.39	11	26	80	4.27	0.21	0.88	0.04	0.13	**1.01**	65.9	200	242.80	242.47	243.00	242.67	0.50%	**23.19**	**4.36%**	0.74	247.18	245.89	4.18	3.22
4	MH#3	MH#2	0.67	20	47	126	4.21	0.33	1.39	0.07	0.19	**1.58**	105.3	200	242.24	241.19	242.44	241.39	1.00%	**32.80**	**4.82%**	1.04	245.89	243.84	3.45	2.45
5	MH#2	MH#1	0.07	2	5	131	4.21	0.34	1.44	0.01	0.20	**1.64**	8.3	200	241.16	241.08	241.36	241.28	1.00%	**32.80**	**4.99%**	1.04	243.84	243.70	2.48	2.42
6	MH#1	Ex. MH	0.15	0	0	131	4.21	0.34	1.44	0.02	0.22	**1.65**	31.6	200	241.05	240.73	241.25	240.93	1.00%	**32.80**	**5.04%**	1.04	243.70	243.63	2.45	2.70

APPENDIX B

Domestic Water

Demand Calculations
Fire Flow Calculation

CROZIER
CONSULTING ENGINEERS

Project: 428 Little Avenue
Project No.: 0892-4560
Date: November 20, 2019
By: ML
Check By:

428 Little Avenue - Water Design Criteria

Developed Site Area		2.15	ha
*Number of Residential Units			
Townhouse		56	units
	TOTAL:	**56**	**units**
Persons Per Residential Unit (City of Barrie Design Guidelines)			
Townhouse		2.34	persons/unit
Residential Population		131	persons
Domestic Water Design Flows			
Residential (City of Barrie Design Guidelines)		225	L/C-day
Total Domestic Water Design Flows			
Average Residential Daily Flow		0.34	L/sec
Max Day Peak Factor (per MOECC Design Guidelines 2008)		2.75	
Max Day Demand Flow		**0.94**	L/sec
Peak Hour Factor (per MOECC Design Guidelines 2008)		4.13	
Peak Hour Flow		**1.41**	L/sec
Fire Flow Demand (per City of Barrie Guidelines)		76	L/sec
Fire Flow Demand (per Fire Underwriters Survey)		76	L/sec
Fire Flow Demand (per OBC)		76	L/sec
Design Flow (per City of Barrie Guidelines)		***76.94***	L/sec

CROZIER & ASSOCIATES
Consulting Engineers

Project.: 428 Little Avenue
Project No.: 892-4560
File.: Fire Flow Calcs
Date.: November 20, 2019

Fire Protection Volume Calculation Summary
428 Little Avenue

WATER SUPPLY FOR PUBLIC FIRE PROTECTION (1999)
FIRE UNDERWRITER'S SURVEY

Unit Block #	Total Floor Area (m²)	Flow (L/min)	Reduction (L/min)	Exposure Surcharge (L/min)	Required Flow (L/min)	Required Storage Volume (m³)	Required Flow (L/s)
Regular Units 3 storey	430	5,000	-750	2,550	7,000	840	117
Affordable Units 2 storey	481	5,000	-750	1,700	6,000	720	100

OFFICE OF FIRE MARSHAL
Part 3 of OBC

Unit Block #		K	Volume (m³)	S Tot	Required Flow (L/min)	Required Storage (OBC) (m³)	Required Flow (L/s)
Regular Units 3 storey		23	1,304	2.00	2,700	60	45
Affordable Units 2 storey		23	1,429	1.50	2,700	49	45

SUMMARY:

1) Fire Flow required per FUS **117** L/s
2) Fire flow required per Fire Marshal (OBC) 45 L/s

428 Little Avenue - Regular Units
Fire Protection Volume Calculation
CFCA File: 892-4560

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

1. An estimate of fire flow required for a given area may be determined by the formula:

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

where

F = the required fire flow in litres per minute
C = coefficient related to the type of construction
= 1.5 for wood frame construction (structure essentially all combustible)
= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
= 0.8 for non-combustible construction (unprotected metal structural components)
= 0.6 for fire-resistive construction (fully protected frame, floors, roof)
A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building considered.

Proposed Buildings — Ordinary construction

3	number of floors	1.0	C
143	sq.m. floor area		
430	sq.m. total floor area		

Therefore F= 5,000 L/min (rounded to nearest 1000 L/min)
("Value obtained in No. 1")

Fire flow determined above shall not exceed:

30,000	L/min for wood frame construction
30,000	L/min for ordinary construction
25,000	L/min for non-combustible construction
25,000	L/min for fire-resistive construction

2. Values obtained in No. 1 may be reduced by as much as 25% for occupancies having low contents fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Non-Combustible	-25%	Free Burning	15%
Limited Combustible	-15%	Rapid Buring	25%
Combustible	No Charge		

Low fire Hazard occupancy for dwellings	-15% reduction

-750 L/min reduction

"Value obtained in No. 2" 4,250

Note: Flow determined shall not be less than 2,000 L/min

3. Sprinklers - The value obtained in No. 2 above maybe reduce by up to 50% for complete automatic sprinkler protection.

Buildings will not have sprinklers (typical 30% reduction)
0 L/min reduction

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

4. Exposure - To the value obtained in No. 2, a percentage should be added for structures exposed within 45 metres by the fire area under consideration. The percentage shall depend upon the height, area, and construction of the building(s) being exposed, the separation, openings in the exposed building(s), the length and height of exposure, the provision of automatic sprinklers and/or outside sprinklers in the building(s) esposed, the occupancy of the exposed building(s) and the effect of hillside locations on the possible spread of fire.

Separation	Charge	Separation	Charge
0 to 3 m	25%	20.1 to 30 m	10%
3.1 to 10 m	20%	30.1 to 45 m	5%
10.1 to 20 m	15%		

Exposed buildings

Name		**Distance**		
North	Adjacent Dwelling	>45	0%	0
South	Adjacent Dwelling	21	10%	425
East	Adjacent Dwelling	0	25%	1,063
West	Adjacent Dwelling	0	25%	1,063
				2,550 L/min Surcharge

Determine Required Fire Flow

No. 2	4,250		
No. 3	0	reduction	
No. 4	2,550	surcharge	
Required Flow:	**6,800**	**L/min**	
Rounded to nearest 1000l/min:	**7,000**	**L/min**	or 116.7 L/s
			1,849 USGPM

Determine Required Fire Storage Volume

Flow from above	7,000	L/min
Required duration	2.00	hours
Therefore:	840,000	Litres or
	840	cu.m. is the required storage volume

Required Duration of Fire Flow

Flow Required L/min	Duration (hours)
2,000 or less	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 and over	9.5

Fire Protection Water Supply Guideline
Part 3 of the Ontario Building Code (2006)

$$Q = KVS_{TOT}$$

Q = minimum supply of water in litres (L)
K = water supply coefficient
V = total building volume in cubic metres
S_{TOT} = total of spatial coefficient values from property line exposures on all sides

K =	23	Group C building with non-combustible construction (Table 1)
V =	1304	Total building volume in cubic meters (9m tall)
S_{TOT} =	2	S_{TOT} Need Not Exceed 2.0

Q = 59991 L

Based on ranges listed in Table 2, the required minimum water supply flow rate is **2700 L/min**

45 L/s

428 Little Avenue - Affordable Units
Fire Protection Volume Calculation
CFCA File: 892-4560

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

1. An estimate of fire flow required for a given area may be determined by the formula:

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

where

F = the required fire flow in litres per minute
C = coefficient related to the type of construction
= 1.5 for wood frame construction (structure essentially all combustible)
= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
= 0.8 for non-combustible construction (unprotected metal structural components)
= 0.6 for fire-resistive construction (fully protected frame, floors, roof)
A = The total floor area in square metres (including all storeys, but excluding basements at least 50 percent below grade) in the building considered.

Proposed Buildings		Ordinary Construction
2	number of floors	1.0 C
241	sq.m. floor area	
481	sq.m. total floor area	

Therefore F= 5,000 L/min (rounded to nearest 1000 L/min)
("Value obtained in No. 1")

Fire flow determined above shall not exceed:

30,000	L/min for wood frame construction
30,000	L/min for ordinary construction
25,000	L/min for non-combustible construction
25,000	L/min for fire-resistive construction

2. Values obtained in No. 1 may be reduced by as much as 25% for occupancies having low contents fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Non-Combustible	-25%	Free Burning	15%
Limited Combustible	-15%	Rapid Buring	25%
Combustible	No Charge		

Low fire Hazard occupancy for dwellings	-15% reduction

-750 L/min reduction

"Value obtained in No. 2" 4,250 L/min

Note: Flow determined shall not be less than 2,000 L/min

3. Sprinklers - The value obtained in No. 2 above maybe reduce by up to 50% for complete automatic sprinkler protection.

Building will not have sprinklers (typical 30% reduction)
0 L/min reduction

Water Supply for Public Fire Protection - 1999
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

4. Exposure - To the value obtained in No. 2, a percentage should be added for structures exposed within 45 metres by the fire area under consideration. The percentage shall depend upon the height, area, and construction of the building(s) being exposed, the separation, openings in the exposed building(s), the length and height of exposure, the provision of automatic sprinklers and/or outside sprinklers in the building(s) esposed, the occupancy of the exposed building(s) and the effect of hillside locations on the possible spread of fire.

Separation	Charge	Separation	Charge
0 to 3 m	25%	20.1 to 30 m	10%
3.1 to 10 m	20%	30.1 to 45 m	5%
10.1 to 20 m	15%		

Exposed buildings

Name		**Distance**		
North	Adjacent Dwelling	>45	0%	0
South	Adjacent Dwelling	12	15%	638
East	Adjacent Dwelling	2	25%	1,063
West	Adjacent Dwelling	>45	0%	0
				1,700 L/min Surcharge

Determine Required Fire Flow

No. 2	4,250		
No. 3	0	reduction	
No. 4	1,700	surcharge	
Required Flow:	**5,950**	**L/min**	
Rounded to nearest 1000l/min:	**6,000**	**L/min**	or 100.0 L/s, 1,585 USGPM

Determine Required Fire Storage Volume

Flow from above	6,000	L/min	
Required duration	2.00	hours	
Therefore:	720,000	Litres or	
	720	cu.m.	is the required storage volume

Required Duration of Fire Flow

Flow Required L/min	Duration (hours)
2,000 or less	1.0
3,000	1.25
4,000	1.5
5,000	1.75
6,000	2.0
8,000	2.0
10,000	2.0
12,000	2.5
14,000	3.0
16,000	3.5
18,000	4.0
20,000	4.5
22,000	5.0
24,000	5.5
26,000	6.0
28,000	6.5
30,000	7.0
32,000	7.5
34,000	8.0
36,000	8.5
38,000	9.0
40,000 and over	9.5

Fire Protection Water Supply Guideline
Part 3 of the Ontario Building Code (2006)

$$Q = KVS_{TOT}$$

Q = minimum supply of water in litres (L)
K = water supply coefficient
V = total building volume in cubic metres
S_{TOT} = total of spatial coefficient values from property line exposures on all sides

K =	23	Group C building with combustible construction (Table 1)
V =	1429	Total building volume in cubic meters (6m height)
S_{TOT} =	1.5	S_{TOT} Need Not Exceed 2.0

Q = 49294 L

Based on ranges listed in Table 2, the required minimum water supply flow rate is **2700 L/min**

45 L/s

APPENDIX C

Hydrologic Modelling

Hydrologic Parameter Sheets
Pre-development Schematic
Pre-development Flow Summary
Pre-development VO Output
Post-development Schematic
Whiskey Creek Underground Storage – Stage-Storage-Discharge
Lovers Creek Attenuation Pond – Stage-Storage-Discharge
Post-development Flow Summary
Post-development VO Output

CROZIER
CONSULTING ENGINEERS

Project Name: Little Avenue
Project Number: 0892-4560
Date: 21-Nov-19
By: ML
Checked by:

Pre Development

			Calculated			Modified/Modelled			
Subcatchment	OTTHYMO Command	Area (ha)	Curve Number			Curve Number			Modifed Impervious Area (ha)
				%X imp (%)	%T imp (%)		%X imp (%)	%T imp (%)	
101	NASH	1.49	54	0%	0%	54	0%	0%	0.00
102	NASH	0.66	54	0%	0%	54	0%	0%	0.00
Total		2.15							0.00

Post Development

			Calculated			Modified/Modelled			
Subcatchment	OTTHYMO Command	Area (ha)	Curve Number / RC			Curve Number			Modifed Impervious Area (ha)
				%X imp (%)	%T imp (%)		%X imp (%)	%T imp (%)	
201	STAND	1.03	70	25%	50%	70	30%	50%	0.52
202	NASH	0.53	54	0%	0%	54	0%	0%	0.00
203	STAND	0.59	70	30%	55%	70	30%	60%	0.35
Total		2.15							0.87

External

			Calculated			Modified/Modelled			
Subcatchment	SWMHYMO Command	Area (ha)	Curve Number / RC			Curve Number			Modifed Impervious Area (ha)
				%X imp (%)	%T imp (%)		%X imp (%)	%T imp (%)	
EXT 1	STAND	0.45	70	3%	30%	70	5%	30%	0.14
EXT 2	NASH	0.95	63.5	0%	3%	65	0%	5%	0.05
Total		1.40							0.18

CROZIER CONSULTING ENGINEERS

Project Name:	428 Little Avenue	**D.A.**	**101**
Project Number:	892-4560	**D.A.**	**1.49**
Date:	2019-11-21		
By:	ML		
Checked by:			

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment 101

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Bondhead & Sargent Sandy Loam & Gravelly Sandy Loam	bs/stsl	AB	100	1.49
Total Area				1.49

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl		98		98		98		98		98	0	0
Subtotal	0		0		0		0		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl	1.49	54	0.00		0.00		0.00		0.00		1.49	80.5
Subtotal	1.49		0.00		0.00		0.00		0.00			

Composite Area Calculations	Total Pervious Area	1.49	
	Total Impervious Area	0	
	% Impervious	0.00%	
	Composite Curve Number	54.0	
	Total Area Check	1.49	

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Bondhead &		Sandy Loam &		Gravelly Sandy		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	1.49	14.9	0.10	1		0		0		0	0.15
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0
Cultivated	7	0	0		0		0		0		0	0
Impervious	2	0	0		0		0		0		0	0
Composite		1.49	10	Composite Runoff Coefficient								0.10

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Sheet Flow	129	8.5	6.6%	0.6	0.15	0.23	0.16	0.16	0.08	0.05	0.33	0.22

Appropriate calculated time to	0.22	Appropriate Method:	Airport

CROZIER CONSULTING ENGINEERS

Project Name:	428 Little Avenue	**D.A.**	**102**
Project Number:	892-4560	**D.A.**	**0.66**
Date:	2019-11-21		
By:	ML		
Checked by:			

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment 102

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Bondhead & Sargent Sandy Loam & Gravelly Sandy Loam	bs/stsl	AB	100	0.66
Total Area				0.66

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl		98		98		98		98		98	0	0
Subtotal	0		0		0		0		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl	0.66	54	0.00		0.00		0.00		0.00		0.66	35.6
Subtotal	0.66		0.00		0.00		0.00		0.00			

Composite Area Calculations	Total Pervious Area	0.66	
	Total Impervious Area	0	
	% Impervious	0.00%	
	Composite Curve Number	54.0	
	Total Area Check	0.66	

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Bondhead &		Sandy Loam &		Gravelly Sandy		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.66	6.6	0.10	1		0		0		0	0.07
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0
Cultivated	7	0	0		0		0		0		0	0
Impervious	2	0	0		0		0		0		0	0
Composite		0.66	10	Composite Runoff Coefficient								0.10

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Sheet Flow	105	4.5	4.3%	0.6	0.12	0.23	0.16	0.16	0.38	0.25	0.94	0.63
Concentrate	324	3.0	0.9%	0.6	0.06	1.56	1.04	1.20				

Appropriate calculated time to	0.63	Appropriate Method:	Airport

CROZIER CONSULTING ENGINEERS

Project Name:	428 Little Avenue	**D.A. NAME**	**201**
Project Number:	892-4560	**D.A. AREA (ha)**	**1.03**
Date:	21-Nov-19		
By:	ML		
Checked By:			

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment 201

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Bondhead & Sargent Sandy Loam and Gravely	bs/stsl	AB	100	1.03
Total Area Check				1.03

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
bs/stsl	0.15	98	0.05	98	0.07	98	0.26	98		98	0.52	50.9
Subtotal Area	0.15		0.05		0.07		0.26		0			

Pervious Landuses Present:

	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
bs/stsl	0		0		0		0.51	70	0		0.51	35.7
Subtotal Area	0		0		0		0.51		0			

	Pervious Area Calculations	Total Pervious Area	0.51
		Composite Pervious Curve Number	70
	Impervious Area Calculations	Total Directly Connected Area	0.26
		Total Indirectly Connected Area	0.26
		Total Impervious Area	0.52
		% X imp	25%
		% T imp	50%
		Total Area Check	1.03

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.51	2.6
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	6	0.035
Impervious	2.0	2	83	0.013

Project Name:	428 Little	**D.A. NAME**	**202**
Project Number:	892-4560	**D.A. AREA (ha)**	**0.53**
Date:	21-Nov-19		
By:	ML		
Checked by:			

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment 202

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Bondhead & Sargent Sandy Loam and Grave	bs/stsl	AB	100	0.53
Total Area				0.53

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl		98		98		98		98		98	0	0
Subtotal	0		0		0		0		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl	0.53	54	0.00		0.00		0.00		0.00		0.53	28.6
Subtotal	0.53		0.00		0.00		0.00		0.00			

Composite Area Calculations	Total Pervious Area	0.53	
	Total Impervious Area	0	
	% Impervious	0.0%	
	Composite Curve Number	54	
	Total Area Check	0.53	

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
Landuse	IA (mm)	Area (ha)	A * IA	Bondhead &		Sandy Loam and		0		0		
				RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.53	5.30	0.10	1		0		0		0	0.05
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0
Cultivated	7	0	0		0		0		0		0	0
Impervious	2	0	0		0		0		0		0	0
Composite		0.53	10	Composite Runoff Coefficient								0.1

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Sheet Flow	346	3.5	1.0%	0.6	0.06	1.59	1.07	1.07	0.35	0.23	1.01	0.67

Appropriate calculated time to	0.67	Appropriate Method:	Airport

CROZIER CONSULTING ENGINEERS

Project Name:	428 Little Avenue	**D.A. NAME**	**203**
Project Number:	892-4560	**D.A. AREA (ha)**	**0.59**
Date:	21-Nov-19		
By:	ML		
Checked By:			

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment 203

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Bondhead & Sargent Sandy Loam and Gravely	bs/stsl	AB	100	0.59
Total Area Check				0.59

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
bs/stsl	0.10	98	0.03	98	0.05	98	0.15	98		98	0.33	31.9
Subtotal Area	0.10		0.03		0.05		0.15		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
bs/stsl	0		0		0		0.26	70	0		0.26	18.5
Subtotal Area	0		0		0		0.26		0			

Pervious Area Calculations	Total Pervious Area	0.26
	Composite Pervious Curve Number	70
Impervious Area Calculations	Total Directly Connected Area	0.18
	Total Indirectly Connected Area	0.15
	Total Impervious Area	0.33
	% X imp	30%
	% T imp	55%
	Total Area Check	0.59

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.26	1.32
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	6	0.035
Impervious	2.0	2	63	0.013

CROZIER CONSULTING ENGINEERS

Project Name:	428 Little Avenue	**D.A. NAME**	**EXT 1**
Project Number:	892-4560	**D.A. AREA (ha)**	**0.45**
Date:	21-Nov-19		
By:	ML		
Checked By:			

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment EXT 1

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Bondhead & Sargent Sandy Loam and Gravely	bs/stsl	AB	100	0.45
Total Area Check				0.45

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
bs/stsl		98		98	0.01	98	0.12	98		98	0.14	13.4
Subtotal Area	0		0		0.01		0.12		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
bs/stsl	0		0		0		0.31	70	0		0.31	21.9
Subtotal Area	0		0		0		0.31		0			

	Pervious Area Calculations	Total Pervious Area	0.31
		Composite Pervious Curve Number	70
	Impervious Area Calculations	Total Directly Connected Area	0.01
		Total Indirectly Connected Area	0.12
		Total Impervious Area	0.14
		% X imp	2.8%
		% T imp	30%
		Total Area Check	0.45

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.31	1.57
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	40	0.035
Impervious	2.0	2	55	0.013

Project	428 Little Avenue	**D.A.**	**EXT 2**
Project	892-4560	**D.A.**	**0.95**
Date:	2019-11-21		
By:	ML		
Checke			

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment EXT 2

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Bondhead & Sargent Sandy Loam & Gravelly Sandy Loam	bs/stsl	AB	100	0.95
Total Area				0.95

Impervious Landuses Present:												
	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl		98		98	0.01	98	0.02	98		98	0.03	2.9
Subtotal	0		0		0.01		0.02		0			

Pervious Landuses Present:												
	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
bs/stsl	0.44	54	0.00		0.00		0.48	70	0.00		0.92	57.4
Subtotal	0.44		0.00		0.00		0.48		0.00			

Composite Area Calculations	Total Pervious Area	0.92	
	Total Impervious Area	0.03	
	% Impervious	3.2%	
	Composite Curve Number	63.5	
	Total Area Check	0.95	

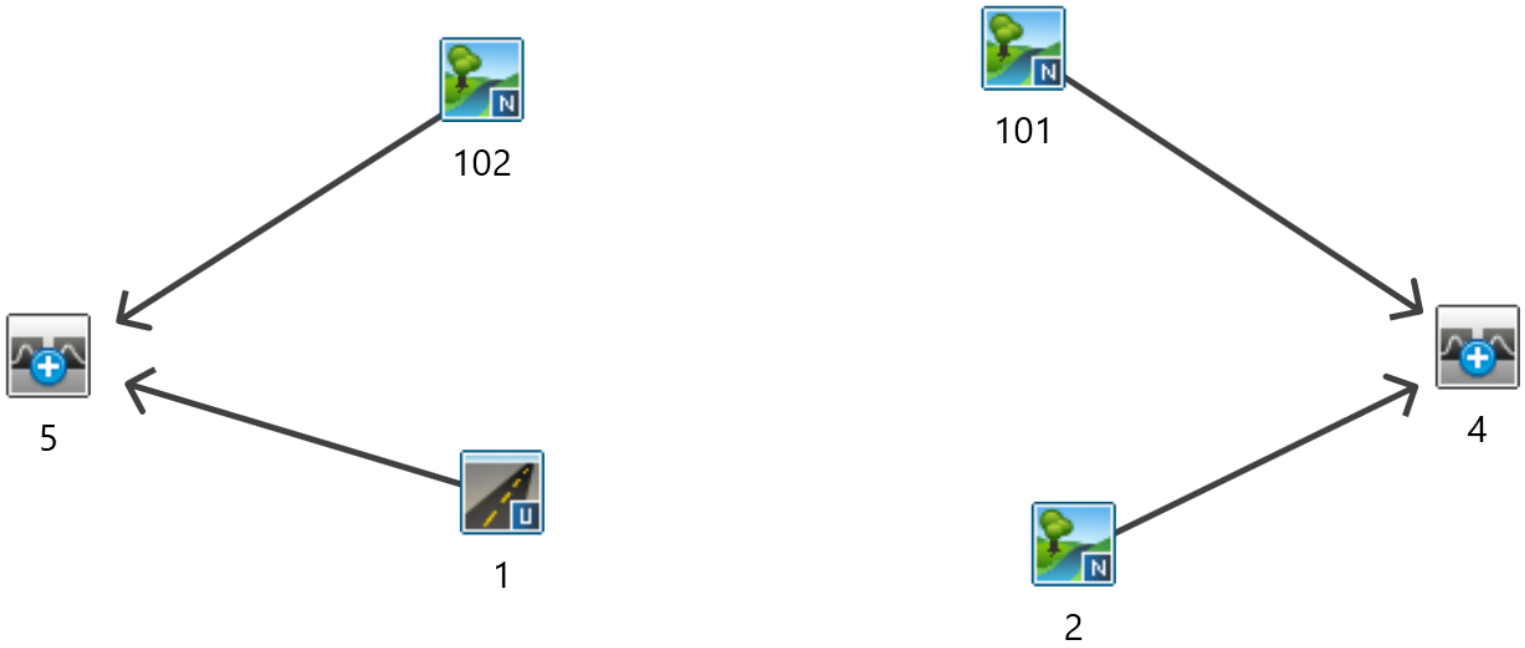
Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Runoff Coefficient								
				Bondhead &		Sandy Loam &		Gravelly Sandy		0		
Landuse	IA (mm)	Area (ha)	A * IA	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.44	4.39	0.08	0		0		0		0	0.04
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0.48	2.41	0.10	0		0		0		0	0.05
Cultivated	7	0	0		0		0		0		0	0
Impervious	2	0.03	0.06	0.25	0		0		0		0	0.01
Composite		0.95	7.21	Composite Runoff Coefficient								0.10

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Sheet Flow	150	4.5	3.0%	2.3	0.40	0.10	0.07	0.07	0.11	0.08	0.46	0.31

Appropriate calculated time to	0.31	Appropriate Method:	Airport

PRE-DEVELOPMENT SCHEMATIC



CROZIER CONSULTING ENGINEERS

Project Name: Little Avenue
Project Number: 0892-4560
Date: November 21, 2019
By: ML
Checked by:

	Pre-Development						
	Catchment	Qpeak					
		Whiskey Creek			Lovers Creek		
		102	1	ADD 5	101	2	ADD 4
24-hr SCS Type II	2-yr	0.005	0.025	**0.026**	0.024	0.020	**0.044**
	5-yr	0.011	0.044	**0.048**	0.050	0.039	**0.088**
	10-yr	0.015	0.060	**0.066**	0.071	0.054	**0.123**
	25-yr	0.022	0.080	**0.088**	0.101	0.074	**0.172**
	50-yr	0.027	0.097	**0.107**	0.126	0.090	**0.213**
	100-yr	0.032	0.113	**0.126**	0.152	0.107	**0.255**
12-hr SCS Type II	2-yr	0.004	0.022	**0.024**	0.020	0.017	**0.036**
	5-yr	0.009	0.041	**0.044**	0.042	0.034	**0.075**
	10-yr	0.013	0.055	**0.060**	0.061	0.047	**0.106**
	25-yr	0.019	0.074	**0.081**	0.087	0.065	**0.150**
	50-yr	0.023	0.091	**0.099**	0.109	0.080	**0.186**
	100-yr	0.028	0.106	**0.116**	0.132	0.096	**0.224**
6-hr SCS Type II	2-yr	0.004	0.022	**0.023**	0.018	0.016	**0.033**
	5-yr	0.009	0.044	**0.046**	0.041	0.034	**0.074**
	10-yr	0.013	0.059	**0.063**	0.061	0.048	**0.107**
	25-yr	0.019	0.082	**0.087**	0.090	0.068	**0.155**
	50-yr	0.024	0.099	**0.106**	0.114	0.084	**0.194**
	100-yr	0.030	0.117	**0.126**	0.140	0.101	**0.237**
4-hr Chicago	2-yr	0.003	0.016	**0.016**	0.010	0.010	**0.020**
	5-yr	0.006	0.030	**0.030**	0.023	0.020	**0.042**
	10-yr	0.008	0.042	**0.042**	0.034	0.028	**0.061**
	25-yr	0.012	0.057	**0.058**	0.051	0.040	**0.089**
	50-yr	0.015	0.069	**0.070**	0.064	0.049	**0.112**
	100-yr	0.019	0.081	**0.083**	0.080	0.060	**0.137**

```
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


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DATE: 11-25-2019                          TIME: 10:50:06

USER:



COMMENTS: _____


--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : 01. 2 yr - 4 hr Chicago       **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 678.085
| Ptotal= 36.96 mm |                          B=   4.699
```



```
--------------------                              C=   0.781
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  4.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    2.47 |  1.17   18.78 |  2.17    5.73 |  3.17    2.93
                0.33    2.82 |  1.33   83.11 |  2.33    4.89 |  3.33    2.72
                0.50    3.31 |  1.50   24.57 |  2.50    4.28 |  3.50    2.55
                0.67    4.05 |  1.67   13.01 |  2.67    3.82 |  3.67    2.39
                0.83    5.30 |  1.83    9.01 |  2.83    3.46 |  3.83    2.26
                1.00    7.98 |  2.00    6.97 |  3.00    3.17 |  4.00    2.15


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    2.47 | 1.017   18.78 | 2.017    5.73 |  3.02    2.93
               0.033    2.47 | 1.033   18.78 | 2.033    5.73 |  3.03    2.93
               0.050    2.47 | 1.050   18.78 | 2.050    5.73 |  3.05    2.93
               0.067    2.47 | 1.067   18.78 | 2.067    5.73 |  3.07    2.93
               0.083    2.47 | 1.083   18.78 | 2.083    5.73 |  3.08    2.93
               0.100    2.47 | 1.100   18.78 | 2.100    5.73 |  3.10    2.93
               0.117    2.47 | 1.117   18.78 | 2.117    5.73 |  3.12    2.93
               0.133    2.47 | 1.133   18.78 | 2.133    5.73 |  3.13    2.93
               0.150    2.47 | 1.150   18.78 | 2.150    5.73 |  3.15    2.93
               0.167    2.47 | 1.167   18.78 | 2.167    5.73 |  3.17    2.93
               0.183    2.82 | 1.183   83.10 | 2.183    4.89 |  3.18    2.72
               0.200    2.82 | 1.200   83.11 | 2.200    4.89 |  3.20    2.72
               0.217    2.82 | 1.217   83.11 | 2.217    4.89 |  3.22    2.72
               0.233    2.82 | 1.233   83.11 | 2.233    4.89 |  3.23    2.72
               0.250    2.82 | 1.250   83.11 | 2.250    4.89 |  3.25    2.72
               0.267    2.82 | 1.267   83.11 | 2.267    4.89 |  3.27    2.72
               0.283    2.82 | 1.283   83.11 | 2.283    4.89 |  3.28    2.72
               0.300    2.82 | 1.300   83.11 | 2.300    4.89 |  3.30    2.72
               0.317    2.82 | 1.317   83.11 | 2.317    4.89 |  3.32    2.72
```

0.333	2.82	1.333	83.11	2.333	4.89	3.33	2.72
0.350	3.31	1.350	24.57	2.350	4.28	3.35	2.55
0.367	3.31	1.367	24.57	2.367	4.28	3.37	2.55
0.383	3.31	1.383	24.57	2.383	4.28	3.38	2.55
0.400	3.31	1.400	24.57	2.400	4.28	3.40	2.55
0.417	3.31	1.417	24.57	2.417	4.28	3.42	2.55
0.433	3.31	1.433	24.57	2.433	4.28	3.43	2.55
0.450	3.31	1.450	24.57	2.450	4.28	3.45	2.55
0.467	3.31	1.467	24.57	2.467	4.28	3.47	2.55
0.483	3.31	1.483	24.57	2.483	4.28	3.48	2.55
0.500	3.31	1.500	24.57	2.500	4.28	3.50	2.55
0.517	4.05	1.517	13.01	2.517	3.82	3.52	2.39
0.533	4.05	1.533	13.01	2.533	3.82	3.53	2.39
0.550	4.05	1.550	13.01	2.550	3.82	3.55	2.39
0.567	4.05	1.567	13.01	2.567	3.82	3.57	2.39
0.583	4.05	1.583	13.01	2.583	3.82	3.58	2.39
0.600	4.05	1.600	13.01	2.600	3.82	3.60	2.39
0.617	4.05	1.617	13.01	2.617	3.82	3.62	2.39
0.633	4.05	1.633	13.01	2.633	3.82	3.63	2.39
0.650	4.05	1.650	13.01	2.650	3.82	3.65	2.39
0.667	4.05	1.667	13.01	2.667	3.82	3.67	2.39
0.683	5.30	1.683	9.01	2.683	3.46	3.68	2.26
0.700	5.30	1.700	9.01	2.700	3.46	3.70	2.26
0.717	5.30	1.717	9.01	2.717	3.46	3.72	2.26
0.733	5.30	1.733	9.01	2.733	3.46	3.73	2.26
0.750	5.30	1.750	9.01	2.750	3.46	3.75	2.26
0.767	5.30	1.767	9.01	2.767	3.46	3.77	2.26
0.783	5.30	1.783	9.01	2.783	3.46	3.78	2.26
0.800	5.30	1.800	9.01	2.800	3.46	3.80	2.26
0.817	5.30	1.817	9.01	2.817	3.46	3.82	2.26
0.833	5.30	1.833	9.01	2.833	3.46	3.83	2.26
0.850	7.98	1.850	6.97	2.850	3.17	3.85	2.15
0.867	7.98	1.867	6.97	2.867	3.17	3.87	2.15
0.883	7.98	1.883	6.97	2.883	3.17	3.88	2.15
0.900	7.98	1.900	6.97	2.900	3.17	3.90	2.15
0.917	7.98	1.917	6.97	2.917	3.17	3.92	2.15
0.933	7.98	1.933	6.97	2.933	3.17	3.93	2.15
0.950	7.98	1.950	6.97	2.950	3.17	3.95	2.15
0.967	7.98	1.967	6.97	2.967	3.17	3.97	2.15
0.983	7.98	1.983	6.97	2.983	3.17	3.98	2.15
1.000	7.98	2.000	6.97	3.000	3.17	4.00	2.15

```
Unit Hyd Qpeak  (cms)=   0.259

PEAK FLOW       (cms)=   0.010 (i)
TIME TO PEAK    (hrs)=   1.650
RUNOFF VOLUME    (mm)=   3.094
TOTAL RAINFALL   (mm)=  36.955
RUNOFF COEFFICIENT   =   0.084
```



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

---------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 63.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.010 (i)
     TIME TO PEAK    (hrs)=   1.750
     RUNOFF VOLUME    (mm)=   4.944
     TOTAL RAINFALL   (mm)=  36.955
     RUNOFF COEFFICIENT   =   0.134

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

---------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.010     1.65     3.09
      + ID2= 2 (  0002):     0.98   0.010     1.75     4.94
        ================================================
        ID = 3 (  0004):     2.47   0.020     1.70     3.83

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.003 (i)
     TIME TO PEAK    (hrs)=   2.300
     RUNOFF VOLUME    (mm)=   3.093
     TOTAL RAINFALL   (mm)=  36.955
     RUNOFF COEFFICIENT   =   0.084

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

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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      83.11        22.66
               over (min)        5.00         9.00
     Storage Coeff.  (min)=       1.56 (ii)    8.27 (ii)
     Unit Hyd. Tpeak (min)=       5.00         9.00
     Unit Hyd. peak  (cms)=       0.41         0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.016 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.45           1.40
     RUNOFF VOLUME    (mm)=      35.96         9.12          10.45
     TOTAL RAINFALL   (mm)=      36.96        36.96          36.96
     RUNOFF COEFFICIENT   =       0.97         0.25           0.28

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.016     1.40    10.45
      + ID2= 2 (  0102):     0.66   0.003     2.30     3.09
        ==================================================
        ID = 3 (  0005):     1.11   0.016     1.40     6.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


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DATE: 11-25-2019                          TIME: 10:50:06

USER:


COMMENTS: _____

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  ***********************************************
  ** SIMULATION : 02. 5 yr - 4 hr Chicago       **
  ***********************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 853.608
| Ptotal= 50.52 mm |                          B=   4.699
```

C= 0.766

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	3.57	1.17	25.64	2.17	8.12	3.17	4.22
0.33	4.07	1.33	108.92	2.33	6.96	3.33	3.93
0.50	4.76	1.50	33.31	2.50	6.12	3.50	3.68
0.67	5.79	1.67	17.99	2.67	5.48	3.67	3.47
0.83	7.53	1.83	12.60	2.83	4.97	3.83	3.28
1.00	11.20	2.00	9.82	3.00	4.56	4.00	3.12

CALIB
NASHYD (0101)
ID= 1 DT= 1.0 min

Area (ha)= 1.49 Curve Number (CN)= 55.0
Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.57	1.017	25.64	2.017	8.12	3.02	4.22
0.033	3.57	1.033	25.64	2.033	8.12	3.03	4.22
0.050	3.57	1.050	25.64	2.050	8.12	3.05	4.22
0.067	3.57	1.067	25.64	2.067	8.12	3.07	4.22
0.083	3.57	1.083	25.64	2.083	8.12	3.08	4.22
0.100	3.57	1.100	25.64	2.100	8.12	3.10	4.22
0.117	3.57	1.117	25.64	2.117	8.12	3.12	4.22
0.133	3.57	1.133	25.64	2.133	8.12	3.13	4.22
0.150	3.57	1.150	25.64	2.150	8.12	3.15	4.22
0.167	3.57	1.167	25.64	2.167	8.12	3.17	4.22
0.183	4.07	1.183	108.92	2.183	6.96	3.18	3.93
0.200	4.07	1.200	108.92	2.200	6.96	3.20	3.93
0.217	4.07	1.217	108.92	2.217	6.96	3.22	3.93
0.233	4.07	1.233	108.92	2.233	6.96	3.23	3.93
0.250	4.07	1.250	108.92	2.250	6.96	3.25	3.93
0.267	4.07	1.267	108.92	2.267	6.96	3.27	3.93
0.283	4.07	1.283	108.92	2.283	6.96	3.28	3.93
0.300	4.07	1.300	108.92	2.300	6.96	3.30	3.93
0.317	4.07	1.317	108.92	2.317	6.96	3.32	3.93

0.333	4.07	1.333	108.92	2.333	6.96	3.33	3.93
0.350	4.76	1.350	33.32	2.350	6.12	3.35	3.68
0.367	4.76	1.367	33.31	2.367	6.12	3.37	3.68
0.383	4.76	1.383	33.31	2.383	6.12	3.38	3.68
0.400	4.76	1.400	33.31	2.400	6.12	3.40	3.68
0.417	4.76	1.417	33.31	2.417	6.12	3.42	3.68
0.433	4.76	1.433	33.31	2.433	6.12	3.43	3.68
0.450	4.76	1.450	33.31	2.450	6.12	3.45	3.68
0.467	4.76	1.467	33.31	2.467	6.12	3.47	3.68
0.483	4.76	1.483	33.31	2.483	6.12	3.48	3.68
0.500	4.76	1.500	33.31	2.500	6.12	3.50	3.68
0.517	5.79	1.517	17.99	2.517	5.48	3.52	3.47
0.533	5.79	1.533	17.99	2.533	5.48	3.53	3.47
0.550	5.79	1.550	17.99	2.550	5.48	3.55	3.47
0.567	5.79	1.567	17.99	2.567	5.48	3.57	3.47
0.583	5.79	1.583	17.99	2.583	5.48	3.58	3.47
0.600	5.79	1.600	17.99	2.600	5.48	3.60	3.47
0.617	5.79	1.617	17.99	2.617	5.48	3.62	3.47
0.633	5.79	1.633	17.99	2.633	5.48	3.63	3.47
0.650	5.79	1.650	17.99	2.650	5.48	3.65	3.47
0.667	5.79	1.667	17.99	2.667	5.48	3.67	3.47
0.683	7.53	1.683	12.60	2.683	4.97	3.68	3.28
0.700	7.53	1.700	12.60	2.700	4.97	3.70	3.28
0.717	7.53	1.717	12.60	2.717	4.97	3.72	3.28
0.733	7.53	1.733	12.60	2.733	4.97	3.73	3.28
0.750	7.53	1.750	12.60	2.750	4.97	3.75	3.28
0.767	7.53	1.767	12.60	2.767	4.97	3.77	3.28
0.783	7.53	1.783	12.60	2.783	4.97	3.78	3.28
0.800	7.53	1.800	12.60	2.800	4.97	3.80	3.28
0.817	7.53	1.817	12.60	2.817	4.97	3.82	3.28
0.833	7.53	1.833	12.60	2.833	4.97	3.83	3.28
0.850	11.20	1.850	9.82	2.850	4.56	3.85	3.12
0.867	11.20	1.867	9.82	2.867	4.56	3.87	3.12
0.883	11.20	1.883	9.82	2.883	4.56	3.88	3.12
0.900	11.20	1.900	9.82	2.900	4.56	3.90	3.12
0.917	11.20	1.917	9.82	2.917	4.56	3.92	3.12
0.933	11.20	1.933	9.82	2.933	4.56	3.93	3.12
0.950	11.20	1.950	9.82	2.950	4.56	3.95	3.12
0.967	11.20	1.967	9.82	2.967	4.56	3.97	3.12
0.983	11.20	1.983	9.82	2.983	4.56	3.98	3.12
1.000	11.20	2.000	9.82	3.000	4.56	4.00	3.12

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.023 (i)
TIME TO PEAK (hrs)= 1.617
RUNOFF VOLUME (mm)= 6.611
TOTAL RAINFALL (mm)= 50.521
RUNOFF COEFFICIENT = 0.131

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 63.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.020 (i)
     TIME TO PEAK    (hrs)=   1.733
     RUNOFF VOLUME    (mm)=   9.745
     TOTAL RAINFALL   (mm)=  50.521
     RUNOFF COEFFICIENT   =   0.193

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

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     1.49   0.023     1.62     6.61
     + ID2= 2 (  0002):     0.98   0.020     1.73     9.74
       ================================================
       ID = 3 (  0004):     2.47   0.042     1.67     7.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.006 (i)
     TIME TO PEAK    (hrs)=   2.250
     RUNOFF VOLUME    (mm)=   6.610
     TOTAL RAINFALL   (mm)=  50.521
     RUNOFF COEFFICIENT   =   0.131

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



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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     108.92        40.77
               over (min)        5.00         8.00
     Storage Coeff.  (min)=       1.40 (ii)    7.42 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.43         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.03          0.030 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.43           1.40
     RUNOFF VOLUME    (mm)=      49.52        16.26          17.91
     TOTAL RAINFALL   (mm)=      50.52        50.52          50.52
     RUNOFF COEFFICIENT   =       0.98         0.32           0.35

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.030     1.40    17.91
     + ID2= 2 (  0102):     0.66   0.006     2.25     6.61
       ================================================
       ID = 3 (  0005):     1.11   0.030     1.40    11.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


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DATE: 11-25-2019                          TIME: 10:50:06

USER:



COMMENTS: _____


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------------------------
  ************************************************
  ** SIMULATION : 03. 10 yr - 4 hr Chicago      **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 975.865
| Ptotal= 59.69 mm |                          B=   4.699
```



```
--------------------                          C=   0.760
                      used in:   INTENSITY =  A / (t + B)^C

                      Duration of storm  =  4.00 hrs
                      Storm time step    = 10.00 min
                      Time to peak ratio =  0.33

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    4.32 |  1.17   30.27 |  2.17    9.72 |  3.17    5.09
               0.33    4.91 |  1.33  126.55 |  2.33    8.35 |  3.33    4.74
               0.50    5.73 |  1.50   39.22 |  2.50    7.35 |  3.50    4.45
               0.67    6.96 |  1.67   21.35 |  2.67    6.59 |  3.67    4.19
               0.83    9.03 |  1.83   15.01 |  2.83    5.99 |  3.83    3.97
               1.00   13.36 |  2.00   11.74 |  3.00    5.50 |  4.00    3.77


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--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
              0.017    4.32 | 1.017   30.27 | 2.017    9.72 |  3.02    5.09
              0.033    4.32 | 1.033   30.27 | 2.033    9.72 |  3.03    5.09
              0.050    4.32 | 1.050   30.27 | 2.050    9.72 |  3.05    5.09
              0.067    4.32 | 1.067   30.27 | 2.067    9.72 |  3.07    5.09
              0.083    4.32 | 1.083   30.27 | 2.083    9.72 |  3.08    5.09
              0.100    4.32 | 1.100   30.27 | 2.100    9.72 |  3.10    5.09
              0.117    4.32 | 1.117   30.27 | 2.117    9.72 |  3.12    5.09
              0.133    4.32 | 1.133   30.27 | 2.133    9.72 |  3.13    5.09
              0.150    4.32 | 1.150   30.27 | 2.150    9.72 |  3.15    5.09
              0.167    4.32 | 1.167   30.27 | 2.167    9.72 |  3.17    5.09
              0.183    4.91 | 1.183  126.54 | 2.183    8.35 |  3.18    4.74
              0.200    4.91 | 1.200  126.55 | 2.200    8.35 |  3.20    4.74
              0.217    4.91 | 1.217  126.55 | 2.217    8.35 |  3.22    4.74
              0.233    4.91 | 1.233  126.55 | 2.233    8.35 |  3.23    4.74
              0.250    4.91 | 1.250  126.55 | 2.250    8.35 |  3.25    4.74
              0.267    4.91 | 1.267  126.55 | 2.267    8.35 |  3.27    4.74
              0.283    4.91 | 1.283  126.55 | 2.283    8.35 |  3.28    4.74
              0.300    4.91 | 1.300  126.55 | 2.300    8.35 |  3.30    4.74
              0.317    4.91 | 1.317  126.55 | 2.317    8.35 |  3.32    4.74
```

0.333	4.91	1.333	126.55	2.333	8.35	3.33	4.74
0.350	5.73	1.350	39.23	2.350	7.35	3.35	4.45
0.367	5.73	1.367	39.22	2.367	7.35	3.37	4.45
0.383	5.73	1.383	39.22	2.383	7.35	3.38	4.45
0.400	5.73	1.400	39.22	2.400	7.35	3.40	4.45
0.417	5.73	1.417	39.22	2.417	7.35	3.42	4.45
0.433	5.73	1.433	39.22	2.433	7.35	3.43	4.45
0.450	5.73	1.450	39.22	2.450	7.35	3.45	4.45
0.467	5.73	1.467	39.22	2.467	7.35	3.47	4.45
0.483	5.73	1.483	39.22	2.483	7.35	3.48	4.45
0.500	5.73	1.500	39.22	2.500	7.35	3.50	4.45
0.517	6.96	1.517	21.35	2.517	6.59	3.52	4.19
0.533	6.96	1.533	21.35	2.533	6.59	3.53	4.19
0.550	6.96	1.550	21.35	2.550	6.59	3.55	4.19
0.567	6.96	1.567	21.35	2.567	6.59	3.57	4.19
0.583	6.96	1.583	21.35	2.583	6.59	3.58	4.19
0.600	6.96	1.600	21.35	2.600	6.59	3.60	4.19
0.617	6.96	1.617	21.35	2.617	6.59	3.62	4.19
0.633	6.96	1.633	21.35	2.633	6.59	3.63	4.19
0.650	6.96	1.650	21.35	2.650	6.59	3.65	4.19
0.667	6.96	1.667	21.35	2.667	6.59	3.67	4.19
0.683	9.03	1.683	15.01	2.683	5.99	3.68	3.97
0.700	9.03	1.700	15.01	2.700	5.99	3.70	3.97
0.717	9.03	1.717	15.01	2.717	5.99	3.72	3.97
0.733	9.03	1.733	15.01	2.733	5.99	3.73	3.97
0.750	9.03	1.750	15.01	2.750	5.99	3.75	3.97
0.767	9.03	1.767	15.01	2.767	5.99	3.77	3.97
0.783	9.03	1.783	15.01	2.783	5.99	3.78	3.97
0.800	9.03	1.800	15.01	2.800	5.99	3.80	3.97
0.817	9.03	1.817	15.01	2.817	5.99	3.82	3.97
0.833	9.03	1.833	15.01	2.833	5.99	3.83	3.97
0.850	13.36	1.850	11.74	2.850	5.50	3.85	3.77
0.867	13.36	1.867	11.74	2.867	5.50	3.87	3.77
0.883	13.36	1.883	11.74	2.883	5.50	3.88	3.77
0.900	13.36	1.900	11.74	2.900	5.50	3.90	3.77
0.917	13.36	1.917	11.74	2.917	5.50	3.92	3.77
0.933	13.36	1.933	11.74	2.933	5.50	3.93	3.77
0.950	13.36	1.950	11.74	2.950	5.50	3.95	3.77
0.967	13.36	1.967	11.74	2.967	5.50	3.97	3.77
0.983	13.36	1.983	11.74	2.983	5.50	3.98	3.77
1.000	13.36	2.000	11.74	3.000	5.50	4.00	3.77

```
Unit Hyd Qpeak  (cms)=   0.259

PEAK FLOW       (cms)=   0.034 (i)
TIME TO PEAK    (hrs)=   1.600
RUNOFF VOLUME    (mm)=   9.590
TOTAL RAINFALL   (mm)=  59.695
RUNOFF COEFFICIENT   =   0.161
```



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

---------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 63.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.028 (i)
     TIME TO PEAK    (hrs)=   1.717
     RUNOFF VOLUME    (mm)=  13.659
     TOTAL RAINFALL   (mm)=  59.695
     RUNOFF COEFFICIENT   =   0.229

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

---------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.034     1.60     9.59
      + ID2= 2 (  0002):     0.98   0.028     1.72    13.66
        ================================================
        ID = 3 (  0004):     2.47   0.061     1.65    11.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

---------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.008 (i)
     TIME TO PEAK    (hrs)=   2.233
     RUNOFF VOLUME    (mm)=   9.588
     TOTAL RAINFALL   (mm)=  59.695
     RUNOFF COEFFICIENT   =   0.161

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     126.55        55.05
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.32 (ii)    6.99 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.44         0.16
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.04          0.042 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.40           1.38
     RUNOFF VOLUME    (mm)=      58.69        21.77          23.61
     TOTAL RAINFALL   (mm)=      59.69        59.69          59.69
     RUNOFF COEFFICIENT   =       0.98         0.36           0.40

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.042     1.38    23.61
      + ID2= 2 (  0102):     0.66   0.008     2.23     9.59
        ==================================================
        ID = 3 (  0005):     1.11   0.042     1.38    15.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
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DATE: 11-25-2019                          TIME: 10:50:06

USER:


COMMENTS: _____

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  ***********************************************
  ** SIMULATION : 04. 25 yr - 4 hr Chicago      **
  ***********************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1146.275
| Ptotal= 71.24 mm |                          B=   4.922
```

C= 0.757

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	5.22	1.17	36.37	2.17	11.74	3.17	6.15
0.33	5.94	1.33	148.15	2.33	10.09	3.33	5.74
0.50	6.93	1.50	47.06	2.50	8.89	3.50	5.38
0.67	8.42	1.67	25.72	2.67	7.96	3.67	5.08
0.83	10.91	1.83	18.11	2.83	7.24	3.83	4.80
1.00	16.13	2.00	14.17	3.00	6.65	4.00	4.57

CALIB
NASHYD (0101) | ID= 1 DT= 1.0 min

Area (ha)= 1.49 Curve Number (CN)= 55.0
Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.22

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	5.22	1.017	36.37	2.017	11.74	3.02	6.15
0.033	5.22	1.033	36.37	2.033	11.74	3.03	6.15
0.050	5.22	1.050	36.37	2.050	11.74	3.05	6.15
0.067	5.22	1.067	36.37	2.067	11.74	3.07	6.15
0.083	5.22	1.083	36.37	2.083	11.74	3.08	6.15
0.100	5.22	1.100	36.37	2.100	11.74	3.10	6.15
0.117	5.22	1.117	36.37	2.117	11.74	3.12	6.15
0.133	5.22	1.133	36.37	2.133	11.74	3.13	6.15
0.150	5.22	1.150	36.37	2.150	11.74	3.15	6.15
0.167	5.22	1.167	36.37	2.167	11.74	3.17	6.15
0.183	5.94	1.183	148.15	2.183	10.09	3.18	5.74
0.200	5.94	1.200	148.15	2.200	10.09	3.20	5.74
0.217	5.94	1.217	148.15	2.217	10.09	3.22	5.74
0.233	5.94	1.233	148.15	2.233	10.09	3.23	5.74
0.250	5.94	1.250	148.15	2.250	10.09	3.25	5.74
0.267	5.94	1.267	148.15	2.267	10.09	3.27	5.74
0.283	5.94	1.283	148.15	2.283	10.09	3.28	5.74
0.300	5.94	1.300	148.15	2.300	10.09	3.30	5.74
0.317	5.94	1.317	148.15	2.317	10.09	3.32	5.74

0.333	5.94	1.333	148.15	2.333	10.09	3.33	5.74
0.350	6.93	1.350	47.06	2.350	8.89	3.35	5.38
0.367	6.93	1.367	47.06	2.367	8.89	3.37	5.38
0.383	6.93	1.383	47.06	2.383	8.89	3.38	5.38
0.400	6.93	1.400	47.06	2.400	8.89	3.40	5.38
0.417	6.93	1.417	47.06	2.417	8.89	3.42	5.38
0.433	6.93	1.433	47.06	2.433	8.89	3.43	5.38
0.450	6.93	1.450	47.06	2.450	8.89	3.45	5.38
0.467	6.93	1.467	47.06	2.467	8.89	3.47	5.38
0.483	6.93	1.483	47.06	2.483	8.89	3.48	5.38
0.500	6.93	1.500	47.06	2.500	8.89	3.50	5.38
0.517	8.42	1.517	25.72	2.517	7.96	3.52	5.08
0.533	8.42	1.533	25.72	2.533	7.96	3.53	5.08
0.550	8.42	1.550	25.72	2.550	7.96	3.55	5.08
0.567	8.42	1.567	25.72	2.567	7.96	3.57	5.08
0.583	8.42	1.583	25.72	2.583	7.96	3.58	5.08
0.600	8.42	1.600	25.72	2.600	7.96	3.60	5.08
0.617	8.42	1.617	25.72	2.617	7.96	3.62	5.08
0.633	8.42	1.633	25.72	2.633	7.96	3.63	5.08
0.650	8.42	1.650	25.72	2.650	7.96	3.65	5.08
0.667	8.42	1.667	25.72	2.667	7.96	3.67	5.08
0.683	10.91	1.683	18.11	2.683	7.24	3.68	4.80
0.700	10.91	1.700	18.11	2.700	7.24	3.70	4.80
0.717	10.91	1.717	18.11	2.717	7.24	3.72	4.80
0.733	10.91	1.733	18.11	2.733	7.24	3.73	4.80
0.750	10.91	1.750	18.11	2.750	7.24	3.75	4.80
0.767	10.91	1.767	18.11	2.767	7.24	3.77	4.80
0.783	10.91	1.783	18.11	2.783	7.24	3.78	4.80
0.800	10.91	1.800	18.11	2.800	7.24	3.80	4.80
0.817	10.91	1.817	18.11	2.817	7.24	3.82	4.80
0.833	10.91	1.833	18.11	2.833	7.24	3.83	4.80
0.850	16.13	1.850	14.17	2.850	6.65	3.85	4.57
0.867	16.13	1.867	14.17	2.867	6.65	3.87	4.57
0.883	16.13	1.883	14.17	2.883	6.65	3.88	4.57
0.900	16.13	1.900	14.17	2.900	6.65	3.90	4.57
0.917	16.13	1.917	14.17	2.917	6.65	3.92	4.57
0.933	16.13	1.933	14.17	2.933	6.65	3.93	4.57
0.950	16.13	1.950	14.17	2.950	6.65	3.95	4.57
0.967	16.13	1.967	14.17	2.967	6.65	3.97	4.57
0.983	16.13	1.983	14.17	2.983	6.65	3.98	4.57
1.000	16.13	2.000	14.17	3.000	6.65	4.00	4.57

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.051 (i)
TIME TO PEAK (hrs)= 1.600
RUNOFF VOLUME (mm)= 13.937
TOTAL RAINFALL (mm)= 71.236
RUNOFF COEFFICIENT = 0.196

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 63.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.040 (i)
     TIME TO PEAK    (hrs)=   1.717
     RUNOFF VOLUME    (mm)=  19.227
     TOTAL RAINFALL   (mm)=  71.236
     RUNOFF COEFFICIENT   =   0.270

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

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     1.49   0.051     1.60    13.94
     + ID2= 2 (  0002):     0.98   0.040     1.72    19.23
       ================================================
       ID = 3 (  0004):     2.47   0.089     1.63    16.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.012 (i)
     TIME TO PEAK    (hrs)=   2.200
     RUNOFF VOLUME    (mm)=  13.935
     TOTAL RAINFALL   (mm)=  71.236
     RUNOFF COEFFICIENT   =   0.196

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     148.15        74.56
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.24 (ii)    6.56 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.45         0.17
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.05          0.057 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.40           1.38
     RUNOFF VOLUME    (mm)=      70.24        29.32          31.36
     TOTAL RAINFALL   (mm)=      71.24        71.24          71.24
     RUNOFF COEFFICIENT   =       0.99         0.41           0.44

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.057     1.38    31.36
     + ID2= 2 (  0102):     0.66   0.012     2.20    13.93
       ================================================
       ID = 3 (  0005):     1.11   0.058     1.38    21.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\fad
c5dab-4151-4dd7-a0b1-cc2b438483f5\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\fad
c5dab-4151-4dd7-a0b1-cc2b438483f5\sce


DATE: 11-25-2019                          TIME: 10:50:06

USER:



COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : 05. 50 yr - 4 hr Chicago      **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1236.408
| Ptotal= 79.47 mm |                          B=   4.699
```



```
--------------------                              C=   0.751
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  4.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    5.94 |  1.17   40.23 |  2.17   13.20 |  3.17    6.98
                0.33    6.74 |  1.33  164.26 |  2.33   11.37 |  3.33    6.51
                0.50    7.85 |  1.50   51.93 |  2.50   10.03 |  3.50    6.12
                0.67    9.50 |  1.67   28.58 |  2.67    9.00 |  3.67    5.77
                0.83   12.27 |  1.83   20.23 |  2.83    8.19 |  3.83    5.47
                1.00   18.04 |  2.00   15.89 |  3.00    7.53 |  4.00    5.20


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--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    5.94 | 1.017   40.23 | 2.017   13.20 |  3.02    6.98
               0.033    5.94 | 1.033   40.23 | 2.033   13.20 |  3.03    6.98
               0.050    5.94 | 1.050   40.23 | 2.050   13.20 |  3.05    6.98
               0.067    5.94 | 1.067   40.23 | 2.067   13.20 |  3.07    6.98
               0.083    5.94 | 1.083   40.23 | 2.083   13.20 |  3.08    6.98
               0.100    5.94 | 1.100   40.23 | 2.100   13.20 |  3.10    6.98
               0.117    5.94 | 1.117   40.23 | 2.117   13.20 |  3.12    6.98
               0.133    5.94 | 1.133   40.23 | 2.133   13.20 |  3.13    6.98
               0.150    5.94 | 1.150   40.23 | 2.150   13.20 |  3.15    6.98
               0.167    5.94 | 1.167   40.23 | 2.167   13.20 |  3.17    6.98
               0.183    6.74 | 1.183  164.26 | 2.183   11.37 |  3.18    6.51
               0.200    6.74 | 1.200  164.26 | 2.200   11.37 |  3.20    6.51
               0.217    6.74 | 1.217  164.26 | 2.217   11.37 |  3.22    6.51
               0.233    6.74 | 1.233  164.26 | 2.233   11.37 |  3.23    6.51
               0.250    6.74 | 1.250  164.26 | 2.250   11.37 |  3.25    6.51
               0.267    6.74 | 1.267  164.26 | 2.267   11.37 |  3.27    6.51
               0.283    6.74 | 1.283  164.26 | 2.283   11.37 |  3.28    6.51
               0.300    6.74 | 1.300  164.26 | 2.300   11.37 |  3.30    6.51
               0.317    6.74 | 1.317  164.26 | 2.317   11.37 |  3.32    6.51
```

0.333	6.74	1.333	164.26	2.333	11.37	3.33	6.51
0.350	7.85	1.350	51.94	2.350	10.03	3.35	6.12
0.367	7.85	1.367	51.93	2.367	10.03	3.37	6.12
0.383	7.85	1.383	51.93	2.383	10.03	3.38	6.12
0.400	7.85	1.400	51.93	2.400	10.03	3.40	6.12
0.417	7.85	1.417	51.93	2.417	10.03	3.42	6.12
0.433	7.85	1.433	51.93	2.433	10.03	3.43	6.12
0.450	7.85	1.450	51.93	2.450	10.03	3.45	6.12
0.467	7.85	1.467	51.93	2.467	10.03	3.47	6.12
0.483	7.85	1.483	51.93	2.483	10.03	3.48	6.12
0.500	7.85	1.500	51.93	2.500	10.03	3.50	6.12
0.517	9.50	1.517	28.58	2.517	9.00	3.52	5.77
0.533	9.50	1.533	28.58	2.533	9.00	3.53	5.77
0.550	9.50	1.550	28.58	2.550	9.00	3.55	5.77
0.567	9.50	1.567	28.58	2.567	9.00	3.57	5.77
0.583	9.50	1.583	28.58	2.583	9.00	3.58	5.77
0.600	9.50	1.600	28.58	2.600	9.00	3.60	5.77
0.617	9.50	1.617	28.58	2.617	9.00	3.62	5.77
0.633	9.50	1.633	28.58	2.633	9.00	3.63	5.77
0.650	9.50	1.650	28.58	2.650	9.00	3.65	5.77
0.667	9.50	1.667	28.58	2.667	9.00	3.67	5.77
0.683	12.27	1.683	20.23	2.683	8.19	3.68	5.47
0.700	12.27	1.700	20.23	2.700	8.19	3.70	5.47
0.717	12.27	1.717	20.23	2.717	8.19	3.72	5.47
0.733	12.27	1.733	20.23	2.733	8.19	3.73	5.47
0.750	12.27	1.750	20.23	2.750	8.19	3.75	5.47
0.767	12.27	1.767	20.23	2.767	8.19	3.77	5.47
0.783	12.27	1.783	20.23	2.783	8.19	3.78	5.47
0.800	12.27	1.800	20.23	2.800	8.19	3.80	5.47
0.817	12.27	1.817	20.23	2.817	8.19	3.82	5.47
0.833	12.27	1.833	20.23	2.833	8.19	3.83	5.47
0.850	18.04	1.850	15.89	2.850	7.53	3.85	5.20
0.867	18.04	1.867	15.89	2.867	7.53	3.87	5.20
0.883	18.04	1.883	15.89	2.883	7.53	3.88	5.20
0.900	18.04	1.900	15.89	2.900	7.53	3.90	5.20
0.917	18.04	1.917	15.89	2.917	7.53	3.92	5.20
0.933	18.04	1.933	15.89	2.933	7.53	3.93	5.20
0.950	18.04	1.950	15.89	2.950	7.53	3.95	5.20
0.967	18.04	1.967	15.89	2.967	7.53	3.97	5.20
0.983	18.04	1.983	15.89	2.983	7.53	3.98	5.20
1.000	18.04	2.000	15.89	3.000	7.53	4.00	5.20

```
Unit Hyd Qpeak  (cms)=   0.259

PEAK FLOW       (cms)=   0.064 (i)
TIME TO PEAK    (hrs)=   1.583
RUNOFF VOLUME    (mm)=  17.404
TOTAL RAINFALL   (mm)=  79.470
RUNOFF COEFFICIENT   =   0.219
```



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

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 63.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.049 (i)
     TIME TO PEAK    (hrs)=   1.700
     RUNOFF VOLUME    (mm)=  23.580
     TOTAL RAINFALL   (mm)=  79.470
     RUNOFF COEFFICIENT   =   0.297

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

-------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.064     1.58    17.40
      + ID2= 2 (  0002):     0.98   0.049     1.70    23.58
        ================================================
        ID = 3 (  0004):     2.47   0.112     1.63    19.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.015 (i)
     TIME TO PEAK    (hrs)=   2.200
     RUNOFF VOLUME    (mm)=  17.402
     TOTAL RAINFALL   (mm)=  79.470
     RUNOFF COEFFICIENT   =   0.219

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     164.26        89.91
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.19 (ii)    6.30 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.45         0.17
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.06          0.069 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.40           1.38
     RUNOFF VOLUME    (mm)=      78.47        35.05          37.21
     TOTAL RAINFALL   (mm)=      79.47        79.47          79.47
     RUNOFF COEFFICIENT   =       0.99         0.44           0.47

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.069     1.38    37.21
      + ID2= 2 (  0102):     0.66   0.015     2.20    17.40
        ==================================================
        ID = 3 (  0005):     1.11   0.070     1.38    25.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\73e
0b007-2cbb-4508-9884-39bba96a7843\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\73e
0b007-2cbb-4508-9884-39bba96a7843\sce


DATE: 11-25-2019                          TIME: 10:50:06

USER:


COMMENTS: _____

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  ***********************************************
  ** SIMULATION : 06. 100 yr - 4 hr Chicago     **
  ***********************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1426.408
| Ptotal= 87.58 mm |                          B=   5.273
```

---------- C= 0.759
used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	6.41	1.17	45.22	2.17	14.50	3.17	7.56
0.33	7.29	1.33	180.15	2.33	12.44	3.33	7.04
0.50	8.52	1.50	58.54	2.50	10.94	3.50	6.60
0.67	10.36	1.67	31.96	2.67	9.80	3.67	6.22
0.83	13.45	1.83	22.45	2.83	8.90	3.83	5.89
1.00	19.96	2.00	17.52	3.00	8.16	4.00	5.59

CALIB NASHYD (0101) ID= 1 DT= 1.0 min	Area (ha)= 1.49	Curve Number (CN)= 55.0
	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.22	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	6.41	1.017	45.22	2.017	14.50	3.02	7.56
0.033	6.41	1.033	45.22	2.033	14.50	3.03	7.56
0.050	6.41	1.050	45.22	2.050	14.50	3.05	7.56
0.067	6.41	1.067	45.22	2.067	14.50	3.07	7.56
0.083	6.41	1.083	45.22	2.083	14.50	3.08	7.56
0.100	6.41	1.100	45.22	2.100	14.50	3.10	7.56
0.117	6.41	1.117	45.22	2.117	14.50	3.12	7.56
0.133	6.41	1.133	45.22	2.133	14.50	3.13	7.56
0.150	6.41	1.150	45.22	2.150	14.50	3.15	7.56
0.167	6.41	1.167	45.22	2.167	14.50	3.17	7.56
0.183	7.29	1.183	180.15	2.183	12.44	3.18	7.04
0.200	7.29	1.200	180.15	2.200	12.44	3.20	7.04
0.217	7.29	1.217	180.15	2.217	12.44	3.22	7.04
0.233	7.29	1.233	180.15	2.233	12.44	3.23	7.04
0.250	7.29	1.250	180.15	2.250	12.44	3.25	7.04
0.267	7.29	1.267	180.15	2.267	12.44	3.27	7.04
0.283	7.29	1.283	180.15	2.283	12.44	3.28	7.04
0.300	7.29	1.300	180.15	2.300	12.44	3.30	7.04
0.317	7.29	1.317	180.15	2.317	12.44	3.32	7.04

0.333	7.29	1.333	180.15	2.333	12.44	3.33	7.04
0.350	8.52	1.350	58.55	2.350	10.94	3.35	6.60
0.367	8.52	1.367	58.54	2.367	10.94	3.37	6.60
0.383	8.52	1.383	58.54	2.383	10.94	3.38	6.60
0.400	8.52	1.400	58.54	2.400	10.94	3.40	6.60
0.417	8.52	1.417	58.54	2.417	10.94	3.42	6.60
0.433	8.52	1.433	58.54	2.433	10.94	3.43	6.60
0.450	8.52	1.450	58.54	2.450	10.94	3.45	6.60
0.467	8.52	1.467	58.54	2.467	10.94	3.47	6.60
0.483	8.52	1.483	58.54	2.483	10.94	3.48	6.60
0.500	8.52	1.500	58.54	2.500	10.94	3.50	6.60
0.517	10.36	1.517	31.96	2.517	9.80	3.52	6.22
0.533	10.36	1.533	31.96	2.533	9.80	3.53	6.22
0.550	10.36	1.550	31.96	2.550	9.80	3.55	6.22
0.567	10.36	1.567	31.96	2.567	9.80	3.57	6.22
0.583	10.36	1.583	31.96	2.583	9.80	3.58	6.22
0.600	10.36	1.600	31.96	2.600	9.80	3.60	6.22
0.617	10.36	1.617	31.96	2.617	9.80	3.62	6.22
0.633	10.36	1.633	31.96	2.633	9.80	3.63	6.22
0.650	10.36	1.650	31.96	2.650	9.80	3.65	6.22
0.667	10.36	1.667	31.96	2.667	9.80	3.67	6.22
0.683	13.45	1.683	22.45	2.683	8.90	3.68	5.89
0.700	13.45	1.700	22.45	2.700	8.90	3.70	5.89
0.717	13.45	1.717	22.45	2.717	8.90	3.72	5.89
0.733	13.45	1.733	22.45	2.733	8.90	3.73	5.89
0.750	13.45	1.750	22.45	2.750	8.90	3.75	5.89
0.767	13.45	1.767	22.45	2.767	8.90	3.77	5.89
0.783	13.45	1.783	22.45	2.783	8.90	3.78	5.89
0.800	13.45	1.800	22.45	2.800	8.90	3.80	5.89
0.817	13.45	1.817	22.45	2.817	8.90	3.82	5.89
0.833	13.45	1.833	22.45	2.833	8.90	3.83	5.89
0.850	19.96	1.850	17.52	2.850	8.16	3.85	5.59
0.867	19.96	1.867	17.52	2.867	8.16	3.87	5.59
0.883	19.96	1.883	17.52	2.883	8.16	3.88	5.59
0.900	19.96	1.900	17.52	2.900	8.16	3.90	5.59
0.917	19.96	1.917	17.52	2.917	8.16	3.92	5.59
0.933	19.96	1.933	17.52	2.933	8.16	3.93	5.59
0.950	19.96	1.950	17.52	2.950	8.16	3.95	5.59
0.967	19.96	1.967	17.52	2.967	8.16	3.97	5.59
0.983	19.96	1.983	17.52	2.983	8.16	3.98	5.59
1.000	19.96	2.000	17.52	3.000	8.16	4.00	5.59

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.080 (i)
TIME TO PEAK (hrs)= 1.583
RUNOFF VOLUME (mm)= 21.088
TOTAL RAINFALL (mm)= 87.580
RUNOFF COEFFICIENT = 0.241

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 63.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.060 (i)
     TIME TO PEAK    (hrs)=   1.700
     RUNOFF VOLUME    (mm)=  28.139
     TOTAL RAINFALL   (mm)=  87.580
     RUNOFF COEFFICIENT   =   0.321

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

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     1.49   0.080     1.58    21.09
     + ID2= 2 (  0002):     0.98   0.060     1.70    28.14
       ================================================
       ID = 3 (  0004):     2.47   0.137     1.63    23.89

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.019 (i)
     TIME TO PEAK    (hrs)=   2.183
     RUNOFF VOLUME    (mm)=  21.086
     TOTAL RAINFALL   (mm)=  87.580
     RUNOFF COEFFICIENT   =   0.241

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



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--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     180.15       105.90
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.14 (ii)    6.07 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.46         0.18
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.07          0.081 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.40           1.38
     RUNOFF VOLUME    (mm)=      86.58        40.93          43.20
     TOTAL RAINFALL   (mm)=      87.58        87.58          87.58
     RUNOFF COEFFICIENT   =       0.99         0.47           0.49

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.081     1.38    43.20
     + ID2= 2 (  0102):     0.66   0.019     2.18    21.09
       ================================================
       ID = 3 (  0005):     1.11   0.083     1.38    30.05

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
```

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 FINISH
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
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6cd55-5a09-4c28-9711-c6e03c552f0a\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\5f9
6cd55-5a09-4c28-9711-c6e03c552f0a\sce


DATE: 11-25-2019                          TIME: 10:49:45

USER:



COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------
------------------------
  ***********************************************
  ** SIMULATION : 01. 2 yr - 6h Storm -SCS Type **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
```



```
|                  |              74163a60-c77c-4e3f-8a20-f98a0d0a2ecd\cb7c6532
| Ptotal= 42.30 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                          Duration of storm    =  6.00 hrs
                          Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.69 |  1.75    4.23 |  3.25    9.31 |  4.75    2.54
                0.50    1.69 |  2.00    4.23 |  3.50    9.31 |  5.00    2.54
                0.75    2.54 |  2.25    5.08 |  3.75    4.23 |  5.25    1.69
                1.00    2.54 |  2.50    5.08 |  4.00    4.23 |  5.50    1.69
                1.25    2.54 |  2.75   25.38 |  4.25    3.38 |  5.75    1.69
                1.50    2.54 |  3.00   65.99 |  4.50    3.38 |  6.00    1.69

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area     (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia       (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    1.69 | 1.517    4.23 | 3.017    9.31 |  4.52    2.54
               0.033    1.69 | 1.533    4.23 | 3.033    9.31 |  4.53    2.54
               0.050    1.69 | 1.550    4.23 | 3.050    9.31 |  4.55    2.54
               0.067    1.69 | 1.567    4.23 | 3.067    9.31 |  4.57    2.54
               0.083    1.69 | 1.583    4.23 | 3.083    9.31 |  4.58    2.54
               0.100    1.69 | 1.600    4.23 | 3.100    9.31 |  4.60    2.54
               0.117    1.69 | 1.617    4.23 | 3.117    9.31 |  4.62    2.54
               0.133    1.69 | 1.633    4.23 | 3.133    9.31 |  4.63    2.54
               0.150    1.69 | 1.650    4.23 | 3.150    9.31 |  4.65    2.54
               0.167    1.69 | 1.667    4.23 | 3.167    9.31 |  4.67    2.54
               0.183    1.69 | 1.683    4.23 | 3.183    9.31 |  4.68    2.54
               0.200    1.69 | 1.700    4.23 | 3.200    9.31 |  4.70    2.54
               0.217    1.69 | 1.717    4.23 | 3.217    9.31 |  4.72    2.54
               0.233    1.69 | 1.733    4.23 | 3.233    9.31 |  4.73    2.54
               0.250    1.69 | 1.750    4.23 | 3.250    9.31 |  4.75    2.54
               0.267    1.69 | 1.767    4.23 | 3.267    9.31 |  4.77    2.54
               0.283    1.69 | 1.783    4.23 | 3.283    9.31 |  4.78    2.54
               0.300    1.69 | 1.800    4.23 | 3.300    9.31 |  4.80    2.54
               0.317    1.69 | 1.817    4.23 | 3.317    9.31 |  4.82    2.54
               0.333    1.69 | 1.833    4.23 | 3.333    9.31 |  4.83    2.54
               0.350    1.69 | 1.850    4.23 | 3.350    9.31 |  4.85    2.54
```

0.367	1.69	1.867	4.23	3.367	9.31	4.87	2.54
0.383	1.69	1.883	4.23	3.383	9.31	4.88	2.54
0.400	1.69	1.900	4.23	3.400	9.31	4.90	2.54
0.417	1.69	1.917	4.23	3.417	9.31	4.92	2.54
0.433	1.69	1.933	4.23	3.433	9.31	4.93	2.54
0.450	1.69	1.950	4.23	3.450	9.31	4.95	2.54
0.467	1.69	1.967	4.23	3.467	9.31	4.97	2.54
0.483	1.69	1.983	4.23	3.483	9.31	4.98	2.54
0.500	1.69	2.000	4.23	3.500	9.31	5.00	2.54
0.517	2.54	2.017	5.08	3.517	4.23	5.02	1.69
0.533	2.54	2.033	5.08	3.533	4.23	5.03	1.69
0.550	2.54	2.050	5.08	3.550	4.23	5.05	1.69
0.567	2.54	2.067	5.08	3.567	4.23	5.07	1.69
0.583	2.54	2.083	5.08	3.583	4.23	5.08	1.69
0.600	2.54	2.100	5.08	3.600	4.23	5.10	1.69
0.617	2.54	2.117	5.08	3.617	4.23	5.12	1.69
0.633	2.54	2.133	5.08	3.633	4.23	5.13	1.69
0.650	2.54	2.150	5.08	3.650	4.23	5.15	1.69
0.667	2.54	2.167	5.08	3.667	4.23	5.17	1.69
0.683	2.54	2.183	5.08	3.683	4.23	5.18	1.69
0.700	2.54	2.200	5.08	3.700	4.23	5.20	1.69
0.717	2.54	2.217	5.08	3.717	4.23	5.22	1.69
0.733	2.54	2.233	5.08	3.733	4.23	5.23	1.69
0.750	2.54	2.250	5.08	3.750	4.23	5.25	1.69
0.767	2.54	2.267	5.08	3.767	4.23	5.27	1.69
0.783	2.54	2.283	5.08	3.783	4.23	5.28	1.69
0.800	2.54	2.300	5.08	3.800	4.23	5.30	1.69
0.817	2.54	2.317	5.08	3.817	4.23	5.32	1.69
0.833	2.54	2.333	5.08	3.833	4.23	5.33	1.69
0.850	2.54	2.350	5.08	3.850	4.23	5.35	1.69
0.867	2.54	2.367	5.08	3.867	4.23	5.37	1.69
0.883	2.54	2.383	5.08	3.883	4.23	5.38	1.69
0.900	2.54	2.400	5.08	3.900	4.23	5.40	1.69
0.917	2.54	2.417	5.08	3.917	4.23	5.42	1.69
0.933	2.54	2.433	5.08	3.933	4.23	5.43	1.69
0.950	2.54	2.450	5.08	3.950	4.23	5.45	1.69
0.967	2.54	2.467	5.08	3.967	4.23	5.47	1.69
0.983	2.54	2.483	5.08	3.983	4.23	5.48	1.69
1.000	2.54	2.500	5.08	4.000	4.23	5.50	1.69
1.017	2.54	2.517	25.38	4.017	3.38	5.52	1.69
1.033	2.54	2.533	25.38	4.033	3.38	5.53	1.69
1.050	2.54	2.550	25.38	4.050	3.38	5.55	1.69
1.067	2.54	2.567	25.38	4.067	3.38	5.57	1.69
1.083	2.54	2.583	25.38	4.083	3.38	5.58	1.69
1.100	2.54	2.600	25.38	4.100	3.38	5.60	1.69
1.117	2.54	2.617	25.38	4.117	3.38	5.62	1.69
1.133	2.54	2.633	25.38	4.133	3.38	5.63	1.69
1.150	2.54	2.650	25.38	4.150	3.38	5.65	1.69
1.167	2.54	2.667	25.38	4.167	3.38	5.67	1.69

1.183	2.54	2.683	25.38	4.183	3.38	5.68	1.69
1.200	2.54	2.700	25.38	4.200	3.38	5.70	1.69
1.217	2.54	2.717	25.38	4.217	3.38	5.72	1.69
1.233	2.54	2.733	25.38	4.233	3.38	5.73	1.69
1.250	2.54	2.750	25.38	4.250	3.38	5.75	1.69
1.267	2.54	2.767	65.98	4.267	3.38	5.77	1.69
1.283	2.54	2.783	65.99	4.283	3.38	5.78	1.69
1.300	2.54	2.800	65.99	4.300	3.38	5.80	1.69
1.317	2.54	2.817	65.99	4.317	3.38	5.82	1.69
1.333	2.54	2.833	65.99	4.333	3.38	5.83	1.69
1.350	2.54	2.850	65.99	4.350	3.38	5.85	1.69
1.367	2.54	2.867	65.99	4.367	3.38	5.87	1.69
1.383	2.54	2.883	65.99	4.383	3.38	5.88	1.69
1.400	2.54	2.900	65.99	4.400	3.38	5.90	1.69
1.417	2.54	2.917	65.99	4.417	3.38	5.92	1.69
1.433	2.54	2.933	65.99	4.433	3.38	5.93	1.69
1.450	2.54	2.950	65.99	4.450	3.38	5.95	1.69
1.467	2.54	2.967	65.99	4.467	3.38	5.97	1.69
1.483	2.54	2.983	65.99	4.483	3.38	5.98	1.69
1.500	2.54	3.000	65.99	4.500	3.38	6.00	1.69

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.018 (i)
TIME TO PEAK (hrs)= 3.150
RUNOFF VOLUME (mm)= 4.195
TOTAL RAINFALL (mm)= 42.300
RUNOFF COEFFICIENT = 0.099

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

CALIB	
NASHYD (0002)	Area (ha)= 0.98 Curve Number (CN)= 64.0
ID= 1 DT= 1.0 min	Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.016 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 6.918
TOTAL RAINFALL (mm)= 42.300
RUNOFF COEFFICIENT = 0.164

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

```
--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.018     3.15     4.20
      + ID2= 2 (  0002):     0.98   0.016     3.25     6.92
        ================================================
        ID = 3 (  0004):     2.47   0.033     3.18     5.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.004 (i)
     TIME TO PEAK    (hrs)=   3.733
     RUNOFF VOLUME    (mm)=   4.193
     TOTAL RAINFALL   (mm)=  42.300
     RUNOFF COEFFICIENT   =   0.099

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      65.99        31.76
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       1.71 (ii)    9.07 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.40         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.02          0.022 (iii)
```



```
     TIME TO PEAK    (hrs)=       3.00         3.08          3.05
     RUNOFF VOLUME    (mm)=      41.30        11.77         13.23
     TOTAL RAINFALL   (mm)=      42.30        42.30         42.30
     RUNOFF COEFFICIENT   =       0.98         0.28          0.31

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.022     3.05    13.23
      + ID2= 2 (  0102):     0.66   0.004     3.73     4.19
        ================================================
        ID = 3 (  0005):     1.11   0.023     3.05     7.86

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****
```

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  Output  filename:
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60286-6c70-4364-814d-fbc69bf5eb57\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\9cf
60286-6c70-4364-814d-fbc69bf5eb57\sce


DATE: 11-25-2019                          TIME: 10:49:45

USER:



COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------
-----------------------
  ************************************************
  ** SIMULATION : 02. 5 yr - 6h Storm -SCS Type **
  ************************************************


--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              74163a60-c77c-4e3f-8a20-f98a0d0a2ecd\f9a556d8
| Ptotal= 59.50 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                     Duration of storm    =  6.00 hrs
                     Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.38 |  1.75    5.95 |  3.25   13.09 |  4.75    3.57
                0.50    2.38 |  2.00    5.95 |  3.50   13.09 |  5.00    3.57
                0.75    3.57 |  2.25    7.14 |  3.75    5.95 |  5.25    2.38
                1.00    3.57 |  2.50    7.14 |  4.00    5.95 |  5.50    2.38
                1.25    3.57 |  2.75   35.70 |  4.25    4.76 |  5.75    2.38
                1.50    3.57 |  3.00   92.82 |  4.50    4.76 |  6.00    2.38

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22
```



```
NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
0.017    2.38 | 1.517    5.95 | 3.017   13.10 |  4.52    3.57
0.033    2.38 | 1.533    5.95 | 3.033   13.09 |  4.53    3.57
0.050    2.38 | 1.550    5.95 | 3.050   13.09 |  4.55    3.57
0.067    2.38 | 1.567    5.95 | 3.067   13.09 |  4.57    3.57
0.083    2.38 | 1.583    5.95 | 3.083   13.09 |  4.58    3.57
0.100    2.38 | 1.600    5.95 | 3.100   13.09 |  4.60    3.57
0.117    2.38 | 1.617    5.95 | 3.117   13.09 |  4.62    3.57
0.133    2.38 | 1.633    5.95 | 3.133   13.09 |  4.63    3.57
0.150    2.38 | 1.650    5.95 | 3.150   13.09 |  4.65    3.57
0.167    2.38 | 1.667    5.95 | 3.167   13.09 |  4.67    3.57
0.183    2.38 | 1.683    5.95 | 3.183   13.09 |  4.68    3.57
0.200    2.38 | 1.700    5.95 | 3.200   13.09 |  4.70    3.57
0.217    2.38 | 1.717    5.95 | 3.217   13.09 |  4.72    3.57
0.233    2.38 | 1.733    5.95 | 3.233   13.09 |  4.73    3.57
0.250    2.38 | 1.750    5.95 | 3.250   13.09 |  4.75    3.57
0.267    2.38 | 1.767    5.95 | 3.267   13.09 |  4.77    3.57
0.283    2.38 | 1.783    5.95 | 3.283   13.09 |  4.78    3.57
0.300    2.38 | 1.800    5.95 | 3.300   13.09 |  4.80    3.57
0.317    2.38 | 1.817    5.95 | 3.317   13.09 |  4.82    3.57
0.333    2.38 | 1.833    5.95 | 3.333   13.09 |  4.83    3.57
0.350    2.38 | 1.850    5.95 | 3.350   13.09 |  4.85    3.57
0.367    2.38 | 1.867    5.95 | 3.367   13.09 |  4.87    3.57
0.383    2.38 | 1.883    5.95 | 3.383   13.09 |  4.88    3.57
0.400    2.38 | 1.900    5.95 | 3.400   13.09 |  4.90    3.57
0.417    2.38 | 1.917    5.95 | 3.417   13.09 |  4.92    3.57
0.433    2.38 | 1.933    5.95 | 3.433   13.09 |  4.93    3.57
0.450    2.38 | 1.950    5.95 | 3.450   13.09 |  4.95    3.57
0.467    2.38 | 1.967    5.95 | 3.467   13.09 |  4.97    3.57
0.483    2.38 | 1.983    5.95 | 3.483   13.09 |  4.98    3.57
0.500    2.38 | 2.000    5.95 | 3.500   13.09 |  5.00    3.57
0.517    3.57 | 2.017    7.14 | 3.517    5.95 |  5.02    2.38
0.533    3.57 | 2.033    7.14 | 3.533    5.95 |  5.03    2.38
0.550    3.57 | 2.050    7.14 | 3.550    5.95 |  5.05    2.38
0.567    3.57 | 2.067    7.14 | 3.567    5.95 |  5.07    2.38
0.583    3.57 | 2.083    7.14 | 3.583    5.95 |  5.08    2.38
0.600    3.57 | 2.100    7.14 | 3.600    5.95 |  5.10    2.38
0.617    3.57 | 2.117    7.14 | 3.617    5.95 |  5.12    2.38
0.633    3.57 | 2.133    7.14 | 3.633    5.95 |  5.13    2.38
0.650    3.57 | 2.150    7.14 | 3.650    5.95 |  5.15    2.38
0.667    3.57 | 2.167    7.14 | 3.667    5.95 |  5.17    2.38
0.683    3.57 | 2.183    7.14 | 3.683    5.95 |  5.18    2.38
0.700    3.57 | 2.200    7.14 | 3.700    5.95 |  5.20    2.38
```

0.717	3.57	2.217	7.14	3.717	5.95	5.22	2.38
0.733	3.57	2.233	7.14	3.733	5.95	5.23	2.38
0.750	3.57	2.250	7.14	3.750	5.95	5.25	2.38
0.767	3.57	2.267	7.14	3.767	5.95	5.27	2.38
0.783	3.57	2.283	7.14	3.783	5.95	5.28	2.38
0.800	3.57	2.300	7.14	3.800	5.95	5.30	2.38
0.817	3.57	2.317	7.14	3.817	5.95	5.32	2.38
0.833	3.57	2.333	7.14	3.833	5.95	5.33	2.38
0.850	3.57	2.350	7.14	3.850	5.95	5.35	2.38
0.867	3.57	2.367	7.14	3.867	5.95	5.37	2.38
0.883	3.57	2.383	7.14	3.883	5.95	5.38	2.38
0.900	3.57	2.400	7.14	3.900	5.95	5.40	2.38
0.917	3.57	2.417	7.14	3.917	5.95	5.42	2.38
0.933	3.57	2.433	7.14	3.933	5.95	5.43	2.38
0.950	3.57	2.450	7.14	3.950	5.95	5.45	2.38
0.967	3.57	2.467	7.14	3.967	5.95	5.47	2.38
0.983	3.57	2.483	7.14	3.983	5.95	5.48	2.38
1.000	3.57	2.500	7.14	4.000	5.95	5.50	2.38
1.017	3.57	2.517	35.70	4.017	4.76	5.52	2.38
1.033	3.57	2.533	35.70	4.033	4.76	5.53	2.38
1.050	3.57	2.550	35.70	4.050	4.76	5.55	2.38
1.067	3.57	2.567	35.70	4.067	4.76	5.57	2.38
1.083	3.57	2.583	35.70	4.083	4.76	5.58	2.38
1.100	3.57	2.600	35.70	4.100	4.76	5.60	2.38
1.117	3.57	2.617	35.70	4.117	4.76	5.62	2.38
1.133	3.57	2.633	35.70	4.133	4.76	5.63	2.38
1.150	3.57	2.650	35.70	4.150	4.76	5.65	2.38
1.167	3.57	2.667	35.70	4.167	4.76	5.67	2.38
1.183	3.57	2.683	35.70	4.183	4.76	5.68	2.38
1.200	3.57	2.700	35.70	4.200	4.76	5.70	2.38
1.217	3.57	2.717	35.70	4.217	4.76	5.72	2.38
1.233	3.57	2.733	35.70	4.233	4.76	5.73	2.38
1.250	3.57	2.750	35.70	4.250	4.76	5.75	2.38
1.267	3.57	2.767	92.81	4.267	4.76	5.77	2.38
1.283	3.57	2.783	92.82	4.283	4.76	5.78	2.38
1.300	3.57	2.800	92.82	4.300	4.76	5.80	2.38
1.317	3.57	2.817	92.82	4.317	4.76	5.82	2.38
1.333	3.57	2.833	92.82	4.333	4.76	5.83	2.38
1.350	3.57	2.850	92.82	4.350	4.76	5.85	2.38
1.367	3.57	2.867	92.82	4.367	4.76	5.87	2.38
1.383	3.57	2.883	92.82	4.383	4.76	5.88	2.38
1.400	3.57	2.900	92.82	4.400	4.76	5.90	2.38
1.417	3.57	2.917	92.82	4.417	4.76	5.92	2.38
1.433	3.57	2.933	92.82	4.433	4.76	5.93	2.38
1.450	3.57	2.950	92.82	4.450	4.76	5.95	2.38
1.467	3.57	2.967	92.82	4.467	4.76	5.97	2.38
1.483	3.57	2.983	92.82	4.483	4.76	5.98	2.38
1.500	3.57	3.000	92.82	4.500	4.76	6.00	2.38


```
     Unit Hyd Qpeak  (cms)=   0.259

     PEAK FLOW       (cms)=   0.041 (i)
     TIME TO PEAK    (hrs)=   3.150
     RUNOFF VOLUME    (mm)=   9.216
     TOTAL RAINFALL   (mm)=  59.500
     RUNOFF COEFFICIENT   =   0.155

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.034 (i)
     TIME TO PEAK    (hrs)=   3.233
     RUNOFF VOLUME    (mm)=  14.009
     TOTAL RAINFALL   (mm)=  59.500
     RUNOFF COEFFICIENT   =   0.235

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

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.041     3.15     9.22
      + ID2= 2 (  0002):     0.98   0.034     3.23    14.01
        ================================================
        ID = 3 (  0004):     2.47   0.074     3.17    11.12

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040
```

```
     PEAK FLOW       (cms)=   0.009 (i)
     TIME TO PEAK    (hrs)=   3.683
     RUNOFF VOLUME    (mm)=   9.214
     TOTAL RAINFALL   (mm)=  59.500
     RUNOFF COEFFICIENT   =   0.155

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.31
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     54.77        40.00
     Mannings n           =     0.013        0.035

     Max.Eff.Inten.(mm/hr)=     92.82        57.93
               over (min)       5.00         8.00
     Storage Coeff.  (min)=      1.49 (ii)    7.91 (ii)
     Unit Hyd. Tpeak (min)=      5.00         8.00
     Unit Hyd. peak  (cms)=      0.42         0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.04          0.044 (iii)
     TIME TO PEAK    (hrs)=      3.00         3.05           3.03
     RUNOFF VOLUME    (mm)=     58.50        21.65          23.48
     TOTAL RAINFALL   (mm)=     59.50        59.50          59.50
     RUNOFF COEFFICIENT   =      0.98         0.36           0.39

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.044     3.03    23.48
```



```
      + ID2= 2 (  0102):     0.66   0.009     3.68     9.21
        ==================================================
        ID = 3 (  0005):     1.11   0.046     3.03    15.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\8ed
3ecd4-ec34-4df9-b307-b2b0cd7a967e\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\8ed
3ecd4-ec34-4df9-b307-b2b0cd7a967e\sce


DATE: 11-25-2019                          TIME: 10:49:45

USER:


COMMENTS: _____

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  ***********************************************
  ** SIMULATION : 03. 10 yr - 6h Storm -SCS Typ **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              74163a60-c77c-4e3f-8a20-f98a0d0a2ecd\b71dce07
| Ptotal= 70.80 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                     Duration of storm    =  6.00 hrs
                     Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.83 |  1.75    7.08 |  3.25   15.58 |  4.75    4.25
                0.50    2.83 |  2.00    7.08 |  3.50   15.58 |  5.00    4.25
                0.75    4.25 |  2.25    8.50 |  3.75    7.08 |  5.25    2.83
                1.00    4.25 |  2.50    8.50 |  4.00    7.08 |  5.50    2.83
                1.25    4.25 |  2.75   42.48 |  4.25    5.66 |  5.75    2.83
                1.50    4.25 |  3.00  110.45 |  4.50    5.66 |  6.00    2.83

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    2.83 | 1.517    7.08 | 3.017   15.59 |  4.52    4.25
               0.033    2.83 | 1.533    7.08 | 3.033   15.58 |  4.53    4.25
               0.050    2.83 | 1.550    7.08 | 3.050   15.58 |  4.55    4.25
               0.067    2.83 | 1.567    7.08 | 3.067   15.58 |  4.57    4.25
               0.083    2.83 | 1.583    7.08 | 3.083   15.58 |  4.58    4.25
               0.100    2.83 | 1.600    7.08 | 3.100   15.58 |  4.60    4.25
               0.117    2.83 | 1.617    7.08 | 3.117   15.58 |  4.62    4.25
               0.133    2.83 | 1.633    7.08 | 3.133   15.58 |  4.63    4.25
               0.150    2.83 | 1.650    7.08 | 3.150   15.58 |  4.65    4.25
               0.167    2.83 | 1.667    7.08 | 3.167   15.58 |  4.67    4.25
               0.183    2.83 | 1.683    7.08 | 3.183   15.58 |  4.68    4.25
               0.200    2.83 | 1.700    7.08 | 3.200   15.58 |  4.70    4.25
               0.217    2.83 | 1.717    7.08 | 3.217   15.58 |  4.72    4.25
               0.233    2.83 | 1.733    7.08 | 3.233   15.58 |  4.73    4.25
```



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               0.250    2.83 | 1.750    7.08 | 3.250   15.58 |  4.75    4.25
               0.267    2.83 | 1.767    7.08 | 3.267   15.58 |  4.77    4.25
               0.283    2.83 | 1.783    7.08 | 3.283   15.58 |  4.78    4.25
               0.300    2.83 | 1.800    7.08 | 3.300   15.58 |  4.80    4.25
               0.317    2.83 | 1.817    7.08 | 3.317   15.58 |  4.82    4.25
               0.333    2.83 | 1.833    7.08 | 3.333   15.58 |  4.83    4.25
               0.350    2.83 | 1.850    7.08 | 3.350   15.58 |  4.85    4.25
               0.367    2.83 | 1.867    7.08 | 3.367   15.58 |  4.87    4.25
               0.383    2.83 | 1.883    7.08 | 3.383   15.58 |  4.88    4.25
               0.400    2.83 | 1.900    7.08 | 3.400   15.58 |  4.90    4.25
               0.417    2.83 | 1.917    7.08 | 3.417   15.58 |  4.92    4.25
               0.433    2.83 | 1.933    7.08 | 3.433   15.58 |  4.93    4.25
               0.450    2.83 | 1.950    7.08 | 3.450   15.58 |  4.95    4.25
               0.467    2.83 | 1.967    7.08 | 3.467   15.58 |  4.97    4.25
               0.483    2.83 | 1.983    7.08 | 3.483   15.58 |  4.98    4.25
               0.500    2.83 | 2.000    7.08 | 3.500   15.58 |  5.00    4.25
               0.517    4.25 | 2.017    8.50 | 3.517    7.08 |  5.02    2.83
               0.533    4.25 | 2.033    8.50 | 3.533    7.08 |  5.03    2.83
               0.550    4.25 | 2.050    8.50 | 3.550    7.08 |  5.05    2.83
               0.567    4.25 | 2.067    8.50 | 3.567    7.08 |  5.07    2.83
               0.583    4.25 | 2.083    8.50 | 3.583    7.08 |  5.08    2.83
               0.600    4.25 | 2.100    8.50 | 3.600    7.08 |  5.10    2.83
               0.617    4.25 | 2.117    8.50 | 3.617    7.08 |  5.12    2.83
               0.633    4.25 | 2.133    8.50 | 3.633    7.08 |  5.13    2.83
               0.650    4.25 | 2.150    8.50 | 3.650    7.08 |  5.15    2.83
               0.667    4.25 | 2.167    8.50 | 3.667    7.08 |  5.17    2.83
               0.683    4.25 | 2.183    8.50 | 3.683    7.08 |  5.18    2.83
               0.700    4.25 | 2.200    8.50 | 3.700    7.08 |  5.20    2.83
               0.717    4.25 | 2.217    8.50 | 3.717    7.08 |  5.22    2.83
               0.733    4.25 | 2.233    8.50 | 3.733    7.08 |  5.23    2.83
               0.750    4.25 | 2.250    8.50 | 3.750    7.08 |  5.25    2.83
               0.767    4.25 | 2.267    8.50 | 3.767    7.08 |  5.27    2.83
               0.783    4.25 | 2.283    8.50 | 3.783    7.08 |  5.28    2.83
               0.800    4.25 | 2.300    8.50 | 3.800    7.08 |  5.30    2.83
               0.817    4.25 | 2.317    8.50 | 3.817    7.08 |  5.32    2.83
               0.833    4.25 | 2.333    8.50 | 3.833    7.08 |  5.33    2.83
               0.850    4.25 | 2.350    8.50 | 3.850    7.08 |  5.35    2.83
               0.867    4.25 | 2.367    8.50 | 3.867    7.08 |  5.37    2.83
               0.883    4.25 | 2.383    8.50 | 3.883    7.08 |  5.38    2.83
               0.900    4.25 | 2.400    8.50 | 3.900    7.08 |  5.40    2.83
               0.917    4.25 | 2.417    8.50 | 3.917    7.08 |  5.42    2.83
               0.933    4.25 | 2.433    8.50 | 3.933    7.08 |  5.43    2.83
               0.950    4.25 | 2.450    8.50 | 3.950    7.08 |  5.45    2.83
               0.967    4.25 | 2.467    8.50 | 3.967    7.08 |  5.47    2.83
               0.983    4.25 | 2.483    8.50 | 3.983    7.08 |  5.48    2.83
               1.000    4.25 | 2.500    8.50 | 4.000    7.08 |  5.50    2.83
               1.017    4.25 | 2.517   42.48 | 4.017    5.66 |  5.52    2.83
               1.033    4.25 | 2.533   42.48 | 4.033    5.66 |  5.53    2.83
               1.050    4.25 | 2.550   42.48 | 4.050    5.66 |  5.55    2.83
```

1.067	4.25	2.567	42.48	4.067	5.66	5.57	2.83
1.083	4.25	2.583	42.48	4.083	5.66	5.58	2.83
1.100	4.25	2.600	42.48	4.100	5.66	5.60	2.83
1.117	4.25	2.617	42.48	4.117	5.66	5.62	2.83
1.133	4.25	2.633	42.48	4.133	5.66	5.63	2.83
1.150	4.25	2.650	42.48	4.150	5.66	5.65	2.83
1.167	4.25	2.667	42.48	4.167	5.66	5.67	2.83
1.183	4.25	2.683	42.48	4.183	5.66	5.68	2.83
1.200	4.25	2.700	42.48	4.200	5.66	5.70	2.83
1.217	4.25	2.717	42.48	4.217	5.66	5.72	2.83
1.233	4.25	2.733	42.48	4.233	5.66	5.73	2.83
1.250	4.25	2.750	42.48	4.250	5.66	5.75	2.83
1.267	4.25	2.767	110.44	4.267	5.66	5.77	2.83
1.283	4.25	2.783	110.45	4.283	5.66	5.78	2.83
1.300	4.25	2.800	110.45	4.300	5.66	5.80	2.83
1.317	4.25	2.817	110.45	4.317	5.66	5.82	2.83
1.333	4.25	2.833	110.45	4.333	5.66	5.83	2.83
1.350	4.25	2.850	110.45	4.350	5.66	5.85	2.83
1.367	4.25	2.867	110.45	4.367	5.66	5.87	2.83
1.383	4.25	2.883	110.45	4.383	5.66	5.88	2.83
1.400	4.25	2.900	110.45	4.400	5.66	5.90	2.83
1.417	4.25	2.917	110.45	4.417	5.66	5.92	2.83
1.433	4.25	2.933	110.45	4.433	5.66	5.93	2.83
1.450	4.25	2.950	110.45	4.450	5.66	5.95	2.83
1.467	4.25	2.967	110.45	4.467	5.66	5.97	2.83
1.483	4.25	2.983	110.45	4.483	5.66	5.98	2.83
1.500	4.25	3.000	110.45	4.500	5.66	6.00	2.83

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.061 (i)
TIME TO PEAK (hrs)= 3.133
RUNOFF VOLUME (mm)= 13.337
TOTAL RAINFALL (mm)= 70.800
RUNOFF COEFFICIENT = 0.188

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

CALIB	
NASHYD (0002)	Area (ha)= 0.98 Curve Number (CN)= 64.0
ID= 1 DT= 1.0 min	Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.048 (i)
TIME TO PEAK (hrs)= 3.233

RUNOFF VOLUME (mm)= 19.585
TOTAL RAINFALL (mm)= 70.800
RUNOFF COEFFICIENT = 0.277

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

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	1.49	0.061	3.13	13.34
+ ID2= 2 (0002):	0.98	0.048	3.23	19.58
ID = 3 (0004):	2.47	0.107	3.17	15.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
NASHYD (0102)	Area (ha)= 0.66 Curve Number (CN)= 54.0
ID= 1 DT= 1.0 min	Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.63

Unit Hyd Qpeak (cms)= 0.040

PEAK FLOW (cms)= 0.013 (i)
TIME TO PEAK (hrs)= 3.667
RUNOFF VOLUME (mm)= 13.335
TOTAL RAINFALL (mm)= 70.800
RUNOFF COEFFICIENT = 0.188

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

CALIB	
STANDHYD (0001)	Area (ha)= 0.45
ID= 1 DT= 1.0 min	Total Imp(%)= 30.00 Dir. Conn.(%)= 5.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.31
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	54.77	40.00
Mannings n =	0.013	0.035

```
     Max.Eff.Inten.(mm/hr)=     110.45        77.27
               over (min)        5.00         8.00
     Storage Coeff.  (min)=      1.39 (ii)    7.38 (ii)
     Unit Hyd. Tpeak (min)=      5.00         8.00
     Unit Hyd. peak  (cms)=      0.43         0.15
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.05          0.059 (iii)
     TIME TO PEAK    (hrs)=      3.00         3.05           3.03
     RUNOFF VOLUME    (mm)=     69.80        29.03          31.06
     TOTAL RAINFALL   (mm)=     70.80        70.80          70.80
     RUNOFF COEFFICIENT   =      0.99         0.41           0.44

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.059     3.03    31.06
      + ID2= 2 (  0102):     0.66   0.013     3.67    13.33
        ====================================================
        ID = 3 (  0005):     1.11   0.063     3.03    20.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
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7db00-a9a3-48b4-95ad-2db516684a6f\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\41e
7db00-a9a3-48b4-95ad-2db516684a6f\sce


DATE: 11-25-2019                          TIME: 10:49:45

USER:


COMMENTS: _____________________________________________

--------------------------------------------------------------------------------
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  ***********************************************
  ** SIMULATION : 04. 25 yr - 6 h Storm SCS Typ **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              74163a60-c77c-4e3f-8a20-f98a0d0a2ecd\62c64705
| Ptotal= 85.20 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    =  6.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    3.41 |  1.75    8.52 |  3.25   18.74 |  4.75    5.11
                0.50    3.41 |  2.00    8.52 |  3.50   18.74 |  5.00    5.11
                0.75    5.11 |  2.25   10.22 |  3.75    8.52 |  5.25    3.41
                1.00    5.11 |  2.50   10.22 |  4.00    8.52 |  5.50    3.41
                1.25    5.11 |  2.75   51.12 |  4.25    6.82 |  5.75    3.41
                1.50    5.11 |  3.00  132.91 |  4.50    6.82 |  6.00    3.41
```

CALIB					
NASHYD (0101)	Area (ha)= 1.49	Curve Number (CN)= 54.0			
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.22				

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.41	1.517	8.52	3.017	18.76	4.52	5.11
0.033	3.41	1.533	8.52	3.033	18.74	4.53	5.11
0.050	3.41	1.550	8.52	3.050	18.74	4.55	5.11
0.067	3.41	1.567	8.52	3.067	18.74	4.57	5.11
0.083	3.41	1.583	8.52	3.083	18.74	4.58	5.11
0.100	3.41	1.600	8.52	3.100	18.74	4.60	5.11
0.117	3.41	1.617	8.52	3.117	18.74	4.62	5.11
0.133	3.41	1.633	8.52	3.133	18.74	4.63	5.11
0.150	3.41	1.650	8.52	3.150	18.74	4.65	5.11
0.167	3.41	1.667	8.52	3.167	18.74	4.67	5.11
0.183	3.41	1.683	8.52	3.183	18.74	4.68	5.11
0.200	3.41	1.700	8.52	3.200	18.74	4.70	5.11
0.217	3.41	1.717	8.52	3.217	18.74	4.72	5.11
0.233	3.41	1.733	8.52	3.233	18.74	4.73	5.11
0.250	3.41	1.750	8.52	3.250	18.74	4.75	5.11
0.267	3.41	1.767	8.52	3.267	18.74	4.77	5.11
0.283	3.41	1.783	8.52	3.283	18.74	4.78	5.11
0.300	3.41	1.800	8.52	3.300	18.74	4.80	5.11
0.317	3.41	1.817	8.52	3.317	18.74	4.82	5.11
0.333	3.41	1.833	8.52	3.333	18.74	4.83	5.11
0.350	3.41	1.850	8.52	3.350	18.74	4.85	5.11
0.367	3.41	1.867	8.52	3.367	18.74	4.87	5.11
0.383	3.41	1.883	8.52	3.383	18.74	4.88	5.11
0.400	3.41	1.900	8.52	3.400	18.74	4.90	5.11
0.417	3.41	1.917	8.52	3.417	18.74	4.92	5.11
0.433	3.41	1.933	8.52	3.433	18.74	4.93	5.11
0.450	3.41	1.950	8.52	3.450	18.74	4.95	5.11
0.467	3.41	1.967	8.52	3.467	18.74	4.97	5.11
0.483	3.41	1.983	8.52	3.483	18.74	4.98	5.11
0.500	3.41	2.000	8.52	3.500	18.74	5.00	5.11
0.517	5.11	2.017	10.22	3.517	8.52	5.02	3.41
0.533	5.11	2.033	10.22	3.533	8.52	5.03	3.41
0.550	5.11	2.050	10.22	3.550	8.52	5.05	3.41
0.567	5.11	2.067	10.22	3.567	8.52	5.07	3.41
0.583	5.11	2.083	10.22	3.583	8.52	5.08	3.41

0.600	5.11	2.100	10.22	3.600	8.52	5.10	3.41
0.617	5.11	2.117	10.22	3.617	8.52	5.12	3.41
0.633	5.11	2.133	10.22	3.633	8.52	5.13	3.41
0.650	5.11	2.150	10.22	3.650	8.52	5.15	3.41
0.667	5.11	2.167	10.22	3.667	8.52	5.17	3.41
0.683	5.11	2.183	10.22	3.683	8.52	5.18	3.41
0.700	5.11	2.200	10.22	3.700	8.52	5.20	3.41
0.717	5.11	2.217	10.22	3.717	8.52	5.22	3.41
0.733	5.11	2.233	10.22	3.733	8.52	5.23	3.41
0.750	5.11	2.250	10.22	3.750	8.52	5.25	3.41
0.767	5.11	2.267	10.22	3.767	8.52	5.27	3.41
0.783	5.11	2.283	10.22	3.783	8.52	5.28	3.41
0.800	5.11	2.300	10.22	3.800	8.52	5.30	3.41
0.817	5.11	2.317	10.22	3.817	8.52	5.32	3.41
0.833	5.11	2.333	10.22	3.833	8.52	5.33	3.41
0.850	5.11	2.350	10.22	3.850	8.52	5.35	3.41
0.867	5.11	2.367	10.22	3.867	8.52	5.37	3.41
0.883	5.11	2.383	10.22	3.883	8.52	5.38	3.41
0.900	5.11	2.400	10.22	3.900	8.52	5.40	3.41
0.917	5.11	2.417	10.22	3.917	8.52	5.42	3.41
0.933	5.11	2.433	10.22	3.933	8.52	5.43	3.41
0.950	5.11	2.450	10.22	3.950	8.52	5.45	3.41
0.967	5.11	2.467	10.22	3.967	8.52	5.47	3.41
0.983	5.11	2.483	10.22	3.983	8.52	5.48	3.41
1.000	5.11	2.500	10.22	4.000	8.52	5.50	3.41
1.017	5.11	2.517	51.12	4.017	6.82	5.52	3.41
1.033	5.11	2.533	51.12	4.033	6.82	5.53	3.41
1.050	5.11	2.550	51.12	4.050	6.82	5.55	3.41
1.067	5.11	2.567	51.12	4.067	6.82	5.57	3.41
1.083	5.11	2.583	51.12	4.083	6.82	5.58	3.41
1.100	5.11	2.600	51.12	4.100	6.82	5.60	3.41
1.117	5.11	2.617	51.12	4.117	6.82	5.62	3.41
1.133	5.11	2.633	51.12	4.133	6.82	5.63	3.41
1.150	5.11	2.650	51.12	4.150	6.82	5.65	3.41
1.167	5.11	2.667	51.12	4.167	6.82	5.67	3.41
1.183	5.11	2.683	51.12	4.183	6.82	5.68	3.41
1.200	5.11	2.700	51.12	4.200	6.82	5.70	3.41
1.217	5.11	2.717	51.12	4.217	6.82	5.72	3.41
1.233	5.11	2.733	51.12	4.233	6.82	5.73	3.41
1.250	5.11	2.750	51.12	4.250	6.82	5.75	3.41
1.267	5.11	2.767	132.90	4.267	6.82	5.77	3.41
1.283	5.11	2.783	132.91	4.283	6.82	5.78	3.41
1.300	5.11	2.800	132.91	4.300	6.82	5.80	3.41
1.317	5.11	2.817	132.91	4.317	6.82	5.82	3.41
1.333	5.11	2.833	132.91	4.333	6.82	5.83	3.41
1.350	5.11	2.850	132.91	4.350	6.82	5.85	3.41
1.367	5.11	2.867	132.91	4.367	6.82	5.87	3.41
1.383	5.11	2.883	132.91	4.383	6.82	5.88	3.41
1.400	5.11	2.900	132.91	4.400	6.82	5.90	3.41

```
                1.417    5.11 | 2.917  132.91 | 4.417    6.82 |  5.92    3.41
                1.433    5.11 | 2.933  132.91 | 4.433    6.82 |  5.93    3.41
                1.450    5.11 | 2.950  132.91 | 4.450    6.82 |  5.95    3.41
                1.467    5.11 | 2.967  132.91 | 4.467    6.82 |  5.97    3.41
                1.483    5.11 | 2.983  132.91 | 4.483    6.82 |  5.98    3.41
                1.500    5.11 | 3.000  132.91 | 4.500    6.82 |  6.00    3.40

     Unit Hyd Qpeak  (cms)=   0.259

     PEAK FLOW       (cms)=   0.090 (i)
     TIME TO PEAK    (hrs)=   3.133
     RUNOFF VOLUME    (mm)=  19.395
     TOTAL RAINFALL   (mm)=  85.200
     RUNOFF COEFFICIENT   =   0.228

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.068 (i)
     TIME TO PEAK    (hrs)=   3.217
     RUNOFF VOLUME    (mm)=  27.538
     TOTAL RAINFALL   (mm)=  85.200
     RUNOFF COEFFICIENT   =   0.323

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

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.090     3.13    19.39
      + ID2= 2 (  0002):     0.98   0.068     3.22    27.54
        ================================================
        ID = 3 (  0004):     2.47   0.155     3.17    22.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.019 (i)
     TIME TO PEAK    (hrs)=   3.650
     RUNOFF VOLUME    (mm)=  19.393
     TOTAL RAINFALL   (mm)=  85.200
     RUNOFF COEFFICIENT   =   0.228

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     132.91       103.67
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.29 (ii)    6.85 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.44         0.16
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.07          0.082 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.03           3.02
     RUNOFF VOLUME    (mm)=      84.20        39.18          41.42
     TOTAL RAINFALL   (mm)=      85.20        85.20          85.20
     RUNOFF COEFFICIENT   =       0.99         0.46           0.49

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.082     3.02    41.42
     + ID2= 2 (  0102):     0.66   0.019     3.65    19.39
       ====================================================
       ID = 3 (  0005):     1.11   0.087     3.03    28.32

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
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  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\f2c
c0244-872c-48cb-b292-a45937607ad9\sce


DATE: 11-25-2019                          TIME: 10:49:45

USER:
```



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COMMENTS: _____________________________________________


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  ***********************************************
  ** SIMULATION : 05. 50 yr - 6h Storm -SCS Typ **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              74163a60-c77c-4e3f-8a20-f98a0d0a2ecd\739813be
| Ptotal= 95.90 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    =  6.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    3.84 |  1.75    9.59 |  3.25   21.10 |  4.75    5.75
                0.50    3.84 |  2.00    9.59 |  3.50   21.10 |  5.00    5.75
                0.75    5.75 |  2.25   11.51 |  3.75    9.59 |  5.25    3.84
                1.00    5.75 |  2.50   11.51 |  4.00    9.59 |  5.50    3.84
                1.25    5.75 |  2.75   57.54 |  4.25    7.67 |  5.75    3.84
                1.50    5.75 |  3.00  149.60 |  4.50    7.67 |  6.00    3.84

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    3.84 | 1.517    9.59 | 3.017   21.11 |  4.52    5.75
               0.033    3.84 | 1.533    9.59 | 3.033   21.10 |  4.53    5.75
               0.050    3.84 | 1.550    9.59 | 3.050   21.10 |  4.55    5.75
               0.067    3.84 | 1.567    9.59 | 3.067   21.10 |  4.57    5.75
               0.083    3.84 | 1.583    9.59 | 3.083   21.10 |  4.58    5.75
               0.100    3.84 | 1.600    9.59 | 3.100   21.10 |  4.60    5.75
               0.117    3.84 | 1.617    9.59 | 3.117   21.10 |  4.62    5.75
```

0.133	3.84	1.633	9.59	3.133	21.10	4.63	5.75
0.150	3.84	1.650	9.59	3.150	21.10	4.65	5.75
0.167	3.84	1.667	9.59	3.167	21.10	4.67	5.75
0.183	3.84	1.683	9.59	3.183	21.10	4.68	5.75
0.200	3.84	1.700	9.59	3.200	21.10	4.70	5.75
0.217	3.84	1.717	9.59	3.217	21.10	4.72	5.75
0.233	3.84	1.733	9.59	3.233	21.10	4.73	5.75
0.250	3.84	1.750	9.59	3.250	21.10	4.75	5.75
0.267	3.84	1.767	9.59	3.267	21.10	4.77	5.75
0.283	3.84	1.783	9.59	3.283	21.10	4.78	5.75
0.300	3.84	1.800	9.59	3.300	21.10	4.80	5.75
0.317	3.84	1.817	9.59	3.317	21.10	4.82	5.75
0.333	3.84	1.833	9.59	3.333	21.10	4.83	5.75
0.350	3.84	1.850	9.59	3.350	21.10	4.85	5.75
0.367	3.84	1.867	9.59	3.367	21.10	4.87	5.75
0.383	3.84	1.883	9.59	3.383	21.10	4.88	5.75
0.400	3.84	1.900	9.59	3.400	21.10	4.90	5.75
0.417	3.84	1.917	9.59	3.417	21.10	4.92	5.75
0.433	3.84	1.933	9.59	3.433	21.10	4.93	5.75
0.450	3.84	1.950	9.59	3.450	21.10	4.95	5.75
0.467	3.84	1.967	9.59	3.467	21.10	4.97	5.75
0.483	3.84	1.983	9.59	3.483	21.10	4.98	5.75
0.500	3.84	2.000	9.59	3.500	21.10	5.00	5.75
0.517	5.75	2.017	11.51	3.517	9.59	5.02	3.84
0.533	5.75	2.033	11.51	3.533	9.59	5.03	3.84
0.550	5.75	2.050	11.51	3.550	9.59	5.05	3.84
0.567	5.75	2.067	11.51	3.567	9.59	5.07	3.84
0.583	5.75	2.083	11.51	3.583	9.59	5.08	3.84
0.600	5.75	2.100	11.51	3.600	9.59	5.10	3.84
0.617	5.75	2.117	11.51	3.617	9.59	5.12	3.84
0.633	5.75	2.133	11.51	3.633	9.59	5.13	3.84
0.650	5.75	2.150	11.51	3.650	9.59	5.15	3.84
0.667	5.75	2.167	11.51	3.667	9.59	5.17	3.84
0.683	5.75	2.183	11.51	3.683	9.59	5.18	3.84
0.700	5.75	2.200	11.51	3.700	9.59	5.20	3.84
0.717	5.75	2.217	11.51	3.717	9.59	5.22	3.84
0.733	5.75	2.233	11.51	3.733	9.59	5.23	3.84
0.750	5.75	2.250	11.51	3.750	9.59	5.25	3.84
0.767	5.75	2.267	11.51	3.767	9.59	5.27	3.84
0.783	5.75	2.283	11.51	3.783	9.59	5.28	3.84
0.800	5.75	2.300	11.51	3.800	9.59	5.30	3.84
0.817	5.75	2.317	11.51	3.817	9.59	5.32	3.84
0.833	5.75	2.333	11.51	3.833	9.59	5.33	3.84
0.850	5.75	2.350	11.51	3.850	9.59	5.35	3.84
0.867	5.75	2.367	11.51	3.867	9.59	5.37	3.84
0.883	5.75	2.383	11.51	3.883	9.59	5.38	3.84
0.900	5.75	2.400	11.51	3.900	9.59	5.40	3.84
0.917	5.75	2.417	11.51	3.917	9.59	5.42	3.84
0.933	5.75	2.433	11.51	3.933	9.59	5.43	3.84

0.950	5.75	2.450	11.51	3.950	9.59	5.45	3.84
0.967	5.75	2.467	11.51	3.967	9.59	5.47	3.84
0.983	5.75	2.483	11.51	3.983	9.59	5.48	3.84
1.000	5.75	2.500	11.51	4.000	9.59	5.50	3.84
1.017	5.75	2.517	57.54	4.017	7.67	5.52	3.84
1.033	5.75	2.533	57.54	4.033	7.67	5.53	3.84
1.050	5.75	2.550	57.54	4.050	7.67	5.55	3.84
1.067	5.75	2.567	57.54	4.067	7.67	5.57	3.84
1.083	5.75	2.583	57.54	4.083	7.67	5.58	3.84
1.100	5.75	2.600	57.54	4.100	7.67	5.60	3.84
1.117	5.75	2.617	57.54	4.117	7.67	5.62	3.84
1.133	5.75	2.633	57.54	4.133	7.67	5.63	3.84
1.150	5.75	2.650	57.54	4.150	7.67	5.65	3.84
1.167	5.75	2.667	57.54	4.167	7.67	5.67	3.84
1.183	5.75	2.683	57.54	4.183	7.67	5.68	3.84
1.200	5.75	2.700	57.54	4.200	7.67	5.70	3.84
1.217	5.75	2.717	57.54	4.217	7.67	5.72	3.84
1.233	5.75	2.733	57.54	4.233	7.67	5.73	3.84
1.250	5.75	2.750	57.54	4.250	7.67	5.75	3.84
1.267	5.75	2.767	149.59	4.267	7.67	5.77	3.84
1.283	5.75	2.783	149.60	4.283	7.67	5.78	3.84
1.300	5.75	2.800	149.60	4.300	7.67	5.80	3.84
1.317	5.75	2.817	149.60	4.317	7.67	5.82	3.84
1.333	5.75	2.833	149.60	4.333	7.67	5.83	3.84
1.350	5.75	2.850	149.60	4.350	7.67	5.85	3.84
1.367	5.75	2.867	149.60	4.367	7.67	5.87	3.84
1.383	5.75	2.883	149.60	4.383	7.67	5.88	3.84
1.400	5.75	2.900	149.60	4.400	7.67	5.90	3.84
1.417	5.75	2.917	149.60	4.417	7.67	5.92	3.84
1.433	5.75	2.933	149.60	4.433	7.67	5.93	3.84
1.450	5.75	2.950	149.60	4.450	7.67	5.95	3.84
1.467	5.75	2.967	149.60	4.467	7.67	5.97	3.84
1.483	5.75	2.983	149.60	4.483	7.67	5.98	3.84
1.500	5.75	3.000	149.60	4.500	7.67	6.00	3.83

```
     Unit Hyd Qpeak  (cms)=   0.259

     PEAK FLOW       (cms)=   0.114 (i)
     TIME TO PEAK    (hrs)=   3.133
     RUNOFF VOLUME    (mm)=  24.411
     TOTAL RAINFALL   (mm)=  95.900
     RUNOFF COEFFICIENT   =   0.255

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

--------------------------------------------------------------------------------
--------------------
| CALIB             |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 64.0
```

```
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.084 (i)
     TIME TO PEAK    (hrs)=   3.217
     RUNOFF VOLUME    (mm)=  33.968
     TOTAL RAINFALL   (mm)=  95.900
     RUNOFF COEFFICIENT   =   0.354

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

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-------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.114     3.13    24.41
      + ID2= 2 (  0002):     0.98   0.084     3.22    33.97
        ================================================
        ID = 3 (  0004):     2.47   0.194     3.17    28.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.024 (i)
     TIME TO PEAK    (hrs)=   3.650
     RUNOFF VOLUME    (mm)=  24.409
     TOTAL RAINFALL   (mm)=  95.900
     RUNOFF COEFFICIENT   =   0.255

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
-------------------
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```
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     149.60       124.24
               over (min)         5.00         7.00
     Storage Coeff.  (min)=       1.23 (ii)    6.54 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.45         0.17
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.09          0.099 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.03           3.02
     RUNOFF VOLUME    (mm)=      94.90        47.17          49.54
     TOTAL RAINFALL   (mm)=      95.90        95.90          95.90
     RUNOFF COEFFICIENT   =       0.99         0.49           0.52

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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-------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.099     3.02    49.54
      + ID2= 2 (  0102):     0.66   0.024     3.65    24.41
        ================================================
        ID = 3 (  0005):     1.11   0.106     3.03    34.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 FINISH
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```
        V    V   I    SSSSS  U   U    A    L
        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

         OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
        O   O    T      T    H   H   Y Y   MM MM  O   O
        O   O    T      T    H   H    Y    M   M  O   O
         OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\9bb
7f002-3193-411a-93c7-138451b53dd6\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\9bb
7f002-3193-411a-93c7-138451b53dd6\sce


DATE: 11-25-2019                          TIME: 10:49:45

USER:



COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : 06. 100 yr - 6h Storm -SCS Ty **
  ************************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              74163a60-c77c-4e3f-8a20-f98a0d0a2ecd\c61e9997
| Ptotal=106.50 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
```



```
--------------------
                      Duration of storm    =  6.00 hrs
                      Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    4.26 |  1.75   10.65 |  3.25   23.43 |  4.75    6.39
                0.50    4.26 |  2.00   10.65 |  3.50   23.43 |  5.00    6.39
                0.75    6.39 |  2.25   12.78 |  3.75   10.65 |  5.25    4.26
                1.00    6.39 |  2.50   12.78 |  4.00   10.65 |  5.50    4.26
                1.25    6.39 |  2.75   63.90 |  4.25    8.52 |  5.75    4.26
                1.50    6.39 |  3.00  166.14 |  4.50    8.52 |  6.00    4.26

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--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    4.26 | 1.517   10.65 | 3.017   23.45 |  4.52    6.39
               0.033    4.26 | 1.533   10.65 | 3.033   23.43 |  4.53    6.39
               0.050    4.26 | 1.550   10.65 | 3.050   23.43 |  4.55    6.39
               0.067    4.26 | 1.567   10.65 | 3.067   23.43 |  4.57    6.39
               0.083    4.26 | 1.583   10.65 | 3.083   23.43 |  4.58    6.39
               0.100    4.26 | 1.600   10.65 | 3.100   23.43 |  4.60    6.39
               0.117    4.26 | 1.617   10.65 | 3.117   23.43 |  4.62    6.39
               0.133    4.26 | 1.633   10.65 | 3.133   23.43 |  4.63    6.39
               0.150    4.26 | 1.650   10.65 | 3.150   23.43 |  4.65    6.39
               0.167    4.26 | 1.667   10.65 | 3.167   23.43 |  4.67    6.39
               0.183    4.26 | 1.683   10.65 | 3.183   23.43 |  4.68    6.39
               0.200    4.26 | 1.700   10.65 | 3.200   23.43 |  4.70    6.39
               0.217    4.26 | 1.717   10.65 | 3.217   23.43 |  4.72    6.39
               0.233    4.26 | 1.733   10.65 | 3.233   23.43 |  4.73    6.39
               0.250    4.26 | 1.750   10.65 | 3.250   23.43 |  4.75    6.39
               0.267    4.26 | 1.767   10.65 | 3.267   23.43 |  4.77    6.39
               0.283    4.26 | 1.783   10.65 | 3.283   23.43 |  4.78    6.39
               0.300    4.26 | 1.800   10.65 | 3.300   23.43 |  4.80    6.39
               0.317    4.26 | 1.817   10.65 | 3.317   23.43 |  4.82    6.39
               0.333    4.26 | 1.833   10.65 | 3.333   23.43 |  4.83    6.39
               0.350    4.26 | 1.850   10.65 | 3.350   23.43 |  4.85    6.39
               0.367    4.26 | 1.867   10.65 | 3.367   23.43 |  4.87    6.39
               0.383    4.26 | 1.883   10.65 | 3.383   23.43 |  4.88    6.39
```

0.400	4.26	1.900	10.65	3.400	23.43	4.90	6.39
0.417	4.26	1.917	10.65	3.417	23.43	4.92	6.39
0.433	4.26	1.933	10.65	3.433	23.43	4.93	6.39
0.450	4.26	1.950	10.65	3.450	23.43	4.95	6.39
0.467	4.26	1.967	10.65	3.467	23.43	4.97	6.39
0.483	4.26	1.983	10.65	3.483	23.43	4.98	6.39
0.500	4.26	2.000	10.65	3.500	23.43	5.00	6.39
0.517	6.39	2.017	12.78	3.517	10.65	5.02	4.26
0.533	6.39	2.033	12.78	3.533	10.65	5.03	4.26
0.550	6.39	2.050	12.78	3.550	10.65	5.05	4.26
0.567	6.39	2.067	12.78	3.567	10.65	5.07	4.26
0.583	6.39	2.083	12.78	3.583	10.65	5.08	4.26
0.600	6.39	2.100	12.78	3.600	10.65	5.10	4.26
0.617	6.39	2.117	12.78	3.617	10.65	5.12	4.26
0.633	6.39	2.133	12.78	3.633	10.65	5.13	4.26
0.650	6.39	2.150	12.78	3.650	10.65	5.15	4.26
0.667	6.39	2.167	12.78	3.667	10.65	5.17	4.26
0.683	6.39	2.183	12.78	3.683	10.65	5.18	4.26
0.700	6.39	2.200	12.78	3.700	10.65	5.20	4.26
0.717	6.39	2.217	12.78	3.717	10.65	5.22	4.26
0.733	6.39	2.233	12.78	3.733	10.65	5.23	4.26
0.750	6.39	2.250	12.78	3.750	10.65	5.25	4.26
0.767	6.39	2.267	12.78	3.767	10.65	5.27	4.26
0.783	6.39	2.283	12.78	3.783	10.65	5.28	4.26
0.800	6.39	2.300	12.78	3.800	10.65	5.30	4.26
0.817	6.39	2.317	12.78	3.817	10.65	5.32	4.26
0.833	6.39	2.333	12.78	3.833	10.65	5.33	4.26
0.850	6.39	2.350	12.78	3.850	10.65	5.35	4.26
0.867	6.39	2.367	12.78	3.867	10.65	5.37	4.26
0.883	6.39	2.383	12.78	3.883	10.65	5.38	4.26
0.900	6.39	2.400	12.78	3.900	10.65	5.40	4.26
0.917	6.39	2.417	12.78	3.917	10.65	5.42	4.26
0.933	6.39	2.433	12.78	3.933	10.65	5.43	4.26
0.950	6.39	2.450	12.78	3.950	10.65	5.45	4.26
0.967	6.39	2.467	12.78	3.967	10.65	5.47	4.26
0.983	6.39	2.483	12.78	3.983	10.65	5.48	4.26
1.000	6.39	2.500	12.78	4.000	10.65	5.50	4.26
1.017	6.39	2.517	63.89	4.017	8.52	5.52	4.26
1.033	6.39	2.533	63.90	4.033	8.52	5.53	4.26
1.050	6.39	2.550	63.90	4.050	8.52	5.55	4.26
1.067	6.39	2.567	63.90	4.067	8.52	5.57	4.26
1.083	6.39	2.583	63.90	4.083	8.52	5.58	4.26
1.100	6.39	2.600	63.90	4.100	8.52	5.60	4.26
1.117	6.39	2.617	63.90	4.117	8.52	5.62	4.26
1.133	6.39	2.633	63.90	4.133	8.52	5.63	4.26
1.150	6.39	2.650	63.90	4.150	8.52	5.65	4.26
1.167	6.39	2.667	63.90	4.167	8.52	5.67	4.26
1.183	6.39	2.683	63.90	4.183	8.52	5.68	4.26
1.200	6.39	2.700	63.90	4.200	8.52	5.70	4.26

1.217	6.39	2.717	63.90	4.217	8.52	5.72	4.26
1.233	6.39	2.733	63.90	4.233	8.52	5.73	4.26
1.250	6.39	2.750	63.90	4.250	8.52	5.75	4.26
1.267	6.39	2.767	166.13	4.267	8.52	5.77	4.26
1.283	6.39	2.783	166.14	4.283	8.52	5.78	4.26
1.300	6.39	2.800	166.14	4.300	8.52	5.80	4.26
1.317	6.39	2.817	166.14	4.317	8.52	5.82	4.26
1.333	6.39	2.833	166.14	4.333	8.52	5.83	4.26
1.350	6.39	2.850	166.14	4.350	8.52	5.85	4.26
1.367	6.39	2.867	166.14	4.367	8.52	5.87	4.26
1.383	6.39	2.883	166.14	4.383	8.52	5.88	4.26
1.400	6.39	2.900	166.14	4.400	8.52	5.90	4.26
1.417	6.39	2.917	166.14	4.417	8.52	5.92	4.26
1.433	6.39	2.933	166.14	4.433	8.52	5.93	4.26
1.450	6.39	2.950	166.14	4.450	8.52	5.95	4.26
1.467	6.39	2.967	166.14	4.467	8.52	5.97	4.26
1.483	6.39	2.983	166.14	4.483	8.52	5.98	4.26
1.500	6.39	3.000	166.14	4.500	8.52	6.00	4.25

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.140 (i)
TIME TO PEAK (hrs)= 3.133
RUNOFF VOLUME (mm)= 29.763
TOTAL RAINFALL (mm)= 106.500
RUNOFF COEFFICIENT = 0.279

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

CALIB
NASHYD (0002) | Area (ha)= 0.98 Curve Number (CN)= 64.0
ID= 1 DT= 1.0 min | Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.31

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.101 (i)
TIME TO PEAK (hrs)= 3.217
RUNOFF VOLUME (mm)= 40.709
TOTAL RAINFALL (mm)= 106.500
RUNOFF COEFFICIENT = 0.382

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

```
| ADD HYD  (  0004)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     1.49   0.140     3.13    29.76
     + ID2= 2 (  0002):     0.98   0.101     3.22    40.71
       ================================================
       ID = 3 (  0004):     2.47   0.237     3.15    34.11

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.030 (i)
     TIME TO PEAK    (hrs)=   3.650
     RUNOFF VOLUME    (mm)=  29.762
     TOTAL RAINFALL   (mm)= 106.500
     RUNOFF COEFFICIENT   =   0.279

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

--------------------------------------------------------------------------------
-------------------
| CALIB           |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.31
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     54.77        40.00
     Mannings n           =     0.013        0.035

     Max.Eff.Inten.(mm/hr)=    166.14       145.24
               over (min)        5.00         7.00
     Storage Coeff.  (min)=      1.18 (ii)    6.27 (ii)
     Unit Hyd. Tpeak (min)=      5.00         7.00
     Unit Hyd. peak  (cms)=      0.45         0.17
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.11          0.117 (iii)
     TIME TO PEAK    (hrs)=      3.00         3.03           3.02
     RUNOFF VOLUME    (mm)=    105.50        55.38          57.88
```



```
     TOTAL RAINFALL   (mm)=     106.50       106.50         106.50
     RUNOFF COEFFICIENT   =       0.99         0.52           0.54

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.117     3.02    57.88
     + ID2= 2 (  0102):     0.66   0.030     3.65    29.76
       ================================================
       ID = 3 (  0005):     1.11   0.126     3.03    41.16

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\b21
28f58-bf6b-4885-b91b-926c73b73d47\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\b21
28f58-bf6b-4885-b91b-926c73b73d47\sce


DATE: 11-25-2019                          TIME: 10:49:20

USER:



COMMENTS: _____


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  ***********************************************
  ** SIMULATION : 01. 2 yr - 12h Storm -SCS Typ **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
```



```
|                  |              2366d115-49d5-4a83-88c6-261e62a9487a\e7cc13f9
| Ptotal= 46.70 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                          Duration of storm    = 12.00 hrs
                          Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.17 |  3.25    1.87 |  6.25    8.41 |  9.25    1.63
                0.50    1.17 |  3.50    1.87 |  6.50    8.41 |  9.50    1.63
                0.75    1.17 |  3.75    1.87 |  6.75    3.74 |  9.75    1.63
                1.00    1.17 |  4.00    1.87 |  7.00    3.74 | 10.00    1.63
                1.25    1.17 |  4.25    2.80 |  7.25    2.80 | 10.25    0.93
                1.50    1.17 |  4.50    2.80 |  7.50    2.80 | 10.50    0.93
                1.75    1.17 |  4.75    3.74 |  7.75    2.80 | 10.75    0.93
                2.00    1.17 |  5.00    3.74 |  8.00    2.80 | 11.00    0.93
                2.25    1.40 |  5.25    5.60 |  8.25    1.63 | 11.25    0.93
                2.50    1.40 |  5.50    5.60 |  8.50    1.63 | 11.50    0.93
                2.75    1.40 |  5.75   22.42 |  8.75    1.63 | 11.75    0.93
                3.00    1.40 |  6.00   61.64 |  9.00    1.63 | 12.00    0.93

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--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    1.17 | 3.017    1.87 | 6.017    8.41 |  9.02    1.63
               0.033    1.17 | 3.033    1.87 | 6.033    8.41 |  9.03    1.63
               0.050    1.17 | 3.050    1.87 | 6.050    8.41 |  9.05    1.63
               0.067    1.17 | 3.067    1.87 | 6.067    8.41 |  9.07    1.63
               0.083    1.17 | 3.083    1.87 | 6.083    8.41 |  9.08    1.63
               0.100    1.17 | 3.100    1.87 | 6.100    8.41 |  9.10    1.63
               0.117    1.17 | 3.117    1.87 | 6.117    8.41 |  9.12    1.63
               0.133    1.17 | 3.133    1.87 | 6.133    8.41 |  9.13    1.63
               0.150    1.17 | 3.150    1.87 | 6.150    8.41 |  9.15    1.63
               0.167    1.17 | 3.167    1.87 | 6.167    8.41 |  9.17    1.63
               0.183    1.17 | 3.183    1.87 | 6.183    8.41 |  9.18    1.63
               0.200    1.17 | 3.200    1.87 | 6.200    8.41 |  9.20    1.63
               0.217    1.17 | 3.217    1.87 | 6.217    8.41 |  9.22    1.63
               0.233    1.17 | 3.233    1.87 | 6.233    8.41 |  9.23    1.63
               0.250    1.17 | 3.250    1.87 | 6.250    8.41 |  9.25    1.63
```

0.267	1.17	3.267	1.87	6.267	8.41	9.27	1.63
0.283	1.17	3.283	1.87	6.283	8.41	9.28	1.63
0.300	1.17	3.300	1.87	6.300	8.41	9.30	1.63
0.317	1.17	3.317	1.87	6.317	8.41	9.32	1.63
0.333	1.17	3.333	1.87	6.333	8.41	9.33	1.63
0.350	1.17	3.350	1.87	6.350	8.41	9.35	1.63
0.367	1.17	3.367	1.87	6.367	8.41	9.37	1.63
0.383	1.17	3.383	1.87	6.383	8.41	9.38	1.63
0.400	1.17	3.400	1.87	6.400	8.41	9.40	1.63
0.417	1.17	3.417	1.87	6.417	8.41	9.42	1.63
0.433	1.17	3.433	1.87	6.433	8.41	9.43	1.63
0.450	1.17	3.450	1.87	6.450	8.41	9.45	1.63
0.467	1.17	3.467	1.87	6.467	8.41	9.47	1.63
0.483	1.17	3.483	1.87	6.483	8.41	9.48	1.63
0.500	1.17	3.500	1.87	6.500	8.40	9.50	1.63
0.517	1.17	3.517	1.87	6.517	3.74	9.52	1.63
0.533	1.17	3.533	1.87	6.533	3.74	9.53	1.63
0.550	1.17	3.550	1.87	6.550	3.74	9.55	1.63
0.567	1.17	3.567	1.87	6.567	3.74	9.57	1.63
0.583	1.17	3.583	1.87	6.583	3.74	9.58	1.63
0.600	1.17	3.600	1.87	6.600	3.74	9.60	1.63
0.617	1.17	3.617	1.87	6.617	3.74	9.62	1.63
0.633	1.17	3.633	1.87	6.633	3.74	9.63	1.63
0.650	1.17	3.650	1.87	6.650	3.74	9.65	1.63
0.667	1.17	3.667	1.87	6.667	3.74	9.67	1.63
0.683	1.17	3.683	1.87	6.683	3.74	9.68	1.63
0.700	1.17	3.700	1.87	6.700	3.74	9.70	1.63
0.717	1.17	3.717	1.87	6.717	3.74	9.72	1.63
0.733	1.17	3.733	1.87	6.733	3.74	9.73	1.63
0.750	1.17	3.750	1.87	6.750	3.74	9.75	1.63
0.767	1.17	3.767	1.87	6.767	3.74	9.77	1.63
0.783	1.17	3.783	1.87	6.783	3.74	9.78	1.63
0.800	1.17	3.800	1.87	6.800	3.74	9.80	1.63
0.817	1.17	3.817	1.87	6.817	3.74	9.82	1.63
0.833	1.17	3.833	1.87	6.833	3.74	9.83	1.63
0.850	1.17	3.850	1.87	6.850	3.74	9.85	1.63
0.867	1.17	3.867	1.87	6.867	3.74	9.87	1.63
0.883	1.17	3.883	1.87	6.883	3.74	9.88	1.63
0.900	1.17	3.900	1.87	6.900	3.74	9.90	1.63
0.917	1.17	3.917	1.87	6.917	3.74	9.92	1.63
0.933	1.17	3.933	1.87	6.933	3.74	9.93	1.63
0.950	1.17	3.950	1.87	6.950	3.74	9.95	1.63
0.967	1.17	3.967	1.87	6.967	3.74	9.97	1.63
0.983	1.17	3.983	1.87	6.983	3.74	9.98	1.63
1.000	1.17	4.000	1.87	7.000	3.73	10.00	1.63
1.017	1.17	4.017	2.80	7.017	2.80	10.02	0.93
1.033	1.17	4.033	2.80	7.033	2.80	10.03	0.93
1.050	1.17	4.050	2.80	7.050	2.80	10.05	0.93
1.067	1.17	4.067	2.80	7.067	2.80	10.07	0.93

1.083	1.17	4.083	2.80	7.083	2.80	10.08	0.93
1.100	1.17	4.100	2.80	7.100	2.80	10.10	0.93
1.117	1.17	4.117	2.80	7.117	2.80	10.12	0.93
1.133	1.17	4.133	2.80	7.133	2.80	10.13	0.93
1.150	1.17	4.150	2.80	7.150	2.80	10.15	0.93
1.167	1.17	4.167	2.80	7.167	2.80	10.17	0.93
1.183	1.17	4.183	2.80	7.183	2.80	10.18	0.93
1.200	1.17	4.200	2.80	7.200	2.80	10.20	0.93
1.217	1.17	4.217	2.80	7.217	2.80	10.22	0.93
1.233	1.17	4.233	2.80	7.233	2.80	10.23	0.93
1.250	1.17	4.250	2.80	7.250	2.80	10.25	0.93
1.267	1.17	4.267	2.80	7.267	2.80	10.27	0.93
1.283	1.17	4.283	2.80	7.283	2.80	10.28	0.93
1.300	1.17	4.300	2.80	7.300	2.80	10.30	0.93
1.317	1.17	4.317	2.80	7.317	2.80	10.32	0.93
1.333	1.17	4.333	2.80	7.333	2.80	10.33	0.93
1.350	1.17	4.350	2.80	7.350	2.80	10.35	0.93
1.367	1.17	4.367	2.80	7.367	2.80	10.37	0.93
1.383	1.17	4.383	2.80	7.383	2.80	10.38	0.93
1.400	1.17	4.400	2.80	7.400	2.80	10.40	0.93
1.417	1.17	4.417	2.80	7.417	2.80	10.42	0.93
1.433	1.17	4.433	2.80	7.433	2.80	10.43	0.93
1.450	1.17	4.450	2.80	7.450	2.80	10.45	0.93
1.467	1.17	4.467	2.80	7.467	2.80	10.47	0.93
1.483	1.17	4.483	2.80	7.483	2.80	10.48	0.93
1.500	1.17	4.500	2.80	7.500	2.80	10.50	0.93
1.517	1.17	4.517	3.74	7.517	2.80	10.52	0.93
1.533	1.17	4.533	3.74	7.533	2.80	10.53	0.93
1.550	1.17	4.550	3.74	7.550	2.80	10.55	0.93
1.567	1.17	4.567	3.74	7.567	2.80	10.57	0.93
1.583	1.17	4.583	3.74	7.583	2.80	10.58	0.93
1.600	1.17	4.600	3.74	7.600	2.80	10.60	0.93
1.617	1.17	4.617	3.74	7.617	2.80	10.62	0.93
1.633	1.17	4.633	3.74	7.633	2.80	10.63	0.93
1.650	1.17	4.650	3.74	7.650	2.80	10.65	0.93
1.667	1.17	4.667	3.74	7.667	2.80	10.67	0.93
1.683	1.17	4.683	3.74	7.683	2.80	10.68	0.93
1.700	1.17	4.700	3.74	7.700	2.80	10.70	0.93
1.717	1.17	4.717	3.74	7.717	2.80	10.72	0.93
1.733	1.17	4.733	3.74	7.733	2.80	10.73	0.93
1.750	1.17	4.750	3.74	7.750	2.80	10.75	0.93
1.767	1.17	4.767	3.74	7.767	2.80	10.77	0.93
1.783	1.17	4.783	3.74	7.783	2.80	10.78	0.93
1.800	1.17	4.800	3.74	7.800	2.80	10.80	0.93
1.817	1.17	4.817	3.74	7.817	2.80	10.82	0.93
1.833	1.17	4.833	3.74	7.833	2.80	10.83	0.93
1.850	1.17	4.850	3.74	7.850	2.80	10.85	0.93
1.867	1.17	4.867	3.74	7.867	2.80	10.87	0.93
1.883	1.17	4.883	3.74	7.883	2.80	10.88	0.93

1.900	1.17	4.900	3.74	7.900	2.80	10.90	0.93
1.917	1.17	4.917	3.74	7.917	2.80	10.92	0.93
1.933	1.17	4.933	3.74	7.933	2.80	10.93	0.93
1.950	1.17	4.950	3.74	7.950	2.80	10.95	0.93
1.967	1.17	4.967	3.74	7.967	2.80	10.97	0.93
1.983	1.17	4.983	3.74	7.983	2.80	10.98	0.93
2.000	1.17	5.000	3.74	8.000	2.80	11.00	0.93
2.017	1.40	5.017	5.60	8.017	1.63	11.02	0.93
2.033	1.40	5.033	5.60	8.033	1.63	11.03	0.93
2.050	1.40	5.050	5.60	8.050	1.63	11.05	0.93
2.067	1.40	5.067	5.60	8.067	1.63	11.07	0.93
2.083	1.40	5.083	5.60	8.083	1.63	11.08	0.93
2.100	1.40	5.100	5.60	8.100	1.63	11.10	0.93
2.117	1.40	5.117	5.60	8.117	1.63	11.12	0.93
2.133	1.40	5.133	5.60	8.133	1.63	11.13	0.93
2.150	1.40	5.150	5.60	8.150	1.63	11.15	0.93
2.167	1.40	5.167	5.60	8.167	1.63	11.17	0.93
2.183	1.40	5.183	5.60	8.183	1.63	11.18	0.93
2.200	1.40	5.200	5.60	8.200	1.63	11.20	0.93
2.217	1.40	5.217	5.60	8.217	1.63	11.22	0.93
2.233	1.40	5.233	5.60	8.233	1.63	11.23	0.93
2.250	1.40	5.250	5.60	8.250	1.63	11.25	0.93
2.267	1.40	5.267	5.60	8.267	1.63	11.27	0.93
2.283	1.40	5.283	5.60	8.283	1.63	11.28	0.93
2.300	1.40	5.300	5.60	8.300	1.63	11.30	0.93
2.317	1.40	5.317	5.60	8.317	1.63	11.32	0.93
2.333	1.40	5.333	5.60	8.333	1.63	11.33	0.93
2.350	1.40	5.350	5.60	8.350	1.63	11.35	0.93
2.367	1.40	5.367	5.60	8.367	1.63	11.37	0.93
2.383	1.40	5.383	5.60	8.383	1.63	11.38	0.93
2.400	1.40	5.400	5.60	8.400	1.63	11.40	0.93
2.417	1.40	5.417	5.60	8.417	1.63	11.42	0.93
2.433	1.40	5.433	5.60	8.433	1.63	11.43	0.93
2.450	1.40	5.450	5.60	8.450	1.63	11.45	0.93
2.467	1.40	5.467	5.60	8.467	1.63	11.47	0.93
2.483	1.40	5.483	5.60	8.483	1.63	11.48	0.93
2.500	1.40	5.500	5.62	8.500	1.63	11.50	0.93
2.517	1.40	5.517	22.42	8.517	1.63	11.52	0.93
2.533	1.40	5.533	22.42	8.533	1.63	11.53	0.93
2.550	1.40	5.550	22.42	8.550	1.63	11.55	0.93
2.567	1.40	5.567	22.42	8.567	1.63	11.57	0.93
2.583	1.40	5.583	22.42	8.583	1.63	11.58	0.93
2.600	1.40	5.600	22.42	8.600	1.63	11.60	0.93
2.617	1.40	5.617	22.42	8.617	1.63	11.62	0.93
2.633	1.40	5.633	22.42	8.633	1.63	11.63	0.93
2.650	1.40	5.650	22.42	8.650	1.63	11.65	0.93
2.667	1.40	5.667	22.42	8.667	1.63	11.67	0.93
2.683	1.40	5.683	22.42	8.683	1.63	11.68	0.93
2.700	1.40	5.700	22.42	8.700	1.63	11.70	0.93

2.717	1.40	5.717	22.42	8.717	1.63	11.72	0.93
2.733	1.40	5.733	22.42	8.733	1.63	11.73	0.93
2.750	1.40	5.750	22.46	8.750	1.63	11.75	0.93
2.767	1.40	5.767	61.64	8.767	1.63	11.77	0.93
2.783	1.40	5.783	61.64	8.783	1.63	11.78	0.93
2.800	1.40	5.800	61.64	8.800	1.63	11.80	0.93
2.817	1.40	5.817	61.64	8.817	1.63	11.82	0.93
2.833	1.40	5.833	61.64	8.833	1.63	11.83	0.93
2.850	1.40	5.850	61.64	8.850	1.63	11.85	0.93
2.867	1.40	5.867	61.64	8.867	1.63	11.87	0.93
2.883	1.40	5.883	61.64	8.883	1.63	11.88	0.93
2.900	1.40	5.900	61.64	8.900	1.63	11.90	0.93
2.917	1.40	5.917	61.64	8.917	1.63	11.92	0.93
2.933	1.40	5.933	61.64	8.933	1.63	11.93	0.93
2.950	1.40	5.950	61.64	8.950	1.63	11.95	0.93
2.967	1.40	5.967	61.64	8.967	1.63	11.97	0.93
2.983	1.40	5.983	61.64	8.983	1.63	11.98	0.93
3.000	1.40	6.000	61.57	9.000	1.63	12.00	0.93

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.020 (i)
TIME TO PEAK (hrs)= 6.133
RUNOFF VOLUME (mm)= 5.322
TOTAL RAINFALL (mm)= 46.700
RUNOFF COEFFICIENT = 0.114

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

CALIB
NASHYD (0002) | Area (ha)= 0.98 Curve Number (CN)= 64.0
ID= 1 DT= 1.0 min | Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.31

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.017 (i)
TIME TO PEAK (hrs)= 6.233
RUNOFF VOLUME (mm)= 8.550
TOTAL RAINFALL (mm)= 46.700
RUNOFF COEFFICIENT = 0.183

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

```
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0101):     1.49   0.020     6.13     5.32
     + ID2= 2 (  0002):     0.98   0.017     6.23     8.55
       ================================================
       ID = 3 (  0004):     2.47   0.036     6.17     6.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.004 (i)
     TIME TO PEAK    (hrs)=   6.683
     RUNOFF VOLUME    (mm)=   5.322
     TOTAL RAINFALL   (mm)=  46.700
     RUNOFF COEFFICIENT   =   0.114

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
-------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      61.64        31.76
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.75 (ii)    9.32 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.39         0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.02          0.022 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.07           6.03
     RUNOFF VOLUME    (mm)=      45.70        14.11          15.68
```



```
     TOTAL RAINFALL   (mm)=      46.70        46.70          46.70
     RUNOFF COEFFICIENT   =       0.98         0.30           0.34

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.022     6.03    15.68
     + ID2= 2 (  0102):     0.66   0.004     6.68     5.32
       ================================================
       ID = 3 (  0005):     1.11   0.024     6.05     9.52

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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      V    V   I    SSSSS  U   U    A    L
      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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat
```

Output filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\adb49226-ffa9-4045-84c7-ff11b5eb5c89\sce
Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\adb49226-ffa9-4045-84c7-ff11b5eb5c89\sce

DATE: 11-25-2019 TIME: 10:49:20

USER:

COMMENTS: _____

****
** SIMULATION : 02. 5 yr - 12h Storm -SCS Typ **
****

| MASS STORM | Filename: C:\Users\iblechta\AppData\Local\Temp\2366d115-49d5-4a83-88c6-261e62a9487a\173d3882
| Ptotal= 64.30 mm | Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 12.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.61	3.25	2.57	6.25	11.57	9.25	2.25
0.50	1.61	3.50	2.57	6.50	11.57	9.50	2.25
0.75	1.61	3.75	2.57	6.75	5.14	9.75	2.25
1.00	1.61	4.00	2.57	7.00	5.14	10.00	2.25
1.25	1.61	4.25	3.86	7.25	3.86	10.25	1.29
1.50	1.61	4.50	3.86	7.50	3.86	10.50	1.29
1.75	1.61	4.75	5.14	7.75	3.86	10.75	1.29
2.00	1.61	5.00	5.14	8.00	3.86	11.00	1.29
2.25	1.93	5.25	7.72	8.25	2.25	11.25	1.29
2.50	1.93	5.50	7.72	8.50	2.25	11.50	1.29
2.75	1.93	5.75	30.86	8.75	2.25	11.75	1.29
3.00	1.93	6.00	84.88	9.00	2.25	12.00	1.29

CALIB	NASHYD (0101)	ID= 1 DT= 1.0 min	Area (ha)= 1.49	Ia (mm)= 10.00	U.H. Tp(hrs)= 0.22	Curve Number (CN)= 54.0	# of Linear Res.(N)= 3.00

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	1.61	3.017	2.57	6.017	11.57	9.02	2.25
0.033	1.61	3.033	2.57	6.033	11.57	9.03	2.25
0.050	1.61	3.050	2.57	6.050	11.57	9.05	2.25
0.067	1.61	3.067	2.57	6.067	11.57	9.07	2.25
0.083	1.61	3.083	2.57	6.083	11.57	9.08	2.25
0.100	1.61	3.100	2.57	6.100	11.57	9.10	2.25
0.117	1.61	3.117	2.57	6.117	11.57	9.12	2.25
0.133	1.61	3.133	2.57	6.133	11.57	9.13	2.25
0.150	1.61	3.150	2.57	6.150	11.57	9.15	2.25
0.167	1.61	3.167	2.57	6.167	11.57	9.17	2.25
0.183	1.61	3.183	2.57	6.183	11.57	9.18	2.25
0.200	1.61	3.200	2.57	6.200	11.57	9.20	2.25
0.217	1.61	3.217	2.57	6.217	11.57	9.22	2.25
0.233	1.61	3.233	2.57	6.233	11.57	9.23	2.25
0.250	1.61	3.250	2.57	6.250	11.57	9.25	2.25
0.267	1.61	3.267	2.57	6.267	11.57	9.27	2.25
0.283	1.61	3.283	2.57	6.283	11.57	9.28	2.25
0.300	1.61	3.300	2.57	6.300	11.57	9.30	2.25
0.317	1.61	3.317	2.57	6.317	11.57	9.32	2.25
0.333	1.61	3.333	2.57	6.333	11.57	9.33	2.25
0.350	1.61	3.350	2.57	6.350	11.57	9.35	2.25
0.367	1.61	3.367	2.57	6.367	11.57	9.37	2.25
0.383	1.61	3.383	2.57	6.383	11.57	9.38	2.25
0.400	1.61	3.400	2.57	6.400	11.57	9.40	2.25
0.417	1.61	3.417	2.57	6.417	11.57	9.42	2.25
0.433	1.61	3.433	2.57	6.433	11.57	9.43	2.25
0.450	1.61	3.450	2.57	6.450	11.57	9.45	2.25
0.467	1.61	3.467	2.57	6.467	11.57	9.47	2.25
0.483	1.61	3.483	2.57	6.483	11.57	9.48	2.25
0.500	1.61	3.500	2.57	6.500	11.56	9.50	2.25
0.517	1.61	3.517	2.57	6.517	5.14	9.52	2.25
0.533	1.61	3.533	2.57	6.533	5.14	9.53	2.25
0.550	1.61	3.550	2.57	6.550	5.14	9.55	2.25
0.567	1.61	3.567	2.57	6.567	5.14	9.57	2.25
0.583	1.61	3.583	2.57	6.583	5.14	9.58	2.25
0.600	1.61	3.600	2.57	6.600	5.14	9.60	2.25
0.617	1.61	3.617	2.57	6.617	5.14	9.62	2.25
0.633	1.61	3.633	2.57	6.633	5.14	9.63	2.25

0.650	1.61	3.650	2.57	6.650	5.14	9.65	2.25
0.667	1.61	3.667	2.57	6.667	5.14	9.67	2.25
0.683	1.61	3.683	2.57	6.683	5.14	9.68	2.25
0.700	1.61	3.700	2.57	6.700	5.14	9.70	2.25
0.717	1.61	3.717	2.57	6.717	5.14	9.72	2.25
0.733	1.61	3.733	2.57	6.733	5.14	9.73	2.25
0.750	1.61	3.750	2.57	6.750	5.14	9.75	2.25
0.767	1.61	3.767	2.57	6.767	5.14	9.77	2.25
0.783	1.61	3.783	2.57	6.783	5.14	9.78	2.25
0.800	1.61	3.800	2.57	6.800	5.14	9.80	2.25
0.817	1.61	3.817	2.57	6.817	5.14	9.82	2.25
0.833	1.61	3.833	2.57	6.833	5.14	9.83	2.25
0.850	1.61	3.850	2.57	6.850	5.14	9.85	2.25
0.867	1.61	3.867	2.57	6.867	5.14	9.87	2.25
0.883	1.61	3.883	2.57	6.883	5.14	9.88	2.25
0.900	1.61	3.900	2.57	6.900	5.14	9.90	2.25
0.917	1.61	3.917	2.57	6.917	5.14	9.92	2.25
0.933	1.61	3.933	2.57	6.933	5.14	9.93	2.25
0.950	1.61	3.950	2.57	6.950	5.14	9.95	2.25
0.967	1.61	3.967	2.57	6.967	5.14	9.97	2.25
0.983	1.61	3.983	2.57	6.983	5.14	9.98	2.25
1.000	1.61	4.000	2.57	7.000	5.14	10.00	2.25
1.017	1.61	4.017	3.86	7.017	3.86	10.02	1.29
1.033	1.61	4.033	3.86	7.033	3.86	10.03	1.29
1.050	1.61	4.050	3.86	7.050	3.86	10.05	1.29
1.067	1.61	4.067	3.86	7.067	3.86	10.07	1.29
1.083	1.61	4.083	3.86	7.083	3.86	10.08	1.29
1.100	1.61	4.100	3.86	7.100	3.86	10.10	1.29
1.117	1.61	4.117	3.86	7.117	3.86	10.12	1.29
1.133	1.61	4.133	3.86	7.133	3.86	10.13	1.29
1.150	1.61	4.150	3.86	7.150	3.86	10.15	1.29
1.167	1.61	4.167	3.86	7.167	3.86	10.17	1.29
1.183	1.61	4.183	3.86	7.183	3.86	10.18	1.29
1.200	1.61	4.200	3.86	7.200	3.86	10.20	1.29
1.217	1.61	4.217	3.86	7.217	3.86	10.22	1.29
1.233	1.61	4.233	3.86	7.233	3.86	10.23	1.29
1.250	1.61	4.250	3.86	7.250	3.86	10.25	1.29
1.267	1.61	4.267	3.86	7.267	3.86	10.27	1.29
1.283	1.61	4.283	3.86	7.283	3.86	10.28	1.29
1.300	1.61	4.300	3.86	7.300	3.86	10.30	1.29
1.317	1.61	4.317	3.86	7.317	3.86	10.32	1.29
1.333	1.61	4.333	3.86	7.333	3.86	10.33	1.29
1.350	1.61	4.350	3.86	7.350	3.86	10.35	1.29
1.367	1.61	4.367	3.86	7.367	3.86	10.37	1.29
1.383	1.61	4.383	3.86	7.383	3.86	10.38	1.29
1.400	1.61	4.400	3.86	7.400	3.86	10.40	1.29
1.417	1.61	4.417	3.86	7.417	3.86	10.42	1.29
1.433	1.61	4.433	3.86	7.433	3.86	10.43	1.29
1.450	1.61	4.450	3.86	7.450	3.86	10.45	1.29

1.467	1.61	4.467	3.86	7.467	3.86	10.47	1.29
1.483	1.61	4.483	3.86	7.483	3.86	10.48	1.29
1.500	1.61	4.500	3.86	7.500	3.86	10.50	1.29
1.517	1.61	4.517	5.14	7.517	3.86	10.52	1.29
1.533	1.61	4.533	5.14	7.533	3.86	10.53	1.29
1.550	1.61	4.550	5.14	7.550	3.86	10.55	1.29
1.567	1.61	4.567	5.14	7.567	3.86	10.57	1.29
1.583	1.61	4.583	5.14	7.583	3.86	10.58	1.29
1.600	1.61	4.600	5.14	7.600	3.86	10.60	1.29
1.617	1.61	4.617	5.14	7.617	3.86	10.62	1.29
1.633	1.61	4.633	5.14	7.633	3.86	10.63	1.29
1.650	1.61	4.650	5.14	7.650	3.86	10.65	1.29
1.667	1.61	4.667	5.14	7.667	3.86	10.67	1.29
1.683	1.61	4.683	5.14	7.683	3.86	10.68	1.29
1.700	1.61	4.700	5.14	7.700	3.86	10.70	1.29
1.717	1.61	4.717	5.14	7.717	3.86	10.72	1.29
1.733	1.61	4.733	5.14	7.733	3.86	10.73	1.29
1.750	1.61	4.750	5.14	7.750	3.86	10.75	1.29
1.767	1.61	4.767	5.14	7.767	3.86	10.77	1.29
1.783	1.61	4.783	5.14	7.783	3.86	10.78	1.29
1.800	1.61	4.800	5.14	7.800	3.86	10.80	1.29
1.817	1.61	4.817	5.14	7.817	3.86	10.82	1.29
1.833	1.61	4.833	5.14	7.833	3.86	10.83	1.29
1.850	1.61	4.850	5.14	7.850	3.86	10.85	1.29
1.867	1.61	4.867	5.14	7.867	3.86	10.87	1.29
1.883	1.61	4.883	5.14	7.883	3.86	10.88	1.29
1.900	1.61	4.900	5.14	7.900	3.86	10.90	1.29
1.917	1.61	4.917	5.14	7.917	3.86	10.92	1.29
1.933	1.61	4.933	5.14	7.933	3.86	10.93	1.29
1.950	1.61	4.950	5.14	7.950	3.86	10.95	1.29
1.967	1.61	4.967	5.14	7.967	3.86	10.97	1.29
1.983	1.61	4.983	5.14	7.983	3.86	10.98	1.29
2.000	1.61	5.000	5.15	8.000	3.85	11.00	1.29
2.017	1.93	5.017	7.72	8.017	2.25	11.02	1.29
2.033	1.93	5.033	7.72	8.033	2.25	11.03	1.29
2.050	1.93	5.050	7.72	8.050	2.25	11.05	1.29
2.067	1.93	5.067	7.72	8.067	2.25	11.07	1.29
2.083	1.93	5.083	7.72	8.083	2.25	11.08	1.29
2.100	1.93	5.100	7.72	8.100	2.25	11.10	1.29
2.117	1.93	5.117	7.72	8.117	2.25	11.12	1.29
2.133	1.93	5.133	7.72	8.133	2.25	11.13	1.29
2.150	1.93	5.150	7.72	8.150	2.25	11.15	1.29
2.167	1.93	5.167	7.72	8.167	2.25	11.17	1.29
2.183	1.93	5.183	7.72	8.183	2.25	11.18	1.29
2.200	1.93	5.200	7.72	8.200	2.25	11.20	1.29
2.217	1.93	5.217	7.72	8.217	2.25	11.22	1.29
2.233	1.93	5.233	7.72	8.233	2.25	11.23	1.29
2.250	1.93	5.250	7.72	8.250	2.25	11.25	1.29
2.267	1.93	5.267	7.72	8.267	2.25	11.27	1.29

2.283	1.93	5.283	7.72	8.283	2.25	11.28	1.29
2.300	1.93	5.300	7.72	8.300	2.25	11.30	1.29
2.317	1.93	5.317	7.72	8.317	2.25	11.32	1.29
2.333	1.93	5.333	7.72	8.333	2.25	11.33	1.29
2.350	1.93	5.350	7.72	8.350	2.25	11.35	1.29
2.367	1.93	5.367	7.72	8.367	2.25	11.37	1.29
2.383	1.93	5.383	7.72	8.383	2.25	11.38	1.29
2.400	1.93	5.400	7.72	8.400	2.25	11.40	1.29
2.417	1.93	5.417	7.72	8.417	2.25	11.42	1.29
2.433	1.93	5.433	7.72	8.433	2.25	11.43	1.29
2.450	1.93	5.450	7.72	8.450	2.25	11.45	1.29
2.467	1.93	5.467	7.72	8.467	2.25	11.47	1.29
2.483	1.93	5.483	7.72	8.483	2.25	11.48	1.29
2.500	1.93	5.500	7.74	8.500	2.25	11.50	1.29
2.517	1.93	5.517	30.86	8.517	2.25	11.52	1.29
2.533	1.93	5.533	30.86	8.533	2.25	11.53	1.29
2.550	1.93	5.550	30.86	8.550	2.25	11.55	1.29
2.567	1.93	5.567	30.86	8.567	2.25	11.57	1.29
2.583	1.93	5.583	30.86	8.583	2.25	11.58	1.29
2.600	1.93	5.600	30.86	8.600	2.25	11.60	1.29
2.617	1.93	5.617	30.86	8.617	2.25	11.62	1.29
2.633	1.93	5.633	30.86	8.633	2.25	11.63	1.29
2.650	1.93	5.650	30.86	8.650	2.25	11.65	1.29
2.667	1.93	5.667	30.86	8.667	2.25	11.67	1.29
2.683	1.93	5.683	30.86	8.683	2.25	11.68	1.29
2.700	1.93	5.700	30.86	8.700	2.25	11.70	1.29
2.717	1.93	5.717	30.86	8.717	2.25	11.72	1.29
2.733	1.93	5.733	30.86	8.733	2.25	11.73	1.29
2.750	1.93	5.750	30.93	8.750	2.25	11.75	1.29
2.767	1.93	5.767	84.88	8.767	2.25	11.77	1.29
2.783	1.93	5.783	84.88	8.783	2.25	11.78	1.29
2.800	1.93	5.800	84.88	8.800	2.25	11.80	1.29
2.817	1.93	5.817	84.88	8.817	2.25	11.82	1.29
2.833	1.93	5.833	84.88	8.833	2.25	11.83	1.29
2.850	1.93	5.850	84.88	8.850	2.25	11.85	1.29
2.867	1.93	5.867	84.88	8.867	2.25	11.87	1.29
2.883	1.93	5.883	84.88	8.883	2.25	11.88	1.29
2.900	1.93	5.900	84.88	8.900	2.25	11.90	1.29
2.917	1.93	5.917	84.88	8.917	2.25	11.92	1.29
2.933	1.93	5.933	84.88	8.933	2.25	11.93	1.29
2.950	1.93	5.950	84.88	8.950	2.25	11.95	1.29
2.967	1.93	5.967	84.88	8.967	2.25	11.97	1.29
2.983	1.93	5.983	84.88	8.983	2.25	11.98	1.29
3.000	1.93	6.000	84.77	9.000	2.25	12.00	1.29

```
Unit Hyd Qpeak  (cms)=   0.259

PEAK FLOW       (cms)=   0.042 (i)
TIME TO PEAK    (hrs)=   6.133
```



```
     RUNOFF VOLUME    (mm)=  10.893
     TOTAL RAINFALL   (mm)=  64.299
     RUNOFF COEFFICIENT   =   0.169

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

-------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.034 (i)
     TIME TO PEAK    (hrs)=   6.217
     RUNOFF VOLUME    (mm)=  16.298
     TOTAL RAINFALL   (mm)=  64.299
     RUNOFF COEFFICIENT   =   0.253

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

-------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.042     6.13    10.89
      + ID2= 2 (  0002):     0.98   0.034     6.22    16.30
        ================================================
        ID = 3 (  0004):     2.47   0.075     6.17    13.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.009 (i)
     TIME TO PEAK    (hrs)=   6.650
     RUNOFF VOLUME    (mm)=  10.893
     TOTAL RAINFALL   (mm)=  64.299
```

```
     RUNOFF COEFFICIENT   =   0.169

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

-------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
-------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.31
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     54.77        40.00
     Mannings n           =     0.013        0.035

     Max.Eff.Inten.(mm/hr)=     84.88        55.27
               over (min)       5.00         9.00
     Storage Coeff.  (min)=      1.54 (ii)    8.20 (ii)
     Unit Hyd. Tpeak (min)=      5.00         9.00
     Unit Hyd. peak  (cms)=      0.41         0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.04          0.041 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.05           6.03
     RUNOFF VOLUME    (mm)=     63.30        24.71          26.63
     TOTAL RAINFALL   (mm)=     64.30        64.30          64.30
     RUNOFF COEFFICIENT   =      0.98         0.38           0.41

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.041     6.03    26.63
      + ID2= 2 (  0102):     0.66   0.009     6.65    10.89
        ==========================================================
        ID = 3 (  0005):     1.11   0.044     6.05    17.27
```



```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
===============================================================================
=======================

       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\a38
a5aa8-5da5-4fb9-9724-145e6fb59722\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\a38
a5aa8-5da5-4fb9-9724-145e6fb59722\sce


DATE: 11-25-2019                          TIME: 10:49:20

USER:


COMMENTS: _____

-------------------------------------------------------------------------------
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  ********************************************
  ** SIMULATION : 03. 10 yr - 12h Storm -SCS Ty **
  ********************************************
```

MASS STORM	Filename: C:\Users\iblechta\AppData\Local\Temp\2366d115-49d5-4a83-88c6-261e62a9487a\956397d6
Ptotal= 76.00 mm	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 12.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.90	3.25	3.04	6.25	13.68	9.25	2.66
0.50	1.90	3.50	3.04	6.50	13.68	9.50	2.66
0.75	1.90	3.75	3.04	6.75	6.08	9.75	2.66
1.00	1.90	4.00	3.04	7.00	6.08	10.00	2.66
1.25	1.90	4.25	4.56	7.25	4.56	10.25	1.52
1.50	1.90	4.50	4.56	7.50	4.56	10.50	1.52
1.75	1.90	4.75	6.08	7.75	4.56	10.75	1.52
2.00	1.90	5.00	6.08	8.00	4.56	11.00	1.52
2.25	2.28	5.25	9.12	8.25	2.66	11.25	1.52
2.50	2.28	5.50	9.12	8.50	2.66	11.50	1.52
2.75	2.28	5.75	36.48	8.75	2.66	11.75	1.52
3.00	2.28	6.00	100.32	9.00	2.66	12.00	1.52

CALIB NASHYD (0101) ID= 1 DT= 1.0 min	Area (ha)= 1.49	Curve Number (CN)= 54.0
	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.22	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	1.90	3.017	3.04	6.017	13.68	9.02	2.66
0.033	1.90	3.033	3.04	6.033	13.68	9.03	2.66
0.050	1.90	3.050	3.04	6.050	13.68	9.05	2.66
0.067	1.90	3.067	3.04	6.067	13.68	9.07	2.66
0.083	1.90	3.083	3.04	6.083	13.68	9.08	2.66
0.100	1.90	3.100	3.04	6.100	13.68	9.10	2.66
0.117	1.90	3.117	3.04	6.117	13.68	9.12	2.66
0.133	1.90	3.133	3.04	6.133	13.68	9.13	2.66
0.150	1.90	3.150	3.04	6.150	13.68	9.15	2.66
0.167	1.90	3.167	3.04	6.167	13.68	9.17	2.66
0.183	1.90	3.183	3.04	6.183	13.68	9.18	2.66
0.200	1.90	3.200	3.04	6.200	13.68	9.20	2.66

0.217	1.90	3.217	3.04	6.217	13.68	9.22	2.66
0.233	1.90	3.233	3.04	6.233	13.68	9.23	2.66
0.250	1.90	3.250	3.04	6.250	13.68	9.25	2.66
0.267	1.90	3.267	3.04	6.267	13.68	9.27	2.66
0.283	1.90	3.283	3.04	6.283	13.68	9.28	2.66
0.300	1.90	3.300	3.04	6.300	13.68	9.30	2.66
0.317	1.90	3.317	3.04	6.317	13.68	9.32	2.66
0.333	1.90	3.333	3.04	6.333	13.68	9.33	2.66
0.350	1.90	3.350	3.04	6.350	13.68	9.35	2.66
0.367	1.90	3.367	3.04	6.367	13.68	9.37	2.66
0.383	1.90	3.383	3.04	6.383	13.68	9.38	2.66
0.400	1.90	3.400	3.04	6.400	13.68	9.40	2.66
0.417	1.90	3.417	3.04	6.417	13.68	9.42	2.66
0.433	1.90	3.433	3.04	6.433	13.68	9.43	2.66
0.450	1.90	3.450	3.04	6.450	13.68	9.45	2.66
0.467	1.90	3.467	3.04	6.467	13.68	9.47	2.66
0.483	1.90	3.483	3.04	6.483	13.68	9.48	2.66
0.500	1.90	3.500	3.04	6.500	13.67	9.50	2.66
0.517	1.90	3.517	3.04	6.517	6.08	9.52	2.66
0.533	1.90	3.533	3.04	6.533	6.08	9.53	2.66
0.550	1.90	3.550	3.04	6.550	6.08	9.55	2.66
0.567	1.90	3.567	3.04	6.567	6.08	9.57	2.66
0.583	1.90	3.583	3.04	6.583	6.08	9.58	2.66
0.600	1.90	3.600	3.04	6.600	6.08	9.60	2.66
0.617	1.90	3.617	3.04	6.617	6.08	9.62	2.66
0.633	1.90	3.633	3.04	6.633	6.08	9.63	2.66
0.650	1.90	3.650	3.04	6.650	6.08	9.65	2.66
0.667	1.90	3.667	3.04	6.667	6.08	9.67	2.66
0.683	1.90	3.683	3.04	6.683	6.08	9.68	2.66
0.700	1.90	3.700	3.04	6.700	6.08	9.70	2.66
0.717	1.90	3.717	3.04	6.717	6.08	9.72	2.66
0.733	1.90	3.733	3.04	6.733	6.08	9.73	2.66
0.750	1.90	3.750	3.04	6.750	6.08	9.75	2.66
0.767	1.90	3.767	3.04	6.767	6.08	9.77	2.66
0.783	1.90	3.783	3.04	6.783	6.08	9.78	2.66
0.800	1.90	3.800	3.04	6.800	6.08	9.80	2.66
0.817	1.90	3.817	3.04	6.817	6.08	9.82	2.66
0.833	1.90	3.833	3.04	6.833	6.08	9.83	2.66
0.850	1.90	3.850	3.04	6.850	6.08	9.85	2.66
0.867	1.90	3.867	3.04	6.867	6.08	9.87	2.66
0.883	1.90	3.883	3.04	6.883	6.08	9.88	2.66
0.900	1.90	3.900	3.04	6.900	6.08	9.90	2.66
0.917	1.90	3.917	3.04	6.917	6.08	9.92	2.66
0.933	1.90	3.933	3.04	6.933	6.08	9.93	2.66
0.950	1.90	3.950	3.04	6.950	6.08	9.95	2.66
0.967	1.90	3.967	3.04	6.967	6.08	9.97	2.66
0.983	1.90	3.983	3.04	6.983	6.08	9.98	2.66
1.000	1.90	4.000	3.04	7.000	6.08	10.00	2.66
1.017	1.90	4.017	4.56	7.017	4.56	10.02	1.52

1.033	1.90	4.033	4.56	7.033	4.56	10.03	1.52
1.050	1.90	4.050	4.56	7.050	4.56	10.05	1.52
1.067	1.90	4.067	4.56	7.067	4.56	10.07	1.52
1.083	1.90	4.083	4.56	7.083	4.56	10.08	1.52
1.100	1.90	4.100	4.56	7.100	4.56	10.10	1.52
1.117	1.90	4.117	4.56	7.117	4.56	10.12	1.52
1.133	1.90	4.133	4.56	7.133	4.56	10.13	1.52
1.150	1.90	4.150	4.56	7.150	4.56	10.15	1.52
1.167	1.90	4.167	4.56	7.167	4.56	10.17	1.52
1.183	1.90	4.183	4.56	7.183	4.56	10.18	1.52
1.200	1.90	4.200	4.56	7.200	4.56	10.20	1.52
1.217	1.90	4.217	4.56	7.217	4.56	10.22	1.52
1.233	1.90	4.233	4.56	7.233	4.56	10.23	1.52
1.250	1.90	4.250	4.56	7.250	4.56	10.25	1.52
1.267	1.90	4.267	4.56	7.267	4.56	10.27	1.52
1.283	1.90	4.283	4.56	7.283	4.56	10.28	1.52
1.300	1.90	4.300	4.56	7.300	4.56	10.30	1.52
1.317	1.90	4.317	4.56	7.317	4.56	10.32	1.52
1.333	1.90	4.333	4.56	7.333	4.56	10.33	1.52
1.350	1.90	4.350	4.56	7.350	4.56	10.35	1.52
1.367	1.90	4.367	4.56	7.367	4.56	10.37	1.52
1.383	1.90	4.383	4.56	7.383	4.56	10.38	1.52
1.400	1.90	4.400	4.56	7.400	4.56	10.40	1.52
1.417	1.90	4.417	4.56	7.417	4.56	10.42	1.52
1.433	1.90	4.433	4.56	7.433	4.56	10.43	1.52
1.450	1.90	4.450	4.56	7.450	4.56	10.45	1.52
1.467	1.90	4.467	4.56	7.467	4.56	10.47	1.52
1.483	1.90	4.483	4.56	7.483	4.56	10.48	1.52
1.500	1.90	4.500	4.56	7.500	4.56	10.50	1.52
1.517	1.90	4.517	6.08	7.517	4.56	10.52	1.52
1.533	1.90	4.533	6.08	7.533	4.56	10.53	1.52
1.550	1.90	4.550	6.08	7.550	4.56	10.55	1.52
1.567	1.90	4.567	6.08	7.567	4.56	10.57	1.52
1.583	1.90	4.583	6.08	7.583	4.56	10.58	1.52
1.600	1.90	4.600	6.08	7.600	4.56	10.60	1.52
1.617	1.90	4.617	6.08	7.617	4.56	10.62	1.52
1.633	1.90	4.633	6.08	7.633	4.56	10.63	1.52
1.650	1.90	4.650	6.08	7.650	4.56	10.65	1.52
1.667	1.90	4.667	6.08	7.667	4.56	10.67	1.52
1.683	1.90	4.683	6.08	7.683	4.56	10.68	1.52
1.700	1.90	4.700	6.08	7.700	4.56	10.70	1.52
1.717	1.90	4.717	6.08	7.717	4.56	10.72	1.52
1.733	1.90	4.733	6.08	7.733	4.56	10.73	1.52
1.750	1.90	4.750	6.08	7.750	4.56	10.75	1.52
1.767	1.90	4.767	6.08	7.767	4.56	10.77	1.52
1.783	1.90	4.783	6.08	7.783	4.56	10.78	1.52
1.800	1.90	4.800	6.08	7.800	4.56	10.80	1.52
1.817	1.90	4.817	6.08	7.817	4.56	10.82	1.52
1.833	1.90	4.833	6.08	7.833	4.56	10.83	1.52

1.850	1.90	4.850	6.08	7.850	4.56	10.85	1.52
1.867	1.90	4.867	6.08	7.867	4.56	10.87	1.52
1.883	1.90	4.883	6.08	7.883	4.56	10.88	1.52
1.900	1.90	4.900	6.08	7.900	4.56	10.90	1.52
1.917	1.90	4.917	6.08	7.917	4.56	10.92	1.52
1.933	1.90	4.933	6.08	7.933	4.56	10.93	1.52
1.950	1.90	4.950	6.08	7.950	4.56	10.95	1.52
1.967	1.90	4.967	6.08	7.967	4.56	10.97	1.52
1.983	1.90	4.983	6.08	7.983	4.56	10.98	1.52
2.000	1.90	5.000	6.08	8.000	4.55	11.00	1.52
2.017	2.28	5.017	9.12	8.017	2.66	11.02	1.52
2.033	2.28	5.033	9.12	8.033	2.66	11.03	1.52
2.050	2.28	5.050	9.12	8.050	2.66	11.05	1.52
2.067	2.28	5.067	9.12	8.067	2.66	11.07	1.52
2.083	2.28	5.083	9.12	8.083	2.66	11.08	1.52
2.100	2.28	5.100	9.12	8.100	2.66	11.10	1.52
2.117	2.28	5.117	9.12	8.117	2.66	11.12	1.52
2.133	2.28	5.133	9.12	8.133	2.66	11.13	1.52
2.150	2.28	5.150	9.12	8.150	2.66	11.15	1.52
2.167	2.28	5.167	9.12	8.167	2.66	11.17	1.52
2.183	2.28	5.183	9.12	8.183	2.66	11.18	1.52
2.200	2.28	5.200	9.12	8.200	2.66	11.20	1.52
2.217	2.28	5.217	9.12	8.217	2.66	11.22	1.52
2.233	2.28	5.233	9.12	8.233	2.66	11.23	1.52
2.250	2.28	5.250	9.12	8.250	2.66	11.25	1.52
2.267	2.28	5.267	9.12	8.267	2.66	11.27	1.52
2.283	2.28	5.283	9.12	8.283	2.66	11.28	1.52
2.300	2.28	5.300	9.12	8.300	2.66	11.30	1.52
2.317	2.28	5.317	9.12	8.317	2.66	11.32	1.52
2.333	2.28	5.333	9.12	8.333	2.66	11.33	1.52
2.350	2.28	5.350	9.12	8.350	2.66	11.35	1.52
2.367	2.28	5.367	9.12	8.367	2.66	11.37	1.52
2.383	2.28	5.383	9.12	8.383	2.66	11.38	1.52
2.400	2.28	5.400	9.12	8.400	2.66	11.40	1.52
2.417	2.28	5.417	9.12	8.417	2.66	11.42	1.52
2.433	2.28	5.433	9.12	8.433	2.66	11.43	1.52
2.450	2.28	5.450	9.12	8.450	2.66	11.45	1.52
2.467	2.28	5.467	9.12	8.467	2.66	11.47	1.52
2.483	2.28	5.483	9.12	8.483	2.66	11.48	1.52
2.500	2.28	5.500	9.15	8.500	2.66	11.50	1.52
2.517	2.28	5.517	36.48	8.517	2.66	11.52	1.52
2.533	2.28	5.533	36.48	8.533	2.66	11.53	1.52
2.550	2.28	5.550	36.48	8.550	2.66	11.55	1.52
2.567	2.28	5.567	36.48	8.567	2.66	11.57	1.52
2.583	2.28	5.583	36.48	8.583	2.66	11.58	1.52
2.600	2.28	5.600	36.48	8.600	2.66	11.60	1.52
2.617	2.28	5.617	36.48	8.617	2.66	11.62	1.52
2.633	2.28	5.633	36.48	8.633	2.66	11.63	1.52
2.650	2.28	5.650	36.48	8.650	2.66	11.65	1.52

2.667	2.28	5.667	36.48	8.667	2.66	11.67	1.52
2.683	2.28	5.683	36.48	8.683	2.66	11.68	1.52
2.700	2.28	5.700	36.48	8.700	2.66	11.70	1.52
2.717	2.28	5.717	36.48	8.717	2.66	11.72	1.52
2.733	2.28	5.733	36.48	8.733	2.66	11.73	1.52
2.750	2.28	5.750	36.56	8.750	2.66	11.75	1.52
2.767	2.28	5.767	100.32	8.767	2.66	11.77	1.52
2.783	2.28	5.783	100.32	8.783	2.66	11.78	1.52
2.800	2.28	5.800	100.32	8.800	2.66	11.80	1.52
2.817	2.28	5.817	100.32	8.817	2.66	11.82	1.52
2.833	2.28	5.833	100.32	8.833	2.66	11.83	1.52
2.850	2.28	5.850	100.32	8.850	2.66	11.85	1.52
2.867	2.28	5.867	100.32	8.867	2.66	11.87	1.52
2.883	2.28	5.883	100.32	8.883	2.66	11.88	1.52
2.900	2.28	5.900	100.32	8.900	2.66	11.90	1.52
2.917	2.28	5.917	100.32	8.917	2.66	11.92	1.52
2.933	2.28	5.933	100.32	8.933	2.66	11.93	1.52
2.950	2.28	5.950	100.32	8.950	2.66	11.95	1.52
2.967	2.28	5.967	100.32	8.967	2.66	11.97	1.52
2.983	2.28	5.983	100.32	8.983	2.66	11.98	1.52
3.000	2.28	6.000	100.20	9.000	2.66	12.00	1.52

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.061 (i)
TIME TO PEAK (hrs)= 6.133
RUNOFF VOLUME (mm)= 15.426
TOTAL RAINFALL (mm)= 75.999
RUNOFF COEFFICIENT = 0.203

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

CALIB NASHYD (0002) ID= 1 DT= 1.0 min	Area (ha)= 0.98	Curve Number (CN)= 64.0
	Ia (mm)= 7.21	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31	

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.047 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 22.355
TOTAL RAINFALL (mm)= 75.999
RUNOFF COEFFICIENT = 0.294

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

ADD HYD (0004) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	1.49	0.061	6.13	15.43
+ ID2= 2 (0002):	0.98	0.047	6.22	22.36
ID = 3 (0004):	2.47	0.106	6.17	18.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD (0102) ID= 1 DT= 1.0 min	Area (ha)= 0.66	Curve Number (CN)= 54.0
	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.63	

Unit Hyd Qpeak (cms)= 0.040

PEAK FLOW (cms)= 0.013 (i)
TIME TO PEAK (hrs)= 6.633
RUNOFF VOLUME (mm)= 15.426
TOTAL RAINFALL (mm)= 75.999
RUNOFF COEFFICIENT = 0.203

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

CALIB STANDHYD (0001) ID= 1 DT= 1.0 min	Area (ha)= 0.45	
	Total Imp(%)= 30.00	Dir. Conn.(%)= 5.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.31
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	54.77	40.00
Mannings n =	0.013	0.035
Max.Eff.Inten.(mm/hr)=	100.32	72.64
over (min)	5.00	8.00
Storage Coeff. (min)=	1.44 (ii)	7.67 (ii)
Unit Hyd. Tpeak (min)=	5.00	8.00
Unit Hyd. peak (cms)=	0.42	0.15
		TOTALS

```
     PEAK FLOW      (cms)=       0.01         0.05          0.055 (iii)
     TIME TO PEAK   (hrs)=       6.00         6.05           6.03
     RUNOFF VOLUME   (mm)=      75.00        32.60          34.71
     TOTAL RAINFALL  (mm)=      76.00        76.00          76.00
     RUNOFF COEFFICIENT  =       0.99         0.43           0.46

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.055     6.03    34.71
      + ID2= 2 (  0102):     0.66   0.013     6.63    15.43
        ================================================
        ID = 3 (  0005):     1.11   0.060     6.03    23.25

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****
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```
  Input   filename: C:\Program Files (x86)\Visual OTTHYMO 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\50c
c009e-8efb-41af-9b55-5fd16b764499\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\50c
c009e-8efb-41af-9b55-5fd16b764499\sce


DATE: 11-25-2019                          TIME: 10:49:20

USER:


COMMENTS: _____________________________________________________


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  ***********************************************
  ** SIMULATION : 04. 25 yr - 12h Storm SCS Typ **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              2366d115-49d5-4a83-88c6-261e62a9487a\21f66434
| Ptotal= 90.70 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 12.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.27 |  3.25    3.63 |  6.25   16.33 |  9.25    3.17
                0.50    2.27 |  3.50    3.63 |  6.50   16.33 |  9.50    3.17
                0.75    2.27 |  3.75    3.63 |  6.75    7.26 |  9.75    3.17
                1.00    2.27 |  4.00    3.63 |  7.00    7.26 | 10.00    3.17
                1.25    2.27 |  4.25    5.44 |  7.25    5.44 | 10.25    1.81
                1.50    2.27 |  4.50    5.44 |  7.50    5.44 | 10.50    1.81
                1.75    2.27 |  4.75    7.26 |  7.75    5.44 | 10.75    1.81
                2.00    2.27 |  5.00    7.26 |  8.00    5.44 | 11.00    1.81
                2.25    2.72 |  5.25   10.88 |  8.25    3.17 | 11.25    1.81
                2.50    2.72 |  5.50   10.88 |  8.50    3.17 | 11.50    1.81
                2.75    2.72 |  5.75   43.54 |  8.75    3.17 | 11.75    1.81
                3.00    2.72 |  6.00  119.72 |  9.00    3.17 | 12.00    1.81
```

CALIB					
NASHYD (0101)	Area (ha)= 1.49	Curve Number (CN)= 54.0			
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.22				

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.27	3.017	3.63	6.017	16.33	9.02	3.17
0.033	2.27	3.033	3.63	6.033	16.33	9.03	3.17
0.050	2.27	3.050	3.63	6.050	16.33	9.05	3.17
0.067	2.27	3.067	3.63	6.067	16.33	9.07	3.17
0.083	2.27	3.083	3.63	6.083	16.33	9.08	3.17
0.100	2.27	3.100	3.63	6.100	16.33	9.10	3.17
0.117	2.27	3.117	3.63	6.117	16.33	9.12	3.17
0.133	2.27	3.133	3.63	6.133	16.33	9.13	3.17
0.150	2.27	3.150	3.63	6.150	16.33	9.15	3.17
0.167	2.27	3.167	3.63	6.167	16.33	9.17	3.17
0.183	2.27	3.183	3.63	6.183	16.33	9.18	3.17
0.200	2.27	3.200	3.63	6.200	16.33	9.20	3.17
0.217	2.27	3.217	3.63	6.217	16.33	9.22	3.17
0.233	2.27	3.233	3.63	6.233	16.33	9.23	3.17
0.250	2.27	3.250	3.63	6.250	16.33	9.25	3.17
0.267	2.27	3.267	3.63	6.267	16.33	9.27	3.17
0.283	2.27	3.283	3.63	6.283	16.33	9.28	3.17
0.300	2.27	3.300	3.63	6.300	16.33	9.30	3.17
0.317	2.27	3.317	3.63	6.317	16.33	9.32	3.17
0.333	2.27	3.333	3.63	6.333	16.33	9.33	3.17
0.350	2.27	3.350	3.63	6.350	16.33	9.35	3.17
0.367	2.27	3.367	3.63	6.367	16.33	9.37	3.17
0.383	2.27	3.383	3.63	6.383	16.33	9.38	3.17
0.400	2.27	3.400	3.63	6.400	16.33	9.40	3.17
0.417	2.27	3.417	3.63	6.417	16.33	9.42	3.17
0.433	2.27	3.433	3.63	6.433	16.33	9.43	3.17
0.450	2.27	3.450	3.63	6.450	16.33	9.45	3.17
0.467	2.27	3.467	3.63	6.467	16.33	9.47	3.17
0.483	2.27	3.483	3.63	6.483	16.33	9.48	3.17
0.500	2.27	3.500	3.63	6.500	16.31	9.50	3.17
0.517	2.27	3.517	3.63	6.517	7.26	9.52	3.17
0.533	2.27	3.533	3.63	6.533	7.26	9.53	3.17
0.550	2.27	3.550	3.63	6.550	7.26	9.55	3.17
0.567	2.27	3.567	3.63	6.567	7.26	9.57	3.17
0.583	2.27	3.583	3.63	6.583	7.26	9.58	3.17

0.600	2.27	3.600	3.63	6.600	7.26	9.60	3.17
0.617	2.27	3.617	3.63	6.617	7.26	9.62	3.17
0.633	2.27	3.633	3.63	6.633	7.26	9.63	3.17
0.650	2.27	3.650	3.63	6.650	7.26	9.65	3.17
0.667	2.27	3.667	3.63	6.667	7.26	9.67	3.17
0.683	2.27	3.683	3.63	6.683	7.26	9.68	3.17
0.700	2.27	3.700	3.63	6.700	7.26	9.70	3.17
0.717	2.27	3.717	3.63	6.717	7.26	9.72	3.17
0.733	2.27	3.733	3.63	6.733	7.26	9.73	3.17
0.750	2.27	3.750	3.63	6.750	7.26	9.75	3.17
0.767	2.27	3.767	3.63	6.767	7.26	9.77	3.17
0.783	2.27	3.783	3.63	6.783	7.26	9.78	3.17
0.800	2.27	3.800	3.63	6.800	7.26	9.80	3.17
0.817	2.27	3.817	3.63	6.817	7.26	9.82	3.17
0.833	2.27	3.833	3.63	6.833	7.26	9.83	3.17
0.850	2.27	3.850	3.63	6.850	7.26	9.85	3.17
0.867	2.27	3.867	3.63	6.867	7.26	9.87	3.17
0.883	2.27	3.883	3.63	6.883	7.26	9.88	3.17
0.900	2.27	3.900	3.63	6.900	7.26	9.90	3.17
0.917	2.27	3.917	3.63	6.917	7.26	9.92	3.17
0.933	2.27	3.933	3.63	6.933	7.26	9.93	3.17
0.950	2.27	3.950	3.63	6.950	7.26	9.95	3.17
0.967	2.27	3.967	3.63	6.967	7.26	9.97	3.17
0.983	2.27	3.983	3.63	6.983	7.26	9.98	3.17
1.000	2.27	4.000	3.63	7.000	7.25	10.00	3.17
1.017	2.27	4.017	5.44	7.017	5.44	10.02	1.81
1.033	2.27	4.033	5.44	7.033	5.44	10.03	1.81
1.050	2.27	4.050	5.44	7.050	5.44	10.05	1.81
1.067	2.27	4.067	5.44	7.067	5.44	10.07	1.81
1.083	2.27	4.083	5.44	7.083	5.44	10.08	1.81
1.100	2.27	4.100	5.44	7.100	5.44	10.10	1.81
1.117	2.27	4.117	5.44	7.117	5.44	10.12	1.81
1.133	2.27	4.133	5.44	7.133	5.44	10.13	1.81
1.150	2.27	4.150	5.44	7.150	5.44	10.15	1.81
1.167	2.27	4.167	5.44	7.167	5.44	10.17	1.81
1.183	2.27	4.183	5.44	7.183	5.44	10.18	1.81
1.200	2.27	4.200	5.44	7.200	5.44	10.20	1.81
1.217	2.27	4.217	5.44	7.217	5.44	10.22	1.81
1.233	2.27	4.233	5.44	7.233	5.44	10.23	1.81
1.250	2.27	4.250	5.44	7.250	5.44	10.25	1.81
1.267	2.27	4.267	5.44	7.267	5.44	10.27	1.81
1.283	2.27	4.283	5.44	7.283	5.44	10.28	1.81
1.300	2.27	4.300	5.44	7.300	5.44	10.30	1.81
1.317	2.27	4.317	5.44	7.317	5.44	10.32	1.81
1.333	2.27	4.333	5.44	7.333	5.44	10.33	1.81
1.350	2.27	4.350	5.44	7.350	5.44	10.35	1.81
1.367	2.27	4.367	5.44	7.367	5.44	10.37	1.81
1.383	2.27	4.383	5.44	7.383	5.44	10.38	1.81
1.400	2.27	4.400	5.44	7.400	5.44	10.40	1.81

1.417	2.27	4.417	5.44	7.417	5.44	10.42	1.81
1.433	2.27	4.433	5.44	7.433	5.44	10.43	1.81
1.450	2.27	4.450	5.44	7.450	5.44	10.45	1.81
1.467	2.27	4.467	5.44	7.467	5.44	10.47	1.81
1.483	2.27	4.483	5.44	7.483	5.44	10.48	1.81
1.500	2.27	4.500	5.44	7.500	5.44	10.50	1.81
1.517	2.27	4.517	7.26	7.517	5.44	10.52	1.81
1.533	2.27	4.533	7.26	7.533	5.44	10.53	1.81
1.550	2.27	4.550	7.26	7.550	5.44	10.55	1.81
1.567	2.27	4.567	7.26	7.567	5.44	10.57	1.81
1.583	2.27	4.583	7.26	7.583	5.44	10.58	1.81
1.600	2.27	4.600	7.26	7.600	5.44	10.60	1.81
1.617	2.27	4.617	7.26	7.617	5.44	10.62	1.81
1.633	2.27	4.633	7.26	7.633	5.44	10.63	1.81
1.650	2.27	4.650	7.26	7.650	5.44	10.65	1.81
1.667	2.27	4.667	7.26	7.667	5.44	10.67	1.81
1.683	2.27	4.683	7.26	7.683	5.44	10.68	1.81
1.700	2.27	4.700	7.26	7.700	5.44	10.70	1.81
1.717	2.27	4.717	7.26	7.717	5.44	10.72	1.81
1.733	2.27	4.733	7.26	7.733	5.44	10.73	1.81
1.750	2.27	4.750	7.26	7.750	5.44	10.75	1.81
1.767	2.27	4.767	7.26	7.767	5.44	10.77	1.81
1.783	2.27	4.783	7.26	7.783	5.44	10.78	1.81
1.800	2.27	4.800	7.26	7.800	5.44	10.80	1.81
1.817	2.27	4.817	7.26	7.817	5.44	10.82	1.81
1.833	2.27	4.833	7.26	7.833	5.44	10.83	1.81
1.850	2.27	4.850	7.26	7.850	5.44	10.85	1.81
1.867	2.27	4.867	7.26	7.867	5.44	10.87	1.81
1.883	2.27	4.883	7.26	7.883	5.44	10.88	1.81
1.900	2.27	4.900	7.26	7.900	5.44	10.90	1.81
1.917	2.27	4.917	7.26	7.917	5.44	10.92	1.81
1.933	2.27	4.933	7.26	7.933	5.44	10.93	1.81
1.950	2.27	4.950	7.26	7.950	5.44	10.95	1.81
1.967	2.27	4.967	7.26	7.967	5.44	10.97	1.81
1.983	2.27	4.983	7.26	7.983	5.44	10.98	1.81
2.000	2.27	5.000	7.26	8.000	5.44	11.00	1.81
2.017	2.72	5.017	10.88	8.017	3.17	11.02	1.81
2.033	2.72	5.033	10.88	8.033	3.17	11.03	1.81
2.050	2.72	5.050	10.88	8.050	3.17	11.05	1.81
2.067	2.72	5.067	10.88	8.067	3.17	11.07	1.81
2.083	2.72	5.083	10.88	8.083	3.17	11.08	1.81
2.100	2.72	5.100	10.88	8.100	3.17	11.10	1.81
2.117	2.72	5.117	10.88	8.117	3.17	11.12	1.81
2.133	2.72	5.133	10.88	8.133	3.17	11.13	1.81
2.150	2.72	5.150	10.88	8.150	3.17	11.15	1.81
2.167	2.72	5.167	10.88	8.167	3.17	11.17	1.81
2.183	2.72	5.183	10.88	8.183	3.17	11.18	1.81
2.200	2.72	5.200	10.88	8.200	3.17	11.20	1.81
2.217	2.72	5.217	10.88	8.217	3.17	11.22	1.81

2.233	2.72	5.233	10.88	8.233	3.17	11.23	1.81
2.250	2.72	5.250	10.88	8.250	3.17	11.25	1.81
2.267	2.72	5.267	10.88	8.267	3.17	11.27	1.81
2.283	2.72	5.283	10.88	8.283	3.17	11.28	1.81
2.300	2.72	5.300	10.88	8.300	3.17	11.30	1.81
2.317	2.72	5.317	10.88	8.317	3.17	11.32	1.81
2.333	2.72	5.333	10.88	8.333	3.17	11.33	1.81
2.350	2.72	5.350	10.88	8.350	3.17	11.35	1.81
2.367	2.72	5.367	10.88	8.367	3.17	11.37	1.81
2.383	2.72	5.383	10.88	8.383	3.17	11.38	1.81
2.400	2.72	5.400	10.88	8.400	3.17	11.40	1.81
2.417	2.72	5.417	10.88	8.417	3.17	11.42	1.81
2.433	2.72	5.433	10.88	8.433	3.17	11.43	1.81
2.450	2.72	5.450	10.88	8.450	3.17	11.45	1.81
2.467	2.72	5.467	10.88	8.467	3.17	11.47	1.81
2.483	2.72	5.483	10.88	8.483	3.17	11.48	1.81
2.500	2.72	5.500	10.92	8.500	3.17	11.50	1.81
2.517	2.72	5.517	43.54	8.517	3.17	11.52	1.81
2.533	2.72	5.533	43.54	8.533	3.17	11.53	1.81
2.550	2.72	5.550	43.54	8.550	3.17	11.55	1.81
2.567	2.72	5.567	43.54	8.567	3.17	11.57	1.81
2.583	2.72	5.583	43.54	8.583	3.17	11.58	1.81
2.600	2.72	5.600	43.54	8.600	3.17	11.60	1.81
2.617	2.72	5.617	43.54	8.617	3.17	11.62	1.81
2.633	2.72	5.633	43.54	8.633	3.17	11.63	1.81
2.650	2.72	5.650	43.54	8.650	3.17	11.65	1.81
2.667	2.72	5.667	43.54	8.667	3.17	11.67	1.81
2.683	2.72	5.683	43.54	8.683	3.17	11.68	1.81
2.700	2.72	5.700	43.54	8.700	3.17	11.70	1.81
2.717	2.72	5.717	43.54	8.717	3.17	11.72	1.81
2.733	2.72	5.733	43.54	8.733	3.17	11.73	1.81
2.750	2.72	5.750	43.63	8.750	3.17	11.75	1.81
2.767	2.72	5.767	119.72	8.767	3.17	11.77	1.81
2.783	2.72	5.783	119.72	8.783	3.17	11.78	1.81
2.800	2.72	5.800	119.72	8.800	3.17	11.80	1.81
2.817	2.72	5.817	119.72	8.817	3.17	11.82	1.81
2.833	2.72	5.833	119.72	8.833	3.17	11.83	1.81
2.850	2.72	5.850	119.72	8.850	3.17	11.85	1.81
2.867	2.72	5.867	119.72	8.867	3.17	11.87	1.81
2.883	2.72	5.883	119.72	8.883	3.17	11.88	1.81
2.900	2.72	5.900	119.72	8.900	3.17	11.90	1.81
2.917	2.72	5.917	119.72	8.917	3.17	11.92	1.81
2.933	2.72	5.933	119.72	8.933	3.17	11.93	1.81
2.950	2.72	5.950	119.72	8.950	3.17	11.95	1.81
2.967	2.72	5.967	119.72	8.967	3.17	11.97	1.81
2.983	2.72	5.983	119.72	8.983	3.17	11.98	1.81
3.000	2.72	6.000	119.58	9.000	3.17	12.00	1.81

Unit Hyd Qpeak (cms)= 0.259

```
     PEAK FLOW       (cms)=   0.087 (i)
     TIME TO PEAK    (hrs)=   6.133
     RUNOFF VOLUME    (mm)=  21.922
     TOTAL RAINFALL   (mm)=  90.699
     RUNOFF COEFFICIENT   =   0.242

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.065 (i)
     TIME TO PEAK    (hrs)=   6.217
     RUNOFF VOLUME    (mm)=  30.792
     TOTAL RAINFALL   (mm)=  90.699
     RUNOFF COEFFICIENT   =   0.339

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

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.087     6.13    21.92
      + ID2= 2 (  0002):     0.98   0.065     6.22    30.79
        ================================================
        ID = 3 (  0004):     2.47   0.150     6.15    25.44

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.019 (i)
```



```
     TIME TO PEAK    (hrs)=   6.617
     RUNOFF VOLUME    (mm)=  21.922
     TOTAL RAINFALL   (mm)=  90.699
     RUNOFF COEFFICIENT   =   0.242

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     119.72        95.85
               over (min)         5.00         8.00
     Storage Coeff.  (min)=       1.35 (ii)    7.15 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.43         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.07          0.074 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.03           6.03
     RUNOFF VOLUME    (mm)=      89.70        43.24          45.56
     TOTAL RAINFALL   (mm)=      90.70        90.70          90.70
     RUNOFF COEFFICIENT   =       0.99         0.48           0.50

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.074     6.03    45.56
      + ID2= 2 (  0102):     0.66   0.019     6.62    21.92
```

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        ==================================================
        ID = 3 (  0005):     1.11   0.081     6.03    31.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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===========================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\10a
daa90-49aa-4ea4-accc-acd8c23dad88\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\10a
daa90-49aa-4ea4-accc-acd8c23dad88\sce


DATE: 11-25-2019                          TIME: 10:49:20

USER:



COMMENTS: _____________________________________________________


---------------------------------------------------------------------------
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  ***********************************************
```



```
  ** SIMULATION : 05. 50 yr - 12h Storm -SCS Ty **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              2366d115-49d5-4a83-88c6-261e62a9487a\03909c95
| Ptotal=101.70 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                         Duration of storm    = 12.00 hrs
                         Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.54 |  3.25    4.07 |  6.25   18.31 |  9.25    3.56
                0.50    2.54 |  3.50    4.07 |  6.50   18.31 |  9.50    3.56
                0.75    2.54 |  3.75    4.07 |  6.75    8.14 |  9.75    3.56
                1.00    2.54 |  4.00    4.07 |  7.00    8.14 | 10.00    3.56
                1.25    2.54 |  4.25    6.10 |  7.25    6.10 | 10.25    2.03
                1.50    2.54 |  4.50    6.10 |  7.50    6.10 | 10.50    2.03
                1.75    2.54 |  4.75    8.14 |  7.75    6.10 | 10.75    2.03
                2.00    2.54 |  5.00    8.14 |  8.00    6.10 | 11.00    2.03
                2.25    3.05 |  5.25   12.20 |  8.25    3.56 | 11.25    2.03
                2.50    3.05 |  5.50   12.20 |  8.50    3.56 | 11.50    2.03
                2.75    3.05 |  5.75   48.82 |  8.75    3.56 | 11.75    2.03
                3.00    3.05 |  6.00  134.24 |  9.00    3.56 | 12.00    2.03

---------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    2.54 | 3.017    4.07 | 6.017   18.31 |  9.02    3.56
               0.033    2.54 | 3.033    4.07 | 6.033   18.31 |  9.03    3.56
               0.050    2.54 | 3.050    4.07 | 6.050   18.31 |  9.05    3.56
               0.067    2.54 | 3.067    4.07 | 6.067   18.31 |  9.07    3.56
               0.083    2.54 | 3.083    4.07 | 6.083   18.31 |  9.08    3.56
               0.100    2.54 | 3.100    4.07 | 6.100   18.31 |  9.10    3.56
               0.117    2.54 | 3.117    4.07 | 6.117   18.31 |  9.12    3.56
               0.133    2.54 | 3.133    4.07 | 6.133   18.31 |  9.13    3.56
               0.150    2.54 | 3.150    4.07 | 6.150   18.31 |  9.15    3.56
```

0.167	2.54	3.167	4.07	6.167	18.31	9.17	3.56
0.183	2.54	3.183	4.07	6.183	18.31	9.18	3.56
0.200	2.54	3.200	4.07	6.200	18.31	9.20	3.56
0.217	2.54	3.217	4.07	6.217	18.31	9.22	3.56
0.233	2.54	3.233	4.07	6.233	18.31	9.23	3.56
0.250	2.54	3.250	4.07	6.250	18.31	9.25	3.56
0.267	2.54	3.267	4.07	6.267	18.31	9.27	3.56
0.283	2.54	3.283	4.07	6.283	18.31	9.28	3.56
0.300	2.54	3.300	4.07	6.300	18.31	9.30	3.56
0.317	2.54	3.317	4.07	6.317	18.31	9.32	3.56
0.333	2.54	3.333	4.07	6.333	18.31	9.33	3.56
0.350	2.54	3.350	4.07	6.350	18.31	9.35	3.56
0.367	2.54	3.367	4.07	6.367	18.31	9.37	3.56
0.383	2.54	3.383	4.07	6.383	18.31	9.38	3.56
0.400	2.54	3.400	4.07	6.400	18.31	9.40	3.56
0.417	2.54	3.417	4.07	6.417	18.31	9.42	3.56
0.433	2.54	3.433	4.07	6.433	18.31	9.43	3.56
0.450	2.54	3.450	4.07	6.450	18.31	9.45	3.56
0.467	2.54	3.467	4.07	6.467	18.31	9.47	3.56
0.483	2.54	3.483	4.07	6.483	18.31	9.48	3.56
0.500	2.54	3.500	4.07	6.500	18.29	9.50	3.56
0.517	2.54	3.517	4.07	6.517	8.14	9.52	3.56
0.533	2.54	3.533	4.07	6.533	8.14	9.53	3.56
0.550	2.54	3.550	4.07	6.550	8.14	9.55	3.56
0.567	2.54	3.567	4.07	6.567	8.14	9.57	3.56
0.583	2.54	3.583	4.07	6.583	8.14	9.58	3.56
0.600	2.54	3.600	4.07	6.600	8.14	9.60	3.56
0.617	2.54	3.617	4.07	6.617	8.14	9.62	3.56
0.633	2.54	3.633	4.07	6.633	8.14	9.63	3.56
0.650	2.54	3.650	4.07	6.650	8.14	9.65	3.56
0.667	2.54	3.667	4.07	6.667	8.14	9.67	3.56
0.683	2.54	3.683	4.07	6.683	8.14	9.68	3.56
0.700	2.54	3.700	4.07	6.700	8.14	9.70	3.56
0.717	2.54	3.717	4.07	6.717	8.14	9.72	3.56
0.733	2.54	3.733	4.07	6.733	8.14	9.73	3.56
0.750	2.54	3.750	4.07	6.750	8.14	9.75	3.56
0.767	2.54	3.767	4.07	6.767	8.14	9.77	3.56
0.783	2.54	3.783	4.07	6.783	8.14	9.78	3.56
0.800	2.54	3.800	4.07	6.800	8.14	9.80	3.56
0.817	2.54	3.817	4.07	6.817	8.14	9.82	3.56
0.833	2.54	3.833	4.07	6.833	8.14	9.83	3.56
0.850	2.54	3.850	4.07	6.850	8.14	9.85	3.56
0.867	2.54	3.867	4.07	6.867	8.14	9.87	3.56
0.883	2.54	3.883	4.07	6.883	8.14	9.88	3.56
0.900	2.54	3.900	4.07	6.900	8.14	9.90	3.56
0.917	2.54	3.917	4.07	6.917	8.14	9.92	3.56
0.933	2.54	3.933	4.07	6.933	8.14	9.93	3.56
0.950	2.54	3.950	4.07	6.950	8.14	9.95	3.56
0.967	2.54	3.967	4.07	6.967	8.14	9.97	3.56

0.983	2.54	3.983	4.07	6.983	8.14	9.98	3.56
1.000	2.54	4.000	4.07	7.000	8.13	10.00	3.56
1.017	2.54	4.017	6.10	7.017	6.10	10.02	2.03
1.033	2.54	4.033	6.10	7.033	6.10	10.03	2.03
1.050	2.54	4.050	6.10	7.050	6.10	10.05	2.03
1.067	2.54	4.067	6.10	7.067	6.10	10.07	2.03
1.083	2.54	4.083	6.10	7.083	6.10	10.08	2.03
1.100	2.54	4.100	6.10	7.100	6.10	10.10	2.03
1.117	2.54	4.117	6.10	7.117	6.10	10.12	2.03
1.133	2.54	4.133	6.10	7.133	6.10	10.13	2.03
1.150	2.54	4.150	6.10	7.150	6.10	10.15	2.03
1.167	2.54	4.167	6.10	7.167	6.10	10.17	2.03
1.183	2.54	4.183	6.10	7.183	6.10	10.18	2.03
1.200	2.54	4.200	6.10	7.200	6.10	10.20	2.03
1.217	2.54	4.217	6.10	7.217	6.10	10.22	2.03
1.233	2.54	4.233	6.10	7.233	6.10	10.23	2.03
1.250	2.54	4.250	6.10	7.250	6.10	10.25	2.03
1.267	2.54	4.267	6.10	7.267	6.10	10.27	2.03
1.283	2.54	4.283	6.10	7.283	6.10	10.28	2.03
1.300	2.54	4.300	6.10	7.300	6.10	10.30	2.03
1.317	2.54	4.317	6.10	7.317	6.10	10.32	2.03
1.333	2.54	4.333	6.10	7.333	6.10	10.33	2.03
1.350	2.54	4.350	6.10	7.350	6.10	10.35	2.03
1.367	2.54	4.367	6.10	7.367	6.10	10.37	2.03
1.383	2.54	4.383	6.10	7.383	6.10	10.38	2.03
1.400	2.54	4.400	6.10	7.400	6.10	10.40	2.03
1.417	2.54	4.417	6.10	7.417	6.10	10.42	2.03
1.433	2.54	4.433	6.10	7.433	6.10	10.43	2.03
1.450	2.54	4.450	6.10	7.450	6.10	10.45	2.03
1.467	2.54	4.467	6.10	7.467	6.10	10.47	2.03
1.483	2.54	4.483	6.10	7.483	6.10	10.48	2.03
1.500	2.54	4.500	6.10	7.500	6.10	10.50	2.03
1.517	2.54	4.517	8.14	7.517	6.10	10.52	2.03
1.533	2.54	4.533	8.14	7.533	6.10	10.53	2.03
1.550	2.54	4.550	8.14	7.550	6.10	10.55	2.03
1.567	2.54	4.567	8.14	7.567	6.10	10.57	2.03
1.583	2.54	4.583	8.14	7.583	6.10	10.58	2.03
1.600	2.54	4.600	8.14	7.600	6.10	10.60	2.03
1.617	2.54	4.617	8.14	7.617	6.10	10.62	2.03
1.633	2.54	4.633	8.14	7.633	6.10	10.63	2.03
1.650	2.54	4.650	8.14	7.650	6.10	10.65	2.03
1.667	2.54	4.667	8.14	7.667	6.10	10.67	2.03
1.683	2.54	4.683	8.14	7.683	6.10	10.68	2.03
1.700	2.54	4.700	8.14	7.700	6.10	10.70	2.03
1.717	2.54	4.717	8.14	7.717	6.10	10.72	2.03
1.733	2.54	4.733	8.14	7.733	6.10	10.73	2.03
1.750	2.54	4.750	8.14	7.750	6.10	10.75	2.03
1.767	2.54	4.767	8.14	7.767	6.10	10.77	2.03
1.783	2.54	4.783	8.14	7.783	6.10	10.78	2.03

1.800	2.54	4.800	8.14	7.800	6.10	10.80	2.03
1.817	2.54	4.817	8.14	7.817	6.10	10.82	2.03
1.833	2.54	4.833	8.14	7.833	6.10	10.83	2.03
1.850	2.54	4.850	8.14	7.850	6.10	10.85	2.03
1.867	2.54	4.867	8.14	7.867	6.10	10.87	2.03
1.883	2.54	4.883	8.14	7.883	6.10	10.88	2.03
1.900	2.54	4.900	8.14	7.900	6.10	10.90	2.03
1.917	2.54	4.917	8.14	7.917	6.10	10.92	2.03
1.933	2.54	4.933	8.14	7.933	6.10	10.93	2.03
1.950	2.54	4.950	8.14	7.950	6.10	10.95	2.03
1.967	2.54	4.967	8.14	7.967	6.10	10.97	2.03
1.983	2.54	4.983	8.14	7.983	6.10	10.98	2.03
2.000	2.54	5.000	8.14	8.000	6.09	11.00	2.03
2.017	3.05	5.017	12.20	8.017	3.56	11.02	2.03
2.033	3.05	5.033	12.20	8.033	3.56	11.03	2.03
2.050	3.05	5.050	12.20	8.050	3.56	11.05	2.03
2.067	3.05	5.067	12.20	8.067	3.56	11.07	2.03
2.083	3.05	5.083	12.20	8.083	3.56	11.08	2.03
2.100	3.05	5.100	12.20	8.100	3.56	11.10	2.03
2.117	3.05	5.117	12.20	8.117	3.56	11.12	2.03
2.133	3.05	5.133	12.20	8.133	3.56	11.13	2.03
2.150	3.05	5.150	12.20	8.150	3.56	11.15	2.03
2.167	3.05	5.167	12.20	8.167	3.56	11.17	2.03
2.183	3.05	5.183	12.20	8.183	3.56	11.18	2.03
2.200	3.05	5.200	12.20	8.200	3.56	11.20	2.03
2.217	3.05	5.217	12.20	8.217	3.56	11.22	2.03
2.233	3.05	5.233	12.20	8.233	3.56	11.23	2.03
2.250	3.05	5.250	12.20	8.250	3.56	11.25	2.03
2.267	3.05	5.267	12.20	8.267	3.56	11.27	2.03
2.283	3.05	5.283	12.20	8.283	3.56	11.28	2.03
2.300	3.05	5.300	12.20	8.300	3.56	11.30	2.03
2.317	3.05	5.317	12.20	8.317	3.56	11.32	2.03
2.333	3.05	5.333	12.20	8.333	3.56	11.33	2.03
2.350	3.05	5.350	12.20	8.350	3.56	11.35	2.03
2.367	3.05	5.367	12.20	8.367	3.56	11.37	2.03
2.383	3.05	5.383	12.20	8.383	3.56	11.38	2.03
2.400	3.05	5.400	12.20	8.400	3.56	11.40	2.03
2.417	3.05	5.417	12.20	8.417	3.56	11.42	2.03
2.433	3.05	5.433	12.20	8.433	3.56	11.43	2.03
2.450	3.05	5.450	12.20	8.450	3.56	11.45	2.03
2.467	3.05	5.467	12.20	8.467	3.56	11.47	2.03
2.483	3.05	5.483	12.20	8.483	3.56	11.48	2.03
2.500	3.05	5.500	12.24	8.500	3.56	11.50	2.03
2.517	3.05	5.517	48.82	8.517	3.56	11.52	2.03
2.533	3.05	5.533	48.82	8.533	3.56	11.53	2.03
2.550	3.05	5.550	48.82	8.550	3.56	11.55	2.03
2.567	3.05	5.567	48.82	8.567	3.56	11.57	2.03
2.583	3.05	5.583	48.82	8.583	3.56	11.58	2.03
2.600	3.05	5.600	48.82	8.600	3.56	11.60	2.03

2.617	3.05	5.617	48.82	8.617	3.56	11.62	2.03
2.633	3.05	5.633	48.82	8.633	3.56	11.63	2.03
2.650	3.05	5.650	48.82	8.650	3.56	11.65	2.03
2.667	3.05	5.667	48.82	8.667	3.56	11.67	2.03
2.683	3.05	5.683	48.82	8.683	3.56	11.68	2.03
2.700	3.05	5.700	48.82	8.700	3.56	11.70	2.03
2.717	3.05	5.717	48.82	8.717	3.56	11.72	2.03
2.733	3.05	5.733	48.82	8.733	3.56	11.73	2.03
2.750	3.05	5.750	48.92	8.750	3.56	11.75	2.03
2.767	3.05	5.767	134.24	8.767	3.56	11.77	2.03
2.783	3.05	5.783	134.24	8.783	3.56	11.78	2.03
2.800	3.05	5.800	134.24	8.800	3.56	11.80	2.03
2.817	3.05	5.817	134.24	8.817	3.56	11.82	2.03
2.833	3.05	5.833	134.24	8.833	3.56	11.83	2.03
2.850	3.05	5.850	134.24	8.850	3.56	11.85	2.03
2.867	3.05	5.867	134.24	8.867	3.56	11.87	2.03
2.883	3.05	5.883	134.24	8.883	3.56	11.88	2.03
2.900	3.05	5.900	134.24	8.900	3.56	11.90	2.03
2.917	3.05	5.917	134.24	8.917	3.56	11.92	2.03
2.933	3.05	5.933	134.24	8.933	3.56	11.93	2.03
2.950	3.05	5.950	134.24	8.950	3.56	11.95	2.03
2.967	3.05	5.967	134.24	8.967	3.56	11.97	2.03
2.983	3.05	5.983	134.24	8.983	3.56	11.98	2.03
3.000	3.05	6.000	134.08	9.000	3.56	12.00	2.03

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.109 (i)
TIME TO PEAK (hrs)= 6.117
RUNOFF VOLUME (mm)= 27.295
TOTAL RAINFALL (mm)= 101.699
RUNOFF COEFFICIENT = 0.268

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

CALIB NASHYD (0002) ID= 1 DT= 1.0 min	Area (ha)= 0.98 Curve Number (CN)= 64.0 Ia (mm)= 7.21 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.31

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.080 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 37.613
TOTAL RAINFALL (mm)= 101.699
RUNOFF COEFFICIENT = 0.370

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

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--------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.109     6.12    27.29
      + ID2= 2 (  0002):     0.98   0.080     6.22    37.61
        ================================================
        ID = 3 (  0004):     2.47   0.186     6.15    31.39

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.023 (i)
     TIME TO PEAK    (hrs)=   6.617
     RUNOFF VOLUME    (mm)=  27.295
     TOTAL RAINFALL   (mm)= 101.699
     RUNOFF COEFFICIENT   =   0.268

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     134.24       113.98
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.29 (ii)    6.83 (ii)
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```
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.44         0.16
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.08          0.091 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.03          6.02
     RUNOFF VOLUME    (mm)=     100.70        51.62         54.07
     TOTAL RAINFALL   (mm)=     101.70       101.70        101.70
     RUNOFF COEFFICIENT   =       0.99         0.51          0.53

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.091     6.02    54.07
      + ID2= 2 (  0102):     0.66   0.023     6.62    27.29
        ================================================
        ID = 3 (  0005):     1.11   0.099     6.03    38.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

Output filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\c6818fcf-c9cf-4b89-ba72-b994ff28ac79\sce
Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\c6818fcf-c9cf-4b89-ba72-b994ff28ac79\sce

DATE: 11-25-2019 TIME: 10:49:20

USER:

COMMENTS: _____

** SIMULATION : 06. 100 yr - 12h Storm -SCS T **

MASS STORM	Filename: C:\Users\iblechta\AppData\Local\Temp\2366d115-49d5-4a83-88c6-261e62a9487a\38f44fc5
Ptotal=112.50 mm	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 12.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.81	3.25	4.50	6.25	20.25	9.25	3.94
0.50	2.81	3.50	4.50	6.50	20.25	9.50	3.94
0.75	2.81	3.75	4.50	6.75	9.00	9.75	3.94
1.00	2.81	4.00	4.50	7.00	9.00	10.00	3.94
1.25	2.81	4.25	6.75	7.25	6.75	10.25	2.25
1.50	2.81	4.50	6.75	7.50	6.75	10.50	2.25
1.75	2.81	4.75	9.00	7.75	6.75	10.75	2.25
2.00	2.81	5.00	9.00	8.00	6.75	11.00	2.25
2.25	3.37	5.25	13.50	8.25	3.94	11.25	2.25

2.50	3.37	5.50	13.50	8.50	3.94	11.50	2.25
2.75	3.37	5.75	54.00	8.75	3.94	11.75	2.25
3.00	3.37	6.00	148.50	9.00	3.94	12.00	2.25

CALIB			
NASHYD (0101)	Area (ha)= 1.49	Curve Number (CN)= 54.0	
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.22		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.81	3.017	4.50	6.017	20.25	9.02	3.94
0.033	2.81	3.033	4.50	6.033	20.25	9.03	3.94
0.050	2.81	3.050	4.50	6.050	20.25	9.05	3.94
0.067	2.81	3.067	4.50	6.067	20.25	9.07	3.94
0.083	2.81	3.083	4.50	6.083	20.25	9.08	3.94
0.100	2.81	3.100	4.50	6.100	20.25	9.10	3.94
0.117	2.81	3.117	4.50	6.117	20.25	9.12	3.94
0.133	2.81	3.133	4.50	6.133	20.25	9.13	3.94
0.150	2.81	3.150	4.50	6.150	20.25	9.15	3.94
0.167	2.81	3.167	4.50	6.167	20.25	9.17	3.94
0.183	2.81	3.183	4.50	6.183	20.25	9.18	3.94
0.200	2.81	3.200	4.50	6.200	20.25	9.20	3.94
0.217	2.81	3.217	4.50	6.217	20.25	9.22	3.94
0.233	2.81	3.233	4.50	6.233	20.25	9.23	3.94
0.250	2.81	3.250	4.50	6.250	20.25	9.25	3.94
0.267	2.81	3.267	4.50	6.267	20.25	9.27	3.94
0.283	2.81	3.283	4.50	6.283	20.25	9.28	3.94
0.300	2.81	3.300	4.50	6.300	20.25	9.30	3.94
0.317	2.81	3.317	4.50	6.317	20.25	9.32	3.94
0.333	2.81	3.333	4.50	6.333	20.25	9.33	3.94
0.350	2.81	3.350	4.50	6.350	20.25	9.35	3.94
0.367	2.81	3.367	4.50	6.367	20.25	9.37	3.94
0.383	2.81	3.383	4.50	6.383	20.25	9.38	3.94
0.400	2.81	3.400	4.50	6.400	20.25	9.40	3.94
0.417	2.81	3.417	4.50	6.417	20.25	9.42	3.94
0.433	2.81	3.433	4.50	6.433	20.25	9.43	3.94
0.450	2.81	3.450	4.50	6.450	20.25	9.45	3.94
0.467	2.81	3.467	4.50	6.467	20.25	9.47	3.94
0.483	2.81	3.483	4.50	6.483	20.25	9.48	3.94
0.500	2.81	3.500	4.50	6.500	20.23	9.50	3.94
0.517	2.81	3.517	4.50	6.517	9.00	9.52	3.94
0.533	2.81	3.533	4.50	6.533	9.00	9.53	3.94

0.550	2.81	3.550	4.50	6.550	9.00	9.55	3.94
0.567	2.81	3.567	4.50	6.567	9.00	9.57	3.94
0.583	2.81	3.583	4.50	6.583	9.00	9.58	3.94
0.600	2.81	3.600	4.50	6.600	9.00	9.60	3.94
0.617	2.81	3.617	4.50	6.617	9.00	9.62	3.94
0.633	2.81	3.633	4.50	6.633	9.00	9.63	3.94
0.650	2.81	3.650	4.50	6.650	9.00	9.65	3.94
0.667	2.81	3.667	4.50	6.667	9.00	9.67	3.94
0.683	2.81	3.683	4.50	6.683	9.00	9.68	3.94
0.700	2.81	3.700	4.50	6.700	9.00	9.70	3.94
0.717	2.81	3.717	4.50	6.717	9.00	9.72	3.94
0.733	2.81	3.733	4.50	6.733	9.00	9.73	3.94
0.750	2.81	3.750	4.50	6.750	9.00	9.75	3.94
0.767	2.81	3.767	4.50	6.767	9.00	9.77	3.94
0.783	2.81	3.783	4.50	6.783	9.00	9.78	3.94
0.800	2.81	3.800	4.50	6.800	9.00	9.80	3.94
0.817	2.81	3.817	4.50	6.817	9.00	9.82	3.94
0.833	2.81	3.833	4.50	6.833	9.00	9.83	3.94
0.850	2.81	3.850	4.50	6.850	9.00	9.85	3.94
0.867	2.81	3.867	4.50	6.867	9.00	9.87	3.94
0.883	2.81	3.883	4.50	6.883	9.00	9.88	3.94
0.900	2.81	3.900	4.50	6.900	9.00	9.90	3.94
0.917	2.81	3.917	4.50	6.917	9.00	9.92	3.94
0.933	2.81	3.933	4.50	6.933	9.00	9.93	3.94
0.950	2.81	3.950	4.50	6.950	9.00	9.95	3.94
0.967	2.81	3.967	4.50	6.967	9.00	9.97	3.94
0.983	2.81	3.983	4.50	6.983	9.00	9.98	3.94
1.000	2.81	4.000	4.50	7.000	9.00	10.00	3.94
1.017	2.81	4.017	6.75	7.017	6.75	10.02	2.25
1.033	2.81	4.033	6.75	7.033	6.75	10.03	2.25
1.050	2.81	4.050	6.75	7.050	6.75	10.05	2.25
1.067	2.81	4.067	6.75	7.067	6.75	10.07	2.25
1.083	2.81	4.083	6.75	7.083	6.75	10.08	2.25
1.100	2.81	4.100	6.75	7.100	6.75	10.10	2.25
1.117	2.81	4.117	6.75	7.117	6.75	10.12	2.25
1.133	2.81	4.133	6.75	7.133	6.75	10.13	2.25
1.150	2.81	4.150	6.75	7.150	6.75	10.15	2.25
1.167	2.81	4.167	6.75	7.167	6.75	10.17	2.25
1.183	2.81	4.183	6.75	7.183	6.75	10.18	2.25
1.200	2.81	4.200	6.75	7.200	6.75	10.20	2.25
1.217	2.81	4.217	6.75	7.217	6.75	10.22	2.25
1.233	2.81	4.233	6.75	7.233	6.75	10.23	2.25
1.250	2.81	4.250	6.75	7.250	6.75	10.25	2.25
1.267	2.81	4.267	6.75	7.267	6.75	10.27	2.25
1.283	2.81	4.283	6.75	7.283	6.75	10.28	2.25
1.300	2.81	4.300	6.75	7.300	6.75	10.30	2.25
1.317	2.81	4.317	6.75	7.317	6.75	10.32	2.25
1.333	2.81	4.333	6.75	7.333	6.75	10.33	2.25
1.350	2.81	4.350	6.75	7.350	6.75	10.35	2.25

1.367	2.81	4.367	6.75	7.367	6.75	10.37	2.25
1.383	2.81	4.383	6.75	7.383	6.75	10.38	2.25
1.400	2.81	4.400	6.75	7.400	6.75	10.40	2.25
1.417	2.81	4.417	6.75	7.417	6.75	10.42	2.25
1.433	2.81	4.433	6.75	7.433	6.75	10.43	2.25
1.450	2.81	4.450	6.75	7.450	6.75	10.45	2.25
1.467	2.81	4.467	6.75	7.467	6.75	10.47	2.25
1.483	2.81	4.483	6.75	7.483	6.75	10.48	2.25
1.500	2.81	4.500	6.75	7.500	6.75	10.50	2.25
1.517	2.81	4.517	9.00	7.517	6.75	10.52	2.25
1.533	2.81	4.533	9.00	7.533	6.75	10.53	2.25
1.550	2.81	4.550	9.00	7.550	6.75	10.55	2.25
1.567	2.81	4.567	9.00	7.567	6.75	10.57	2.25
1.583	2.81	4.583	9.00	7.583	6.75	10.58	2.25
1.600	2.81	4.600	9.00	7.600	6.75	10.60	2.25
1.617	2.81	4.617	9.00	7.617	6.75	10.62	2.25
1.633	2.81	4.633	9.00	7.633	6.75	10.63	2.25
1.650	2.81	4.650	9.00	7.650	6.75	10.65	2.25
1.667	2.81	4.667	9.00	7.667	6.75	10.67	2.25
1.683	2.81	4.683	9.00	7.683	6.75	10.68	2.25
1.700	2.81	4.700	9.00	7.700	6.75	10.70	2.25
1.717	2.81	4.717	9.00	7.717	6.75	10.72	2.25
1.733	2.81	4.733	9.00	7.733	6.75	10.73	2.25
1.750	2.81	4.750	9.00	7.750	6.75	10.75	2.25
1.767	2.81	4.767	9.00	7.767	6.75	10.77	2.25
1.783	2.81	4.783	9.00	7.783	6.75	10.78	2.25
1.800	2.81	4.800	9.00	7.800	6.75	10.80	2.25
1.817	2.81	4.817	9.00	7.817	6.75	10.82	2.25
1.833	2.81	4.833	9.00	7.833	6.75	10.83	2.25
1.850	2.81	4.850	9.00	7.850	6.75	10.85	2.25
1.867	2.81	4.867	9.00	7.867	6.75	10.87	2.25
1.883	2.81	4.883	9.00	7.883	6.75	10.88	2.25
1.900	2.81	4.900	9.00	7.900	6.75	10.90	2.25
1.917	2.81	4.917	9.00	7.917	6.75	10.92	2.25
1.933	2.81	4.933	9.00	7.933	6.75	10.93	2.25
1.950	2.81	4.950	9.00	7.950	6.75	10.95	2.25
1.967	2.81	4.967	9.00	7.967	6.75	10.97	2.25
1.983	2.81	4.983	9.00	7.983	6.75	10.98	2.25
2.000	2.81	5.000	9.00	8.000	6.74	11.00	2.25
2.017	3.37	5.017	13.50	8.017	3.94	11.02	2.25
2.033	3.38	5.033	13.50	8.033	3.94	11.03	2.25
2.050	3.38	5.050	13.50	8.050	3.94	11.05	2.25
2.067	3.38	5.067	13.50	8.067	3.94	11.07	2.25
2.083	3.38	5.083	13.50	8.083	3.94	11.08	2.25
2.100	3.38	5.100	13.50	8.100	3.94	11.10	2.25
2.117	3.38	5.117	13.50	8.117	3.94	11.12	2.25
2.133	3.38	5.133	13.50	8.133	3.94	11.13	2.25
2.150	3.38	5.150	13.50	8.150	3.94	11.15	2.25
2.167	3.38	5.167	13.50	8.167	3.94	11.17	2.25

2.183	3.38	5.183	13.50	8.183	3.94	11.18	2.25
2.200	3.38	5.200	13.50	8.200	3.94	11.20	2.25
2.217	3.38	5.217	13.50	8.217	3.94	11.22	2.25
2.233	3.38	5.233	13.50	8.233	3.94	11.23	2.25
2.250	3.38	5.250	13.50	8.250	3.94	11.25	2.25
2.267	3.37	5.267	13.50	8.267	3.94	11.27	2.25
2.283	3.37	5.283	13.50	8.283	3.94	11.28	2.25
2.300	3.37	5.300	13.50	8.300	3.94	11.30	2.25
2.317	3.37	5.317	13.50	8.317	3.94	11.32	2.25
2.333	3.37	5.333	13.50	8.333	3.94	11.33	2.25
2.350	3.37	5.350	13.50	8.350	3.94	11.35	2.25
2.367	3.37	5.367	13.50	8.367	3.94	11.37	2.25
2.383	3.37	5.383	13.50	8.383	3.94	11.38	2.25
2.400	3.37	5.400	13.50	8.400	3.94	11.40	2.25
2.417	3.37	5.417	13.50	8.417	3.94	11.42	2.25
2.433	3.37	5.433	13.50	8.433	3.94	11.43	2.25
2.450	3.37	5.450	13.50	8.450	3.94	11.45	2.25
2.467	3.37	5.467	13.50	8.467	3.94	11.47	2.25
2.483	3.37	5.483	13.50	8.483	3.94	11.48	2.25
2.500	3.37	5.500	13.54	8.500	3.94	11.50	2.25
2.517	3.37	5.517	54.00	8.517	3.94	11.52	2.25
2.533	3.38	5.533	54.00	8.533	3.94	11.53	2.25
2.550	3.38	5.550	54.00	8.550	3.94	11.55	2.25
2.567	3.38	5.567	54.00	8.567	3.94	11.57	2.25
2.583	3.38	5.583	54.00	8.583	3.94	11.58	2.25
2.600	3.38	5.600	54.00	8.600	3.94	11.60	2.25
2.617	3.38	5.617	54.00	8.617	3.94	11.62	2.25
2.633	3.38	5.633	54.00	8.633	3.94	11.63	2.25
2.650	3.38	5.650	54.00	8.650	3.94	11.65	2.25
2.667	3.38	5.667	54.00	8.667	3.94	11.67	2.25
2.683	3.38	5.683	54.00	8.683	3.94	11.68	2.25
2.700	3.38	5.700	54.00	8.700	3.94	11.70	2.25
2.717	3.38	5.717	54.00	8.717	3.94	11.72	2.25
2.733	3.38	5.733	54.00	8.733	3.94	11.73	2.25
2.750	3.38	5.750	54.11	8.750	3.94	11.75	2.25
2.767	3.37	5.767	148.50	8.767	3.94	11.77	2.25
2.783	3.38	5.783	148.50	8.783	3.94	11.78	2.25
2.800	3.38	5.800	148.50	8.800	3.94	11.80	2.25
2.817	3.38	5.817	148.50	8.817	3.94	11.82	2.25
2.833	3.38	5.833	148.50	8.833	3.94	11.83	2.25
2.850	3.38	5.850	148.50	8.850	3.94	11.85	2.25
2.867	3.38	5.867	148.50	8.867	3.94	11.87	2.25
2.883	3.38	5.883	148.50	8.883	3.94	11.88	2.25
2.900	3.38	5.900	148.50	8.900	3.94	11.90	2.25
2.917	3.38	5.917	148.50	8.917	3.94	11.92	2.25
2.933	3.38	5.933	148.50	8.933	3.94	11.93	2.25
2.950	3.38	5.950	148.50	8.950	3.94	11.95	2.25
2.967	3.38	5.967	148.50	8.967	3.94	11.97	2.25
2.983	3.38	5.983	148.50	8.983	3.94	11.98	2.25

3.000	3.38	6.000	148.32	9.000	3.94	12.00	2.25

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.132 (i)
TIME TO PEAK (hrs)= 6.117
RUNOFF VOLUME (mm)= 32.947
TOTAL RAINFALL (mm)= 112.499
RUNOFF COEFFICIENT = 0.293

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

CALIB					
NASHYD (0002)	Area (ha)=	0.98	Curve Number (CN)=	64.0	
ID= 1 DT= 1.0 min	Ia (mm)=	7.21	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.31			

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.096 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 44.670
TOTAL RAINFALL (mm)= 112.499
RUNOFF COEFFICIENT = 0.397

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

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	1.49	0.132	6.12	32.95
+ ID2= 2 (0002):	0.98	0.096	6.22	44.67
ID = 3 (0004):	2.47	0.224	6.15	37.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0102)	Area (ha)=	0.66	Curve Number (CN)=	54.0	
ID= 1 DT= 1.0 min	Ia (mm)=	10.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.63			

```
     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.028 (i)
     TIME TO PEAK    (hrs)=   6.617
     RUNOFF VOLUME    (mm)=  32.947
     TOTAL RAINFALL   (mm)= 112.499
     RUNOFF COEFFICIENT   =   0.293

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

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| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     148.50       132.28
                 over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.23 (ii)    6.56 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.45         0.17
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.10          0.106 (iii)
     TIME TO PEAK    (hrs)=       5.98         6.03           6.02
     RUNOFF VOLUME    (mm)=     111.50        60.14          62.70
     TOTAL RAINFALL   (mm)=     112.50       112.50         112.50
     RUNOFF COEFFICIENT   =       0.99         0.53           0.56

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
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--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.106     6.02    62.70
     + ID2= 2 (  0102):     0.66   0.028     6.62    32.95
       ================================================
       ID = 3 (  0005):     1.11   0.116     6.03    45.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 FINISH
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\497
741e6-6f08-4066-95f9-66f7c2011a06\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\497
741e6-6f08-4066-95f9-66f7c2011a06\sce


DATE: 11-25-2019                          TIME: 10:47:59

USER:



COMMENTS: _____


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  ************************************************
  ** SIMULATION : 01. 2 yr - 24h Storm -SCS Typ **
  ************************************************

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| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
```



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|                  |              ed2bd9a1-0349-4b34-8ffd-5a876811428b\1c639733
| Ptotal= 55.00 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                          Duration of storm    = 24.00 hrs
                          Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    0.60 |  6.25    1.10 | 12.25    7.92 | 18.25    0.99
                0.50    0.60 |  6.50    1.10 | 12.50    7.92 | 18.50    0.99
                0.75    0.60 |  6.75    1.10 | 12.75    4.07 | 18.75    0.99
                1.00    0.60 |  7.00    1.10 | 13.00    4.07 | 19.00    0.99
                1.25    0.60 |  7.25    1.10 | 13.25    0.77 | 19.25    0.99
                1.50    0.60 |  7.50    1.10 | 13.50    0.77 | 19.50    0.99
                1.75    0.60 |  7.75    1.10 | 13.75    4.51 | 19.75    0.99
                2.00    0.60 |  8.00    1.10 | 14.00    4.51 | 20.00    0.99
                2.25    0.72 |  8.25    1.49 | 14.25    1.65 | 20.25    0.66
                2.50    0.71 |  8.50    1.48 | 14.50    1.65 | 20.50    0.66
                2.75    0.72 |  8.75    1.49 | 14.75    1.65 | 20.75    0.66
                3.00    0.71 |  9.00    1.49 | 15.00    1.65 | 21.00    0.66
                3.25    0.71 |  9.25    1.76 | 15.25    1.65 | 21.25    0.66
                3.50    0.71 |  9.50    1.76 | 15.50    1.65 | 21.50    0.66
                3.75    0.72 |  9.75    1.98 | 15.75    1.65 | 21.75    0.66
                4.00    0.71 | 10.00    1.98 | 16.00    1.65 | 22.00    0.66
                4.25    0.88 | 10.25    2.53 | 16.25    0.99 | 22.25    0.66
                4.50    0.88 | 10.50    2.53 | 16.50    0.99 | 22.50    0.66
                4.75    0.88 | 10.75    3.41 | 16.75    0.99 | 22.75    0.66
                5.00    0.88 | 11.00    3.41 | 17.00    0.99 | 23.00    0.66
                5.25    0.88 | 11.25    5.28 | 17.25    0.99 | 23.25    0.66
                5.50    0.88 | 11.50    5.28 | 17.50    0.99 | 23.50    0.66
                5.75    0.88 | 11.75   22.88 | 17.75    0.99 | 23.75    0.66
                6.00    0.88 | 12.00   60.72 | 18.00    0.99 | 24.00    0.66

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| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    0.60 | 6.017    1.10 |12.017    7.96 | 18.02    0.99
               0.033    0.60 | 6.033    1.10 |12.033    7.92 | 18.03    0.99
               0.050    0.60 | 6.050    1.10 |12.050    7.92 | 18.05    0.99
```

0.067	0.60	6.067	1.10	12.067	7.92	18.07	0.99
0.083	0.60	6.083	1.10	12.083	7.92	18.08	0.99
0.100	0.60	6.100	1.10	12.100	7.92	18.10	0.99
0.117	0.60	6.117	1.10	12.117	7.92	18.12	0.99
0.133	0.60	6.133	1.10	12.133	7.92	18.13	0.99
0.150	0.60	6.150	1.10	12.150	7.92	18.15	0.99
0.167	0.60	6.167	1.10	12.167	7.92	18.17	0.99
0.183	0.60	6.183	1.10	12.183	7.92	18.18	0.99
0.200	0.60	6.200	1.10	12.200	7.92	18.20	0.99
0.217	0.60	6.217	1.10	12.217	7.92	18.22	0.99
0.233	0.60	6.233	1.10	12.233	7.92	18.23	0.99
0.250	0.60	6.250	1.10	12.250	7.92	18.25	0.99
0.267	0.61	6.267	1.10	12.267	7.92	18.27	0.99
0.283	0.60	6.283	1.10	12.283	7.92	18.28	0.99
0.300	0.60	6.300	1.10	12.300	7.92	18.30	0.99
0.317	0.60	6.317	1.10	12.317	7.92	18.32	0.99
0.333	0.60	6.333	1.10	12.333	7.92	18.33	0.99
0.350	0.60	6.350	1.10	12.350	7.92	18.35	0.99
0.367	0.60	6.367	1.10	12.367	7.92	18.37	0.99
0.383	0.60	6.383	1.10	12.383	7.92	18.38	0.99
0.400	0.60	6.400	1.10	12.400	7.92	18.40	0.99
0.417	0.60	6.417	1.10	12.417	7.92	18.42	0.99
0.433	0.60	6.433	1.10	12.433	7.92	18.43	0.99
0.450	0.60	6.450	1.10	12.450	7.92	18.45	0.99
0.467	0.60	6.467	1.10	12.467	7.92	18.47	0.99
0.483	0.60	6.483	1.10	12.483	7.92	18.48	0.99
0.500	0.61	6.500	1.10	12.500	7.92	18.50	0.99
0.517	0.60	6.517	1.10	12.517	4.07	18.52	0.99
0.533	0.60	6.533	1.10	12.533	4.07	18.53	0.99
0.550	0.60	6.550	1.10	12.550	4.07	18.55	0.99
0.567	0.60	6.567	1.10	12.567	4.07	18.57	0.99
0.583	0.60	6.583	1.10	12.583	4.07	18.58	0.99
0.600	0.60	6.600	1.10	12.600	4.07	18.60	0.99
0.617	0.60	6.617	1.10	12.617	4.07	18.62	0.99
0.633	0.60	6.633	1.10	12.633	4.07	18.63	0.99
0.650	0.60	6.650	1.10	12.650	4.07	18.65	0.99
0.667	0.60	6.667	1.10	12.667	4.07	18.67	0.99
0.683	0.60	6.683	1.10	12.683	4.07	18.68	0.99
0.700	0.60	6.700	1.10	12.700	4.07	18.70	0.99
0.717	0.60	6.717	1.10	12.717	4.07	18.72	0.99
0.733	0.60	6.733	1.10	12.733	4.07	18.73	0.99
0.750	0.60	6.750	1.10	12.750	4.07	18.75	0.99
0.767	0.60	6.767	1.10	12.767	4.07	18.77	0.99
0.783	0.60	6.783	1.10	12.783	4.07	18.78	0.99
0.800	0.60	6.800	1.10	12.800	4.07	18.80	0.99
0.817	0.60	6.817	1.10	12.817	4.07	18.82	0.99
0.833	0.60	6.833	1.10	12.833	4.07	18.83	0.99
0.850	0.60	6.850	1.10	12.850	4.07	18.85	0.99
0.867	0.60	6.867	1.10	12.867	4.07	18.87	0.99

0.883	0.60	6.883	1.10	12.883	4.07	18.88	0.99
0.900	0.60	6.900	1.10	12.900	4.07	18.90	0.99
0.917	0.60	6.917	1.10	12.917	4.07	18.92	0.99
0.933	0.60	6.933	1.10	12.933	4.07	18.93	0.99
0.950	0.60	6.950	1.10	12.950	4.07	18.95	0.99
0.967	0.60	6.967	1.10	12.967	4.07	18.97	0.99
0.983	0.60	6.983	1.10	12.983	4.07	18.98	0.99
1.000	0.60	7.000	1.10	13.000	4.07	19.00	0.99
1.017	0.60	7.017	1.10	13.017	0.78	19.02	0.99
1.033	0.60	7.033	1.10	13.033	0.77	19.03	0.99
1.050	0.60	7.050	1.10	13.050	0.77	19.05	0.99
1.067	0.60	7.067	1.10	13.067	0.77	19.07	0.99
1.083	0.60	7.083	1.10	13.083	0.77	19.08	0.99
1.100	0.60	7.100	1.10	13.100	0.77	19.10	0.99
1.117	0.60	7.117	1.10	13.117	0.77	19.12	0.99
1.133	0.60	7.133	1.10	13.133	0.77	19.13	0.99
1.150	0.60	7.150	1.10	13.150	0.77	19.15	0.99
1.167	0.60	7.167	1.10	13.167	0.77	19.17	0.99
1.183	0.60	7.183	1.10	13.183	0.77	19.18	0.99
1.200	0.60	7.200	1.10	13.200	0.77	19.20	0.99
1.217	0.60	7.217	1.10	13.217	0.77	19.22	0.99
1.233	0.60	7.233	1.10	13.233	0.77	19.23	0.99
1.250	0.60	7.250	1.10	13.250	0.77	19.25	0.99
1.267	0.60	7.267	1.10	13.267	0.77	19.27	0.99
1.283	0.60	7.283	1.10	13.283	0.77	19.28	0.99
1.300	0.60	7.300	1.10	13.300	0.77	19.30	0.99
1.317	0.60	7.317	1.10	13.317	0.77	19.32	0.99
1.333	0.60	7.333	1.10	13.333	0.77	19.33	0.99
1.350	0.60	7.350	1.10	13.350	0.77	19.35	0.99
1.367	0.60	7.367	1.10	13.367	0.77	19.37	0.99
1.383	0.60	7.383	1.10	13.383	0.77	19.38	0.99
1.400	0.60	7.400	1.10	13.400	0.77	19.40	0.99
1.417	0.60	7.417	1.10	13.417	0.77	19.42	0.99
1.433	0.60	7.433	1.10	13.433	0.77	19.43	0.99
1.450	0.60	7.450	1.10	13.450	0.77	19.45	0.99
1.467	0.60	7.467	1.10	13.467	0.77	19.47	0.99
1.483	0.60	7.483	1.10	13.483	0.77	19.48	0.99
1.500	0.60	7.500	1.10	13.500	0.77	19.50	0.99
1.517	0.60	7.517	1.10	13.517	4.50	19.52	0.99
1.533	0.60	7.533	1.10	13.533	4.51	19.53	0.99
1.550	0.60	7.550	1.10	13.550	4.51	19.55	0.99
1.567	0.60	7.567	1.10	13.567	4.51	19.57	0.99
1.583	0.60	7.583	1.10	13.583	4.51	19.58	0.99
1.600	0.60	7.600	1.10	13.600	4.51	19.60	0.99
1.617	0.60	7.617	1.10	13.617	4.51	19.62	0.99
1.633	0.60	7.633	1.10	13.633	4.51	19.63	0.99
1.650	0.60	7.650	1.10	13.650	4.51	19.65	0.99
1.667	0.60	7.667	1.10	13.667	4.51	19.67	0.99
1.683	0.60	7.683	1.10	13.683	4.51	19.68	0.99

1.700	0.60	7.700	1.10	13.700	4.51	19.70	0.99
1.717	0.60	7.717	1.10	13.717	4.51	19.72	0.99
1.733	0.60	7.733	1.10	13.733	4.51	19.73	0.99
1.750	0.60	7.750	1.10	13.750	4.51	19.75	0.99
1.767	0.60	7.767	1.10	13.767	4.51	19.77	0.99
1.783	0.60	7.783	1.10	13.783	4.51	19.78	0.99
1.800	0.60	7.800	1.10	13.800	4.51	19.80	0.99
1.817	0.60	7.817	1.10	13.817	4.51	19.82	0.99
1.833	0.60	7.833	1.10	13.833	4.51	19.83	0.99
1.850	0.60	7.850	1.10	13.850	4.51	19.85	0.99
1.867	0.60	7.867	1.10	13.867	4.51	19.87	0.99
1.883	0.60	7.883	1.10	13.883	4.51	19.88	0.99
1.900	0.60	7.900	1.10	13.900	4.51	19.90	0.99
1.917	0.60	7.917	1.10	13.917	4.51	19.92	0.99
1.933	0.60	7.933	1.10	13.933	4.51	19.93	0.99
1.950	0.60	7.950	1.10	13.950	4.51	19.95	0.99
1.967	0.60	7.967	1.10	13.967	4.51	19.97	0.99
1.983	0.60	7.983	1.10	13.983	4.51	19.98	0.99
2.000	0.60	8.000	1.10	14.000	4.51	20.00	0.99
2.017	0.71	8.017	1.49	14.017	1.66	20.02	0.66
2.033	0.72	8.033	1.49	14.033	1.65	20.03	0.66
2.050	0.72	8.050	1.49	14.050	1.65	20.05	0.66
2.067	0.72	8.067	1.49	14.067	1.65	20.07	0.66
2.083	0.72	8.083	1.49	14.083	1.65	20.08	0.66
2.100	0.72	8.100	1.49	14.100	1.65	20.10	0.66
2.117	0.72	8.117	1.49	14.117	1.65	20.12	0.66
2.133	0.72	8.133	1.49	14.133	1.65	20.13	0.66
2.150	0.72	8.150	1.49	14.150	1.65	20.15	0.66
2.167	0.72	8.167	1.49	14.167	1.65	20.17	0.66
2.183	0.72	8.183	1.49	14.183	1.65	20.18	0.66
2.200	0.72	8.200	1.49	14.200	1.65	20.20	0.66
2.217	0.72	8.217	1.49	14.217	1.65	20.22	0.66
2.233	0.72	8.233	1.49	14.233	1.65	20.23	0.66
2.250	0.72	8.250	1.48	14.250	1.65	20.25	0.66
2.267	0.71	8.267	1.48	14.267	1.65	20.27	0.66
2.283	0.71	8.283	1.48	14.283	1.65	20.28	0.66
2.300	0.71	8.300	1.48	14.300	1.65	20.30	0.66
2.317	0.71	8.317	1.48	14.317	1.65	20.32	0.66
2.333	0.71	8.333	1.48	14.333	1.65	20.33	0.66
2.350	0.71	8.350	1.48	14.350	1.65	20.35	0.66
2.367	0.71	8.367	1.48	14.367	1.65	20.37	0.66
2.383	0.71	8.383	1.48	14.383	1.65	20.38	0.66
2.400	0.71	8.400	1.48	14.400	1.65	20.40	0.66
2.417	0.71	8.417	1.48	14.417	1.65	20.42	0.66
2.433	0.71	8.433	1.48	14.433	1.65	20.43	0.66
2.450	0.71	8.450	1.48	14.450	1.65	20.45	0.66
2.467	0.71	8.467	1.48	14.467	1.65	20.47	0.66
2.483	0.71	8.483	1.48	14.483	1.65	20.48	0.66
2.500	0.71	8.500	1.48	14.500	1.65	20.50	0.66

2.517	0.71	8.517	1.49	14.517	1.65	20.52	0.66
2.533	0.72	8.533	1.49	14.533	1.65	20.53	0.66
2.550	0.72	8.550	1.49	14.550	1.65	20.55	0.66
2.567	0.72	8.567	1.49	14.567	1.65	20.57	0.66
2.583	0.72	8.583	1.49	14.583	1.65	20.58	0.66
2.600	0.72	8.600	1.49	14.600	1.65	20.60	0.66
2.617	0.72	8.617	1.49	14.617	1.65	20.62	0.66
2.633	0.72	8.633	1.49	14.633	1.65	20.63	0.66
2.650	0.72	8.650	1.49	14.650	1.65	20.65	0.66
2.667	0.72	8.667	1.49	14.667	1.65	20.67	0.66
2.683	0.72	8.683	1.49	14.683	1.65	20.68	0.66
2.700	0.72	8.700	1.49	14.700	1.65	20.70	0.66
2.717	0.72	8.717	1.49	14.717	1.65	20.72	0.66
2.733	0.72	8.733	1.49	14.733	1.65	20.73	0.66
2.750	0.72	8.750	1.48	14.750	1.65	20.75	0.66
2.767	0.71	8.767	1.49	14.767	1.65	20.77	0.66
2.783	0.71	8.783	1.49	14.783	1.65	20.78	0.66
2.800	0.71	8.800	1.49	14.800	1.65	20.80	0.66
2.817	0.71	8.817	1.49	14.817	1.65	20.82	0.66
2.833	0.71	8.833	1.49	14.833	1.65	20.83	0.66
2.850	0.71	8.850	1.49	14.850	1.65	20.85	0.66
2.867	0.71	8.867	1.49	14.867	1.65	20.87	0.66
2.883	0.71	8.883	1.49	14.883	1.65	20.88	0.66
2.900	0.71	8.900	1.49	14.900	1.65	20.90	0.66
2.917	0.71	8.917	1.49	14.917	1.65	20.92	0.66
2.933	0.71	8.933	1.49	14.933	1.65	20.93	0.66
2.950	0.71	8.950	1.49	14.950	1.65	20.95	0.66
2.967	0.71	8.967	1.49	14.967	1.65	20.97	0.66
2.983	0.71	8.983	1.49	14.983	1.65	20.98	0.66
3.000	0.71	9.000	1.49	15.000	1.65	21.00	0.66
3.017	0.71	9.017	1.76	15.017	1.65	21.02	0.66
3.033	0.71	9.033	1.76	15.033	1.65	21.03	0.66
3.050	0.71	9.050	1.76	15.050	1.65	21.05	0.66
3.067	0.71	9.067	1.76	15.067	1.65	21.07	0.66
3.083	0.71	9.083	1.76	15.083	1.65	21.08	0.66
3.100	0.71	9.100	1.76	15.100	1.65	21.10	0.66
3.117	0.71	9.117	1.76	15.117	1.65	21.12	0.66
3.133	0.71	9.133	1.76	15.133	1.65	21.13	0.66
3.150	0.71	9.150	1.76	15.150	1.65	21.15	0.66
3.167	0.71	9.167	1.76	15.167	1.65	21.17	0.66
3.183	0.71	9.183	1.76	15.183	1.65	21.18	0.66
3.200	0.71	9.200	1.76	15.200	1.65	21.20	0.66
3.217	0.71	9.217	1.76	15.217	1.65	21.22	0.66
3.233	0.71	9.233	1.76	15.233	1.65	21.23	0.66
3.250	0.71	9.250	1.76	15.250	1.65	21.25	0.66
3.267	0.71	9.267	1.76	15.267	1.65	21.27	0.66
3.283	0.71	9.283	1.76	15.283	1.65	21.28	0.66
3.300	0.71	9.300	1.76	15.300	1.65	21.30	0.66
3.317	0.71	9.317	1.76	15.317	1.65	21.32	0.66

3.333	0.71	9.333	1.76	15.333	1.65	21.33	0.66
3.350	0.71	9.350	1.76	15.350	1.65	21.35	0.66
3.367	0.71	9.367	1.76	15.367	1.65	21.37	0.66
3.383	0.71	9.383	1.76	15.383	1.65	21.38	0.66
3.400	0.71	9.400	1.76	15.400	1.65	21.40	0.66
3.417	0.71	9.417	1.76	15.417	1.65	21.42	0.66
3.433	0.71	9.433	1.76	15.433	1.65	21.43	0.66
3.450	0.71	9.450	1.76	15.450	1.65	21.45	0.66
3.467	0.71	9.467	1.76	15.467	1.65	21.47	0.66
3.483	0.71	9.483	1.76	15.483	1.65	21.48	0.66
3.500	0.71	9.500	1.76	15.500	1.65	21.50	0.66
3.517	0.71	9.517	1.98	15.517	1.65	21.52	0.66
3.533	0.72	9.533	1.98	15.533	1.65	21.53	0.66
3.550	0.72	9.550	1.98	15.550	1.65	21.55	0.66
3.567	0.72	9.567	1.98	15.567	1.65	21.57	0.66
3.583	0.72	9.583	1.98	15.583	1.65	21.58	0.66
3.600	0.72	9.600	1.98	15.600	1.65	21.60	0.66
3.617	0.72	9.617	1.98	15.617	1.65	21.62	0.66
3.633	0.72	9.633	1.98	15.633	1.65	21.63	0.66
3.650	0.72	9.650	1.98	15.650	1.65	21.65	0.66
3.667	0.72	9.667	1.98	15.667	1.65	21.67	0.66
3.683	0.72	9.683	1.98	15.683	1.65	21.68	0.66
3.700	0.72	9.700	1.98	15.700	1.65	21.70	0.66
3.717	0.72	9.717	1.98	15.717	1.65	21.72	0.66
3.733	0.72	9.733	1.98	15.733	1.65	21.73	0.66
3.750	0.72	9.750	1.98	15.750	1.65	21.75	0.66
3.767	0.71	9.767	1.98	15.767	1.65	21.77	0.66
3.783	0.71	9.783	1.98	15.783	1.65	21.78	0.66
3.800	0.71	9.800	1.98	15.800	1.65	21.80	0.66
3.817	0.71	9.817	1.98	15.817	1.65	21.82	0.66
3.833	0.71	9.833	1.98	15.833	1.65	21.83	0.66
3.850	0.71	9.850	1.98	15.850	1.65	21.85	0.66
3.867	0.71	9.867	1.98	15.867	1.65	21.87	0.66
3.883	0.71	9.883	1.98	15.883	1.65	21.88	0.66
3.900	0.71	9.900	1.98	15.900	1.65	21.90	0.66
3.917	0.71	9.917	1.98	15.917	1.65	21.92	0.66
3.933	0.71	9.933	1.98	15.933	1.65	21.93	0.66
3.950	0.71	9.950	1.98	15.950	1.65	21.95	0.66
3.967	0.71	9.967	1.98	15.967	1.65	21.97	0.66
3.983	0.71	9.983	1.98	15.983	1.65	21.98	0.66
4.000	0.71	10.000	1.98	16.000	1.65	22.00	0.66
4.017	0.88	10.017	2.53	16.017	0.99	22.02	0.66
4.033	0.88	10.033	2.53	16.033	0.99	22.03	0.66
4.050	0.88	10.050	2.53	16.050	0.99	22.05	0.66
4.067	0.88	10.067	2.53	16.067	0.99	22.07	0.66
4.083	0.88	10.083	2.53	16.083	0.99	22.08	0.66
4.100	0.88	10.100	2.53	16.100	0.99	22.10	0.66
4.117	0.88	10.117	2.53	16.117	0.99	22.12	0.66
4.133	0.88	10.133	2.53	16.133	0.99	22.13	0.66

4.150	0.88	10.150	2.53	16.150	0.99	22.15	0.66
4.167	0.88	10.167	2.53	16.167	0.99	22.17	0.66
4.183	0.88	10.183	2.53	16.183	0.99	22.18	0.66
4.200	0.88	10.200	2.53	16.200	0.99	22.20	0.66
4.217	0.88	10.217	2.53	16.217	0.99	22.22	0.66
4.233	0.88	10.233	2.53	16.233	0.99	22.23	0.66
4.250	0.88	10.250	2.53	16.250	0.99	22.25	0.66
4.267	0.88	10.267	2.53	16.267	0.99	22.27	0.66
4.283	0.88	10.283	2.53	16.283	0.99	22.28	0.66
4.300	0.88	10.300	2.53	16.300	0.99	22.30	0.66
4.317	0.88	10.317	2.53	16.317	0.99	22.32	0.66
4.333	0.88	10.333	2.53	16.333	0.99	22.33	0.66
4.350	0.88	10.350	2.53	16.350	0.99	22.35	0.66
4.367	0.88	10.367	2.53	16.367	0.99	22.37	0.66
4.383	0.88	10.383	2.53	16.383	0.99	22.38	0.66
4.400	0.88	10.400	2.53	16.400	0.99	22.40	0.66
4.417	0.88	10.417	2.53	16.417	0.99	22.42	0.66
4.433	0.88	10.433	2.53	16.433	0.99	22.43	0.66
4.450	0.88	10.450	2.53	16.450	0.99	22.45	0.66
4.467	0.88	10.467	2.53	16.467	0.99	22.47	0.66
4.483	0.88	10.483	2.53	16.483	0.99	22.48	0.66
4.500	0.88	10.500	2.53	16.500	0.99	22.50	0.66
4.517	0.88	10.517	3.41	16.517	0.99	22.52	0.66
4.533	0.88	10.533	3.41	16.533	0.99	22.53	0.66
4.550	0.88	10.550	3.41	16.550	0.99	22.55	0.66
4.567	0.88	10.567	3.41	16.567	0.99	22.57	0.66
4.583	0.88	10.583	3.41	16.583	0.99	22.58	0.66
4.600	0.88	10.600	3.41	16.600	0.99	22.60	0.66
4.617	0.88	10.617	3.41	16.617	0.99	22.62	0.66
4.633	0.88	10.633	3.41	16.633	0.99	22.63	0.66
4.650	0.88	10.650	3.41	16.650	0.99	22.65	0.66
4.667	0.88	10.667	3.41	16.667	0.99	22.67	0.66
4.683	0.88	10.683	3.41	16.683	0.99	22.68	0.66
4.700	0.88	10.700	3.41	16.700	0.99	22.70	0.66
4.717	0.88	10.717	3.41	16.717	0.99	22.72	0.66
4.733	0.88	10.733	3.41	16.733	0.99	22.73	0.66
4.750	0.88	10.750	3.41	16.750	0.99	22.75	0.66
4.767	0.88	10.767	3.41	16.767	0.99	22.77	0.66
4.783	0.88	10.783	3.41	16.783	0.99	22.78	0.66
4.800	0.88	10.800	3.41	16.800	0.99	22.80	0.66
4.817	0.88	10.817	3.41	16.817	0.99	22.82	0.66
4.833	0.88	10.833	3.41	16.833	0.99	22.83	0.66
4.850	0.88	10.850	3.41	16.850	0.99	22.85	0.66
4.867	0.88	10.867	3.41	16.867	0.99	22.87	0.66
4.883	0.88	10.883	3.41	16.883	0.99	22.88	0.66
4.900	0.88	10.900	3.41	16.900	0.99	22.90	0.66
4.917	0.88	10.917	3.41	16.917	0.99	22.92	0.66
4.933	0.88	10.933	3.41	16.933	0.99	22.93	0.66
4.950	0.88	10.950	3.41	16.950	0.99	22.95	0.66

4.967	0.88	10.967	3.41	16.967	0.99	22.97	0.66
4.983	0.88	10.983	3.41	16.983	0.99	22.98	0.66
5.000	0.88	11.000	3.41	17.000	0.99	23.00	0.66
5.017	0.88	11.017	5.28	17.017	0.99	23.02	0.66
5.033	0.88	11.033	5.28	17.033	0.99	23.03	0.66
5.050	0.88	11.050	5.28	17.050	0.99	23.05	0.66
5.067	0.88	11.067	5.28	17.067	0.99	23.07	0.66
5.083	0.88	11.083	5.28	17.083	0.99	23.08	0.66
5.100	0.88	11.100	5.28	17.100	0.99	23.10	0.66
5.117	0.88	11.117	5.28	17.117	0.99	23.12	0.66
5.133	0.88	11.133	5.28	17.133	0.99	23.13	0.66
5.150	0.88	11.150	5.28	17.150	0.99	23.15	0.66
5.167	0.88	11.167	5.28	17.167	0.99	23.17	0.66
5.183	0.88	11.183	5.28	17.183	0.99	23.18	0.66
5.200	0.88	11.200	5.28	17.200	0.99	23.20	0.66
5.217	0.88	11.217	5.28	17.217	0.99	23.22	0.66
5.233	0.88	11.233	5.28	17.233	0.99	23.23	0.66
5.250	0.88	11.250	5.28	17.250	0.99	23.25	0.66
5.267	0.88	11.267	5.28	17.267	0.99	23.27	0.66
5.283	0.88	11.283	5.28	17.283	0.99	23.28	0.66
5.300	0.88	11.300	5.28	17.300	0.99	23.30	0.66
5.317	0.88	11.317	5.28	17.317	0.99	23.32	0.66
5.333	0.88	11.333	5.28	17.333	0.99	23.33	0.66
5.350	0.88	11.350	5.28	17.350	0.99	23.35	0.66
5.367	0.88	11.367	5.28	17.367	0.99	23.37	0.66
5.383	0.88	11.383	5.28	17.383	0.99	23.38	0.66
5.400	0.88	11.400	5.28	17.400	0.99	23.40	0.66
5.417	0.88	11.417	5.28	17.417	0.99	23.42	0.66
5.433	0.88	11.433	5.28	17.433	0.99	23.43	0.66
5.450	0.88	11.450	5.28	17.450	0.99	23.45	0.66
5.467	0.88	11.467	5.28	17.467	0.99	23.47	0.66
5.483	0.88	11.483	5.28	17.483	0.99	23.48	0.66
5.500	0.88	11.500	5.28	17.500	0.99	23.50	0.66
5.517	0.88	11.517	22.88	17.517	0.99	23.52	0.66
5.533	0.88	11.533	22.88	17.533	0.99	23.53	0.66
5.550	0.88	11.550	22.88	17.550	0.99	23.55	0.66
5.567	0.88	11.567	22.88	17.567	0.99	23.57	0.66
5.583	0.88	11.583	22.88	17.583	0.99	23.58	0.66
5.600	0.88	11.600	22.88	17.600	0.99	23.60	0.66
5.617	0.88	11.617	22.88	17.617	0.99	23.62	0.66
5.633	0.88	11.633	22.88	17.633	0.99	23.63	0.66
5.650	0.88	11.650	22.88	17.650	0.99	23.65	0.66
5.667	0.88	11.667	22.88	17.667	0.99	23.67	0.66
5.683	0.88	11.683	22.88	17.683	0.99	23.68	0.66
5.700	0.88	11.700	22.88	17.700	0.99	23.70	0.66
5.717	0.88	11.717	22.88	17.717	0.99	23.72	0.66
5.733	0.88	11.733	22.88	17.733	0.99	23.73	0.66
5.750	0.88	11.750	22.88	17.750	0.99	23.75	0.66
5.767	0.88	11.767	60.70	17.767	0.99	23.77	0.66

5.783	0.88	11.783	60.72	17.783	0.99	23.78	0.66
5.800	0.88	11.800	60.72	17.800	0.99	23.80	0.66
5.817	0.88	11.817	60.72	17.817	0.99	23.82	0.66
5.833	0.88	11.833	60.72	17.833	0.99	23.83	0.66
5.850	0.88	11.850	60.72	17.850	0.99	23.85	0.66
5.867	0.88	11.867	60.72	17.867	0.99	23.87	0.66
5.883	0.88	11.883	60.72	17.883	0.99	23.88	0.66
5.900	0.88	11.900	60.72	17.900	0.99	23.90	0.66
5.917	0.88	11.917	60.72	17.917	0.99	23.92	0.66
5.933	0.88	11.933	60.72	17.933	0.99	23.93	0.66
5.950	0.88	11.950	60.72	17.950	0.99	23.95	0.66
5.967	0.88	11.967	60.72	17.967	0.99	23.97	0.66
5.983	0.88	11.983	60.72	17.983	0.99	23.98	0.66
6.000	0.88	12.000	60.72	18.000	0.99	24.00	0.66

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.024 (i)
TIME TO PEAK (hrs)= 12.133
RUNOFF VOLUME (mm)= 5.875
TOTAL RAINFALL (mm)= 55.001
RUNOFF COEFFICIENT = 0.107

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

CALIB
NASHYD (0002) | Area (ha)= 0.98 Curve Number (CN)= 64.0
ID= 1 DT= 1.0 min | Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.31

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.020 (i)
TIME TO PEAK (hrs)= 12.217
RUNOFF VOLUME (mm)= 9.279
TOTAL RAINFALL (mm)= 55.001
RUNOFF COEFFICIENT = 0.169

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

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	1.49	0.024	12.13	5.87

```
 + ID2= 2 (  0002):     0.98   0.020    12.22     9.28
   ====================================================
   ID = 3 (  0004):     2.47   0.044    12.17     9.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.005 (i)
     TIME TO PEAK    (hrs)=  12.633
     RUNOFF VOLUME    (mm)=   5.639
     TOTAL RAINFALL   (mm)=  55.001
     RUNOFF COEFFICIENT   =   0.103

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

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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.31
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      54.77         40.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=      60.72         34.64
               over (min)        5.00         10.00
     Storage Coeff.  (min)=       1.77 (ii)     9.38 (ii)
     Unit Hyd. Tpeak (min)=       5.00         10.00
     Unit Hyd. peak  (cms)=       0.39          0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.00          0.02          0.025 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.07          12.03
     RUNOFF VOLUME    (mm)=      54.00         18.89          20.64
     TOTAL RAINFALL   (mm)=      55.00         55.00          55.00
     RUNOFF COEFFICIENT   =       0.98          0.34           0.38

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
```



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              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.025    12.03    20.64
      + ID2= 2 (  0102):     0.66   0.005    12.63     5.64
        ====================================================
        ID = 3 (  0005):     1.11   0.026    12.05    12.97

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
========================

       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\3f5
5f5a6-83b8-4cb9-a152-1db90023a9a5\sce
  Summary filename:
```

C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\3f5
5f5a6-83b8-4cb9-a152-1db90023a9a5\sce

DATE: 11-25-2019 TIME: 10:47:58

USER:

COMMENTS: _____

** SIMULATION : 02. 5 yr - 24h Storm -SCS Typ **

MASS STORM	Filename: C:\Users\iblechta\AppD ata\Local\Temp\ ed2bd9a1-0349-4b34-8ffd-5a876811428b\37c4f75b
Ptotal= 76.00 mm	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 24.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.84	6.25	1.52	12.25	10.94	18.25	1.37
0.50	0.84	6.50	1.52	12.50	10.94	18.50	1.37
0.75	0.84	6.75	1.52	12.75	5.62	18.75	1.37
1.00	0.84	7.00	1.52	13.00	5.62	19.00	1.37
1.25	0.84	7.25	1.52	13.25	1.06	19.25	1.37
1.50	0.84	7.50	1.52	13.50	1.06	19.50	1.37
1.75	0.84	7.75	1.52	13.75	6.23	19.75	1.37
2.00	0.84	8.00	1.52	14.00	6.23	20.00	1.37
2.25	0.99	8.25	2.05	14.25	2.28	20.25	0.91
2.50	0.99	8.50	2.05	14.50	2.28	20.50	0.91
2.75	0.99	8.75	2.05	14.75	2.28	20.75	0.91
3.00	0.99	9.00	2.05	15.00	2.28	21.00	0.91
3.25	0.99	9.25	2.43	15.25	2.28	21.25	0.91
3.50	0.99	9.50	2.43	15.50	2.28	21.50	0.91
3.75	0.99	9.75	2.74	15.75	2.28	21.75	0.91
4.00	0.99	10.00	2.74	16.00	2.28	22.00	0.91
4.25	1.22	10.25	3.50	16.25	1.37	22.25	0.91
4.50	1.22	10.50	3.50	16.50	1.37	22.50	0.91
4.75	1.22	10.75	4.71	16.75	1.37	22.75	0.91

5.00	1.22	11.00	4.71	17.00	1.37	23.00	0.91
5.25	1.22	11.25	7.30	17.25	1.37	23.25	0.91
5.50	1.22	11.50	7.30	17.50	1.37	23.50	0.91
5.75	1.22	11.75	31.62	17.75	1.37	23.75	0.91
6.00	1.22	12.00	83.90	18.00	1.37	24.00	0.91

CALIB NASHYD (0101) ID= 1 DT= 1.0 min	Area (ha)= 1.49 Curve Number (CN)= 54.0 Ia (mm)= 10.00 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.22

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.84	6.017	1.52	12.017	10.99	18.02	1.37
0.033	0.84	6.033	1.52	12.033	10.94	18.03	1.37
0.050	0.84	6.050	1.52	12.050	10.94	18.05	1.37
0.067	0.84	6.067	1.52	12.067	10.94	18.07	1.37
0.083	0.84	6.083	1.52	12.083	10.94	18.08	1.37
0.100	0.84	6.100	1.52	12.100	10.94	18.10	1.37
0.117	0.84	6.117	1.52	12.117	10.94	18.12	1.37
0.133	0.84	6.133	1.52	12.133	10.94	18.13	1.37
0.150	0.84	6.150	1.52	12.150	10.94	18.15	1.37
0.167	0.84	6.167	1.52	12.167	10.94	18.17	1.37
0.183	0.84	6.183	1.52	12.183	10.94	18.18	1.37
0.200	0.84	6.200	1.52	12.200	10.94	18.20	1.37
0.217	0.84	6.217	1.52	12.217	10.94	18.22	1.37
0.233	0.84	6.233	1.52	12.233	10.94	18.23	1.37
0.250	0.84	6.250	1.52	12.250	10.94	18.25	1.37
0.267	0.84	6.267	1.52	12.267	10.94	18.27	1.37
0.283	0.84	6.283	1.52	12.283	10.94	18.28	1.37
0.300	0.84	6.300	1.52	12.300	10.94	18.30	1.37
0.317	0.84	6.317	1.52	12.317	10.94	18.32	1.37
0.333	0.84	6.333	1.52	12.333	10.94	18.33	1.37
0.350	0.84	6.350	1.52	12.350	10.94	18.35	1.37
0.367	0.84	6.367	1.52	12.367	10.94	18.37	1.37
0.383	0.84	6.383	1.52	12.383	10.94	18.38	1.37
0.400	0.84	6.400	1.52	12.400	10.94	18.40	1.37
0.417	0.84	6.417	1.52	12.417	10.94	18.42	1.37
0.433	0.84	6.433	1.52	12.433	10.94	18.43	1.37
0.450	0.84	6.450	1.52	12.450	10.94	18.45	1.37
0.467	0.84	6.467	1.52	12.467	10.94	18.47	1.37
0.483	0.84	6.483	1.52	12.483	10.94	18.48	1.37
0.500	0.84	6.500	1.52	12.500	10.94	18.50	1.37

0.517	0.84	6.517	1.52	12.517	5.63	18.52	1.37
0.533	0.84	6.533	1.52	12.533	5.62	18.53	1.37
0.550	0.84	6.550	1.52	12.550	5.62	18.55	1.37
0.567	0.84	6.567	1.52	12.567	5.62	18.57	1.37
0.583	0.84	6.583	1.52	12.583	5.62	18.58	1.37
0.600	0.84	6.600	1.52	12.600	5.62	18.60	1.37
0.617	0.84	6.617	1.52	12.617	5.62	18.62	1.37
0.633	0.84	6.633	1.52	12.633	5.62	18.63	1.37
0.650	0.84	6.650	1.52	12.650	5.62	18.65	1.37
0.667	0.84	6.667	1.52	12.667	5.62	18.67	1.37
0.683	0.84	6.683	1.52	12.683	5.62	18.68	1.37
0.700	0.84	6.700	1.52	12.700	5.62	18.70	1.37
0.717	0.84	6.717	1.52	12.717	5.62	18.72	1.37
0.733	0.84	6.733	1.52	12.733	5.62	18.73	1.37
0.750	0.84	6.750	1.52	12.750	5.62	18.75	1.37
0.767	0.84	6.767	1.52	12.767	5.62	18.77	1.37
0.783	0.84	6.783	1.52	12.783	5.62	18.78	1.37
0.800	0.84	6.800	1.52	12.800	5.62	18.80	1.37
0.817	0.84	6.817	1.52	12.817	5.62	18.82	1.37
0.833	0.84	6.833	1.52	12.833	5.62	18.83	1.37
0.850	0.84	6.850	1.52	12.850	5.62	18.85	1.37
0.867	0.84	6.867	1.52	12.867	5.62	18.87	1.37
0.883	0.84	6.883	1.52	12.883	5.62	18.88	1.37
0.900	0.84	6.900	1.52	12.900	5.62	18.90	1.37
0.917	0.84	6.917	1.52	12.917	5.62	18.92	1.37
0.933	0.84	6.933	1.52	12.933	5.62	18.93	1.37
0.950	0.84	6.950	1.52	12.950	5.62	18.95	1.37
0.967	0.84	6.967	1.52	12.967	5.62	18.97	1.37
0.983	0.84	6.983	1.52	12.983	5.62	18.98	1.37
1.000	0.84	7.000	1.52	13.000	5.62	19.00	1.37
1.017	0.84	7.017	1.52	13.017	1.07	19.02	1.37
1.033	0.84	7.033	1.52	13.033	1.06	19.03	1.37
1.050	0.84	7.050	1.52	13.050	1.06	19.05	1.37
1.067	0.84	7.067	1.52	13.067	1.06	19.07	1.37
1.083	0.84	7.083	1.52	13.083	1.06	19.08	1.37
1.100	0.84	7.100	1.52	13.100	1.06	19.10	1.37
1.117	0.84	7.117	1.52	13.117	1.06	19.12	1.37
1.133	0.84	7.133	1.52	13.133	1.06	19.13	1.37
1.150	0.84	7.150	1.52	13.150	1.06	19.15	1.37
1.167	0.84	7.167	1.52	13.167	1.06	19.17	1.37
1.183	0.84	7.183	1.52	13.183	1.06	19.18	1.37
1.200	0.84	7.200	1.52	13.200	1.06	19.20	1.37
1.217	0.84	7.217	1.52	13.217	1.06	19.22	1.37
1.233	0.84	7.233	1.52	13.233	1.06	19.23	1.37
1.250	0.84	7.250	1.52	13.250	1.06	19.25	1.37
1.267	0.84	7.267	1.52	13.267	1.06	19.27	1.37
1.283	0.84	7.283	1.52	13.283	1.06	19.28	1.37
1.300	0.84	7.300	1.52	13.300	1.06	19.30	1.37
1.317	0.84	7.317	1.52	13.317	1.06	19.32	1.37

1.333	0.84	7.333	1.52	13.333	1.06	19.33	1.37
1.350	0.84	7.350	1.52	13.350	1.06	19.35	1.37
1.367	0.84	7.367	1.52	13.367	1.06	19.37	1.37
1.383	0.84	7.383	1.52	13.383	1.06	19.38	1.37
1.400	0.84	7.400	1.52	13.400	1.06	19.40	1.37
1.417	0.84	7.417	1.52	13.417	1.06	19.42	1.37
1.433	0.84	7.433	1.52	13.433	1.06	19.43	1.37
1.450	0.84	7.450	1.52	13.450	1.06	19.45	1.37
1.467	0.84	7.467	1.52	13.467	1.06	19.47	1.37
1.483	0.84	7.483	1.52	13.483	1.06	19.48	1.37
1.500	0.84	7.500	1.52	13.500	1.06	19.50	1.37
1.517	0.84	7.517	1.52	13.517	6.22	19.52	1.37
1.533	0.84	7.533	1.52	13.533	6.23	19.53	1.37
1.550	0.84	7.550	1.52	13.550	6.23	19.55	1.37
1.567	0.84	7.567	1.52	13.567	6.23	19.57	1.37
1.583	0.84	7.583	1.52	13.583	6.23	19.58	1.37
1.600	0.84	7.600	1.52	13.600	6.23	19.60	1.37
1.617	0.84	7.617	1.52	13.617	6.23	19.62	1.37
1.633	0.84	7.633	1.52	13.633	6.23	19.63	1.37
1.650	0.84	7.650	1.52	13.650	6.23	19.65	1.37
1.667	0.84	7.667	1.52	13.667	6.23	19.67	1.37
1.683	0.84	7.683	1.52	13.683	6.23	19.68	1.37
1.700	0.84	7.700	1.52	13.700	6.23	19.70	1.37
1.717	0.84	7.717	1.52	13.717	6.23	19.72	1.37
1.733	0.84	7.733	1.52	13.733	6.23	19.73	1.37
1.750	0.84	7.750	1.52	13.750	6.23	19.75	1.37
1.767	0.84	7.767	1.52	13.767	6.23	19.77	1.37
1.783	0.84	7.783	1.52	13.783	6.23	19.78	1.37
1.800	0.84	7.800	1.52	13.800	6.23	19.80	1.37
1.817	0.84	7.817	1.52	13.817	6.23	19.82	1.37
1.833	0.84	7.833	1.52	13.833	6.23	19.83	1.37
1.850	0.84	7.850	1.52	13.850	6.23	19.85	1.37
1.867	0.84	7.867	1.52	13.867	6.23	19.87	1.37
1.883	0.84	7.883	1.52	13.883	6.23	19.88	1.37
1.900	0.84	7.900	1.52	13.900	6.23	19.90	1.37
1.917	0.84	7.917	1.52	13.917	6.23	19.92	1.37
1.933	0.84	7.933	1.52	13.933	6.23	19.93	1.37
1.950	0.84	7.950	1.52	13.950	6.23	19.95	1.37
1.967	0.84	7.967	1.52	13.967	6.23	19.97	1.37
1.983	0.84	7.983	1.52	13.983	6.23	19.98	1.37
2.000	0.84	8.000	1.52	14.000	6.23	20.00	1.37
2.017	0.99	8.017	2.05	14.017	2.29	20.02	0.92
2.033	0.99	8.033	2.05	14.033	2.28	20.03	0.91
2.050	0.99	8.050	2.05	14.050	2.28	20.05	0.91
2.067	0.99	8.067	2.05	14.067	2.28	20.07	0.91
2.083	0.99	8.083	2.05	14.083	2.28	20.08	0.91
2.100	0.99	8.100	2.05	14.100	2.28	20.10	0.91
2.117	0.99	8.117	2.05	14.117	2.28	20.12	0.91
2.133	0.99	8.133	2.05	14.133	2.28	20.13	0.91

2.150	0.99	8.150	2.05	14.150	2.28	20.15	0.91
2.167	0.99	8.167	2.05	14.167	2.28	20.17	0.91
2.183	0.99	8.183	2.05	14.183	2.28	20.18	0.91
2.200	0.99	8.200	2.05	14.200	2.28	20.20	0.91
2.217	0.99	8.217	2.05	14.217	2.28	20.22	0.91
2.233	0.99	8.233	2.05	14.233	2.28	20.23	0.91
2.250	0.99	8.250	2.05	14.250	2.28	20.25	0.91
2.267	0.99	8.267	2.05	14.267	2.28	20.27	0.91
2.283	0.99	8.283	2.05	14.283	2.28	20.28	0.91
2.300	0.99	8.300	2.05	14.300	2.28	20.30	0.91
2.317	0.99	8.317	2.05	14.317	2.28	20.32	0.91
2.333	0.99	8.333	2.05	14.333	2.28	20.33	0.91
2.350	0.99	8.350	2.05	14.350	2.28	20.35	0.91
2.367	0.99	8.367	2.05	14.367	2.28	20.37	0.91
2.383	0.99	8.383	2.05	14.383	2.28	20.38	0.91
2.400	0.99	8.400	2.05	14.400	2.28	20.40	0.91
2.417	0.99	8.417	2.05	14.417	2.28	20.42	0.91
2.433	0.99	8.433	2.05	14.433	2.28	20.43	0.91
2.450	0.99	8.450	2.05	14.450	2.28	20.45	0.91
2.467	0.99	8.467	2.05	14.467	2.28	20.47	0.91
2.483	0.99	8.483	2.05	14.483	2.28	20.48	0.91
2.500	0.99	8.500	2.05	14.500	2.28	20.50	0.91
2.517	0.99	8.517	2.05	14.517	2.28	20.52	0.91
2.533	0.99	8.533	2.05	14.533	2.28	20.53	0.91
2.550	0.99	8.550	2.05	14.550	2.28	20.55	0.91
2.567	0.99	8.567	2.05	14.567	2.28	20.57	0.91
2.583	0.99	8.583	2.05	14.583	2.28	20.58	0.91
2.600	0.99	8.600	2.05	14.600	2.28	20.60	0.91
2.617	0.99	8.617	2.05	14.617	2.28	20.62	0.91
2.633	0.99	8.633	2.05	14.633	2.28	20.63	0.91
2.650	0.99	8.650	2.05	14.650	2.28	20.65	0.91
2.667	0.99	8.667	2.05	14.667	2.28	20.67	0.91
2.683	0.99	8.683	2.05	14.683	2.28	20.68	0.91
2.700	0.99	8.700	2.05	14.700	2.28	20.70	0.91
2.717	0.99	8.717	2.05	14.717	2.28	20.72	0.91
2.733	0.99	8.733	2.05	14.733	2.28	20.73	0.91
2.750	0.99	8.750	2.05	14.750	2.28	20.75	0.91
2.767	0.99	8.767	2.05	14.767	2.28	20.77	0.91
2.783	0.99	8.783	2.05	14.783	2.28	20.78	0.91
2.800	0.99	8.800	2.05	14.800	2.28	20.80	0.91
2.817	0.99	8.817	2.05	14.817	2.28	20.82	0.91
2.833	0.99	8.833	2.05	14.833	2.28	20.83	0.91
2.850	0.99	8.850	2.05	14.850	2.28	20.85	0.91
2.867	0.99	8.867	2.05	14.867	2.28	20.87	0.91
2.883	0.99	8.883	2.05	14.883	2.28	20.88	0.91
2.900	0.99	8.900	2.05	14.900	2.28	20.90	0.91
2.917	0.99	8.917	2.05	14.917	2.28	20.92	0.91
2.933	0.99	8.933	2.05	14.933	2.28	20.93	0.91
2.950	0.99	8.950	2.05	14.950	2.28	20.95	0.91

2.967	0.99	8.967	2.05	14.967	2.28	20.97	0.91
2.983	0.99	8.983	2.05	14.983	2.28	20.98	0.91
3.000	0.99	9.000	2.05	15.000	2.28	21.00	0.91
3.017	0.99	9.017	2.43	15.017	2.28	21.02	0.91
3.033	0.99	9.033	2.43	15.033	2.28	21.03	0.91
3.050	0.99	9.050	2.43	15.050	2.28	21.05	0.91
3.067	0.99	9.067	2.43	15.067	2.28	21.07	0.91
3.083	0.99	9.083	2.43	15.083	2.28	21.08	0.91
3.100	0.99	9.100	2.43	15.100	2.28	21.10	0.91
3.117	0.99	9.117	2.43	15.117	2.28	21.12	0.91
3.133	0.99	9.133	2.43	15.133	2.28	21.13	0.91
3.150	0.99	9.150	2.43	15.150	2.28	21.15	0.91
3.167	0.99	9.167	2.43	15.167	2.28	21.17	0.91
3.183	0.99	9.183	2.43	15.183	2.28	21.18	0.91
3.200	0.99	9.200	2.43	15.200	2.28	21.20	0.91
3.217	0.99	9.217	2.43	15.217	2.28	21.22	0.91
3.233	0.99	9.233	2.43	15.233	2.28	21.23	0.91
3.250	0.99	9.250	2.43	15.250	2.28	21.25	0.91
3.267	0.99	9.267	2.43	15.267	2.28	21.27	0.91
3.283	0.99	9.283	2.43	15.283	2.28	21.28	0.91
3.300	0.99	9.300	2.43	15.300	2.28	21.30	0.91
3.317	0.99	9.317	2.43	15.317	2.28	21.32	0.91
3.333	0.99	9.333	2.43	15.333	2.28	21.33	0.91
3.350	0.99	9.350	2.43	15.350	2.28	21.35	0.91
3.367	0.99	9.367	2.43	15.367	2.28	21.37	0.91
3.383	0.99	9.383	2.43	15.383	2.28	21.38	0.91
3.400	0.99	9.400	2.43	15.400	2.28	21.40	0.91
3.417	0.99	9.417	2.43	15.417	2.28	21.42	0.91
3.433	0.99	9.433	2.43	15.433	2.28	21.43	0.91
3.450	0.99	9.450	2.43	15.450	2.28	21.45	0.91
3.467	0.99	9.467	2.43	15.467	2.28	21.47	0.91
3.483	0.99	9.483	2.43	15.483	2.28	21.48	0.91
3.500	0.99	9.500	2.43	15.500	2.28	21.50	0.91
3.517	0.99	9.517	2.74	15.517	2.28	21.52	0.91
3.533	0.99	9.533	2.74	15.533	2.28	21.53	0.91
3.550	0.99	9.550	2.74	15.550	2.28	21.55	0.91
3.567	0.99	9.567	2.74	15.567	2.28	21.57	0.91
3.583	0.99	9.583	2.74	15.583	2.28	21.58	0.91
3.600	0.99	9.600	2.74	15.600	2.28	21.60	0.91
3.617	0.99	9.617	2.74	15.617	2.28	21.62	0.91
3.633	0.99	9.633	2.74	15.633	2.28	21.63	0.91
3.650	0.99	9.650	2.74	15.650	2.28	21.65	0.91
3.667	0.99	9.667	2.74	15.667	2.28	21.67	0.91
3.683	0.99	9.683	2.74	15.683	2.28	21.68	0.91
3.700	0.99	9.700	2.74	15.700	2.28	21.70	0.91
3.717	0.99	9.717	2.74	15.717	2.28	21.72	0.91
3.733	0.99	9.733	2.74	15.733	2.28	21.73	0.91
3.750	0.99	9.750	2.74	15.750	2.28	21.75	0.91
3.767	0.99	9.767	2.74	15.767	2.28	21.77	0.91

3.783	0.99	9.783	2.74	15.783	2.28	21.78	0.91
3.800	0.99	9.800	2.74	15.800	2.28	21.80	0.91
3.817	0.99	9.817	2.74	15.817	2.28	21.82	0.91
3.833	0.99	9.833	2.74	15.833	2.28	21.83	0.91
3.850	0.99	9.850	2.74	15.850	2.28	21.85	0.91
3.867	0.99	9.867	2.74	15.867	2.28	21.87	0.91
3.883	0.99	9.883	2.74	15.883	2.28	21.88	0.91
3.900	0.99	9.900	2.74	15.900	2.28	21.90	0.91
3.917	0.99	9.917	2.74	15.917	2.28	21.92	0.91
3.933	0.99	9.933	2.74	15.933	2.28	21.93	0.91
3.950	0.99	9.950	2.74	15.950	2.28	21.95	0.91
3.967	0.99	9.967	2.74	15.967	2.28	21.97	0.91
3.983	0.99	9.983	2.74	15.983	2.28	21.98	0.91
4.000	0.99	10.000	2.74	16.000	2.28	22.00	0.91
4.017	1.22	10.017	3.50	16.017	1.37	22.02	0.91
4.033	1.22	10.033	3.50	16.033	1.37	22.03	0.91
4.050	1.22	10.050	3.50	16.050	1.37	22.05	0.91
4.067	1.22	10.067	3.50	16.067	1.37	22.07	0.91
4.083	1.22	10.083	3.50	16.083	1.37	22.08	0.91
4.100	1.22	10.100	3.50	16.100	1.37	22.10	0.91
4.117	1.22	10.117	3.50	16.117	1.37	22.12	0.91
4.133	1.22	10.133	3.50	16.133	1.37	22.13	0.91
4.150	1.22	10.150	3.50	16.150	1.37	22.15	0.91
4.167	1.22	10.167	3.50	16.167	1.37	22.17	0.91
4.183	1.22	10.183	3.50	16.183	1.37	22.18	0.91
4.200	1.22	10.200	3.50	16.200	1.37	22.20	0.91
4.217	1.22	10.217	3.50	16.217	1.37	22.22	0.91
4.233	1.22	10.233	3.50	16.233	1.37	22.23	0.91
4.250	1.22	10.250	3.50	16.250	1.37	22.25	0.91
4.267	1.22	10.267	3.50	16.267	1.37	22.27	0.91
4.283	1.22	10.283	3.50	16.283	1.37	22.28	0.91
4.300	1.22	10.300	3.50	16.300	1.37	22.30	0.91
4.317	1.22	10.317	3.50	16.317	1.37	22.32	0.91
4.333	1.22	10.333	3.50	16.333	1.37	22.33	0.91
4.350	1.22	10.350	3.50	16.350	1.37	22.35	0.91
4.367	1.22	10.367	3.50	16.367	1.37	22.37	0.91
4.383	1.22	10.383	3.50	16.383	1.37	22.38	0.91
4.400	1.22	10.400	3.50	16.400	1.37	22.40	0.91
4.417	1.22	10.417	3.50	16.417	1.37	22.42	0.91
4.433	1.22	10.433	3.50	16.433	1.37	22.43	0.91
4.450	1.22	10.450	3.50	16.450	1.37	22.45	0.91
4.467	1.22	10.467	3.50	16.467	1.37	22.47	0.91
4.483	1.22	10.483	3.50	16.483	1.37	22.48	0.91
4.500	1.22	10.500	3.50	16.500	1.37	22.50	0.91
4.517	1.22	10.517	4.71	16.517	1.37	22.52	0.91
4.533	1.22	10.533	4.71	16.533	1.37	22.53	0.91
4.550	1.22	10.550	4.71	16.550	1.37	22.55	0.91
4.567	1.22	10.567	4.71	16.567	1.37	22.57	0.91
4.583	1.22	10.583	4.71	16.583	1.37	22.58	0.91

4.600	1.22	10.600	4.71	16.600	1.37	22.60	0.91
4.617	1.22	10.617	4.71	16.617	1.37	22.62	0.91
4.633	1.22	10.633	4.71	16.633	1.37	22.63	0.91
4.650	1.22	10.650	4.71	16.650	1.37	22.65	0.91
4.667	1.22	10.667	4.71	16.667	1.37	22.67	0.91
4.683	1.22	10.683	4.71	16.683	1.37	22.68	0.91
4.700	1.22	10.700	4.71	16.700	1.37	22.70	0.91
4.717	1.22	10.717	4.71	16.717	1.37	22.72	0.91
4.733	1.22	10.733	4.71	16.733	1.37	22.73	0.91
4.750	1.22	10.750	4.71	16.750	1.37	22.75	0.91
4.767	1.22	10.767	4.71	16.767	1.37	22.77	0.91
4.783	1.22	10.783	4.71	16.783	1.37	22.78	0.91
4.800	1.22	10.800	4.71	16.800	1.37	22.80	0.91
4.817	1.22	10.817	4.71	16.817	1.37	22.82	0.91
4.833	1.22	10.833	4.71	16.833	1.37	22.83	0.91
4.850	1.22	10.850	4.71	16.850	1.37	22.85	0.91
4.867	1.22	10.867	4.71	16.867	1.37	22.87	0.91
4.883	1.22	10.883	4.71	16.883	1.37	22.88	0.91
4.900	1.22	10.900	4.71	16.900	1.37	22.90	0.91
4.917	1.22	10.917	4.71	16.917	1.37	22.92	0.91
4.933	1.22	10.933	4.71	16.933	1.37	22.93	0.91
4.950	1.22	10.950	4.71	16.950	1.37	22.95	0.91
4.967	1.22	10.967	4.71	16.967	1.37	22.97	0.91
4.983	1.22	10.983	4.71	16.983	1.37	22.98	0.91
5.000	1.22	11.000	4.71	17.000	1.37	23.00	0.91
5.017	1.22	11.017	7.30	17.017	1.37	23.02	0.91
5.033	1.22	11.033	7.30	17.033	1.37	23.03	0.91
5.050	1.22	11.050	7.30	17.050	1.37	23.05	0.91
5.067	1.22	11.067	7.30	17.067	1.37	23.07	0.91
5.083	1.22	11.083	7.30	17.083	1.37	23.08	0.91
5.100	1.22	11.100	7.30	17.100	1.37	23.10	0.91
5.117	1.22	11.117	7.30	17.117	1.37	23.12	0.91
5.133	1.22	11.133	7.30	17.133	1.37	23.13	0.91
5.150	1.22	11.150	7.30	17.150	1.37	23.15	0.91
5.167	1.22	11.167	7.30	17.167	1.37	23.17	0.91
5.183	1.22	11.183	7.30	17.183	1.37	23.18	0.91
5.200	1.22	11.200	7.30	17.200	1.37	23.20	0.91
5.217	1.22	11.217	7.30	17.217	1.37	23.22	0.91
5.233	1.22	11.233	7.30	17.233	1.37	23.23	0.91
5.250	1.22	11.250	7.30	17.250	1.37	23.25	0.91
5.267	1.22	11.267	7.30	17.267	1.37	23.27	0.91
5.283	1.22	11.283	7.30	17.283	1.37	23.28	0.91
5.300	1.22	11.300	7.30	17.300	1.37	23.30	0.91
5.317	1.22	11.317	7.30	17.317	1.37	23.32	0.91
5.333	1.22	11.333	7.30	17.333	1.37	23.33	0.91
5.350	1.22	11.350	7.30	17.350	1.37	23.35	0.91
5.367	1.22	11.367	7.30	17.367	1.37	23.37	0.91
5.383	1.22	11.383	7.30	17.383	1.37	23.38	0.91
5.400	1.22	11.400	7.30	17.400	1.37	23.40	0.91

5.417	1.22	11.417	7.30	17.417	1.37	23.42	0.91
5.433	1.22	11.433	7.30	17.433	1.37	23.43	0.91
5.450	1.22	11.450	7.30	17.450	1.37	23.45	0.91
5.467	1.22	11.467	7.30	17.467	1.37	23.47	0.91
5.483	1.22	11.483	7.30	17.483	1.37	23.48	0.91
5.500	1.22	11.500	7.30	17.500	1.37	23.50	0.91
5.517	1.22	11.517	31.61	17.517	1.37	23.52	0.91
5.533	1.22	11.533	31.62	17.533	1.37	23.53	0.91
5.550	1.22	11.550	31.62	17.550	1.37	23.55	0.91
5.567	1.22	11.567	31.62	17.567	1.37	23.57	0.91
5.583	1.22	11.583	31.62	17.583	1.37	23.58	0.91
5.600	1.22	11.600	31.62	17.600	1.37	23.60	0.91
5.617	1.22	11.617	31.62	17.617	1.37	23.62	0.91
5.633	1.22	11.633	31.62	17.633	1.37	23.63	0.91
5.650	1.22	11.650	31.62	17.650	1.37	23.65	0.91
5.667	1.22	11.667	31.62	17.667	1.37	23.67	0.91
5.683	1.22	11.683	31.62	17.683	1.37	23.68	0.91
5.700	1.22	11.700	31.62	17.700	1.37	23.70	0.91
5.717	1.22	11.717	31.62	17.717	1.37	23.72	0.91
5.733	1.22	11.733	31.62	17.733	1.37	23.73	0.91
5.750	1.22	11.750	31.62	17.750	1.37	23.75	0.91
5.767	1.22	11.767	83.88	17.767	1.37	23.77	0.91
5.783	1.22	11.783	83.90	17.783	1.37	23.78	0.91
5.800	1.22	11.800	83.90	17.800	1.37	23.80	0.91
5.817	1.22	11.817	83.90	17.817	1.37	23.82	0.91
5.833	1.22	11.833	83.90	17.833	1.37	23.83	0.91
5.850	1.22	11.850	83.90	17.850	1.37	23.85	0.91
5.867	1.22	11.867	83.90	17.867	1.37	23.87	0.91
5.883	1.22	11.883	83.90	17.883	1.37	23.88	0.91
5.900	1.22	11.900	83.90	17.900	1.37	23.90	0.91
5.917	1.22	11.917	83.90	17.917	1.37	23.92	0.91
5.933	1.22	11.933	83.90	17.933	1.37	23.93	0.91
5.950	1.22	11.950	83.90	17.950	1.37	23.95	0.91
5.967	1.22	11.967	83.90	17.967	1.37	23.97	0.91
5.983	1.22	11.983	83.90	17.983	1.37	23.98	0.91
6.000	1.22	12.000	83.90	18.000	1.37	24.00	0.91

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.050 (i)
TIME TO PEAK (hrs)= 12.117
RUNOFF VOLUME (mm)= 12.001
TOTAL RAINFALL (mm)= 76.001
RUNOFF COEFFICIENT = 0.158

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

CALIB	
NASHYD (0002)	Area (ha)= 0.98 Curve Number (CN)= 64.0
ID= 1 DT= 1.0 min	Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.039 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 17.685
TOTAL RAINFALL (mm)= 76.001
RUNOFF COEFFICIENT = 0.233

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

ADD HYD (0004)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	1.49	0.050	12.12	12.00
+ ID2= 2 (0002):	0.98	0.039	12.20	17.69
ID = 3 (0004):	2.47	0.088	12.15	18.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
NASHYD (0102)	Area (ha)= 0.66 Curve Number (CN)= 54.0
ID= 1 DT= 1.0 min	Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.63

Unit Hyd Qpeak (cms)= 0.040

PEAK FLOW (cms)= 0.011 (i)
TIME TO PEAK (hrs)= 12.617
RUNOFF VOLUME (mm)= 11.564
TOTAL RAINFALL (mm)= 76.001
RUNOFF COEFFICIENT = 0.152

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

CALIB	
STANDHYD (0001)	Area (ha)= 0.45

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|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      83.90        59.61
               over (min)        5.00         9.00
     Storage Coeff.  (min)=       1.55 (ii)    8.24 (ii)
     Unit Hyd. Tpeak (min)=       5.00         9.00
     Unit Hyd. peak  (cms)=       0.41         0.13
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.04          0.044 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.05          12.03
     RUNOFF VOLUME    (mm)=      75.00        32.60          34.71
     TOTAL RAINFALL   (mm)=      76.00        76.00          76.00
     RUNOFF COEFFICIENT   =       0.99         0.43           0.46

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.044    12.03    34.71
      + ID2= 2 (  0102):     0.66   0.011    12.62    11.56
        ====================================================
        ID = 3 (  0005):     1.11   0.048    12.03    23.25

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
```



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        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\5e9
ba406-ccc0-4e30-aa28-b9194ba3ba63\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\5e9
ba406-ccc0-4e30-aa28-b9194ba3ba63\sce


DATE: 11-25-2019                          TIME: 10:47:59

USER:


COMMENTS: _____

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  ********************************************
  ** SIMULATION : 03. 10 yr - 24h Storm -SCS Ty **
  ********************************************

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| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ed2bd9a1-0349-4b34-8ffd-5a876811428b\426a4b15
| Ptotal= 89.90 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 24.00 hrs
                       Mass curve time step = 15.00 min
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.99	6.25	1.80	12.25	12.95	18.25	1.62
0.50	0.99	6.50	1.80	12.50	12.95	18.50	1.62
0.75	0.99	6.75	1.80	12.75	6.65	18.75	1.62
1.00	0.99	7.00	1.80	13.00	6.65	19.00	1.62
1.25	0.99	7.25	1.80	13.25	1.26	19.25	1.62
1.50	0.99	7.50	1.80	13.50	1.26	19.50	1.62
1.75	0.99	7.75	1.80	13.75	7.37	19.75	1.62
2.00	0.99	8.00	1.80	14.00	7.37	20.00	1.62
2.25	1.17	8.25	2.43	14.25	2.70	20.25	1.08
2.50	1.17	8.50	2.43	14.50	2.70	20.50	1.08
2.75	1.17	8.75	2.43	14.75	2.70	20.75	1.08
3.00	1.17	9.00	2.43	15.00	2.70	21.00	1.08
3.25	1.17	9.25	2.88	15.25	2.70	21.25	1.08
3.50	1.17	9.50	2.88	15.50	2.70	21.50	1.08
3.75	1.17	9.75	3.24	15.75	2.70	21.75	1.08
4.00	1.17	10.00	3.24	16.00	2.70	22.00	1.08
4.25	1.44	10.25	4.14	16.25	1.62	22.25	1.08
4.50	1.44	10.50	4.14	16.50	1.62	22.50	1.08
4.75	1.44	10.75	5.57	16.75	1.62	22.75	1.08
5.00	1.44	11.00	5.57	17.00	1.62	23.00	1.08
5.25	1.44	11.25	8.63	17.25	1.62	23.25	1.08
5.50	1.44	11.50	8.63	17.50	1.62	23.50	1.08
5.75	1.44	11.75	37.40	17.75	1.62	23.75	1.08
6.00	1.44	12.00	99.25	18.00	1.62	24.00	1.08

CALIB			
NASHYD (0101)	Area (ha)=	1.49	Curve Number (CN)= 54.0
ID= 1 DT= 1.0 min	Ia (mm)=	10.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.22	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.99	6.017	1.80	12.017	13.00	18.02	1.62
0.033	0.99	6.033	1.80	12.033	12.95	18.03	1.62
0.050	0.99	6.050	1.80	12.050	12.95	18.05	1.62
0.067	0.99	6.067	1.80	12.067	12.95	18.07	1.62
0.083	0.99	6.083	1.80	12.083	12.95	18.08	1.62
0.100	0.99	6.100	1.80	12.100	12.95	18.10	1.62
0.117	0.99	6.117	1.80	12.117	12.95	18.12	1.62
0.133	0.99	6.133	1.80	12.133	12.95	18.13	1.62

0.150	0.99	6.150	1.80	12.150	12.95	18.15	1.62
0.167	0.99	6.167	1.80	12.167	12.95	18.17	1.62
0.183	0.99	6.183	1.80	12.183	12.95	18.18	1.62
0.200	0.99	6.200	1.80	12.200	12.95	18.20	1.62
0.217	0.99	6.217	1.80	12.217	12.95	18.22	1.62
0.233	0.99	6.233	1.80	12.233	12.95	18.23	1.62
0.250	0.99	6.250	1.80	12.250	12.95	18.25	1.62
0.267	0.99	6.267	1.80	12.267	12.95	18.27	1.62
0.283	0.99	6.283	1.80	12.283	12.95	18.28	1.62
0.300	0.99	6.300	1.80	12.300	12.95	18.30	1.62
0.317	0.99	6.317	1.80	12.317	12.95	18.32	1.62
0.333	0.99	6.333	1.80	12.333	12.95	18.33	1.62
0.350	0.99	6.350	1.80	12.350	12.95	18.35	1.62
0.367	0.99	6.367	1.80	12.367	12.95	18.37	1.62
0.383	0.99	6.383	1.80	12.383	12.95	18.38	1.62
0.400	0.99	6.400	1.80	12.400	12.95	18.40	1.62
0.417	0.99	6.417	1.80	12.417	12.95	18.42	1.62
0.433	0.99	6.433	1.80	12.433	12.95	18.43	1.62
0.450	0.99	6.450	1.80	12.450	12.95	18.45	1.62
0.467	0.99	6.467	1.80	12.467	12.95	18.47	1.62
0.483	0.99	6.483	1.80	12.483	12.95	18.48	1.62
0.500	0.99	6.500	1.80	12.500	12.95	18.50	1.62
0.517	0.99	6.517	1.80	12.517	6.66	18.52	1.62
0.533	0.99	6.533	1.80	12.533	6.65	18.53	1.62
0.550	0.99	6.550	1.80	12.550	6.65	18.55	1.62
0.567	0.99	6.567	1.80	12.567	6.65	18.57	1.62
0.583	0.99	6.583	1.80	12.583	6.65	18.58	1.62
0.600	0.99	6.600	1.80	12.600	6.65	18.60	1.62
0.617	0.99	6.617	1.80	12.617	6.65	18.62	1.62
0.633	0.99	6.633	1.80	12.633	6.65	18.63	1.62
0.650	0.99	6.650	1.80	12.650	6.65	18.65	1.62
0.667	0.99	6.667	1.80	12.667	6.65	18.67	1.62
0.683	0.99	6.683	1.80	12.683	6.65	18.68	1.62
0.700	0.99	6.700	1.80	12.700	6.65	18.70	1.62
0.717	0.99	6.717	1.80	12.717	6.65	18.72	1.62
0.733	0.99	6.733	1.80	12.733	6.65	18.73	1.62
0.750	0.99	6.750	1.80	12.750	6.65	18.75	1.62
0.767	0.99	6.767	1.80	12.767	6.65	18.77	1.62
0.783	0.99	6.783	1.80	12.783	6.65	18.78	1.62
0.800	0.99	6.800	1.80	12.800	6.65	18.80	1.62
0.817	0.99	6.817	1.80	12.817	6.65	18.82	1.62
0.833	0.99	6.833	1.80	12.833	6.65	18.83	1.62
0.850	0.99	6.850	1.80	12.850	6.65	18.85	1.62
0.867	0.99	6.867	1.80	12.867	6.65	18.87	1.62
0.883	0.99	6.883	1.80	12.883	6.65	18.88	1.62
0.900	0.99	6.900	1.80	12.900	6.65	18.90	1.62
0.917	0.99	6.917	1.80	12.917	6.65	18.92	1.62
0.933	0.99	6.933	1.80	12.933	6.65	18.93	1.62
0.950	0.99	6.950	1.80	12.950	6.65	18.95	1.62

0.967	0.99	6.967	1.80	12.967	6.65	18.97	1.62
0.983	0.99	6.983	1.80	12.983	6.65	18.98	1.62
1.000	0.99	7.000	1.80	13.000	6.65	19.00	1.62
1.017	0.99	7.017	1.80	13.017	1.27	19.02	1.62
1.033	0.99	7.033	1.80	13.033	1.26	19.03	1.62
1.050	0.99	7.050	1.80	13.050	1.26	19.05	1.62
1.067	0.99	7.067	1.80	13.067	1.26	19.07	1.62
1.083	0.99	7.083	1.80	13.083	1.26	19.08	1.62
1.100	0.99	7.100	1.80	13.100	1.26	19.10	1.62
1.117	0.99	7.117	1.80	13.117	1.26	19.12	1.62
1.133	0.99	7.133	1.80	13.133	1.26	19.13	1.62
1.150	0.99	7.150	1.80	13.150	1.26	19.15	1.62
1.167	0.99	7.167	1.80	13.167	1.26	19.17	1.62
1.183	0.99	7.183	1.80	13.183	1.26	19.18	1.62
1.200	0.99	7.200	1.80	13.200	1.26	19.20	1.62
1.217	0.99	7.217	1.80	13.217	1.26	19.22	1.62
1.233	0.99	7.233	1.80	13.233	1.26	19.23	1.62
1.250	0.99	7.250	1.80	13.250	1.26	19.25	1.62
1.267	0.99	7.267	1.80	13.267	1.26	19.27	1.62
1.283	0.99	7.283	1.80	13.283	1.26	19.28	1.62
1.300	0.99	7.300	1.80	13.300	1.26	19.30	1.62
1.317	0.99	7.317	1.80	13.317	1.26	19.32	1.62
1.333	0.99	7.333	1.80	13.333	1.26	19.33	1.62
1.350	0.99	7.350	1.80	13.350	1.26	19.35	1.62
1.367	0.99	7.367	1.80	13.367	1.26	19.37	1.62
1.383	0.99	7.383	1.80	13.383	1.26	19.38	1.62
1.400	0.99	7.400	1.80	13.400	1.26	19.40	1.62
1.417	0.99	7.417	1.80	13.417	1.26	19.42	1.62
1.433	0.99	7.433	1.80	13.433	1.26	19.43	1.62
1.450	0.99	7.450	1.80	13.450	1.26	19.45	1.62
1.467	0.99	7.467	1.80	13.467	1.26	19.47	1.62
1.483	0.99	7.483	1.80	13.483	1.26	19.48	1.62
1.500	0.99	7.500	1.80	13.500	1.26	19.50	1.62
1.517	0.99	7.517	1.80	13.517	7.36	19.52	1.62
1.533	0.99	7.533	1.80	13.533	7.37	19.53	1.62
1.550	0.99	7.550	1.80	13.550	7.37	19.55	1.62
1.567	0.99	7.567	1.80	13.567	7.37	19.57	1.62
1.583	0.99	7.583	1.80	13.583	7.37	19.58	1.62
1.600	0.99	7.600	1.80	13.600	7.37	19.60	1.62
1.617	0.99	7.617	1.80	13.617	7.37	19.62	1.62
1.633	0.99	7.633	1.80	13.633	7.37	19.63	1.62
1.650	0.99	7.650	1.80	13.650	7.37	19.65	1.62
1.667	0.99	7.667	1.80	13.667	7.37	19.67	1.62
1.683	0.99	7.683	1.80	13.683	7.37	19.68	1.62
1.700	0.99	7.700	1.80	13.700	7.37	19.70	1.62
1.717	0.99	7.717	1.80	13.717	7.37	19.72	1.62
1.733	0.99	7.733	1.80	13.733	7.37	19.73	1.62
1.750	0.99	7.750	1.80	13.750	7.37	19.75	1.62
1.767	0.99	7.767	1.80	13.767	7.37	19.77	1.62

1.783	0.99	7.783	1.80	13.783	7.37	19.78	1.62
1.800	0.99	7.800	1.80	13.800	7.37	19.80	1.62
1.817	0.99	7.817	1.80	13.817	7.37	19.82	1.62
1.833	0.99	7.833	1.80	13.833	7.37	19.83	1.62
1.850	0.99	7.850	1.80	13.850	7.37	19.85	1.62
1.867	0.99	7.867	1.80	13.867	7.37	19.87	1.62
1.883	0.99	7.883	1.80	13.883	7.37	19.88	1.62
1.900	0.99	7.900	1.80	13.900	7.37	19.90	1.62
1.917	0.99	7.917	1.80	13.917	7.37	19.92	1.62
1.933	0.99	7.933	1.80	13.933	7.37	19.93	1.62
1.950	0.99	7.950	1.80	13.950	7.37	19.95	1.62
1.967	0.99	7.967	1.80	13.967	7.37	19.97	1.62
1.983	0.99	7.983	1.80	13.983	7.37	19.98	1.62
2.000	0.99	8.000	1.80	14.000	7.37	20.00	1.62
2.017	1.17	8.017	2.43	14.017	2.71	20.02	1.08
2.033	1.17	8.033	2.43	14.033	2.70	20.03	1.08
2.050	1.17	8.050	2.43	14.050	2.70	20.05	1.08
2.067	1.17	8.067	2.43	14.067	2.70	20.07	1.08
2.083	1.17	8.083	2.43	14.083	2.70	20.08	1.08
2.100	1.17	8.100	2.43	14.100	2.70	20.10	1.08
2.117	1.17	8.117	2.43	14.117	2.70	20.12	1.08
2.133	1.17	8.133	2.43	14.133	2.70	20.13	1.08
2.150	1.17	8.150	2.43	14.150	2.70	20.15	1.08
2.167	1.17	8.167	2.43	14.167	2.70	20.17	1.08
2.183	1.17	8.183	2.43	14.183	2.70	20.18	1.08
2.200	1.17	8.200	2.43	14.200	2.70	20.20	1.08
2.217	1.17	8.217	2.43	14.217	2.70	20.22	1.08
2.233	1.17	8.233	2.43	14.233	2.70	20.23	1.08
2.250	1.17	8.250	2.43	14.250	2.70	20.25	1.08
2.267	1.17	8.267	2.43	14.267	2.70	20.27	1.08
2.283	1.17	8.283	2.43	14.283	2.70	20.28	1.08
2.300	1.17	8.300	2.43	14.300	2.70	20.30	1.08
2.317	1.17	8.317	2.43	14.317	2.70	20.32	1.08
2.333	1.17	8.333	2.43	14.333	2.70	20.33	1.08
2.350	1.17	8.350	2.43	14.350	2.70	20.35	1.08
2.367	1.17	8.367	2.43	14.367	2.70	20.37	1.08
2.383	1.17	8.383	2.43	14.383	2.70	20.38	1.08
2.400	1.17	8.400	2.43	14.400	2.70	20.40	1.08
2.417	1.17	8.417	2.43	14.417	2.70	20.42	1.08
2.433	1.17	8.433	2.43	14.433	2.70	20.43	1.08
2.450	1.17	8.450	2.43	14.450	2.70	20.45	1.08
2.467	1.17	8.467	2.43	14.467	2.70	20.47	1.08
2.483	1.17	8.483	2.43	14.483	2.70	20.48	1.08
2.500	1.17	8.500	2.43	14.500	2.70	20.50	1.08
2.517	1.17	8.517	2.43	14.517	2.70	20.52	1.08
2.533	1.17	8.533	2.43	14.533	2.70	20.53	1.08
2.550	1.17	8.550	2.43	14.550	2.70	20.55	1.08
2.567	1.17	8.567	2.43	14.567	2.70	20.57	1.08
2.583	1.17	8.583	2.43	14.583	2.70	20.58	1.08

2.600	1.17	8.600	2.43	14.600	2.70	20.60	1.08
2.617	1.17	8.617	2.43	14.617	2.70	20.62	1.08
2.633	1.17	8.633	2.43	14.633	2.70	20.63	1.08
2.650	1.17	8.650	2.43	14.650	2.70	20.65	1.08
2.667	1.17	8.667	2.43	14.667	2.70	20.67	1.08
2.683	1.17	8.683	2.43	14.683	2.70	20.68	1.08
2.700	1.17	8.700	2.43	14.700	2.70	20.70	1.08
2.717	1.17	8.717	2.43	14.717	2.70	20.72	1.08
2.733	1.17	8.733	2.43	14.733	2.70	20.73	1.08
2.750	1.17	8.750	2.43	14.750	2.70	20.75	1.08
2.767	1.17	8.767	2.43	14.767	2.70	20.77	1.08
2.783	1.17	8.783	2.43	14.783	2.70	20.78	1.08
2.800	1.17	8.800	2.43	14.800	2.70	20.80	1.08
2.817	1.17	8.817	2.43	14.817	2.70	20.82	1.08
2.833	1.17	8.833	2.43	14.833	2.70	20.83	1.08
2.850	1.17	8.850	2.43	14.850	2.70	20.85	1.08
2.867	1.17	8.867	2.43	14.867	2.70	20.87	1.08
2.883	1.17	8.883	2.43	14.883	2.70	20.88	1.08
2.900	1.17	8.900	2.43	14.900	2.70	20.90	1.08
2.917	1.17	8.917	2.43	14.917	2.70	20.92	1.08
2.933	1.17	8.933	2.43	14.933	2.70	20.93	1.08
2.950	1.17	8.950	2.43	14.950	2.70	20.95	1.08
2.967	1.17	8.967	2.43	14.967	2.70	20.97	1.08
2.983	1.17	8.983	2.43	14.983	2.70	20.98	1.08
3.000	1.17	9.000	2.43	15.000	2.70	21.00	1.08
3.017	1.17	9.017	2.88	15.017	2.70	21.02	1.08
3.033	1.17	9.033	2.88	15.033	2.70	21.03	1.08
3.050	1.17	9.050	2.88	15.050	2.70	21.05	1.08
3.067	1.17	9.067	2.88	15.067	2.70	21.07	1.08
3.083	1.17	9.083	2.88	15.083	2.70	21.08	1.08
3.100	1.17	9.100	2.88	15.100	2.70	21.10	1.08
3.117	1.17	9.117	2.88	15.117	2.70	21.12	1.08
3.133	1.17	9.133	2.88	15.133	2.70	21.13	1.08
3.150	1.17	9.150	2.88	15.150	2.70	21.15	1.08
3.167	1.17	9.167	2.88	15.167	2.70	21.17	1.08
3.183	1.17	9.183	2.88	15.183	2.70	21.18	1.08
3.200	1.17	9.200	2.88	15.200	2.70	21.20	1.08
3.217	1.17	9.217	2.88	15.217	2.70	21.22	1.08
3.233	1.17	9.233	2.88	15.233	2.70	21.23	1.08
3.250	1.17	9.250	2.88	15.250	2.70	21.25	1.08
3.267	1.17	9.267	2.88	15.267	2.70	21.27	1.08
3.283	1.17	9.283	2.88	15.283	2.70	21.28	1.08
3.300	1.17	9.300	2.88	15.300	2.70	21.30	1.08
3.317	1.17	9.317	2.88	15.317	2.70	21.32	1.08
3.333	1.17	9.333	2.88	15.333	2.70	21.33	1.08
3.350	1.17	9.350	2.88	15.350	2.70	21.35	1.08
3.367	1.17	9.367	2.88	15.367	2.70	21.37	1.08
3.383	1.17	9.383	2.88	15.383	2.70	21.38	1.08
3.400	1.17	9.400	2.88	15.400	2.70	21.40	1.08

3.417	1.17	9.417	2.88	15.417	2.70	21.42	1.08
3.433	1.17	9.433	2.88	15.433	2.70	21.43	1.08
3.450	1.17	9.450	2.88	15.450	2.70	21.45	1.08
3.467	1.17	9.467	2.88	15.467	2.70	21.47	1.08
3.483	1.17	9.483	2.88	15.483	2.70	21.48	1.08
3.500	1.17	9.500	2.88	15.500	2.70	21.50	1.08
3.517	1.17	9.517	3.24	15.517	2.70	21.52	1.08
3.533	1.17	9.533	3.24	15.533	2.70	21.53	1.08
3.550	1.17	9.550	3.24	15.550	2.70	21.55	1.08
3.567	1.17	9.567	3.24	15.567	2.70	21.57	1.08
3.583	1.17	9.583	3.24	15.583	2.70	21.58	1.08
3.600	1.17	9.600	3.24	15.600	2.70	21.60	1.08
3.617	1.17	9.617	3.24	15.617	2.70	21.62	1.08
3.633	1.17	9.633	3.24	15.633	2.70	21.63	1.08
3.650	1.17	9.650	3.24	15.650	2.70	21.65	1.08
3.667	1.17	9.667	3.24	15.667	2.70	21.67	1.08
3.683	1.17	9.683	3.24	15.683	2.70	21.68	1.08
3.700	1.17	9.700	3.24	15.700	2.70	21.70	1.08
3.717	1.17	9.717	3.24	15.717	2.70	21.72	1.08
3.733	1.17	9.733	3.24	15.733	2.70	21.73	1.08
3.750	1.17	9.750	3.24	15.750	2.70	21.75	1.08
3.767	1.17	9.767	3.24	15.767	2.70	21.77	1.08
3.783	1.17	9.783	3.24	15.783	2.70	21.78	1.08
3.800	1.17	9.800	3.24	15.800	2.70	21.80	1.08
3.817	1.17	9.817	3.24	15.817	2.70	21.82	1.08
3.833	1.17	9.833	3.24	15.833	2.70	21.83	1.08
3.850	1.17	9.850	3.24	15.850	2.70	21.85	1.08
3.867	1.17	9.867	3.24	15.867	2.70	21.87	1.08
3.883	1.17	9.883	3.24	15.883	2.70	21.88	1.08
3.900	1.17	9.900	3.24	15.900	2.70	21.90	1.08
3.917	1.17	9.917	3.24	15.917	2.70	21.92	1.08
3.933	1.17	9.933	3.24	15.933	2.70	21.93	1.08
3.950	1.17	9.950	3.24	15.950	2.70	21.95	1.08
3.967	1.17	9.967	3.24	15.967	2.70	21.97	1.08
3.983	1.17	9.983	3.24	15.983	2.70	21.98	1.08
4.000	1.17	10.000	3.24	16.000	2.70	22.00	1.08
4.017	1.44	10.017	4.14	16.017	1.62	22.02	1.08
4.033	1.44	10.033	4.14	16.033	1.62	22.03	1.08
4.050	1.44	10.050	4.14	16.050	1.62	22.05	1.08
4.067	1.44	10.067	4.14	16.067	1.62	22.07	1.08
4.083	1.44	10.083	4.14	16.083	1.62	22.08	1.08
4.100	1.44	10.100	4.14	16.100	1.62	22.10	1.08
4.117	1.44	10.117	4.14	16.117	1.62	22.12	1.08
4.133	1.44	10.133	4.14	16.133	1.62	22.13	1.08
4.150	1.44	10.150	4.14	16.150	1.62	22.15	1.08
4.167	1.44	10.167	4.14	16.167	1.62	22.17	1.08
4.183	1.44	10.183	4.14	16.183	1.62	22.18	1.08
4.200	1.44	10.200	4.14	16.200	1.62	22.20	1.08
4.217	1.44	10.217	4.14	16.217	1.62	22.22	1.08

4.233	1.44	10.233	4.14	16.233	1.62	22.23	1.08
4.250	1.44	10.250	4.14	16.250	1.62	22.25	1.08
4.267	1.44	10.267	4.14	16.267	1.62	22.27	1.08
4.283	1.44	10.283	4.14	16.283	1.62	22.28	1.08
4.300	1.44	10.300	4.14	16.300	1.62	22.30	1.08
4.317	1.44	10.317	4.14	16.317	1.62	22.32	1.08
4.333	1.44	10.333	4.14	16.333	1.62	22.33	1.08
4.350	1.44	10.350	4.14	16.350	1.62	22.35	1.08
4.367	1.44	10.367	4.14	16.367	1.62	22.37	1.08
4.383	1.44	10.383	4.14	16.383	1.62	22.38	1.08
4.400	1.44	10.400	4.14	16.400	1.62	22.40	1.08
4.417	1.44	10.417	4.14	16.417	1.62	22.42	1.08
4.433	1.44	10.433	4.14	16.433	1.62	22.43	1.08
4.450	1.44	10.450	4.14	16.450	1.62	22.45	1.08
4.467	1.44	10.467	4.14	16.467	1.62	22.47	1.08
4.483	1.44	10.483	4.14	16.483	1.62	22.48	1.08
4.500	1.44	10.500	4.14	16.500	1.62	22.50	1.08
4.517	1.44	10.517	5.57	16.517	1.62	22.52	1.08
4.533	1.44	10.533	5.57	16.533	1.62	22.53	1.08
4.550	1.44	10.550	5.57	16.550	1.62	22.55	1.08
4.567	1.44	10.567	5.57	16.567	1.62	22.57	1.08
4.583	1.44	10.583	5.57	16.583	1.62	22.58	1.08
4.600	1.44	10.600	5.57	16.600	1.62	22.60	1.08
4.617	1.44	10.617	5.57	16.617	1.62	22.62	1.08
4.633	1.44	10.633	5.57	16.633	1.62	22.63	1.08
4.650	1.44	10.650	5.57	16.650	1.62	22.65	1.08
4.667	1.44	10.667	5.57	16.667	1.62	22.67	1.08
4.683	1.44	10.683	5.57	16.683	1.62	22.68	1.08
4.700	1.44	10.700	5.57	16.700	1.62	22.70	1.08
4.717	1.44	10.717	5.57	16.717	1.62	22.72	1.08
4.733	1.44	10.733	5.57	16.733	1.62	22.73	1.08
4.750	1.44	10.750	5.57	16.750	1.62	22.75	1.08
4.767	1.44	10.767	5.57	16.767	1.62	22.77	1.08
4.783	1.44	10.783	5.57	16.783	1.62	22.78	1.08
4.800	1.44	10.800	5.57	16.800	1.62	22.80	1.08
4.817	1.44	10.817	5.57	16.817	1.62	22.82	1.08
4.833	1.44	10.833	5.57	16.833	1.62	22.83	1.08
4.850	1.44	10.850	5.57	16.850	1.62	22.85	1.08
4.867	1.44	10.867	5.57	16.867	1.62	22.87	1.08
4.883	1.44	10.883	5.57	16.883	1.62	22.88	1.08
4.900	1.44	10.900	5.57	16.900	1.62	22.90	1.08
4.917	1.44	10.917	5.57	16.917	1.62	22.92	1.08
4.933	1.44	10.933	5.57	16.933	1.62	22.93	1.08
4.950	1.44	10.950	5.57	16.950	1.62	22.95	1.08
4.967	1.44	10.967	5.57	16.967	1.62	22.97	1.08
4.983	1.44	10.983	5.57	16.983	1.62	22.98	1.08
5.000	1.44	11.000	5.57	17.000	1.62	23.00	1.08
5.017	1.44	11.017	8.63	17.017	1.62	23.02	1.08
5.033	1.44	11.033	8.63	17.033	1.62	23.03	1.08

5.050	1.44	11.050	8.63	17.050	1.62	23.05	1.08
5.067	1.44	11.067	8.63	17.067	1.62	23.07	1.08
5.083	1.44	11.083	8.63	17.083	1.62	23.08	1.08
5.100	1.44	11.100	8.63	17.100	1.62	23.10	1.08
5.117	1.44	11.117	8.63	17.117	1.62	23.12	1.08
5.133	1.44	11.133	8.63	17.133	1.62	23.13	1.08
5.150	1.44	11.150	8.63	17.150	1.62	23.15	1.08
5.167	1.44	11.167	8.63	17.167	1.62	23.17	1.08
5.183	1.44	11.183	8.63	17.183	1.62	23.18	1.08
5.200	1.44	11.200	8.63	17.200	1.62	23.20	1.08
5.217	1.44	11.217	8.63	17.217	1.62	23.22	1.08
5.233	1.44	11.233	8.63	17.233	1.62	23.23	1.08
5.250	1.44	11.250	8.63	17.250	1.62	23.25	1.08
5.267	1.44	11.267	8.63	17.267	1.62	23.27	1.08
5.283	1.44	11.283	8.63	17.283	1.62	23.28	1.08
5.300	1.44	11.300	8.63	17.300	1.62	23.30	1.08
5.317	1.44	11.317	8.63	17.317	1.62	23.32	1.08
5.333	1.44	11.333	8.63	17.333	1.62	23.33	1.08
5.350	1.44	11.350	8.63	17.350	1.62	23.35	1.08
5.367	1.44	11.367	8.63	17.367	1.62	23.37	1.08
5.383	1.44	11.383	8.63	17.383	1.62	23.38	1.08
5.400	1.44	11.400	8.63	17.400	1.62	23.40	1.08
5.417	1.44	11.417	8.63	17.417	1.62	23.42	1.08
5.433	1.44	11.433	8.63	17.433	1.62	23.43	1.08
5.450	1.44	11.450	8.63	17.450	1.62	23.45	1.08
5.467	1.44	11.467	8.63	17.467	1.62	23.47	1.08
5.483	1.44	11.483	8.63	17.483	1.62	23.48	1.08
5.500	1.44	11.500	8.63	17.500	1.62	23.50	1.08
5.517	1.44	11.517	37.39	17.517	1.62	23.52	1.08
5.533	1.44	11.533	37.40	17.533	1.62	23.53	1.08
5.550	1.44	11.550	37.40	17.550	1.62	23.55	1.08
5.567	1.44	11.567	37.40	17.567	1.62	23.57	1.08
5.583	1.44	11.583	37.40	17.583	1.62	23.58	1.08
5.600	1.44	11.600	37.40	17.600	1.62	23.60	1.08
5.617	1.44	11.617	37.40	17.617	1.62	23.62	1.08
5.633	1.44	11.633	37.40	17.633	1.62	23.63	1.08
5.650	1.44	11.650	37.40	17.650	1.62	23.65	1.08
5.667	1.44	11.667	37.40	17.667	1.62	23.67	1.08
5.683	1.44	11.683	37.40	17.683	1.62	23.68	1.08
5.700	1.44	11.700	37.40	17.700	1.62	23.70	1.08
5.717	1.44	11.717	37.40	17.717	1.62	23.72	1.08
5.733	1.44	11.733	37.40	17.733	1.62	23.73	1.08
5.750	1.44	11.750	37.40	17.750	1.62	23.75	1.08
5.767	1.44	11.767	99.22	17.767	1.62	23.77	1.08
5.783	1.44	11.783	99.25	17.783	1.62	23.78	1.08
5.800	1.44	11.800	99.25	17.800	1.62	23.80	1.08
5.817	1.44	11.817	99.25	17.817	1.62	23.82	1.08
5.833	1.44	11.833	99.25	17.833	1.62	23.83	1.08
5.850	1.44	11.850	99.25	17.850	1.62	23.85	1.08

5.867	1.44	11.867	99.25	17.867	1.62	23.87	1.08
5.883	1.44	11.883	99.25	17.883	1.62	23.88	1.08
5.900	1.44	11.900	99.25	17.900	1.62	23.90	1.08
5.917	1.44	11.917	99.25	17.917	1.62	23.92	1.08
5.933	1.44	11.933	99.25	17.933	1.62	23.93	1.08
5.950	1.44	11.950	99.25	17.950	1.62	23.95	1.08
5.967	1.44	11.967	99.25	17.967	1.62	23.97	1.08
5.983	1.44	11.983	99.25	17.983	1.62	23.98	1.08
6.000	1.44	12.000	99.25	18.000	1.62	24.00	1.08

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.071 (i)
TIME TO PEAK (hrs)= 12.117
RUNOFF VOLUME (mm)= 16.948
TOTAL RAINFALL (mm)= 89.901
RUNOFF COEFFICIENT = 0.189

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

CALIB					
NASHYD (0002)	Area (ha)=	0.98	Curve Number (CN)=	64.0	
ID= 1 DT= 1.0 min	Ia (mm)=	7.21	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.31			

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.054 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 24.211
TOTAL RAINFALL (mm)= 89.901
RUNOFF COEFFICIENT = 0.269

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

ADD HYD (0004)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		1.49	0.071	12.12	16.95
+ ID2= 2 (0002):		0.98	0.054	12.20	24.21
ID = 3 (0004):		2.47	0.123	12.15	25.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0102)	Area (ha)=	0.66	Curve Number (CN)=	54.0	
ID= 1 DT= 1.0 min	Ia (mm)=	10.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.63			

Unit Hyd Qpeak (cms)= 0.040

PEAK FLOW (cms)= 0.015 (i)
TIME TO PEAK (hrs)= 12.600
RUNOFF VOLUME (mm)= 16.358
TOTAL RAINFALL (mm)= 89.901
RUNOFF COEFFICIENT = 0.182

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

CALIB					
STANDHYD (0001)	Area (ha)=	0.45			
ID= 1 DT= 1.0 min	Total Imp(%)=	30.00	Dir. Conn.(%)=	5.00	

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.14	0.31	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	2.00	
Length	(m)=	54.77	40.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		99.25	77.76	
over (min)		5.00	8.00	
Storage Coeff. (min)=		1.45 (ii)	7.70 (ii)	
Unit Hyd. Tpeak (min)=		5.00	8.00	
Unit Hyd. peak (cms)=		0.42	0.15	
				TOTALS
PEAK FLOW	(cms)=	0.01	0.05	0.060 (iii)
TIME TO PEAK	(hrs)=	12.00	12.03	12.03
RUNOFF VOLUME	(mm)=	88.90	42.65	44.95
TOTAL RAINFALL	(mm)=	89.90	89.90	89.90
RUNOFF COEFFICIENT	=	0.99	0.47	0.50

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

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          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.060    12.03    44.95
      + ID2= 2 (  0102):     0.66   0.015    12.60    16.36
        ====================================================
        ID = 3 (  0005):     1.11   0.066    12.03    31.04

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\646
90ae6-5b81-4aaf-8f75-1a573f2038c9\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\646
90ae6-5b81-4aaf-8f75-1a573f2038c9\sce


DATE: 11-25-2019                          TIME: 10:47:59
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USER:


COMMENTS: _____________________________________________

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  ***********************************************
  ** SIMULATION : 04. 25 yr - 24h Storm SCS Typ **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ed2bd9a1-0349-4b34-8ffd-5a876811428b\88a1cfba
| Ptotal=107.50 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 24.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.18 |  6.25    2.15 | 12.25   15.48 | 18.25    1.93
                0.50    1.18 |  6.50    2.15 | 12.50   15.48 | 18.50    1.94
                0.75    1.18 |  6.75    2.15 | 12.75    7.95 | 18.75    1.93
                1.00    1.18 |  7.00    2.15 | 13.00    7.96 | 19.00    1.94
                1.25    1.18 |  7.25    2.15 | 13.25    1.50 | 19.25    1.93
                1.50    1.18 |  7.50    2.15 | 13.50    1.50 | 19.50    1.94
                1.75    1.18 |  7.75    2.15 | 13.75    8.82 | 19.75    1.93
                2.00    1.18 |  8.00    2.15 | 14.00    8.82 | 20.00    1.94
                2.25    1.40 |  8.25    2.90 | 14.25    3.22 | 20.25    1.29
                2.50    1.40 |  8.50    2.90 | 14.50    3.22 | 20.50    1.29
                2.75    1.40 |  8.75    2.90 | 14.75    3.22 | 20.75    1.29
                3.00    1.40 |  9.00    2.90 | 15.00    3.23 | 21.00    1.29
                3.25    1.40 |  9.25    3.44 | 15.25    3.22 | 21.25    1.29
                3.50    1.40 |  9.50    3.44 | 15.50    3.22 | 21.50    1.29
                3.75    1.40 |  9.75    3.87 | 15.75    3.22 | 21.75    1.29
                4.00    1.40 | 10.00    3.87 | 16.00    3.22 | 22.00    1.29
                4.25    1.72 | 10.25    4.95 | 16.25    1.94 | 22.25    1.29
                4.50    1.72 | 10.50    4.95 | 16.50    1.93 | 22.50    1.29
                4.75    1.72 | 10.75    6.67 | 16.75    1.93 | 22.75    1.29
                5.00    1.72 | 11.00    6.66 | 17.00    1.94 | 23.00    1.29
                5.25    1.72 | 11.25   10.32 | 17.25    1.93 | 23.25    1.29
                5.50    1.72 | 11.50   10.32 | 17.50    1.94 | 23.50    1.29
                5.75    1.72 | 11.75   44.72 | 17.75    1.93 | 23.75    1.29
                6.00    1.72 | 12.00  118.68 | 18.00    1.94 | 24.00    1.29
```

CALIB					
NASHYD (0101)	Area (ha)= 1.49	Curve Number (CN)= 54.0			
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.22				

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	1.18	6.017	2.15	12.017	15.55	18.02	1.93
0.033	1.18	6.033	2.15	12.033	15.48	18.03	1.93
0.050	1.18	6.050	2.15	12.050	15.48	18.05	1.93
0.067	1.18	6.067	2.15	12.067	15.48	18.07	1.93
0.083	1.18	6.083	2.15	12.083	15.48	18.08	1.93
0.100	1.18	6.100	2.15	12.100	15.48	18.10	1.93
0.117	1.18	6.117	2.15	12.117	15.48	18.12	1.93
0.133	1.18	6.133	2.15	12.133	15.48	18.13	1.93
0.150	1.18	6.150	2.15	12.150	15.48	18.15	1.93
0.167	1.18	6.167	2.15	12.167	15.48	18.17	1.93
0.183	1.18	6.183	2.15	12.183	15.48	18.18	1.93
0.200	1.18	6.200	2.15	12.200	15.48	18.20	1.93
0.217	1.18	6.217	2.15	12.217	15.48	18.22	1.93
0.233	1.18	6.233	2.15	12.233	15.48	18.23	1.93
0.250	1.18	6.250	2.15	12.250	15.48	18.25	1.93
0.267	1.18	6.267	2.15	12.267	15.48	18.27	1.93
0.283	1.18	6.283	2.15	12.283	15.48	18.28	1.94
0.300	1.18	6.300	2.15	12.300	15.48	18.30	1.94
0.317	1.18	6.317	2.15	12.317	15.48	18.32	1.94
0.333	1.18	6.333	2.15	12.333	15.48	18.33	1.94
0.350	1.18	6.350	2.15	12.350	15.48	18.35	1.94
0.367	1.18	6.367	2.15	12.367	15.48	18.37	1.94
0.383	1.18	6.383	2.15	12.383	15.48	18.38	1.94
0.400	1.18	6.400	2.15	12.400	15.48	18.40	1.94
0.417	1.18	6.417	2.15	12.417	15.48	18.42	1.94
0.433	1.18	6.433	2.15	12.433	15.48	18.43	1.94
0.450	1.18	6.450	2.15	12.450	15.48	18.45	1.94
0.467	1.18	6.467	2.15	12.467	15.48	18.47	1.94
0.483	1.18	6.483	2.15	12.483	15.48	18.48	1.94
0.500	1.18	6.500	2.15	12.500	15.48	18.50	1.94
0.517	1.18	6.517	2.15	12.517	7.96	18.52	1.93
0.533	1.18	6.533	2.15	12.533	7.95	18.53	1.93
0.550	1.18	6.550	2.15	12.550	7.95	18.55	1.93
0.567	1.18	6.567	2.15	12.567	7.95	18.57	1.93
0.583	1.18	6.583	2.15	12.583	7.95	18.58	1.93

0.600	1.18	6.600	2.15	12.600	7.95	18.60	1.93
0.617	1.18	6.617	2.15	12.617	7.95	18.62	1.93
0.633	1.18	6.633	2.15	12.633	7.95	18.63	1.93
0.650	1.18	6.650	2.15	12.650	7.95	18.65	1.93
0.667	1.18	6.667	2.15	12.667	7.95	18.67	1.93
0.683	1.18	6.683	2.15	12.683	7.95	18.68	1.93
0.700	1.18	6.700	2.15	12.700	7.95	18.70	1.93
0.717	1.18	6.717	2.15	12.717	7.95	18.72	1.93
0.733	1.18	6.733	2.15	12.733	7.95	18.73	1.93
0.750	1.18	6.750	2.15	12.750	7.95	18.75	1.93
0.767	1.18	6.767	2.15	12.767	7.95	18.77	1.93
0.783	1.18	6.783	2.15	12.783	7.96	18.78	1.94
0.800	1.18	6.800	2.15	12.800	7.96	18.80	1.94
0.817	1.18	6.817	2.15	12.817	7.96	18.82	1.94
0.833	1.18	6.833	2.15	12.833	7.96	18.83	1.94
0.850	1.18	6.850	2.15	12.850	7.96	18.85	1.94
0.867	1.18	6.867	2.15	12.867	7.96	18.87	1.94
0.883	1.18	6.883	2.15	12.883	7.96	18.88	1.94
0.900	1.18	6.900	2.15	12.900	7.96	18.90	1.94
0.917	1.18	6.917	2.15	12.917	7.96	18.92	1.94
0.933	1.18	6.933	2.15	12.933	7.96	18.93	1.94
0.950	1.18	6.950	2.15	12.950	7.96	18.95	1.94
0.967	1.18	6.967	2.15	12.967	7.96	18.97	1.94
0.983	1.18	6.983	2.15	12.983	7.96	18.98	1.94
1.000	1.18	7.000	2.15	13.000	7.96	19.00	1.94
1.017	1.18	7.017	2.15	13.017	1.52	19.02	1.93
1.033	1.18	7.033	2.15	13.033	1.50	19.03	1.93
1.050	1.18	7.050	2.15	13.050	1.50	19.05	1.93
1.067	1.18	7.067	2.15	13.067	1.50	19.07	1.93
1.083	1.18	7.083	2.15	13.083	1.50	19.08	1.93
1.100	1.18	7.100	2.15	13.100	1.50	19.10	1.93
1.117	1.18	7.117	2.15	13.117	1.50	19.12	1.93
1.133	1.18	7.133	2.15	13.133	1.50	19.13	1.93
1.150	1.18	7.150	2.15	13.150	1.50	19.15	1.93
1.167	1.18	7.167	2.15	13.167	1.50	19.17	1.93
1.183	1.18	7.183	2.15	13.183	1.50	19.18	1.93
1.200	1.18	7.200	2.15	13.200	1.50	19.20	1.93
1.217	1.18	7.217	2.15	13.217	1.50	19.22	1.93
1.233	1.18	7.233	2.15	13.233	1.50	19.23	1.93
1.250	1.18	7.250	2.15	13.250	1.50	19.25	1.93
1.267	1.18	7.267	2.15	13.267	1.50	19.27	1.93
1.283	1.18	7.283	2.15	13.283	1.50	19.28	1.94
1.300	1.18	7.300	2.15	13.300	1.50	19.30	1.94
1.317	1.18	7.317	2.15	13.317	1.50	19.32	1.94
1.333	1.18	7.333	2.15	13.333	1.50	19.33	1.94
1.350	1.18	7.350	2.15	13.350	1.50	19.35	1.94
1.367	1.18	7.367	2.15	13.367	1.50	19.37	1.94
1.383	1.18	7.383	2.15	13.383	1.50	19.38	1.94
1.400	1.18	7.400	2.15	13.400	1.50	19.40	1.94

1.417	1.18	7.417	2.15	13.417	1.50	19.42	1.94
1.433	1.18	7.433	2.15	13.433	1.50	19.43	1.94
1.450	1.18	7.450	2.15	13.450	1.50	19.45	1.94
1.467	1.18	7.467	2.15	13.467	1.50	19.47	1.94
1.483	1.18	7.483	2.15	13.483	1.50	19.48	1.94
1.500	1.18	7.500	2.15	13.500	1.50	19.50	1.94
1.517	1.18	7.517	2.15	13.517	8.80	19.52	1.93
1.533	1.18	7.533	2.15	13.533	8.82	19.53	1.93
1.550	1.18	7.550	2.15	13.550	8.82	19.55	1.93
1.567	1.18	7.567	2.15	13.567	8.82	19.57	1.93
1.583	1.18	7.583	2.15	13.583	8.82	19.58	1.93
1.600	1.18	7.600	2.15	13.600	8.82	19.60	1.93
1.617	1.18	7.617	2.15	13.617	8.82	19.62	1.93
1.633	1.18	7.633	2.15	13.633	8.82	19.63	1.93
1.650	1.18	7.650	2.15	13.650	8.82	19.65	1.93
1.667	1.18	7.667	2.15	13.667	8.82	19.67	1.93
1.683	1.18	7.683	2.15	13.683	8.82	19.68	1.93
1.700	1.18	7.700	2.15	13.700	8.82	19.70	1.93
1.717	1.18	7.717	2.15	13.717	8.82	19.72	1.93
1.733	1.18	7.733	2.15	13.733	8.82	19.73	1.93
1.750	1.18	7.750	2.15	13.750	8.82	19.75	1.93
1.767	1.18	7.767	2.15	13.767	8.81	19.77	1.93
1.783	1.18	7.783	2.15	13.783	8.82	19.78	1.94
1.800	1.18	7.800	2.15	13.800	8.82	19.80	1.94
1.817	1.18	7.817	2.15	13.817	8.82	19.82	1.94
1.833	1.18	7.833	2.15	13.833	8.82	19.83	1.94
1.850	1.18	7.850	2.15	13.850	8.82	19.85	1.94
1.867	1.18	7.867	2.15	13.867	8.82	19.87	1.94
1.883	1.18	7.883	2.15	13.883	8.82	19.88	1.94
1.900	1.18	7.900	2.15	13.900	8.82	19.90	1.94
1.917	1.18	7.917	2.15	13.917	8.82	19.92	1.94
1.933	1.18	7.933	2.15	13.933	8.82	19.93	1.94
1.950	1.18	7.950	2.15	13.950	8.82	19.95	1.94
1.967	1.18	7.967	2.15	13.967	8.82	19.97	1.94
1.983	1.18	7.983	2.15	13.983	8.82	19.98	1.94
2.000	1.18	8.000	2.15	14.000	8.82	20.00	1.94
2.017	1.40	8.017	2.90	14.017	3.24	20.02	1.30
2.033	1.40	8.033	2.90	14.033	3.22	20.03	1.29
2.050	1.40	8.050	2.90	14.050	3.22	20.05	1.29
2.067	1.40	8.067	2.90	14.067	3.22	20.07	1.29
2.083	1.40	8.083	2.90	14.083	3.22	20.08	1.29
2.100	1.40	8.100	2.90	14.100	3.22	20.10	1.29
2.117	1.40	8.117	2.90	14.117	3.22	20.12	1.29
2.133	1.40	8.133	2.90	14.133	3.22	20.13	1.29
2.150	1.40	8.150	2.90	14.150	3.22	20.15	1.29
2.167	1.40	8.167	2.90	14.167	3.22	20.17	1.29
2.183	1.40	8.183	2.90	14.183	3.22	20.18	1.29
2.200	1.40	8.200	2.90	14.200	3.22	20.20	1.29
2.217	1.40	8.217	2.90	14.217	3.22	20.22	1.29

2.233	1.40	8.233	2.90	14.233	3.22	20.23	1.29
2.250	1.40	8.250	2.90	14.250	3.22	20.25	1.29
2.267	1.40	8.267	2.90	14.267	3.22	20.27	1.29
2.283	1.40	8.283	2.90	14.283	3.22	20.28	1.29
2.300	1.40	8.300	2.90	14.300	3.22	20.30	1.29
2.317	1.40	8.317	2.90	14.317	3.22	20.32	1.29
2.333	1.40	8.333	2.90	14.333	3.22	20.33	1.29
2.350	1.40	8.350	2.90	14.350	3.22	20.35	1.29
2.367	1.40	8.367	2.90	14.367	3.22	20.37	1.29
2.383	1.40	8.383	2.90	14.383	3.22	20.38	1.29
2.400	1.40	8.400	2.90	14.400	3.22	20.40	1.29
2.417	1.40	8.417	2.90	14.417	3.22	20.42	1.29
2.433	1.40	8.433	2.90	14.433	3.22	20.43	1.29
2.450	1.40	8.450	2.90	14.450	3.22	20.45	1.29
2.467	1.40	8.467	2.90	14.467	3.22	20.47	1.29
2.483	1.40	8.483	2.90	14.483	3.22	20.48	1.29
2.500	1.40	8.500	2.90	14.500	3.22	20.50	1.29
2.517	1.40	8.517	2.90	14.517	3.22	20.52	1.29
2.533	1.40	8.533	2.90	14.533	3.22	20.53	1.29
2.550	1.40	8.550	2.90	14.550	3.22	20.55	1.29
2.567	1.40	8.567	2.90	14.567	3.22	20.57	1.29
2.583	1.40	8.583	2.90	14.583	3.22	20.58	1.29
2.600	1.40	8.600	2.90	14.600	3.22	20.60	1.29
2.617	1.40	8.617	2.90	14.617	3.22	20.62	1.29
2.633	1.40	8.633	2.90	14.633	3.22	20.63	1.29
2.650	1.40	8.650	2.90	14.650	3.22	20.65	1.29
2.667	1.40	8.667	2.90	14.667	3.22	20.67	1.29
2.683	1.40	8.683	2.90	14.683	3.22	20.68	1.29
2.700	1.40	8.700	2.90	14.700	3.22	20.70	1.29
2.717	1.40	8.717	2.90	14.717	3.22	20.72	1.29
2.733	1.40	8.733	2.90	14.733	3.22	20.73	1.29
2.750	1.40	8.750	2.90	14.750	3.22	20.75	1.29
2.767	1.40	8.767	2.90	14.767	3.22	20.77	1.29
2.783	1.40	8.783	2.90	14.783	3.23	20.78	1.29
2.800	1.40	8.800	2.90	14.800	3.23	20.80	1.29
2.817	1.40	8.817	2.90	14.817	3.23	20.82	1.29
2.833	1.40	8.833	2.90	14.833	3.23	20.83	1.29
2.850	1.40	8.850	2.90	14.850	3.23	20.85	1.29
2.867	1.40	8.867	2.90	14.867	3.23	20.87	1.29
2.883	1.40	8.883	2.90	14.883	3.23	20.88	1.29
2.900	1.40	8.900	2.90	14.900	3.23	20.90	1.29
2.917	1.40	8.917	2.90	14.917	3.23	20.92	1.29
2.933	1.40	8.933	2.90	14.933	3.23	20.93	1.29
2.950	1.40	8.950	2.90	14.950	3.23	20.95	1.29
2.967	1.40	8.967	2.90	14.967	3.23	20.97	1.29
2.983	1.40	8.983	2.90	14.983	3.23	20.98	1.29
3.000	1.40	9.000	2.90	15.000	3.23	21.00	1.29
3.017	1.40	9.017	3.44	15.017	3.22	21.02	1.29
3.033	1.40	9.033	3.44	15.033	3.22	21.03	1.29

3.050	1.40	9.050	3.44	15.050	3.22	21.05	1.29
3.067	1.40	9.067	3.44	15.067	3.22	21.07	1.29
3.083	1.40	9.083	3.44	15.083	3.22	21.08	1.29
3.100	1.40	9.100	3.44	15.100	3.22	21.10	1.29
3.117	1.40	9.117	3.44	15.117	3.22	21.12	1.29
3.133	1.40	9.133	3.44	15.133	3.22	21.13	1.29
3.150	1.40	9.150	3.44	15.150	3.22	21.15	1.29
3.167	1.40	9.167	3.44	15.167	3.22	21.17	1.29
3.183	1.40	9.183	3.44	15.183	3.22	21.18	1.29
3.200	1.40	9.200	3.44	15.200	3.22	21.20	1.29
3.217	1.40	9.217	3.44	15.217	3.22	21.22	1.29
3.233	1.40	9.233	3.44	15.233	3.22	21.23	1.29
3.250	1.40	9.250	3.44	15.250	3.22	21.25	1.29
3.267	1.40	9.267	3.44	15.267	3.22	21.27	1.29
3.283	1.40	9.283	3.44	15.283	3.22	21.28	1.29
3.300	1.40	9.300	3.44	15.300	3.22	21.30	1.29
3.317	1.40	9.317	3.44	15.317	3.22	21.32	1.29
3.333	1.40	9.333	3.44	15.333	3.22	21.33	1.29
3.350	1.40	9.350	3.44	15.350	3.22	21.35	1.29
3.367	1.40	9.367	3.44	15.367	3.22	21.37	1.29
3.383	1.40	9.383	3.44	15.383	3.22	21.38	1.29
3.400	1.40	9.400	3.44	15.400	3.22	21.40	1.29
3.417	1.40	9.417	3.44	15.417	3.22	21.42	1.29
3.433	1.40	9.433	3.44	15.433	3.22	21.43	1.29
3.450	1.40	9.450	3.44	15.450	3.22	21.45	1.29
3.467	1.40	9.467	3.44	15.467	3.22	21.47	1.29
3.483	1.40	9.483	3.44	15.483	3.22	21.48	1.29
3.500	1.40	9.500	3.44	15.500	3.22	21.50	1.29
3.517	1.40	9.517	3.87	15.517	3.22	21.52	1.29
3.533	1.40	9.533	3.87	15.533	3.22	21.53	1.29
3.550	1.40	9.550	3.87	15.550	3.22	21.55	1.29
3.567	1.40	9.567	3.87	15.567	3.22	21.57	1.29
3.583	1.40	9.583	3.87	15.583	3.22	21.58	1.29
3.600	1.40	9.600	3.87	15.600	3.22	21.60	1.29
3.617	1.40	9.617	3.87	15.617	3.22	21.62	1.29
3.633	1.40	9.633	3.87	15.633	3.22	21.63	1.29
3.650	1.40	9.650	3.87	15.650	3.22	21.65	1.29
3.667	1.40	9.667	3.87	15.667	3.22	21.67	1.29
3.683	1.40	9.683	3.87	15.683	3.22	21.68	1.29
3.700	1.40	9.700	3.87	15.700	3.22	21.70	1.29
3.717	1.40	9.717	3.87	15.717	3.22	21.72	1.29
3.733	1.40	9.733	3.87	15.733	3.22	21.73	1.29
3.750	1.40	9.750	3.87	15.750	3.22	21.75	1.29
3.767	1.40	9.767	3.87	15.767	3.22	21.77	1.29
3.783	1.40	9.783	3.87	15.783	3.22	21.78	1.29
3.800	1.40	9.800	3.87	15.800	3.22	21.80	1.29
3.817	1.40	9.817	3.87	15.817	3.22	21.82	1.29
3.833	1.40	9.833	3.87	15.833	3.22	21.83	1.29
3.850	1.40	9.850	3.87	15.850	3.22	21.85	1.29

3.867	1.40	9.867	3.87	15.867	3.22	21.87	1.29
3.883	1.40	9.883	3.87	15.883	3.22	21.88	1.29
3.900	1.40	9.900	3.87	15.900	3.22	21.90	1.29
3.917	1.40	9.917	3.87	15.917	3.22	21.92	1.29
3.933	1.40	9.933	3.87	15.933	3.22	21.93	1.29
3.950	1.40	9.950	3.87	15.950	3.22	21.95	1.29
3.967	1.40	9.967	3.87	15.967	3.22	21.97	1.29
3.983	1.40	9.983	3.87	15.983	3.22	21.98	1.29
4.000	1.40	10.000	3.87	16.000	3.22	22.00	1.29
4.017	1.72	10.017	4.95	16.017	1.94	22.02	1.29
4.033	1.72	10.033	4.95	16.033	1.94	22.03	1.29
4.050	1.72	10.050	4.95	16.050	1.94	22.05	1.29
4.067	1.72	10.067	4.95	16.067	1.94	22.07	1.29
4.083	1.72	10.083	4.95	16.083	1.94	22.08	1.29
4.100	1.72	10.100	4.95	16.100	1.94	22.10	1.29
4.117	1.72	10.117	4.95	16.117	1.94	22.12	1.29
4.133	1.72	10.133	4.95	16.133	1.94	22.13	1.29
4.150	1.72	10.150	4.95	16.150	1.94	22.15	1.29
4.167	1.72	10.167	4.95	16.167	1.94	22.17	1.29
4.183	1.72	10.183	4.95	16.183	1.94	22.18	1.29
4.200	1.72	10.200	4.95	16.200	1.94	22.20	1.29
4.217	1.72	10.217	4.95	16.217	1.94	22.22	1.29
4.233	1.72	10.233	4.95	16.233	1.94	22.23	1.29
4.250	1.72	10.250	4.94	16.250	1.94	22.25	1.29
4.267	1.72	10.267	4.95	16.267	1.93	22.27	1.29
4.283	1.72	10.283	4.95	16.283	1.93	22.28	1.29
4.300	1.72	10.300	4.95	16.300	1.93	22.30	1.29
4.317	1.72	10.317	4.95	16.317	1.93	22.32	1.29
4.333	1.72	10.333	4.95	16.333	1.93	22.33	1.29
4.350	1.72	10.350	4.95	16.350	1.93	22.35	1.29
4.367	1.72	10.367	4.95	16.367	1.93	22.37	1.29
4.383	1.72	10.383	4.95	16.383	1.93	22.38	1.29
4.400	1.72	10.400	4.95	16.400	1.93	22.40	1.29
4.417	1.72	10.417	4.95	16.417	1.93	22.42	1.29
4.433	1.72	10.433	4.95	16.433	1.93	22.43	1.29
4.450	1.72	10.450	4.95	16.450	1.93	22.45	1.29
4.467	1.72	10.467	4.95	16.467	1.93	22.47	1.29
4.483	1.72	10.483	4.95	16.483	1.93	22.48	1.29
4.500	1.72	10.500	4.95	16.500	1.93	22.50	1.29
4.517	1.72	10.517	6.67	16.517	1.93	22.52	1.29
4.533	1.72	10.533	6.67	16.533	1.93	22.53	1.29
4.550	1.72	10.550	6.67	16.550	1.93	22.55	1.29
4.567	1.72	10.567	6.67	16.567	1.93	22.57	1.29
4.583	1.72	10.583	6.67	16.583	1.93	22.58	1.29
4.600	1.72	10.600	6.67	16.600	1.93	22.60	1.29
4.617	1.72	10.617	6.67	16.617	1.93	22.62	1.29
4.633	1.72	10.633	6.67	16.633	1.93	22.63	1.29
4.650	1.72	10.650	6.67	16.650	1.93	22.65	1.29
4.667	1.72	10.667	6.67	16.667	1.93	22.67	1.29

4.683	1.72	10.683	6.67	16.683	1.93	22.68	1.29
4.700	1.72	10.700	6.67	16.700	1.93	22.70	1.29
4.717	1.72	10.717	6.67	16.717	1.93	22.72	1.29
4.733	1.72	10.733	6.67	16.733	1.93	22.73	1.29
4.750	1.72	10.750	6.66	16.750	1.93	22.75	1.29
4.767	1.72	10.767	6.66	16.767	1.93	22.77	1.29
4.783	1.72	10.783	6.66	16.783	1.94	22.78	1.29
4.800	1.72	10.800	6.66	16.800	1.94	22.80	1.29
4.817	1.72	10.817	6.66	16.817	1.94	22.82	1.29
4.833	1.72	10.833	6.66	16.833	1.94	22.83	1.29
4.850	1.72	10.850	6.66	16.850	1.94	22.85	1.29
4.867	1.72	10.867	6.66	16.867	1.94	22.87	1.29
4.883	1.72	10.883	6.66	16.883	1.94	22.88	1.29
4.900	1.72	10.900	6.66	16.900	1.94	22.90	1.29
4.917	1.72	10.917	6.66	16.917	1.94	22.92	1.29
4.933	1.72	10.933	6.66	16.933	1.94	22.93	1.29
4.950	1.72	10.950	6.66	16.950	1.94	22.95	1.29
4.967	1.72	10.967	6.66	16.967	1.94	22.97	1.29
4.983	1.72	10.983	6.66	16.983	1.94	22.98	1.29
5.000	1.72	11.000	6.67	17.000	1.94	23.00	1.29
5.017	1.72	11.017	10.32	17.017	1.93	23.02	1.29
5.033	1.72	11.033	10.32	17.033	1.93	23.03	1.29
5.050	1.72	11.050	10.32	17.050	1.93	23.05	1.29
5.067	1.72	11.067	10.32	17.067	1.93	23.07	1.29
5.083	1.72	11.083	10.32	17.083	1.93	23.08	1.29
5.100	1.72	11.100	10.32	17.100	1.93	23.10	1.29
5.117	1.72	11.117	10.32	17.117	1.93	23.12	1.29
5.133	1.72	11.133	10.32	17.133	1.93	23.13	1.29
5.150	1.72	11.150	10.32	17.150	1.93	23.15	1.29
5.167	1.72	11.167	10.32	17.167	1.93	23.17	1.29
5.183	1.72	11.183	10.32	17.183	1.93	23.18	1.29
5.200	1.72	11.200	10.32	17.200	1.93	23.20	1.29
5.217	1.72	11.217	10.32	17.217	1.93	23.22	1.29
5.233	1.72	11.233	10.32	17.233	1.93	23.23	1.29
5.250	1.72	11.250	10.32	17.250	1.93	23.25	1.29
5.267	1.72	11.267	10.32	17.267	1.93	23.27	1.29
5.283	1.72	11.283	10.32	17.283	1.94	23.28	1.29
5.300	1.72	11.300	10.32	17.300	1.94	23.30	1.29
5.317	1.72	11.317	10.32	17.317	1.94	23.32	1.29
5.333	1.72	11.333	10.32	17.333	1.94	23.33	1.29
5.350	1.72	11.350	10.32	17.350	1.94	23.35	1.29
5.367	1.72	11.367	10.32	17.367	1.94	23.37	1.29
5.383	1.72	11.383	10.32	17.383	1.94	23.38	1.29
5.400	1.72	11.400	10.32	17.400	1.94	23.40	1.29
5.417	1.72	11.417	10.32	17.417	1.94	23.42	1.29
5.433	1.72	11.433	10.32	17.433	1.94	23.43	1.29
5.450	1.72	11.450	10.32	17.450	1.94	23.45	1.29
5.467	1.72	11.467	10.32	17.467	1.94	23.47	1.29
5.483	1.72	11.483	10.32	17.483	1.94	23.48	1.29

5.500	1.72	11.500	10.32	17.500	1.94	23.50	1.29
5.517	1.72	11.517	44.71	17.517	1.93	23.52	1.29
5.533	1.72	11.533	44.72	17.533	1.93	23.53	1.29
5.550	1.72	11.550	44.72	17.550	1.93	23.55	1.29
5.567	1.72	11.567	44.72	17.567	1.93	23.57	1.29
5.583	1.72	11.583	44.72	17.583	1.93	23.58	1.29
5.600	1.72	11.600	44.72	17.600	1.93	23.60	1.29
5.617	1.72	11.617	44.72	17.617	1.93	23.62	1.29
5.633	1.72	11.633	44.72	17.633	1.93	23.63	1.29
5.650	1.72	11.650	44.72	17.650	1.93	23.65	1.29
5.667	1.72	11.667	44.72	17.667	1.93	23.67	1.29
5.683	1.72	11.683	44.72	17.683	1.93	23.68	1.29
5.700	1.72	11.700	44.72	17.700	1.93	23.70	1.29
5.717	1.72	11.717	44.72	17.717	1.93	23.72	1.29
5.733	1.72	11.733	44.72	17.733	1.93	23.73	1.29
5.750	1.72	11.750	44.72	17.750	1.93	23.75	1.29
5.767	1.72	11.767	118.64	17.767	1.93	23.77	1.29
5.783	1.72	11.783	118.68	17.783	1.94	23.78	1.29
5.800	1.72	11.800	118.68	17.800	1.94	23.80	1.29
5.817	1.72	11.817	118.68	17.817	1.94	23.82	1.29
5.833	1.72	11.833	118.68	17.833	1.94	23.83	1.29
5.850	1.72	11.850	118.68	17.850	1.94	23.85	1.29
5.867	1.72	11.867	118.68	17.867	1.94	23.87	1.29
5.883	1.72	11.883	118.68	17.883	1.94	23.88	1.29
5.900	1.72	11.900	118.68	17.900	1.94	23.90	1.29
5.917	1.72	11.917	118.68	17.917	1.94	23.92	1.29
5.933	1.72	11.933	118.68	17.933	1.94	23.93	1.29
5.950	1.72	11.950	118.68	17.950	1.94	23.95	1.29
5.967	1.72	11.967	118.68	17.967	1.94	23.97	1.29
5.983	1.72	11.983	118.68	17.983	1.94	23.98	1.29
6.000	1.72	12.000	118.68	18.000	1.94	24.00	1.29

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     Unit Hyd Qpeak  (cms)=   0.259

     PEAK FLOW       (cms)=   0.101 (i)
     TIME TO PEAK    (hrs)=  12.117
     RUNOFF VOLUME    (mm)=  24.075
     TOTAL RAINFALL   (mm)= 107.501
     RUNOFF COEFFICIENT   =   0.224

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31
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     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.074 (i)
     TIME TO PEAK    (hrs)=  12.200
     RUNOFF VOLUME    (mm)=  33.350
     TOTAL RAINFALL   (mm)= 107.501
     RUNOFF COEFFICIENT   =   0.310

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

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| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.101    12.12    24.07
      + ID2= 2 (  0002):     0.98   0.074    12.20    33.35
        ================================================
        ID = 3 (  0004):     2.47   0.172    12.15    34.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.022 (i)
     TIME TO PEAK    (hrs)=  12.600
     RUNOFF VOLUME    (mm)=  23.273
     TOTAL RAINFALL   (mm)= 107.501
     RUNOFF COEFFICIENT   =   0.216

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

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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
```



```
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     118.68       102.00
               over (min)        5.00         8.00
     Storage Coeff.  (min)=       1.35 (ii)    7.17 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.43         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.07          0.080 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.03          12.02
     RUNOFF VOLUME    (mm)=     106.50        56.16          58.67
     TOTAL RAINFALL   (mm)=     107.50       107.50         107.50
     RUNOFF COEFFICIENT   =       0.99         0.52           0.55

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.080    12.02    58.67
      + ID2= 2 (  0102):     0.66   0.022    12.60    23.27
        ================================================
        ID = 3 (  0005):     1.11   0.088    12.03    41.80

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
```

```
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\3ad
d455c-e359-4e9f-ba16-5fc89cf2bf2e\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\3ad
d455c-e359-4e9f-ba16-5fc89cf2bf2e\sce


DATE: 11-25-2019                          TIME: 10:47:58

USER:



COMMENTS: _____________________________________________________


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  ***********************************************
  ** SIMULATION : 05. 50 yr - 24h Storm -SCS Ty **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ed2bd9a1-0349-4b34-8ffd-5a876811428b\5e8a3b18
| Ptotal=120.60 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 24.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.33 |  6.25    2.41 | 12.25   17.37 | 18.25    2.17
                0.50    1.33 |  6.50    2.41 | 12.50   17.37 | 18.50    2.17
```



```
                0.75    1.33 |  6.75    2.41 | 12.75    8.92 | 18.75    2.17
                1.00    1.33 |  7.00    2.41 | 13.00    8.92 | 19.00    2.17
                1.25    1.33 |  7.25    2.41 | 13.25    1.69 | 19.25    2.17
                1.50    1.33 |  7.50    2.41 | 13.50    1.69 | 19.50    2.17
                1.75    1.33 |  7.75    2.41 | 13.75    9.89 | 19.75    2.17
                2.00    1.33 |  8.00    2.41 | 14.00    9.89 | 20.00    2.17
                2.25    1.57 |  8.25    3.26 | 14.25    3.62 | 20.25    1.45
                2.50    1.57 |  8.50    3.26 | 14.50    3.62 | 20.50    1.45
                2.75    1.57 |  8.75    3.26 | 14.75    3.62 | 20.75    1.45
                3.00    1.57 |  9.00    3.26 | 15.00    3.62 | 21.00    1.45
                3.25    1.57 |  9.25    3.86 | 15.25    3.62 | 21.25    1.45
                3.50    1.57 |  9.50    3.86 | 15.50    3.62 | 21.50    1.45
                3.75    1.57 |  9.75    4.34 | 15.75    3.62 | 21.75    1.45
                4.00    1.57 | 10.00    4.34 | 16.00    3.62 | 22.00    1.45
                4.25    1.93 | 10.25    5.55 | 16.25    2.17 | 22.25    1.45
                4.50    1.93 | 10.50    5.55 | 16.50    2.17 | 22.50    1.45
                4.75    1.93 | 10.75    7.48 | 16.75    2.17 | 22.75    1.45
                5.00    1.93 | 11.00    7.48 | 17.00    2.17 | 23.00    1.45
                5.25    1.93 | 11.25   11.58 | 17.25    2.17 | 23.25    1.45
                5.50    1.93 | 11.50   11.58 | 17.50    2.17 | 23.50    1.45
                5.75    1.93 | 11.75   50.17 | 17.75    2.17 | 23.75    1.45
                6.00    1.93 | 12.00  133.14 | 18.00    2.17 | 24.00    1.45

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--------------------
| CALIB            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.22

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    1.33 | 6.017    2.41 |12.017   17.45 | 18.02    2.17
               0.033    1.33 | 6.033    2.41 |12.033   17.37 | 18.03    2.17
               0.050    1.33 | 6.050    2.41 |12.050   17.37 | 18.05    2.17
               0.067    1.33 | 6.067    2.41 |12.067   17.37 | 18.07    2.17
               0.083    1.33 | 6.083    2.41 |12.083   17.37 | 18.08    2.17
               0.100    1.33 | 6.100    2.41 |12.100   17.37 | 18.10    2.17
               0.117    1.33 | 6.117    2.41 |12.117   17.37 | 18.12    2.17
               0.133    1.33 | 6.133    2.41 |12.133   17.37 | 18.13    2.17
               0.150    1.33 | 6.150    2.41 |12.150   17.37 | 18.15    2.17
               0.167    1.33 | 6.167    2.41 |12.167   17.37 | 18.17    2.17
               0.183    1.33 | 6.183    2.41 |12.183   17.37 | 18.18    2.17
               0.200    1.33 | 6.200    2.41 |12.200   17.37 | 18.20    2.17
               0.217    1.33 | 6.217    2.41 |12.217   17.37 | 18.22    2.17
```

0.233	1.33	6.233	2.41	12.233	17.37	18.23	2.17
0.250	1.33	6.250	2.41	12.250	17.37	18.25	2.17
0.267	1.33	6.267	2.41	12.267	17.37	18.27	2.17
0.283	1.33	6.283	2.41	12.283	17.37	18.28	2.17
0.300	1.33	6.300	2.41	12.300	17.37	18.30	2.17
0.317	1.33	6.317	2.41	12.317	17.37	18.32	2.17
0.333	1.33	6.333	2.41	12.333	17.37	18.33	2.17
0.350	1.33	6.350	2.41	12.350	17.37	18.35	2.17
0.367	1.33	6.367	2.41	12.367	17.37	18.37	2.17
0.383	1.33	6.383	2.41	12.383	17.37	18.38	2.17
0.400	1.33	6.400	2.41	12.400	17.37	18.40	2.17
0.417	1.33	6.417	2.41	12.417	17.37	18.42	2.17
0.433	1.33	6.433	2.41	12.433	17.37	18.43	2.17
0.450	1.33	6.450	2.41	12.450	17.37	18.45	2.17
0.467	1.33	6.467	2.41	12.467	17.37	18.47	2.17
0.483	1.33	6.483	2.41	12.483	17.37	18.48	2.17
0.500	1.33	6.500	2.41	12.500	17.37	18.50	2.17
0.517	1.33	6.517	2.41	12.517	8.93	18.52	2.17
0.533	1.33	6.533	2.41	12.533	8.92	18.53	2.17
0.550	1.33	6.550	2.41	12.550	8.92	18.55	2.17
0.567	1.33	6.567	2.41	12.567	8.92	18.57	2.17
0.583	1.33	6.583	2.41	12.583	8.92	18.58	2.17
0.600	1.33	6.600	2.41	12.600	8.92	18.60	2.17
0.617	1.33	6.617	2.41	12.617	8.92	18.62	2.17
0.633	1.33	6.633	2.41	12.633	8.92	18.63	2.17
0.650	1.33	6.650	2.41	12.650	8.92	18.65	2.17
0.667	1.33	6.667	2.41	12.667	8.92	18.67	2.17
0.683	1.33	6.683	2.41	12.683	8.92	18.68	2.17
0.700	1.33	6.700	2.41	12.700	8.92	18.70	2.17
0.717	1.33	6.717	2.41	12.717	8.92	18.72	2.17
0.733	1.33	6.733	2.41	12.733	8.92	18.73	2.17
0.750	1.33	6.750	2.41	12.750	8.92	18.75	2.17
0.767	1.33	6.767	2.41	12.767	8.92	18.77	2.17
0.783	1.33	6.783	2.41	12.783	8.92	18.78	2.17
0.800	1.33	6.800	2.41	12.800	8.92	18.80	2.17
0.817	1.33	6.817	2.41	12.817	8.92	18.82	2.17
0.833	1.33	6.833	2.41	12.833	8.92	18.83	2.17
0.850	1.33	6.850	2.41	12.850	8.92	18.85	2.17
0.867	1.33	6.867	2.41	12.867	8.92	18.87	2.17
0.883	1.33	6.883	2.41	12.883	8.92	18.88	2.17
0.900	1.33	6.900	2.41	12.900	8.92	18.90	2.17
0.917	1.33	6.917	2.41	12.917	8.92	18.92	2.17
0.933	1.33	6.933	2.41	12.933	8.92	18.93	2.17
0.950	1.33	6.950	2.41	12.950	8.92	18.95	2.17
0.967	1.33	6.967	2.41	12.967	8.92	18.97	2.17
0.983	1.33	6.983	2.41	12.983	8.92	18.98	2.17
1.000	1.33	7.000	2.41	13.000	8.92	19.00	2.17
1.017	1.33	7.017	2.41	13.017	1.70	19.02	2.17
1.033	1.33	7.033	2.41	13.033	1.69	19.03	2.17

1.050	1.33	7.050	2.41	13.050	1.69	19.05	2.17
1.067	1.33	7.067	2.41	13.067	1.69	19.07	2.17
1.083	1.33	7.083	2.41	13.083	1.69	19.08	2.17
1.100	1.33	7.100	2.41	13.100	1.69	19.10	2.17
1.117	1.33	7.117	2.41	13.117	1.69	19.12	2.17
1.133	1.33	7.133	2.41	13.133	1.69	19.13	2.17
1.150	1.33	7.150	2.41	13.150	1.69	19.15	2.17
1.167	1.33	7.167	2.41	13.167	1.69	19.17	2.17
1.183	1.33	7.183	2.41	13.183	1.69	19.18	2.17
1.200	1.33	7.200	2.41	13.200	1.69	19.20	2.17
1.217	1.33	7.217	2.41	13.217	1.69	19.22	2.17
1.233	1.33	7.233	2.41	13.233	1.69	19.23	2.17
1.250	1.33	7.250	2.41	13.250	1.69	19.25	2.17
1.267	1.33	7.267	2.41	13.267	1.69	19.27	2.17
1.283	1.33	7.283	2.41	13.283	1.69	19.28	2.17
1.300	1.33	7.300	2.41	13.300	1.69	19.30	2.17
1.317	1.33	7.317	2.41	13.317	1.69	19.32	2.17
1.333	1.33	7.333	2.41	13.333	1.69	19.33	2.17
1.350	1.33	7.350	2.41	13.350	1.69	19.35	2.17
1.367	1.33	7.367	2.41	13.367	1.69	19.37	2.17
1.383	1.33	7.383	2.41	13.383	1.69	19.38	2.17
1.400	1.33	7.400	2.41	13.400	1.69	19.40	2.17
1.417	1.33	7.417	2.41	13.417	1.69	19.42	2.17
1.433	1.33	7.433	2.41	13.433	1.69	19.43	2.17
1.450	1.33	7.450	2.41	13.450	1.69	19.45	2.17
1.467	1.33	7.467	2.41	13.467	1.69	19.47	2.17
1.483	1.33	7.483	2.41	13.483	1.69	19.48	2.17
1.500	1.33	7.500	2.41	13.500	1.69	19.50	2.17
1.517	1.33	7.517	2.41	13.517	9.87	19.52	2.17
1.533	1.33	7.533	2.41	13.533	9.89	19.53	2.17
1.550	1.33	7.550	2.41	13.550	9.89	19.55	2.17
1.567	1.33	7.567	2.41	13.567	9.89	19.57	2.17
1.583	1.33	7.583	2.41	13.583	9.89	19.58	2.17
1.600	1.33	7.600	2.41	13.600	9.89	19.60	2.17
1.617	1.33	7.617	2.41	13.617	9.89	19.62	2.17
1.633	1.33	7.633	2.41	13.633	9.89	19.63	2.17
1.650	1.33	7.650	2.41	13.650	9.89	19.65	2.17
1.667	1.33	7.667	2.41	13.667	9.89	19.67	2.17
1.683	1.33	7.683	2.41	13.683	9.89	19.68	2.17
1.700	1.33	7.700	2.41	13.700	9.89	19.70	2.17
1.717	1.33	7.717	2.41	13.717	9.89	19.72	2.17
1.733	1.33	7.733	2.41	13.733	9.89	19.73	2.17
1.750	1.33	7.750	2.41	13.750	9.89	19.75	2.17
1.767	1.33	7.767	2.41	13.767	9.89	19.77	2.17
1.783	1.33	7.783	2.41	13.783	9.89	19.78	2.17
1.800	1.33	7.800	2.41	13.800	9.89	19.80	2.17
1.817	1.33	7.817	2.41	13.817	9.89	19.82	2.17
1.833	1.33	7.833	2.41	13.833	9.89	19.83	2.17
1.850	1.33	7.850	2.41	13.850	9.89	19.85	2.17

1.867	1.33	7.867	2.41	13.867	9.89	19.87	2.17
1.883	1.33	7.883	2.41	13.883	9.89	19.88	2.17
1.900	1.33	7.900	2.41	13.900	9.89	19.90	2.17
1.917	1.33	7.917	2.41	13.917	9.89	19.92	2.17
1.933	1.33	7.933	2.41	13.933	9.89	19.93	2.17
1.950	1.33	7.950	2.41	13.950	9.89	19.95	2.17
1.967	1.33	7.967	2.41	13.967	9.89	19.97	2.17
1.983	1.33	7.983	2.41	13.983	9.89	19.98	2.17
2.000	1.33	8.000	2.41	14.000	9.89	20.00	2.17
2.017	1.57	8.017	3.26	14.017	3.63	20.02	1.45
2.033	1.57	8.033	3.26	14.033	3.62	20.03	1.45
2.050	1.57	8.050	3.26	14.050	3.62	20.05	1.45
2.067	1.57	8.067	3.26	14.067	3.62	20.07	1.45
2.083	1.57	8.083	3.26	14.083	3.62	20.08	1.45
2.100	1.57	8.100	3.26	14.100	3.62	20.10	1.45
2.117	1.57	8.117	3.26	14.117	3.62	20.12	1.45
2.133	1.57	8.133	3.26	14.133	3.62	20.13	1.45
2.150	1.57	8.150	3.26	14.150	3.62	20.15	1.45
2.167	1.57	8.167	3.26	14.167	3.62	20.17	1.45
2.183	1.57	8.183	3.26	14.183	3.62	20.18	1.45
2.200	1.57	8.200	3.26	14.200	3.62	20.20	1.45
2.217	1.57	8.217	3.26	14.217	3.62	20.22	1.45
2.233	1.57	8.233	3.26	14.233	3.62	20.23	1.45
2.250	1.57	8.250	3.26	14.250	3.62	20.25	1.45
2.267	1.57	8.267	3.26	14.267	3.62	20.27	1.45
2.283	1.57	8.283	3.26	14.283	3.62	20.28	1.45
2.300	1.57	8.300	3.26	14.300	3.62	20.30	1.45
2.317	1.57	8.317	3.26	14.317	3.62	20.32	1.45
2.333	1.57	8.333	3.26	14.333	3.62	20.33	1.45
2.350	1.57	8.350	3.26	14.350	3.62	20.35	1.45
2.367	1.57	8.367	3.26	14.367	3.62	20.37	1.45
2.383	1.57	8.383	3.26	14.383	3.62	20.38	1.45
2.400	1.57	8.400	3.26	14.400	3.62	20.40	1.45
2.417	1.57	8.417	3.26	14.417	3.62	20.42	1.45
2.433	1.57	8.433	3.26	14.433	3.62	20.43	1.45
2.450	1.57	8.450	3.26	14.450	3.62	20.45	1.45
2.467	1.57	8.467	3.26	14.467	3.62	20.47	1.45
2.483	1.57	8.483	3.26	14.483	3.62	20.48	1.45
2.500	1.57	8.500	3.26	14.500	3.62	20.50	1.45
2.517	1.57	8.517	3.26	14.517	3.62	20.52	1.45
2.533	1.57	8.533	3.26	14.533	3.62	20.53	1.45
2.550	1.57	8.550	3.26	14.550	3.62	20.55	1.45
2.567	1.57	8.567	3.26	14.567	3.62	20.57	1.45
2.583	1.57	8.583	3.26	14.583	3.62	20.58	1.45
2.600	1.57	8.600	3.26	14.600	3.62	20.60	1.45
2.617	1.57	8.617	3.26	14.617	3.62	20.62	1.45
2.633	1.57	8.633	3.26	14.633	3.62	20.63	1.45
2.650	1.57	8.650	3.26	14.650	3.62	20.65	1.45
2.667	1.57	8.667	3.26	14.667	3.62	20.67	1.45

2.683	1.57	8.683	3.26	14.683	3.62	20.68	1.45
2.700	1.57	8.700	3.26	14.700	3.62	20.70	1.45
2.717	1.57	8.717	3.26	14.717	3.62	20.72	1.45
2.733	1.57	8.733	3.26	14.733	3.62	20.73	1.45
2.750	1.57	8.750	3.26	14.750	3.62	20.75	1.45
2.767	1.57	8.767	3.26	14.767	3.62	20.77	1.45
2.783	1.57	8.783	3.26	14.783	3.62	20.78	1.45
2.800	1.57	8.800	3.26	14.800	3.62	20.80	1.45
2.817	1.57	8.817	3.26	14.817	3.62	20.82	1.45
2.833	1.57	8.833	3.26	14.833	3.62	20.83	1.45
2.850	1.57	8.850	3.26	14.850	3.62	20.85	1.45
2.867	1.57	8.867	3.26	14.867	3.62	20.87	1.45
2.883	1.57	8.883	3.26	14.883	3.62	20.88	1.45
2.900	1.57	8.900	3.26	14.900	3.62	20.90	1.45
2.917	1.57	8.917	3.26	14.917	3.62	20.92	1.45
2.933	1.57	8.933	3.26	14.933	3.62	20.93	1.45
2.950	1.57	8.950	3.26	14.950	3.62	20.95	1.45
2.967	1.57	8.967	3.26	14.967	3.62	20.97	1.45
2.983	1.57	8.983	3.26	14.983	3.62	20.98	1.45
3.000	1.57	9.000	3.26	15.000	3.62	21.00	1.45
3.017	1.57	9.017	3.86	15.017	3.62	21.02	1.45
3.033	1.57	9.033	3.86	15.033	3.62	21.03	1.45
3.050	1.57	9.050	3.86	15.050	3.62	21.05	1.45
3.067	1.57	9.067	3.86	15.067	3.62	21.07	1.45
3.083	1.57	9.083	3.86	15.083	3.62	21.08	1.45
3.100	1.57	9.100	3.86	15.100	3.62	21.10	1.45
3.117	1.57	9.117	3.86	15.117	3.62	21.12	1.45
3.133	1.57	9.133	3.86	15.133	3.62	21.13	1.45
3.150	1.57	9.150	3.86	15.150	3.62	21.15	1.45
3.167	1.57	9.167	3.86	15.167	3.62	21.17	1.45
3.183	1.57	9.183	3.86	15.183	3.62	21.18	1.45
3.200	1.57	9.200	3.86	15.200	3.62	21.20	1.45
3.217	1.57	9.217	3.86	15.217	3.62	21.22	1.45
3.233	1.57	9.233	3.86	15.233	3.62	21.23	1.45
3.250	1.57	9.250	3.86	15.250	3.62	21.25	1.45
3.267	1.57	9.267	3.86	15.267	3.62	21.27	1.45
3.283	1.57	9.283	3.86	15.283	3.62	21.28	1.45
3.300	1.57	9.300	3.86	15.300	3.62	21.30	1.45
3.317	1.57	9.317	3.86	15.317	3.62	21.32	1.45
3.333	1.57	9.333	3.86	15.333	3.62	21.33	1.45
3.350	1.57	9.350	3.86	15.350	3.62	21.35	1.45
3.367	1.57	9.367	3.86	15.367	3.62	21.37	1.45
3.383	1.57	9.383	3.86	15.383	3.62	21.38	1.45
3.400	1.57	9.400	3.86	15.400	3.62	21.40	1.45
3.417	1.57	9.417	3.86	15.417	3.62	21.42	1.45
3.433	1.57	9.433	3.86	15.433	3.62	21.43	1.45
3.450	1.57	9.450	3.86	15.450	3.62	21.45	1.45
3.467	1.57	9.467	3.86	15.467	3.62	21.47	1.45
3.483	1.57	9.483	3.86	15.483	3.62	21.48	1.45

3.500	1.57	9.500	3.86	15.500	3.62	21.50	1.45
3.517	1.57	9.517	4.34	15.517	3.62	21.52	1.45
3.533	1.57	9.533	4.34	15.533	3.62	21.53	1.45
3.550	1.57	9.550	4.34	15.550	3.62	21.55	1.45
3.567	1.57	9.567	4.34	15.567	3.62	21.57	1.45
3.583	1.57	9.583	4.34	15.583	3.62	21.58	1.45
3.600	1.57	9.600	4.34	15.600	3.62	21.60	1.45
3.617	1.57	9.617	4.34	15.617	3.62	21.62	1.45
3.633	1.57	9.633	4.34	15.633	3.62	21.63	1.45
3.650	1.57	9.650	4.34	15.650	3.62	21.65	1.45
3.667	1.57	9.667	4.34	15.667	3.62	21.67	1.45
3.683	1.57	9.683	4.34	15.683	3.62	21.68	1.45
3.700	1.57	9.700	4.34	15.700	3.62	21.70	1.45
3.717	1.57	9.717	4.34	15.717	3.62	21.72	1.45
3.733	1.57	9.733	4.34	15.733	3.62	21.73	1.45
3.750	1.57	9.750	4.34	15.750	3.62	21.75	1.45
3.767	1.57	9.767	4.34	15.767	3.62	21.77	1.45
3.783	1.57	9.783	4.34	15.783	3.62	21.78	1.45
3.800	1.57	9.800	4.34	15.800	3.62	21.80	1.45
3.817	1.57	9.817	4.34	15.817	3.62	21.82	1.45
3.833	1.57	9.833	4.34	15.833	3.62	21.83	1.45
3.850	1.57	9.850	4.34	15.850	3.62	21.85	1.45
3.867	1.57	9.867	4.34	15.867	3.62	21.87	1.45
3.883	1.57	9.883	4.34	15.883	3.62	21.88	1.45
3.900	1.57	9.900	4.34	15.900	3.62	21.90	1.45
3.917	1.57	9.917	4.34	15.917	3.62	21.92	1.45
3.933	1.57	9.933	4.34	15.933	3.62	21.93	1.45
3.950	1.57	9.950	4.34	15.950	3.62	21.95	1.45
3.967	1.57	9.967	4.34	15.967	3.62	21.97	1.45
3.983	1.57	9.983	4.34	15.983	3.62	21.98	1.45
4.000	1.57	10.000	4.34	16.000	3.62	22.00	1.45
4.017	1.93	10.017	5.55	16.017	2.18	22.02	1.45
4.033	1.93	10.033	5.55	16.033	2.17	22.03	1.45
4.050	1.93	10.050	5.55	16.050	2.17	22.05	1.45
4.067	1.93	10.067	5.55	16.067	2.17	22.07	1.45
4.083	1.93	10.083	5.55	16.083	2.17	22.08	1.45
4.100	1.93	10.100	5.55	16.100	2.17	22.10	1.45
4.117	1.93	10.117	5.55	16.117	2.17	22.12	1.45
4.133	1.93	10.133	5.55	16.133	2.17	22.13	1.45
4.150	1.93	10.150	5.55	16.150	2.17	22.15	1.45
4.167	1.93	10.167	5.55	16.167	2.17	22.17	1.45
4.183	1.93	10.183	5.55	16.183	2.17	22.18	1.45
4.200	1.93	10.200	5.55	16.200	2.17	22.20	1.45
4.217	1.93	10.217	5.55	16.217	2.17	22.22	1.45
4.233	1.93	10.233	5.55	16.233	2.17	22.23	1.45
4.250	1.93	10.250	5.55	16.250	2.17	22.25	1.45
4.267	1.93	10.267	5.55	16.267	2.17	22.27	1.45
4.283	1.93	10.283	5.55	16.283	2.17	22.28	1.45
4.300	1.93	10.300	5.55	16.300	2.17	22.30	1.45

4.317	1.93	10.317	5.55	16.317	2.17	22.32	1.45
4.333	1.93	10.333	5.55	16.333	2.17	22.33	1.45
4.350	1.93	10.350	5.55	16.350	2.17	22.35	1.45
4.367	1.93	10.367	5.55	16.367	2.17	22.37	1.45
4.383	1.93	10.383	5.55	16.383	2.17	22.38	1.45
4.400	1.93	10.400	5.55	16.400	2.17	22.40	1.45
4.417	1.93	10.417	5.55	16.417	2.17	22.42	1.45
4.433	1.93	10.433	5.55	16.433	2.17	22.43	1.45
4.450	1.93	10.450	5.55	16.450	2.17	22.45	1.45
4.467	1.93	10.467	5.55	16.467	2.17	22.47	1.45
4.483	1.93	10.483	5.55	16.483	2.17	22.48	1.45
4.500	1.93	10.500	5.55	16.500	2.17	22.50	1.45
4.517	1.93	10.517	7.48	16.517	2.17	22.52	1.45
4.533	1.93	10.533	7.48	16.533	2.17	22.53	1.45
4.550	1.93	10.550	7.48	16.550	2.17	22.55	1.45
4.567	1.93	10.567	7.48	16.567	2.17	22.57	1.45
4.583	1.93	10.583	7.48	16.583	2.17	22.58	1.45
4.600	1.93	10.600	7.48	16.600	2.17	22.60	1.45
4.617	1.93	10.617	7.48	16.617	2.17	22.62	1.45
4.633	1.93	10.633	7.48	16.633	2.17	22.63	1.45
4.650	1.93	10.650	7.48	16.650	2.17	22.65	1.45
4.667	1.93	10.667	7.48	16.667	2.17	22.67	1.45
4.683	1.93	10.683	7.48	16.683	2.17	22.68	1.45
4.700	1.93	10.700	7.48	16.700	2.17	22.70	1.45
4.717	1.93	10.717	7.48	16.717	2.17	22.72	1.45
4.733	1.93	10.733	7.48	16.733	2.17	22.73	1.45
4.750	1.93	10.750	7.48	16.750	2.17	22.75	1.45
4.767	1.93	10.767	7.48	16.767	2.17	22.77	1.45
4.783	1.93	10.783	7.48	16.783	2.17	22.78	1.45
4.800	1.93	10.800	7.48	16.800	2.17	22.80	1.45
4.817	1.93	10.817	7.48	16.817	2.17	22.82	1.45
4.833	1.93	10.833	7.48	16.833	2.17	22.83	1.45
4.850	1.93	10.850	7.48	16.850	2.17	22.85	1.45
4.867	1.93	10.867	7.48	16.867	2.17	22.87	1.45
4.883	1.93	10.883	7.48	16.883	2.17	22.88	1.45
4.900	1.93	10.900	7.48	16.900	2.17	22.90	1.45
4.917	1.93	10.917	7.48	16.917	2.17	22.92	1.45
4.933	1.93	10.933	7.48	16.933	2.17	22.93	1.45
4.950	1.93	10.950	7.48	16.950	2.17	22.95	1.45
4.967	1.93	10.967	7.48	16.967	2.17	22.97	1.45
4.983	1.93	10.983	7.48	16.983	2.17	22.98	1.45
5.000	1.93	11.000	7.48	17.000	2.17	23.00	1.45
5.017	1.93	11.017	11.58	17.017	2.17	23.02	1.45
5.033	1.93	11.033	11.58	17.033	2.17	23.03	1.45
5.050	1.93	11.050	11.58	17.050	2.17	23.05	1.45
5.067	1.93	11.067	11.58	17.067	2.17	23.07	1.45
5.083	1.93	11.083	11.58	17.083	2.17	23.08	1.45
5.100	1.93	11.100	11.58	17.100	2.17	23.10	1.45
5.117	1.93	11.117	11.58	17.117	2.17	23.12	1.45

5.133	1.93	11.133	11.58	17.133	2.17	23.13	1.45
5.150	1.93	11.150	11.58	17.150	2.17	23.15	1.45
5.167	1.93	11.167	11.58	17.167	2.17	23.17	1.45
5.183	1.93	11.183	11.58	17.183	2.17	23.18	1.45
5.200	1.93	11.200	11.58	17.200	2.17	23.20	1.45
5.217	1.93	11.217	11.58	17.217	2.17	23.22	1.45
5.233	1.93	11.233	11.58	17.233	2.17	23.23	1.45
5.250	1.93	11.250	11.58	17.250	2.17	23.25	1.45
5.267	1.93	11.267	11.58	17.267	2.17	23.27	1.45
5.283	1.93	11.283	11.58	17.283	2.17	23.28	1.45
5.300	1.93	11.300	11.58	17.300	2.17	23.30	1.45
5.317	1.93	11.317	11.58	17.317	2.17	23.32	1.45
5.333	1.93	11.333	11.58	17.333	2.17	23.33	1.45
5.350	1.93	11.350	11.58	17.350	2.17	23.35	1.45
5.367	1.93	11.367	11.58	17.367	2.17	23.37	1.45
5.383	1.93	11.383	11.58	17.383	2.17	23.38	1.45
5.400	1.93	11.400	11.58	17.400	2.17	23.40	1.45
5.417	1.93	11.417	11.58	17.417	2.17	23.42	1.45
5.433	1.93	11.433	11.58	17.433	2.17	23.43	1.45
5.450	1.93	11.450	11.58	17.450	2.17	23.45	1.45
5.467	1.93	11.467	11.58	17.467	2.17	23.47	1.45
5.483	1.93	11.483	11.58	17.483	2.17	23.48	1.45
5.500	1.93	11.500	11.58	17.500	2.17	23.50	1.45
5.517	1.93	11.517	50.16	17.517	2.17	23.52	1.45
5.533	1.93	11.533	50.17	17.533	2.17	23.53	1.45
5.550	1.93	11.550	50.17	17.550	2.17	23.55	1.45
5.567	1.93	11.567	50.17	17.567	2.17	23.57	1.45
5.583	1.93	11.583	50.17	17.583	2.17	23.58	1.45
5.600	1.93	11.600	50.17	17.600	2.17	23.60	1.45
5.617	1.93	11.617	50.17	17.617	2.17	23.62	1.45
5.633	1.93	11.633	50.17	17.633	2.17	23.63	1.45
5.650	1.93	11.650	50.17	17.650	2.17	23.65	1.45
5.667	1.93	11.667	50.17	17.667	2.17	23.67	1.45
5.683	1.93	11.683	50.17	17.683	2.17	23.68	1.45
5.700	1.93	11.700	50.17	17.700	2.17	23.70	1.45
5.717	1.93	11.717	50.17	17.717	2.17	23.72	1.45
5.733	1.93	11.733	50.17	17.733	2.17	23.73	1.45
5.750	1.93	11.750	50.17	17.750	2.17	23.75	1.45
5.767	1.93	11.767	133.10	17.767	2.17	23.77	1.45
5.783	1.93	11.783	133.14	17.783	2.17	23.78	1.45
5.800	1.93	11.800	133.14	17.800	2.17	23.80	1.45
5.817	1.93	11.817	133.14	17.817	2.17	23.82	1.45
5.833	1.93	11.833	133.14	17.833	2.17	23.83	1.45
5.850	1.93	11.850	133.14	17.850	2.17	23.85	1.45
5.867	1.93	11.867	133.14	17.867	2.17	23.87	1.45
5.883	1.93	11.883	133.14	17.883	2.17	23.88	1.45
5.900	1.93	11.900	133.14	17.900	2.17	23.90	1.45
5.917	1.93	11.917	133.14	17.917	2.17	23.92	1.45
5.933	1.93	11.933	133.14	17.933	2.17	23.93	1.45

5.950	1.93	11.950	133.14	17.950	2.17	23.95	1.45
5.967	1.93	11.967	133.14	17.967	2.17	23.97	1.45
5.983	1.93	11.983	133.14	17.983	2.17	23.98	1.45
6.000	1.93	12.000	133.14	18.000	2.17	24.00	1.45

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.126 (i)
TIME TO PEAK (hrs)= 12.117
RUNOFF VOLUME (mm)= 29.926
TOTAL RAINFALL (mm)= 120.601
RUNOFF COEFFICIENT = 0.248

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

CALIB					
NASHYD (0002)	Area (ha)=	0.98	Curve Number (CN)=	64.0	
ID= 1 DT= 1.0 min	Ia (mm)=	7.21	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.31			

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.090 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 40.686
TOTAL RAINFALL (mm)= 120.601
RUNOFF COEFFICIENT = 0.337

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

ADD HYD (0004)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	1.49	0.126	12.12	29.93
+ ID2= 2 (0002):	0.98	0.090	12.20	40.69
ID = 3 (0004):	2.47	0.213	12.15	42.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0102)	Area (ha)=	0.66	Curve Number (CN)=	54.0	

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|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.027 (i)
     TIME TO PEAK    (hrs)=  12.583
     RUNOFF VOLUME    (mm)=  28.957
     TOTAL RAINFALL   (mm)= 120.601
     RUNOFF COEFFICIENT   =   0.240

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

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| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     133.14       120.70
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.29 (ii)    6.85 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.44         0.16
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.09          0.097 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.02         12.02
     RUNOFF VOLUME    (mm)=     119.60        66.68         69.32
     TOTAL RAINFALL   (mm)=     120.60       120.60        120.60
     RUNOFF COEFFICIENT   =       0.99         0.55          0.57

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.097    12.02    69.32
     + ID2= 2 (  0102):     0.66   0.027    12.58    28.96
       ================================================
       ID = 3 (  0005):     1.11   0.107    12.03    50.35

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L
      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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\ef2
05cf1-83aa-4da7-b489-8fd8c5aa2a65\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\ef2
05cf1-83aa-4da7-b489-8fd8c5aa2a65\sce


DATE: 11-25-2019                          TIME: 10:47:59

USER:
```

COMMENTS: _____

****
** SIMULATION : 06. 100 yr - 24h Storm -SCS T **
****

MASS STORM	Filename: C:\Users\iblechta\AppD
	ata\Local\Temp\
	ed2bd9a1-0349-4b34-8ffd-5a876811428b\e41707b4
Ptotal=133.60 mm	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 24.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.47	6.25	2.67	12.25	19.24	18.25	2.40
0.50	1.47	6.50	2.67	12.50	19.24	18.50	2.40
0.75	1.47	6.75	2.67	12.75	9.89	18.75	2.40
1.00	1.47	7.00	2.67	13.00	9.89	19.00	2.40
1.25	1.47	7.25	2.67	13.25	1.87	19.25	2.40
1.50	1.47	7.50	2.67	13.50	1.87	19.50	2.40
1.75	1.47	7.75	2.67	13.75	10.96	19.75	2.40
2.00	1.47	8.00	2.67	14.00	10.96	20.00	2.40
2.25	1.74	8.25	3.61	14.25	4.01	20.25	1.60
2.50	1.74	8.50	3.61	14.50	4.01	20.50	1.60
2.75	1.74	8.75	3.61	14.75	4.01	20.75	1.60
3.00	1.74	9.00	3.61	15.00	4.01	21.00	1.60
3.25	1.74	9.25	4.28	15.25	4.01	21.25	1.60
3.50	1.74	9.50	4.28	15.50	4.01	21.50	1.60
3.75	1.74	9.75	4.81	15.75	4.01	21.75	1.60
4.00	1.74	10.00	4.81	16.00	4.01	22.00	1.60
4.25	2.14	10.25	6.15	16.25	2.40	22.25	1.60
4.50	2.14	10.50	6.15	16.50	2.40	22.50	1.60
4.75	2.14	10.75	8.28	16.75	2.40	22.75	1.60
5.00	2.14	11.00	8.28	17.00	2.40	23.00	1.60
5.25	2.14	11.25	12.83	17.25	2.40	23.25	1.60
5.50	2.14	11.50	12.83	17.50	2.40	23.50	1.60
5.75	2.14	11.75	55.58	17.75	2.40	23.75	1.60
6.00	2.14	12.00	147.49	18.00	2.40	24.00	1.60

CALIB	
NASHYD (0101)	Area (ha)= 1.49 Curve Number (CN)= 54.0

ID= 1 DT= 1.0 min	Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.22

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	1.47	6.017	2.67	12.017	19.33	18.02	2.40
0.033	1.47	6.033	2.67	12.033	19.24	18.03	2.40
0.050	1.47	6.050	2.67	12.050	19.24	18.05	2.40
0.067	1.47	6.067	2.67	12.067	19.24	18.07	2.40
0.083	1.47	6.083	2.67	12.083	19.24	18.08	2.40
0.100	1.47	6.100	2.67	12.100	19.24	18.10	2.40
0.117	1.47	6.117	2.67	12.117	19.24	18.12	2.40
0.133	1.47	6.133	2.67	12.133	19.24	18.13	2.40
0.150	1.47	6.150	2.67	12.150	19.24	18.15	2.40
0.167	1.47	6.167	2.67	12.167	19.24	18.17	2.40
0.183	1.47	6.183	2.67	12.183	19.24	18.18	2.40
0.200	1.47	6.200	2.67	12.200	19.24	18.20	2.40
0.217	1.47	6.217	2.67	12.217	19.24	18.22	2.40
0.233	1.47	6.233	2.67	12.233	19.24	18.23	2.40
0.250	1.47	6.250	2.67	12.250	19.24	18.25	2.40
0.267	1.47	6.267	2.67	12.267	19.24	18.27	2.40
0.283	1.47	6.283	2.67	12.283	19.24	18.28	2.40
0.300	1.47	6.300	2.67	12.300	19.24	18.30	2.40
0.317	1.47	6.317	2.67	12.317	19.24	18.32	2.40
0.333	1.47	6.333	2.67	12.333	19.24	18.33	2.40
0.350	1.47	6.350	2.67	12.350	19.24	18.35	2.40
0.367	1.47	6.367	2.67	12.367	19.24	18.37	2.40
0.383	1.47	6.383	2.67	12.383	19.24	18.38	2.40
0.400	1.47	6.400	2.67	12.400	19.24	18.40	2.40
0.417	1.47	6.417	2.67	12.417	19.24	18.42	2.40
0.433	1.47	6.433	2.67	12.433	19.24	18.43	2.40
0.450	1.47	6.450	2.67	12.450	19.24	18.45	2.40
0.467	1.47	6.467	2.67	12.467	19.24	18.47	2.40
0.483	1.47	6.483	2.67	12.483	19.24	18.48	2.40
0.500	1.47	6.500	2.67	12.500	19.24	18.50	2.40
0.517	1.47	6.517	2.67	12.517	9.90	18.52	2.40
0.533	1.47	6.533	2.67	12.533	9.89	18.53	2.40
0.550	1.47	6.550	2.67	12.550	9.89	18.55	2.40
0.567	1.47	6.567	2.67	12.567	9.89	18.57	2.40
0.583	1.47	6.583	2.67	12.583	9.89	18.58	2.40
0.600	1.47	6.600	2.67	12.600	9.89	18.60	2.40
0.617	1.47	6.617	2.67	12.617	9.89	18.62	2.40
0.633	1.47	6.633	2.67	12.633	9.89	18.63	2.40
0.650	1.47	6.650	2.67	12.650	9.89	18.65	2.40
0.667	1.47	6.667	2.67	12.667	9.89	18.67	2.40

0.683	1.47	6.683	2.67	12.683	9.89	18.68	2.40
0.700	1.47	6.700	2.67	12.700	9.89	18.70	2.40
0.717	1.47	6.717	2.67	12.717	9.89	18.72	2.40
0.733	1.47	6.733	2.67	12.733	9.89	18.73	2.40
0.750	1.47	6.750	2.67	12.750	9.89	18.75	2.40
0.767	1.47	6.767	2.67	12.767	9.89	18.77	2.40
0.783	1.47	6.783	2.67	12.783	9.89	18.78	2.40
0.800	1.47	6.800	2.67	12.800	9.89	18.80	2.40
0.817	1.47	6.817	2.67	12.817	9.89	18.82	2.40
0.833	1.47	6.833	2.67	12.833	9.89	18.83	2.40
0.850	1.47	6.850	2.67	12.850	9.89	18.85	2.40
0.867	1.47	6.867	2.67	12.867	9.89	18.87	2.40
0.883	1.47	6.883	2.67	12.883	9.89	18.88	2.40
0.900	1.47	6.900	2.67	12.900	9.89	18.90	2.40
0.917	1.47	6.917	2.67	12.917	9.89	18.92	2.40
0.933	1.47	6.933	2.67	12.933	9.89	18.93	2.40
0.950	1.47	6.950	2.67	12.950	9.89	18.95	2.40
0.967	1.47	6.967	2.67	12.967	9.89	18.97	2.40
0.983	1.47	6.983	2.67	12.983	9.89	18.98	2.40
1.000	1.47	7.000	2.67	13.000	9.89	19.00	2.40
1.017	1.47	7.017	2.67	13.017	1.88	19.02	2.40
1.033	1.47	7.033	2.67	13.033	1.87	19.03	2.40
1.050	1.47	7.050	2.67	13.050	1.87	19.05	2.40
1.067	1.47	7.067	2.67	13.067	1.87	19.07	2.40
1.083	1.47	7.083	2.67	13.083	1.87	19.08	2.40
1.100	1.47	7.100	2.67	13.100	1.87	19.10	2.40
1.117	1.47	7.117	2.67	13.117	1.87	19.12	2.40
1.133	1.47	7.133	2.67	13.133	1.87	19.13	2.40
1.150	1.47	7.150	2.67	13.150	1.87	19.15	2.40
1.167	1.47	7.167	2.67	13.167	1.87	19.17	2.40
1.183	1.47	7.183	2.67	13.183	1.87	19.18	2.40
1.200	1.47	7.200	2.67	13.200	1.87	19.20	2.40
1.217	1.47	7.217	2.67	13.217	1.87	19.22	2.40
1.233	1.47	7.233	2.67	13.233	1.87	19.23	2.40
1.250	1.47	7.250	2.67	13.250	1.87	19.25	2.40
1.267	1.47	7.267	2.67	13.267	1.87	19.27	2.40
1.283	1.47	7.283	2.67	13.283	1.87	19.28	2.40
1.300	1.47	7.300	2.67	13.300	1.87	19.30	2.40
1.317	1.47	7.317	2.67	13.317	1.87	19.32	2.40
1.333	1.47	7.333	2.67	13.333	1.87	19.33	2.40
1.350	1.47	7.350	2.67	13.350	1.87	19.35	2.40
1.367	1.47	7.367	2.67	13.367	1.87	19.37	2.40
1.383	1.47	7.383	2.67	13.383	1.87	19.38	2.40
1.400	1.47	7.400	2.67	13.400	1.87	19.40	2.40
1.417	1.47	7.417	2.67	13.417	1.87	19.42	2.40
1.433	1.47	7.433	2.67	13.433	1.87	19.43	2.40
1.450	1.47	7.450	2.67	13.450	1.87	19.45	2.40
1.467	1.47	7.467	2.67	13.467	1.87	19.47	2.40
1.483	1.47	7.483	2.67	13.483	1.87	19.48	2.40

1.500	1.47	7.500	2.67	13.500	1.87	19.50	2.40
1.517	1.47	7.517	2.67	13.517	10.94	19.52	2.40
1.533	1.47	7.533	2.67	13.533	10.96	19.53	2.40
1.550	1.47	7.550	2.67	13.550	10.96	19.55	2.40
1.567	1.47	7.567	2.67	13.567	10.96	19.57	2.40
1.583	1.47	7.583	2.67	13.583	10.96	19.58	2.40
1.600	1.47	7.600	2.67	13.600	10.96	19.60	2.40
1.617	1.47	7.617	2.67	13.617	10.96	19.62	2.40
1.633	1.47	7.633	2.67	13.633	10.96	19.63	2.40
1.650	1.47	7.650	2.67	13.650	10.96	19.65	2.40
1.667	1.47	7.667	2.67	13.667	10.96	19.67	2.40
1.683	1.47	7.683	2.67	13.683	10.96	19.68	2.40
1.700	1.47	7.700	2.67	13.700	10.96	19.70	2.40
1.717	1.47	7.717	2.67	13.717	10.96	19.72	2.40
1.733	1.47	7.733	2.67	13.733	10.96	19.73	2.40
1.750	1.47	7.750	2.67	13.750	10.96	19.75	2.40
1.767	1.47	7.767	2.67	13.767	10.96	19.77	2.40
1.783	1.47	7.783	2.67	13.783	10.96	19.78	2.40
1.800	1.47	7.800	2.67	13.800	10.96	19.80	2.40
1.817	1.47	7.817	2.67	13.817	10.96	19.82	2.40
1.833	1.47	7.833	2.67	13.833	10.96	19.83	2.40
1.850	1.47	7.850	2.67	13.850	10.96	19.85	2.40
1.867	1.47	7.867	2.67	13.867	10.96	19.87	2.40
1.883	1.47	7.883	2.67	13.883	10.96	19.88	2.40
1.900	1.47	7.900	2.67	13.900	10.96	19.90	2.40
1.917	1.47	7.917	2.67	13.917	10.96	19.92	2.40
1.933	1.47	7.933	2.67	13.933	10.96	19.93	2.40
1.950	1.47	7.950	2.67	13.950	10.96	19.95	2.40
1.967	1.47	7.967	2.67	13.967	10.96	19.97	2.40
1.983	1.47	7.983	2.67	13.983	10.96	19.98	2.40
2.000	1.47	8.000	2.67	14.000	10.96	20.00	2.40
2.017	1.74	8.017	3.61	14.017	4.03	20.02	1.61
2.033	1.74	8.033	3.61	14.033	4.01	20.03	1.60
2.050	1.74	8.050	3.61	14.050	4.01	20.05	1.60
2.067	1.74	8.067	3.61	14.067	4.01	20.07	1.60
2.083	1.74	8.083	3.61	14.083	4.01	20.08	1.60
2.100	1.74	8.100	3.61	14.100	4.01	20.10	1.60
2.117	1.74	8.117	3.61	14.117	4.01	20.12	1.60
2.133	1.74	8.133	3.61	14.133	4.01	20.13	1.60
2.150	1.74	8.150	3.61	14.150	4.01	20.15	1.60
2.167	1.74	8.167	3.61	14.167	4.01	20.17	1.60
2.183	1.74	8.183	3.61	14.183	4.01	20.18	1.60
2.200	1.74	8.200	3.61	14.200	4.01	20.20	1.60
2.217	1.74	8.217	3.61	14.217	4.01	20.22	1.60
2.233	1.74	8.233	3.61	14.233	4.01	20.23	1.60
2.250	1.74	8.250	3.61	14.250	4.01	20.25	1.60
2.267	1.74	8.267	3.61	14.267	4.01	20.27	1.60
2.283	1.74	8.283	3.61	14.283	4.01	20.28	1.60
2.300	1.74	8.300	3.61	14.300	4.01	20.30	1.60

2.317	1.74	8.317	3.61	14.317	4.01	20.32	1.60
2.333	1.74	8.333	3.61	14.333	4.01	20.33	1.60
2.350	1.74	8.350	3.61	14.350	4.01	20.35	1.60
2.367	1.74	8.367	3.61	14.367	4.01	20.37	1.60
2.383	1.74	8.383	3.61	14.383	4.01	20.38	1.60
2.400	1.74	8.400	3.61	14.400	4.01	20.40	1.60
2.417	1.74	8.417	3.61	14.417	4.01	20.42	1.60
2.433	1.74	8.433	3.61	14.433	4.01	20.43	1.60
2.450	1.74	8.450	3.61	14.450	4.01	20.45	1.60
2.467	1.74	8.467	3.61	14.467	4.01	20.47	1.60
2.483	1.74	8.483	3.61	14.483	4.01	20.48	1.60
2.500	1.74	8.500	3.61	14.500	4.01	20.50	1.60
2.517	1.74	8.517	3.61	14.517	4.01	20.52	1.60
2.533	1.74	8.533	3.61	14.533	4.01	20.53	1.60
2.550	1.74	8.550	3.61	14.550	4.01	20.55	1.60
2.567	1.74	8.567	3.61	14.567	4.01	20.57	1.60
2.583	1.74	8.583	3.61	14.583	4.01	20.58	1.60
2.600	1.74	8.600	3.61	14.600	4.01	20.60	1.60
2.617	1.74	8.617	3.61	14.617	4.01	20.62	1.60
2.633	1.74	8.633	3.61	14.633	4.01	20.63	1.60
2.650	1.74	8.650	3.61	14.650	4.01	20.65	1.60
2.667	1.74	8.667	3.61	14.667	4.01	20.67	1.60
2.683	1.74	8.683	3.61	14.683	4.01	20.68	1.60
2.700	1.74	8.700	3.61	14.700	4.01	20.70	1.60
2.717	1.74	8.717	3.61	14.717	4.01	20.72	1.60
2.733	1.74	8.733	3.61	14.733	4.01	20.73	1.60
2.750	1.74	8.750	3.61	14.750	4.01	20.75	1.60
2.767	1.74	8.767	3.61	14.767	4.01	20.77	1.60
2.783	1.74	8.783	3.61	14.783	4.01	20.78	1.60
2.800	1.74	8.800	3.61	14.800	4.01	20.80	1.60
2.817	1.74	8.817	3.61	14.817	4.01	20.82	1.60
2.833	1.74	8.833	3.61	14.833	4.01	20.83	1.60
2.850	1.74	8.850	3.61	14.850	4.01	20.85	1.60
2.867	1.74	8.867	3.61	14.867	4.01	20.87	1.60
2.883	1.74	8.883	3.61	14.883	4.01	20.88	1.60
2.900	1.74	8.900	3.61	14.900	4.01	20.90	1.60
2.917	1.74	8.917	3.61	14.917	4.01	20.92	1.60
2.933	1.74	8.933	3.61	14.933	4.01	20.93	1.60
2.950	1.74	8.950	3.61	14.950	4.01	20.95	1.60
2.967	1.74	8.967	3.61	14.967	4.01	20.97	1.60
2.983	1.74	8.983	3.61	14.983	4.01	20.98	1.60
3.000	1.74	9.000	3.61	15.000	4.01	21.00	1.60
3.017	1.74	9.017	4.28	15.017	4.01	21.02	1.60
3.033	1.74	9.033	4.28	15.033	4.01	21.03	1.60
3.050	1.74	9.050	4.28	15.050	4.01	21.05	1.60
3.067	1.74	9.067	4.28	15.067	4.01	21.07	1.60
3.083	1.74	9.083	4.28	15.083	4.01	21.08	1.60
3.100	1.74	9.100	4.28	15.100	4.01	21.10	1.60
3.117	1.74	9.117	4.28	15.117	4.01	21.12	1.60

3.133	1.74	9.133	4.28	15.133	4.01	21.13	1.60
3.150	1.74	9.150	4.28	15.150	4.01	21.15	1.60
3.167	1.74	9.167	4.28	15.167	4.01	21.17	1.60
3.183	1.74	9.183	4.28	15.183	4.01	21.18	1.60
3.200	1.74	9.200	4.28	15.200	4.01	21.20	1.60
3.217	1.74	9.217	4.28	15.217	4.01	21.22	1.60
3.233	1.74	9.233	4.28	15.233	4.01	21.23	1.60
3.250	1.74	9.250	4.28	15.250	4.01	21.25	1.60
3.267	1.74	9.267	4.28	15.267	4.01	21.27	1.60
3.283	1.74	9.283	4.28	15.283	4.01	21.28	1.60
3.300	1.74	9.300	4.28	15.300	4.01	21.30	1.60
3.317	1.74	9.317	4.28	15.317	4.01	21.32	1.60
3.333	1.74	9.333	4.28	15.333	4.01	21.33	1.60
3.350	1.74	9.350	4.28	15.350	4.01	21.35	1.60
3.367	1.74	9.367	4.28	15.367	4.01	21.37	1.60
3.383	1.74	9.383	4.28	15.383	4.01	21.38	1.60
3.400	1.74	9.400	4.28	15.400	4.01	21.40	1.60
3.417	1.74	9.417	4.28	15.417	4.01	21.42	1.60
3.433	1.74	9.433	4.28	15.433	4.01	21.43	1.60
3.450	1.74	9.450	4.28	15.450	4.01	21.45	1.60
3.467	1.74	9.467	4.28	15.467	4.01	21.47	1.60
3.483	1.74	9.483	4.28	15.483	4.01	21.48	1.60
3.500	1.74	9.500	4.28	15.500	4.01	21.50	1.60
3.517	1.74	9.517	4.81	15.517	4.01	21.52	1.60
3.533	1.74	9.533	4.81	15.533	4.01	21.53	1.60
3.550	1.74	9.550	4.81	15.550	4.01	21.55	1.60
3.567	1.74	9.567	4.81	15.567	4.01	21.57	1.60
3.583	1.74	9.583	4.81	15.583	4.01	21.58	1.60
3.600	1.74	9.600	4.81	15.600	4.01	21.60	1.60
3.617	1.74	9.617	4.81	15.617	4.01	21.62	1.60
3.633	1.74	9.633	4.81	15.633	4.01	21.63	1.60
3.650	1.74	9.650	4.81	15.650	4.01	21.65	1.60
3.667	1.74	9.667	4.81	15.667	4.01	21.67	1.60
3.683	1.74	9.683	4.81	15.683	4.01	21.68	1.60
3.700	1.74	9.700	4.81	15.700	4.01	21.70	1.60
3.717	1.74	9.717	4.81	15.717	4.01	21.72	1.60
3.733	1.74	9.733	4.81	15.733	4.01	21.73	1.60
3.750	1.74	9.750	4.81	15.750	4.01	21.75	1.60
3.767	1.74	9.767	4.81	15.767	4.01	21.77	1.60
3.783	1.74	9.783	4.81	15.783	4.01	21.78	1.60
3.800	1.74	9.800	4.81	15.800	4.01	21.80	1.60
3.817	1.74	9.817	4.81	15.817	4.01	21.82	1.60
3.833	1.74	9.833	4.81	15.833	4.01	21.83	1.60
3.850	1.74	9.850	4.81	15.850	4.01	21.85	1.60
3.867	1.74	9.867	4.81	15.867	4.01	21.87	1.60
3.883	1.74	9.883	4.81	15.883	4.01	21.88	1.60
3.900	1.74	9.900	4.81	15.900	4.01	21.90	1.60
3.917	1.74	9.917	4.81	15.917	4.01	21.92	1.60
3.933	1.74	9.933	4.81	15.933	4.01	21.93	1.60

3.950	1.74	9.950	4.81	15.950	4.01	21.95	1.60
3.967	1.74	9.967	4.81	15.967	4.01	21.97	1.60
3.983	1.74	9.983	4.81	15.983	4.01	21.98	1.60
4.000	1.74	10.000	4.81	16.000	4.01	22.00	1.60
4.017	2.14	10.017	6.15	16.017	2.41	22.02	1.60
4.033	2.14	10.033	6.15	16.033	2.40	22.03	1.60
4.050	2.14	10.050	6.15	16.050	2.40	22.05	1.60
4.067	2.14	10.067	6.15	16.067	2.40	22.07	1.60
4.083	2.14	10.083	6.15	16.083	2.40	22.08	1.60
4.100	2.14	10.100	6.15	16.100	2.40	22.10	1.60
4.117	2.14	10.117	6.15	16.117	2.40	22.12	1.60
4.133	2.14	10.133	6.15	16.133	2.40	22.13	1.60
4.150	2.14	10.150	6.15	16.150	2.40	22.15	1.60
4.167	2.14	10.167	6.15	16.167	2.40	22.17	1.60
4.183	2.14	10.183	6.15	16.183	2.40	22.18	1.60
4.200	2.14	10.200	6.15	16.200	2.40	22.20	1.60
4.217	2.14	10.217	6.15	16.217	2.40	22.22	1.60
4.233	2.14	10.233	6.15	16.233	2.40	22.23	1.60
4.250	2.14	10.250	6.15	16.250	2.40	22.25	1.60
4.267	2.14	10.267	6.15	16.267	2.40	22.27	1.60
4.283	2.14	10.283	6.15	16.283	2.40	22.28	1.60
4.300	2.14	10.300	6.15	16.300	2.40	22.30	1.60
4.317	2.14	10.317	6.15	16.317	2.40	22.32	1.60
4.333	2.14	10.333	6.15	16.333	2.40	22.33	1.60
4.350	2.14	10.350	6.15	16.350	2.40	22.35	1.60
4.367	2.14	10.367	6.15	16.367	2.40	22.37	1.60
4.383	2.14	10.383	6.15	16.383	2.40	22.38	1.60
4.400	2.14	10.400	6.15	16.400	2.40	22.40	1.60
4.417	2.14	10.417	6.15	16.417	2.40	22.42	1.60
4.433	2.14	10.433	6.15	16.433	2.40	22.43	1.60
4.450	2.14	10.450	6.15	16.450	2.40	22.45	1.60
4.467	2.14	10.467	6.15	16.467	2.40	22.47	1.60
4.483	2.14	10.483	6.15	16.483	2.40	22.48	1.60
4.500	2.14	10.500	6.15	16.500	2.40	22.50	1.60
4.517	2.14	10.517	8.28	16.517	2.40	22.52	1.60
4.533	2.14	10.533	8.28	16.533	2.40	22.53	1.60
4.550	2.14	10.550	8.28	16.550	2.40	22.55	1.60
4.567	2.14	10.567	8.28	16.567	2.40	22.57	1.60
4.583	2.14	10.583	8.28	16.583	2.40	22.58	1.60
4.600	2.14	10.600	8.28	16.600	2.40	22.60	1.60
4.617	2.14	10.617	8.28	16.617	2.40	22.62	1.60
4.633	2.14	10.633	8.28	16.633	2.40	22.63	1.60
4.650	2.14	10.650	8.28	16.650	2.40	22.65	1.60
4.667	2.14	10.667	8.28	16.667	2.40	22.67	1.60
4.683	2.14	10.683	8.28	16.683	2.40	22.68	1.60
4.700	2.14	10.700	8.28	16.700	2.40	22.70	1.60
4.717	2.14	10.717	8.28	16.717	2.40	22.72	1.60
4.733	2.14	10.733	8.28	16.733	2.40	22.73	1.60
4.750	2.14	10.750	8.28	16.750	2.40	22.75	1.60

4.767	2.14	10.767	8.28	16.767	2.40	22.77	1.60
4.783	2.14	10.783	8.28	16.783	2.40	22.78	1.60
4.800	2.14	10.800	8.28	16.800	2.40	22.80	1.60
4.817	2.14	10.817	8.28	16.817	2.40	22.82	1.60
4.833	2.14	10.833	8.28	16.833	2.40	22.83	1.60
4.850	2.14	10.850	8.28	16.850	2.40	22.85	1.60
4.867	2.14	10.867	8.28	16.867	2.40	22.87	1.60
4.883	2.14	10.883	8.28	16.883	2.40	22.88	1.60
4.900	2.14	10.900	8.28	16.900	2.40	22.90	1.60
4.917	2.14	10.917	8.28	16.917	2.40	22.92	1.60
4.933	2.14	10.933	8.28	16.933	2.40	22.93	1.60
4.950	2.14	10.950	8.28	16.950	2.40	22.95	1.60
4.967	2.14	10.967	8.28	16.967	2.40	22.97	1.60
4.983	2.14	10.983	8.28	16.983	2.40	22.98	1.60
5.000	2.14	11.000	8.28	17.000	2.40	23.00	1.60
5.017	2.14	11.017	12.83	17.017	2.40	23.02	1.60
5.033	2.14	11.033	12.83	17.033	2.40	23.03	1.60
5.050	2.14	11.050	12.83	17.050	2.40	23.05	1.60
5.067	2.14	11.067	12.83	17.067	2.40	23.07	1.60
5.083	2.14	11.083	12.83	17.083	2.40	23.08	1.60
5.100	2.14	11.100	12.83	17.100	2.40	23.10	1.60
5.117	2.14	11.117	12.83	17.117	2.40	23.12	1.60
5.133	2.14	11.133	12.83	17.133	2.40	23.13	1.60
5.150	2.14	11.150	12.83	17.150	2.40	23.15	1.60
5.167	2.14	11.167	12.83	17.167	2.40	23.17	1.60
5.183	2.14	11.183	12.83	17.183	2.40	23.18	1.60
5.200	2.14	11.200	12.83	17.200	2.40	23.20	1.60
5.217	2.14	11.217	12.83	17.217	2.40	23.22	1.60
5.233	2.14	11.233	12.83	17.233	2.40	23.23	1.60
5.250	2.14	11.250	12.83	17.250	2.40	23.25	1.60
5.267	2.14	11.267	12.83	17.267	2.40	23.27	1.60
5.283	2.14	11.283	12.83	17.283	2.40	23.28	1.60
5.300	2.14	11.300	12.83	17.300	2.40	23.30	1.60
5.317	2.14	11.317	12.83	17.317	2.40	23.32	1.60
5.333	2.14	11.333	12.83	17.333	2.40	23.33	1.60
5.350	2.14	11.350	12.83	17.350	2.40	23.35	1.60
5.367	2.14	11.367	12.83	17.367	2.40	23.37	1.60
5.383	2.14	11.383	12.83	17.383	2.40	23.38	1.60
5.400	2.14	11.400	12.83	17.400	2.40	23.40	1.60
5.417	2.14	11.417	12.83	17.417	2.40	23.42	1.60
5.433	2.14	11.433	12.83	17.433	2.40	23.43	1.60
5.450	2.14	11.450	12.83	17.450	2.40	23.45	1.60
5.467	2.14	11.467	12.83	17.467	2.40	23.47	1.60
5.483	2.14	11.483	12.83	17.483	2.40	23.48	1.60
5.500	2.14	11.500	12.83	17.500	2.40	23.50	1.60
5.517	2.14	11.517	55.57	17.517	2.40	23.52	1.60
5.533	2.14	11.533	55.58	17.533	2.40	23.53	1.60
5.550	2.14	11.550	55.58	17.550	2.40	23.55	1.60
5.567	2.14	11.567	55.58	17.567	2.40	23.57	1.60

5.583	2.14	11.583	55.58	17.583	2.40	23.58	1.60
5.600	2.14	11.600	55.58	17.600	2.40	23.60	1.60
5.617	2.14	11.617	55.58	17.617	2.40	23.62	1.60
5.633	2.14	11.633	55.58	17.633	2.40	23.63	1.60
5.650	2.14	11.650	55.58	17.650	2.40	23.65	1.60
5.667	2.14	11.667	55.58	17.667	2.40	23.67	1.60
5.683	2.14	11.683	55.58	17.683	2.40	23.68	1.60
5.700	2.14	11.700	55.58	17.700	2.40	23.70	1.60
5.717	2.14	11.717	55.58	17.717	2.40	23.72	1.60
5.733	2.14	11.733	55.58	17.733	2.40	23.73	1.60
5.750	2.14	11.750	55.58	17.750	2.40	23.75	1.60
5.767	2.14	11.767	147.45	17.767	2.40	23.77	1.60
5.783	2.14	11.783	147.49	17.783	2.40	23.78	1.60
5.800	2.14	11.800	147.49	17.800	2.40	23.80	1.60
5.817	2.14	11.817	147.49	17.817	2.40	23.82	1.60
5.833	2.14	11.833	147.49	17.833	2.40	23.83	1.60
5.850	2.14	11.850	147.49	17.850	2.40	23.85	1.60
5.867	2.14	11.867	147.49	17.867	2.40	23.87	1.60
5.883	2.14	11.883	147.49	17.883	2.40	23.88	1.60
5.900	2.14	11.900	147.49	17.900	2.40	23.90	1.60
5.917	2.14	11.917	147.49	17.917	2.40	23.92	1.60
5.933	2.14	11.933	147.49	17.933	2.40	23.93	1.60
5.950	2.14	11.950	147.49	17.950	2.40	23.95	1.60
5.967	2.14	11.967	147.49	17.967	2.40	23.97	1.60
5.983	2.14	11.983	147.49	17.983	2.40	23.98	1.60
6.000	2.14	12.000	147.49	18.000	2.40	24.00	1.60

Unit Hyd Qpeak (cms)= 0.259

PEAK FLOW (cms)= 0.152 (i)
TIME TO PEAK (hrs)= 12.117
RUNOFF VOLUME (mm)= 36.138
TOTAL RAINFALL (mm)= 133.601
RUNOFF COEFFICIENT = 0.270

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

CALIB					
NASHYD (0002)	Area (ha)=	0.98	Curve Number (CN)=	64.0	
ID= 1 DT= 1.0 min	Ia (mm)=	7.21	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.31			

Unit Hyd Qpeak (cms)= 0.121

PEAK FLOW (cms)= 0.107 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 48.347

TOTAL RAINFALL (mm)= 133.601
RUNOFF COEFFICIENT = 0.362

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

ADD HYD (0004)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):		1.49	0.152	12.12	36.14
+ ID2= 2 (0002):		0.98	0.107	12.20	48.35
ID = 3 (0004):		2.47	0.255	12.13	50.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0102)	Area (ha)=	0.66	Curve Number (CN)=	54.0	
ID= 1 DT= 1.0 min	Ia (mm)=	10.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.63			

Unit Hyd Qpeak (cms)= 0.040

PEAK FLOW (cms)= 0.032 (i)
TIME TO PEAK (hrs)= 12.583
RUNOFF VOLUME (mm)= 34.995
TOTAL RAINFALL (mm)= 133.601
RUNOFF COEFFICIENT = 0.262

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

CALIB					
STANDHYD (0001)	Area (ha)=	0.45			
ID= 1 DT= 1.0 min	Total Imp(%)=	30.00	Dir. Conn.(%)=	5.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.31
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	2.00
Length	(m)=	54.77	40.00
Mannings n	=	0.013	0.035

Max.Eff.Inten.(mm/hr)= 147.49 139.67

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                over (min)        5.00         7.00
      Storage Coeff.  (min)=      1.24 (ii)    6.57 (ii)
      Unit Hyd. Tpeak (min)=      5.00         7.00
      Unit Hyd. peak  (cms)=      0.45         0.17
                                                      *TOTALS*
      PEAK FLOW       (cms)=      0.01         0.10          0.113 (iii)
      TIME TO PEAK    (hrs)=     12.00        12.02          12.02
      RUNOFF VOLUME    (mm)=    132.61        77.42          80.18
      TOTAL RAINFALL   (mm)=    133.60       133.60         133.60
      RUNOFF COEFFICIENT   =      0.99         0.58           0.60

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.113    12.02    80.18
      + ID2= 2 (  0102):     0.66   0.032    12.58    35.00
        ====================================================
        ID = 3 (  0005):     1.11   0.126    12.02    59.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\653
d8d03-5139-4b32-9d17-978a20a43547\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\653
d8d03-5139-4b32-9d17-978a20a43547\sce


DATE: 11-25-2019                          TIME: 10:47:59

USER:


COMMENTS: _____________________________________________________


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  ***********************************************
  ** SIMULATION : Hazel                        **
  ***********************************************


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|    READ STORM    |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ed2bd9a1-0349-4b34-8ffd-5a876811428b\60210d32
| Ptotal=212.00 mm |    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            |
| NASHYD   (  0101)|   Area    (ha)=   1.49   Curve Number   (CN)= 54.0
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|ID= 1 DT= 1.0 min | Ia (mm)= 10.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 0.22

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	6.00	3.017	13.00	6.017	23.00	9.02	53.00
0.033	6.00	3.033	13.00	6.033	23.00	9.03	53.00
0.050	6.00	3.050	13.00	6.050	23.00	9.05	53.00
0.067	6.00	3.067	13.00	6.067	23.00	9.07	53.00
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.100	6.00	3.100	13.00	6.100	23.00	9.10	53.00
0.117	6.00	3.117	13.00	6.117	23.00	9.12	53.00
0.133	6.00	3.133	13.00	6.133	23.00	9.13	53.00
0.150	6.00	3.150	13.00	6.150	23.00	9.15	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.183	6.00	3.183	13.00	6.183	23.00	9.18	53.00
0.200	6.00	3.200	13.00	6.200	23.00	9.20	53.00
0.217	6.00	3.217	13.00	6.217	23.00	9.22	53.00
0.233	6.00	3.233	13.00	6.233	23.00	9.23	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.267	6.00	3.267	13.00	6.267	23.00	9.27	53.00
0.283	6.00	3.283	13.00	6.283	23.00	9.28	53.00
0.300	6.00	3.300	13.00	6.300	23.00	9.30	53.00
0.317	6.00	3.317	13.00	6.317	23.00	9.32	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.350	6.00	3.350	13.00	6.350	23.00	9.35	53.00
0.367	6.00	3.367	13.00	6.367	23.00	9.37	53.00
0.383	6.00	3.383	13.00	6.383	23.00	9.38	53.00
0.400	6.00	3.400	13.00	6.400	23.00	9.40	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.433	6.00	3.433	13.00	6.433	23.00	9.43	53.00
0.450	6.00	3.450	13.00	6.450	23.00	9.45	53.00
0.467	6.00	3.467	13.00	6.467	23.00	9.47	53.00
0.483	6.00	3.483	13.00	6.483	23.00	9.48	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.517	6.00	3.517	13.00	6.517	23.00	9.52	53.00
0.533	6.00	3.533	13.00	6.533	23.00	9.53	53.00
0.550	6.00	3.550	13.00	6.550	23.00	9.55	53.00
0.567	6.00	3.567	13.00	6.567	23.00	9.57	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.600	6.00	3.600	13.00	6.600	23.00	9.60	53.00
0.617	6.00	3.617	13.00	6.617	23.00	9.62	53.00
0.633	6.00	3.633	13.00	6.633	23.00	9.63	53.00
0.650	6.00	3.650	13.00	6.650	23.00	9.65	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00

0.683	6.00	3.683	13.00	6.683	23.00	9.68	53.00
0.700	6.00	3.700	13.00	6.700	23.00	9.70	53.00
0.717	6.00	3.717	13.00	6.717	23.00	9.72	53.00
0.733	6.00	3.733	13.00	6.733	23.00	9.73	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.767	6.00	3.767	13.00	6.767	23.00	9.77	53.00
0.783	6.00	3.783	13.00	6.783	23.00	9.78	53.00
0.800	6.00	3.800	13.00	6.800	23.00	9.80	53.00
0.817	6.00	3.817	13.00	6.817	23.00	9.82	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.850	6.00	3.850	13.00	6.850	23.00	9.85	53.00
0.867	6.00	3.867	13.00	6.867	23.00	9.87	53.00
0.883	6.00	3.883	13.00	6.883	23.00	9.88	53.00
0.900	6.00	3.900	13.00	6.900	23.00	9.90	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
0.933	6.00	3.933	13.00	6.933	23.00	9.93	53.00
0.950	6.00	3.950	13.00	6.950	23.00	9.95	53.00
0.967	6.00	3.967	13.00	6.967	23.00	9.97	53.00
0.983	6.00	3.983	13.00	6.983	23.00	9.98	53.00
1.000	6.00	4.000	13.00	7.000	22.98	10.00	52.98
1.017	4.00	4.017	17.00	7.017	13.00	10.02	38.00
1.033	4.00	4.033	17.00	7.033	13.00	10.03	38.00
1.050	4.00	4.050	17.00	7.050	13.00	10.05	38.00
1.067	4.00	4.067	17.00	7.067	13.00	10.07	38.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.100	4.00	4.100	17.00	7.100	13.00	10.10	38.00
1.117	4.00	4.117	17.00	7.117	13.00	10.12	38.00
1.133	4.00	4.133	17.00	7.133	13.00	10.13	38.00
1.150	4.00	4.150	17.00	7.150	13.00	10.15	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.183	4.00	4.183	17.00	7.183	13.00	10.18	38.00
1.200	4.00	4.200	17.00	7.200	13.00	10.20	38.00
1.217	4.00	4.217	17.00	7.217	13.00	10.22	38.00
1.233	4.00	4.233	17.00	7.233	13.00	10.23	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.267	4.00	4.267	17.00	7.267	13.00	10.27	38.00
1.283	4.00	4.283	17.00	7.283	13.00	10.28	38.00
1.300	4.00	4.300	17.00	7.300	13.00	10.30	38.00
1.317	4.00	4.317	17.00	7.317	13.00	10.32	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.350	4.00	4.350	17.00	7.350	13.00	10.35	38.00
1.367	4.00	4.367	17.00	7.367	13.00	10.37	38.00
1.383	4.00	4.383	17.00	7.383	13.00	10.38	38.00
1.400	4.00	4.400	17.00	7.400	13.00	10.40	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.433	4.00	4.433	17.00	7.433	13.00	10.43	38.00
1.450	4.00	4.450	17.00	7.450	13.00	10.45	38.00
1.467	4.00	4.467	17.00	7.467	13.00	10.47	38.00
1.483	4.00	4.483	17.00	7.483	13.00	10.48	38.00

1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.517	4.00	4.517	17.00	7.517	13.00	10.52	38.00
1.533	4.00	4.533	17.00	7.533	13.00	10.53	38.00
1.550	4.00	4.550	17.00	7.550	13.00	10.55	38.00
1.567	4.00	4.567	17.00	7.567	13.00	10.57	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.600	4.00	4.600	17.00	7.600	13.00	10.60	38.00
1.617	4.00	4.617	17.00	7.617	13.00	10.62	38.00
1.633	4.00	4.633	17.00	7.633	13.00	10.63	38.00
1.650	4.00	4.650	17.00	7.650	13.00	10.65	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.683	4.00	4.683	17.00	7.683	13.00	10.68	38.00
1.700	4.00	4.700	17.00	7.700	13.00	10.70	38.00
1.717	4.00	4.717	17.00	7.717	13.00	10.72	38.00
1.733	4.00	4.733	17.00	7.733	13.00	10.73	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.767	4.00	4.767	17.00	7.767	13.00	10.77	38.00
1.783	4.00	4.783	17.00	7.783	13.00	10.78	38.00
1.800	4.00	4.800	17.00	7.800	13.00	10.80	38.00
1.817	4.00	4.817	17.00	7.817	13.00	10.82	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.850	4.00	4.850	17.00	7.850	13.00	10.85	38.00
1.867	4.00	4.867	17.00	7.867	13.00	10.87	38.00
1.883	4.00	4.883	17.00	7.883	13.00	10.88	38.00
1.900	4.00	4.900	17.00	7.900	13.00	10.90	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
1.933	4.00	4.933	17.00	7.933	13.00	10.93	38.00
1.950	4.00	4.950	17.00	7.950	13.00	10.95	38.00
1.967	4.00	4.967	17.00	7.967	13.00	10.97	38.00
1.983	4.00	4.983	17.00	7.983	13.00	10.98	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	37.99
2.017	6.00	5.017	13.00	8.017	13.00	11.02	13.00
2.033	6.00	5.033	13.00	8.033	13.00	11.03	13.00
2.050	6.00	5.050	13.00	8.050	13.00	11.05	13.00
2.067	6.00	5.067	13.00	8.067	13.00	11.07	13.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.100	6.00	5.100	13.00	8.100	13.00	11.10	13.00
2.117	6.00	5.117	13.00	8.117	13.00	11.12	13.00
2.133	6.00	5.133	13.00	8.133	13.00	11.13	13.00
2.150	6.00	5.150	13.00	8.150	13.00	11.15	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.183	6.00	5.183	13.00	8.183	13.00	11.18	13.00
2.200	6.00	5.200	13.00	8.200	13.00	11.20	13.00
2.217	6.00	5.217	13.00	8.217	13.00	11.22	13.00
2.233	6.00	5.233	13.00	8.233	13.00	11.23	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.267	6.00	5.267	13.00	8.267	13.00	11.27	13.00
2.283	6.00	5.283	13.00	8.283	13.00	11.28	13.00
2.300	6.00	5.300	13.00	8.300	13.00	11.30	13.00

2.317	6.00	5.317	13.00	8.317	13.00	11.32	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.350	6.00	5.350	13.00	8.350	13.00	11.35	13.00
2.367	6.00	5.367	13.00	8.367	13.00	11.37	13.00
2.383	6.00	5.383	13.00	8.383	13.00	11.38	13.00
2.400	6.00	5.400	13.00	8.400	13.00	11.40	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.433	6.00	5.433	13.00	8.433	13.00	11.43	13.00
2.450	6.00	5.450	13.00	8.450	13.00	11.45	13.00
2.467	6.00	5.467	13.00	8.467	13.00	11.47	13.00
2.483	6.00	5.483	13.00	8.483	13.00	11.48	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.517	6.00	5.517	13.00	8.517	13.00	11.52	13.00
2.533	6.00	5.533	13.00	8.533	13.00	11.53	13.00
2.550	6.00	5.550	13.00	8.550	13.00	11.55	13.00
2.567	6.00	5.567	13.00	8.567	13.00	11.57	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.600	6.00	5.600	13.00	8.600	13.00	11.60	13.00
2.617	6.00	5.617	13.00	8.617	13.00	11.62	13.00
2.633	6.00	5.633	13.00	8.633	13.00	11.63	13.00
2.650	6.00	5.650	13.00	8.650	13.00	11.65	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.683	6.00	5.683	13.00	8.683	13.00	11.68	13.00
2.700	6.00	5.700	13.00	8.700	13.00	11.70	13.00
2.717	6.00	5.717	13.00	8.717	13.00	11.72	13.00
2.733	6.00	5.733	13.00	8.733	13.00	11.73	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.767	6.00	5.767	13.00	8.767	13.00	11.77	13.00
2.783	6.00	5.783	13.00	8.783	13.00	11.78	13.00
2.800	6.00	5.800	13.00	8.800	13.00	11.80	13.00
2.817	6.00	5.817	13.00	8.817	13.00	11.82	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.850	6.00	5.850	13.00	8.850	13.00	11.85	13.00
2.867	6.00	5.867	13.00	8.867	13.00	11.87	13.00
2.883	6.00	5.883	13.00	8.883	13.00	11.88	13.00
2.900	6.00	5.900	13.00	8.900	13.00	11.90	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
2.933	6.00	5.933	13.00	8.933	13.00	11.93	13.00
2.950	6.00	5.950	13.00	8.950	13.00	11.95	13.00
2.967	6.00	5.967	13.00	8.967	13.00	11.97	13.00
2.983	6.00	5.983	13.00	8.983	13.00	11.98	13.00
3.000	6.00	6.000	13.01	9.000	13.08	12.00	13.00

```
Unit Hyd Qpeak  (cms)=   0.259

PEAK FLOW       (cms)=   0.136 (i)
TIME TO PEAK    (hrs)=  10.050
RUNOFF VOLUME    (mm)=  97.531
TOTAL RAINFALL   (mm)= 212.001
```

```
     RUNOFF COEFFICIENT   =   0.460

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

-------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD   (  0002)|   Area    (ha)=   0.98   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.31

     Unit Hyd Qpeak  (cms)=   0.121

     PEAK FLOW       (cms)=   0.103 (i)
     TIME TO PEAK    (hrs)=  10.100
     RUNOFF VOLUME    (mm)= 120.630
     TOTAL RAINFALL   (mm)= 212.001
     RUNOFF COEFFICIENT   =   0.569

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

-------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0004)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0101):     1.49   0.136    10.05    97.53
      + ID2= 2 (  0002):     0.98   0.103    10.10   120.63
        ================================================
        ID = 3 (  0004):     2.47   0.238    10.07   106.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD   (  0102)|   Area    (ha)=   0.66   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.63

     Unit Hyd Qpeak  (cms)=   0.040

     PEAK FLOW       (cms)=   0.050 (i)
     TIME TO PEAK    (hrs)=  10.750
     RUNOFF VOLUME    (mm)=  97.531
     TOTAL RAINFALL   (mm)= 212.001
     RUNOFF COEFFICIENT   =   0.460
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     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.31
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      54.77         40.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=      53.00         62.31
               over (min)        5.00         10.00
     Storage Coeff.  (min)=       1.86 (ii)     9.90 (ii)
     Unit Hyd. Tpeak (min)=       5.00         10.00
     Unit Hyd. peak  (cms)=       0.39          0.11
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00          0.05          0.057 (iii)
     TIME TO PEAK    (hrs)=       9.38         10.00          10.00
     RUNOFF VOLUME    (mm)=     211.00        146.41         149.63
     TOTAL RAINFALL   (mm)=     212.00        212.00         212.00
     RUNOFF COEFFICIENT   =       1.00          0.69           0.71

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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-------------------
| ADD HYD  (  0005)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.057    10.00   149.63
      + ID2= 2 (  0102):     0.66   0.050    10.75    97.53
        ================================================
        ID = 3 (  0005):     1.11   0.098    10.07   118.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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 FINISH
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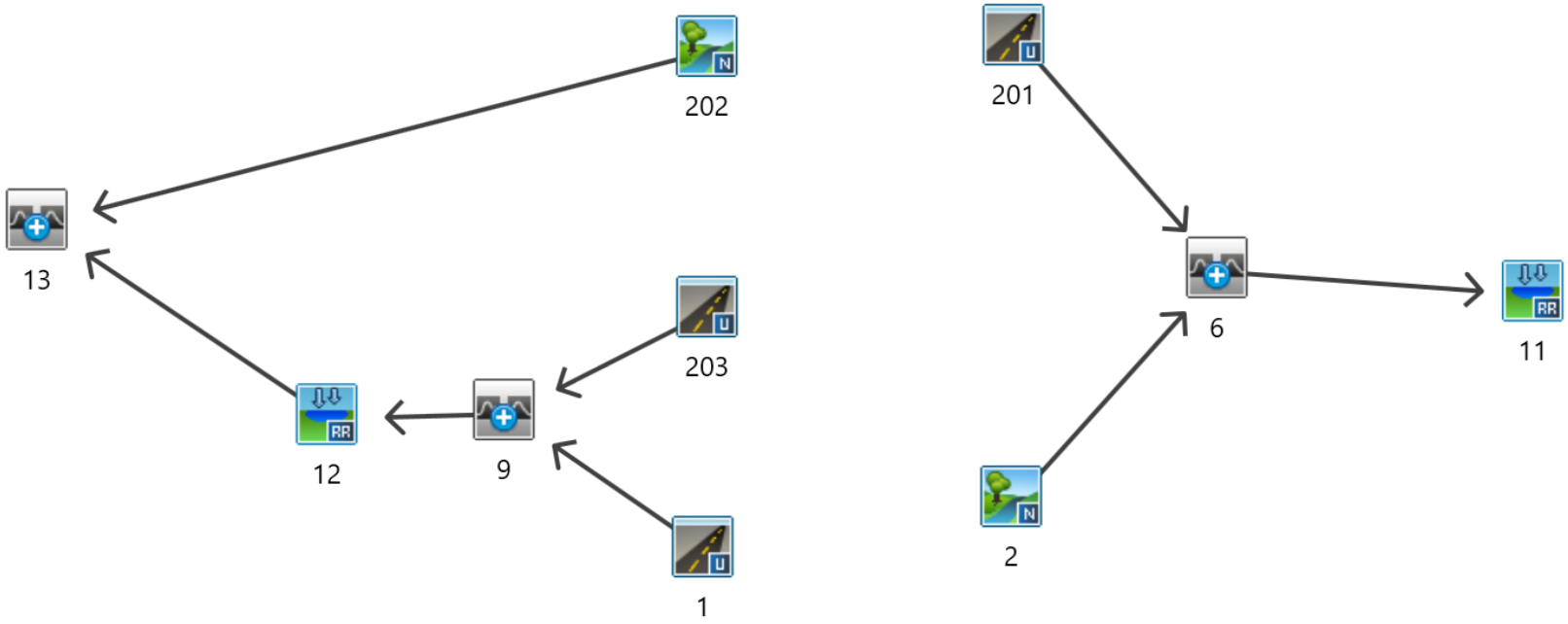
POST-DEVELOPMENT SCHEMATIC



CROZIER
CONSULTING ENGINEERS

Project: 428 Little Avenue
Project No.: 0892-4560
Design by: ML
Checked by:
Date: 2019.11.21

428 Little Avenue

City of Barrie, Ontario

Stage - Discharge - Storage Operation: Whiskey Creek Underground Storage

Control	Coefficient "C"	Inv. Elev. (m)	D or L (m)	Lip Elev. (m)	Description
Orifice 1	0.63	244.320	0.08	244.6	
Oriffice 2	0.63	244.705	0.14	244.6	

Orifice: Q=C*A*(2*g*H)0.5

Pond WS Elev. (m)	Depth Above Base (m)	Area (sq.m)	Storage Volume (cu.m)	1st Orifice Head (m)	Discharge (cu.m/s)	2nd Orifice Head (m)	Discharge (cu.m/s)	Total Discharge (cu.m/s)	Storage (ha-m)
244.60	0.00	639	0	0.28	0.000	-0.105	0.000	0.000	0.000
244.70	0.10	639	64	0.38	0.009	-0.005	0.000	0.009	0.006
244.80	0.20	639	128	0.48	0.010	0.095	0.013	0.023	0.013
244.90	0.30	639	192	0.58	0.011	0.195	0.019	0.030	0.019
245.00	0.40	639	256	0.68	0.012	0.295	0.023	0.035	0.026
245.10	0.50	639	319	0.78	0.012	0.395	0.027	0.039	0.032
245.20	0.60	639	383	0.88	0.013	0.495	0.030	0.043	0.038
245.30	0.70	639	447	0.98	0.014	0.595	0.033	0.047	0.045
245.40	0.80	639	511	1.08	0.015	0.695	0.036	0.050	0.051

CROZIER
CONSULTING ENGINEERS

Project: 428 Little Avenue
Project No.: 0892-4560
Design by: ML
Checked by:
Date: 2019.11.21

428 Little Avenue

City of Barrie, Ontario

Stage - Discharge - Storage Operation: Lovers Creek Dry Pond

Control	Coefficient "C"	Inv. Elev. (m)	D or L (m)	Lip Elev. (m)	Description
Orifice 1	0.63	240.88	0.085	241.25	
Weir "A"	1.5	242.8	5	242.8	Spillway

Orifice: $Q=C*A*(2*g*H)^{0.5}$

Pond WS Elev. (m)	Depth Above Base (m)	Area (sq.m)	Storage Volume (cu.m)	1st Orifice Head (m)	Discharge (cu.m/s)	Weir "A" Head (m)	Discharge (cu.m/s)	Total Discharge (cu.m/s)	Storage (ha-m)
241.25	0.00	146	0	0.370	0.000	0.00	0.000	0.000	0.000
241.50	0.25	469	77	0.62	0.012	0.00	0.000	0.012	0.008
241.75	0.50	555	205	0.87	0.015	0.00	0.000	0.015	0.020
242.00	0.75	644	355	1.12	0.017	0.00	0.000	0.017	0.035
242.25	1.00	738	528	1.37	0.019	0.00	0.000	0.019	0.053
242.50	1.25	836	724	1.62	0.020	0.00	0.000	0.020	0.072
242.75	1.50	938	946	1.87	0.022	0.00	0.000	0.022	0.095
243.00	1.75	1044	1194	2.12	0.023	0.20	0.671	0.694	0.119

CROZIER CONSULTING ENGINEERS

Project Name: Little Avenue
Project Number: 0892-4560
Date: November 21, 2019
By: ML
Checked by:

		Post-Development											
		Qpeak											
	Catchment	Whiskey Creek							Lovers Creek				
		1	203	ADD 9	RR12	Storage (m^3)	202	ADD13	2	201	ADD 6	RR6	Storage (m^3)
24-hr SCS Type II	2-yr	0.025	0.066	0.089	0.019	**108**	0.004	**0.022**	0.020	0.104	0.116	**0.014**	**176**
	5-yr	0.044	0.101	0.144	0.028	**174**	0.008	**0.036**	0.038	0.163	0.188	**0.017**	**319**
	10-yr	0.060	0.125	0.184	0.033	**225**	0.012	**0.044**	0.052	0.204	0.238	**0.018**	**427**
	25-yr	0.080	0.157	0.235	0.037	**296**	0.017	**0.054**	0.072	0.258	0.305	**0.019**	**583**
	50-yr	0.097	0.182	0.277	0.041	**352**	0.021	**0.062**	0.088	0.299	0.357	**0.020**	**713**
	100-yr	0.113	0.205	0.317	0.045	**409**	0.025	**0.069**	0.104	0.340	0.409	**0.021**	**847**
12-hr SCS Type II	2-yr	0.022	0.064	0.085	0.017	**100**	0.003	**0.020**	0.016	0.101	0.110	**0.014**	**156**
	5-yr	0.041	0.098	0.137	0.027	**161**	0.007	**0.033**	0.031	0.158	0.176	**0.016**	**282**
	10-yr	0.055	0.122	0.176	0.031	**209**	0.010	**0.041**	0.043	0.198	0.224	**0.017**	**381**
	25-yr	0.074	0.153	0.226	0.036	**275**	0.014	**0.050**	0.060	0.250	0.287	**0.019**	**523**
	50-yr	0.091	0.178	0.267	0.040	**329**	0.018	**0.057**	0.073	0.291	0.337	**0.020**	**640**
	100-yr	0.106	0.201	0.306	0.043	**382**	0.022	**0.065**	0.088	0.331	0.386	**0.020**	**761**
6-hr SCS Type II	2-yr	0.022	0.066	0.087	0.017	**100**	0.003	**0.020**	0.014	0.106	0.113	**0.014**	**155**
	5-yr	0.044	0.106	0.148	0.027	**166**	0.007	**0.034**	0.030	0.170	0.187	**0.016**	**294**
	10-yr	0.059	0.133	0.190	0.032	**218**	0.010	**0.042**	0.043	0.215	0.240	**0.018**	**404**
	25-yr	0.082	0.170	0.250	0.037	**292**	0.015	**0.051**	0.062	0.275	0.311	**0.019**	**561**
	50-yr	0.099	0.197	0.295	0.041	**351**	0.019	**0.059**	0.077	0.321	0.367	**0.020**	**690**
	100-yr	0.117	0.224	0.340	0.045	**411**	0.023	**0.067**	0.093	0.368	0.423	**0.021**	**824**
4-hr Chicago	2-yr	0.016	0.069	0.082	0.013	**82**	0.002	**0.015**	0.009	0.109	0.110	**0.013**	**121**
	5-yr	0.030	0.102	0.127	0.022	**125**	0.004	**0.026**	0.019	0.162	0.165	**0.015**	**218**
	10-yr	0.042	0.129	0.165	0.026	**159**	0.006	**0.032**	0.026	0.201	0.206	**0.016**	**301**
	25-yr	0.057	0.161	0.210	0.031	**209**	0.009	**0.040**	0.038	0.252	0.261	**0.018**	**422**
	50-yr	0.069	0.185	0.245	0.034	**248**	0.012	**0.046**	0.046	0.292	0.303	**0.019**	**517**
	100-yr	0.081	0.210	0.281	0.037	**291**	0.015	**0.051**	0.056	0.338	0.352	**0.019**	**617**

```
================================================================================
=======================

       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\237
4ff81-84d5-4a22-a008-f90d2bf8b4f2\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\237
4ff81-84d5-4a22-a008-f90d2bf8b4f2\sce


DATE: 11-25-2019                          TIME: 10:54:26

USER:



COMMENTS: _____________________________________________________


--------------------------------------------------------------------------------
-----------------------
  ************************************************
  ** SIMULATION : 01. 2 yr - 4 hr Chicago       **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 678.085
| Ptotal= 36.96 mm |                          B=   4.699
```



```
--------------------                          C=   0.781
                      used in:   INTENSITY =  A / (t + B)^C

                      Duration of storm  =  4.00 hrs
                      Storm time step    = 10.00 min
                      Time to peak ratio =  0.33

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.17    2.47 |  1.17   18.78 |  2.17    5.73 |  3.17    2.93
               0.33    2.82 |  1.33   83.11 |  2.33    4.89 |  3.33    2.72
               0.50    3.31 |  1.50   24.57 |  2.50    4.28 |  3.50    2.55
               0.67    4.05 |  1.67   13.01 |  2.67    3.82 |  3.67    2.39
               0.83    5.30 |  1.83    9.01 |  2.83    3.46 |  3.83    2.26
               1.00    7.98 |  2.00    6.97 |  3.00    3.17 |  4.00    2.15


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
              0.017    2.47 | 1.017   18.78 | 2.017    5.73 |  3.02    2.93
              0.033    2.47 | 1.033   18.78 | 2.033    5.73 |  3.03    2.93
              0.050    2.47 | 1.050   18.78 | 2.050    5.73 |  3.05    2.93
              0.067    2.47 | 1.067   18.78 | 2.067    5.73 |  3.07    2.93
              0.083    2.47 | 1.083   18.78 | 2.083    5.73 |  3.08    2.93
              0.100    2.47 | 1.100   18.78 | 2.100    5.73 |  3.10    2.93
              0.117    2.47 | 1.117   18.78 | 2.117    5.73 |  3.12    2.93
              0.133    2.47 | 1.133   18.78 | 2.133    5.73 |  3.13    2.93
              0.150    2.47 | 1.150   18.78 | 2.150    5.73 |  3.15    2.93
              0.167    2.47 | 1.167   18.78 | 2.167    5.73 |  3.17    2.93
              0.183    2.82 | 1.183   83.10 | 2.183    4.89 |  3.18    2.72
              0.200    2.82 | 1.200   83.11 | 2.200    4.89 |  3.20    2.72
              0.217    2.82 | 1.217   83.11 | 2.217    4.89 |  3.22    2.72
              0.233    2.82 | 1.233   83.11 | 2.233    4.89 |  3.23    2.72
              0.250    2.82 | 1.250   83.11 | 2.250    4.89 |  3.25    2.72
              0.267    2.82 | 1.267   83.11 | 2.267    4.89 |  3.27    2.72
              0.283    2.82 | 1.283   83.11 | 2.283    4.89 |  3.28    2.72
              0.300    2.82 | 1.300   83.11 | 2.300    4.89 |  3.30    2.72
              0.317    2.82 | 1.317   83.11 | 2.317    4.89 |  3.32    2.72
```

0.333	2.82	1.333	83.11	2.333	4.89	3.33	2.72
0.350	3.31	1.350	24.57	2.350	4.28	3.35	2.55
0.367	3.31	1.367	24.57	2.367	4.28	3.37	2.55
0.383	3.31	1.383	24.57	2.383	4.28	3.38	2.55
0.400	3.31	1.400	24.57	2.400	4.28	3.40	2.55
0.417	3.31	1.417	24.57	2.417	4.28	3.42	2.55
0.433	3.31	1.433	24.57	2.433	4.28	3.43	2.55
0.450	3.31	1.450	24.57	2.450	4.28	3.45	2.55
0.467	3.31	1.467	24.57	2.467	4.28	3.47	2.55
0.483	3.31	1.483	24.57	2.483	4.28	3.48	2.55
0.500	3.31	1.500	24.57	2.500	4.28	3.50	2.55
0.517	4.05	1.517	13.01	2.517	3.82	3.52	2.39
0.533	4.05	1.533	13.01	2.533	3.82	3.53	2.39
0.550	4.05	1.550	13.01	2.550	3.82	3.55	2.39
0.567	4.05	1.567	13.01	2.567	3.82	3.57	2.39
0.583	4.05	1.583	13.01	2.583	3.82	3.58	2.39
0.600	4.05	1.600	13.01	2.600	3.82	3.60	2.39
0.617	4.05	1.617	13.01	2.617	3.82	3.62	2.39
0.633	4.05	1.633	13.01	2.633	3.82	3.63	2.39
0.650	4.05	1.650	13.01	2.650	3.82	3.65	2.39
0.667	4.05	1.667	13.01	2.667	3.82	3.67	2.39
0.683	5.30	1.683	9.01	2.683	3.46	3.68	2.26
0.700	5.30	1.700	9.01	2.700	3.46	3.70	2.26
0.717	5.30	1.717	9.01	2.717	3.46	3.72	2.26
0.733	5.30	1.733	9.01	2.733	3.46	3.73	2.26
0.750	5.30	1.750	9.01	2.750	3.46	3.75	2.26
0.767	5.30	1.767	9.01	2.767	3.46	3.77	2.26
0.783	5.30	1.783	9.01	2.783	3.46	3.78	2.26
0.800	5.30	1.800	9.01	2.800	3.46	3.80	2.26
0.817	5.30	1.817	9.01	2.817	3.46	3.82	2.26
0.833	5.30	1.833	9.01	2.833	3.46	3.83	2.26
0.850	7.98	1.850	6.97	2.850	3.17	3.85	2.15
0.867	7.98	1.867	6.97	2.867	3.17	3.87	2.15
0.883	7.98	1.883	6.97	2.883	3.17	3.88	2.15
0.900	7.98	1.900	6.97	2.900	3.17	3.90	2.15
0.917	7.98	1.917	6.97	2.917	3.17	3.92	2.15
0.933	7.98	1.933	6.97	2.933	3.17	3.93	2.15
0.950	7.98	1.950	6.97	2.950	3.17	3.95	2.15
0.967	7.98	1.967	6.97	2.967	3.17	3.97	2.15
0.983	7.98	1.983	6.97	2.983	3.17	3.98	2.15
1.000	7.98	2.000	6.97	3.000	3.17	4.00	2.15

```
Unit Hyd Qpeak  (cms)=   0.117

PEAK FLOW       (cms)=   0.009 (i)
TIME TO PEAK    (hrs)=   1.750
RUNOFF VOLUME    (mm)=   4.771
TOTAL RAINFALL   (mm)=  36.955
RUNOFF COEFFICIENT   =   0.129
```



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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.51
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      82.87         6.00
     Mannings n             =    0.013        0.035

     Max.Eff.Inten.(mm/hr)=      83.11        24.20
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       2.00 (ii)    2.69 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.37         0.40
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.04          0.109 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.35           1.33
     RUNOFF VOLUME    (mm)=      35.96         9.38          17.35
     TOTAL RAINFALL   (mm)=      36.96        36.96          36.96
     RUNOFF COEFFICIENT   =       0.97         0.25           0.47


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.009     1.75     4.77
      + ID2= 2 (  0201):     1.03   0.109     1.33    17.35
        ================================================
        ID = 3 (  0006):     1.98   0.110     1.33    11.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
```

```
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190     0.0530
                          0.0120     0.0080   |   0.0200     0.0720
                          0.0150     0.0200   |   0.0220     0.0950
                          0.0170     0.0350   |   0.6940     0.1190

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980      0.110      1.33      11.32
   OUTFLOW: ID= 1 (  0011)      1.980      0.013      2.38      11.23

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 11.84
                  TIME SHIFT OF PEAK FLOW         (min)= 63.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0121

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   2.367
     RUNOFF VOLUME    (mm)=   3.092
     TOTAL RAINFALL   (mm)=  36.955
     RUNOFF COEFFICIENT   =   0.084

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035
```



```
     Max.Eff.Inten.(mm/hr)=      83.11        22.66
               over (min)        5.00         9.00
     Storage Coeff.  (min)=       1.56 (ii)    8.27 (ii)
     Unit Hyd. Tpeak (min)=       5.00         9.00
     Unit Hyd. peak  (cms)=       0.41         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.01          0.016 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.45           1.40
     RUNOFF VOLUME    (mm)=      35.96         9.12          10.45
     TOTAL RAINFALL   (mm)=      36.96        36.96          36.96
     RUNOFF COEFFICIENT   =       0.97         0.25           0.28

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      83.11        38.14
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.69 (ii)    2.33 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.40         0.44
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.04         0.03          0.069 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      35.96        11.35          18.73
     TOTAL RAINFALL   (mm)=      36.96        36.96          36.96
     RUNOFF COEFFICIENT   =       0.97         0.31           0.51


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
```

```
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.016     1.40    10.45
     + ID2= 2 (  0203):     0.59   0.069     1.33    18.73
       ================================================
       ID = 3 (  0009):     1.04   0.082     1.35    15.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390     0.0320
                         0.0090     0.0060    |   0.0430     0.0380
                         0.0230     0.0130    |   0.0470     0.0450
                         0.0300     0.0190    |   0.0500     0.0510
                         0.0350     0.0260    |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040      0.082      1.35      15.15
   OUTFLOW: ID= 1 (  0012)     1.040      0.013      1.92      14.99

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 16.16
                  TIME SHIFT OF PEAK FLOW         (min)= 34.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0082

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.013     1.92    14.99
     + ID2= 2 (  0202):     0.53   0.002     2.37     3.09
       ================================================
       ID = 3 (  0013):     1.57   0.015     2.05    10.97
```



```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
================================================================================
========================

       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


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  Output  filename:
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74ad3-7d04-49d3-9b5a-9636a2f96195\sce


DATE: 11-25-2019                          TIME: 10:54:26

USER:


COMMENTS: _____

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  ******************************************
  ** SIMULATION : 02. 5 yr - 4 hr Chicago       **
  ******************************************
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CHICAGO STORM Ptotal= 50.52 mm	IDF curve parameters: A= 853.608 B= 4.699 C= 0.766 used in: INTENSITY = A / (t + B)^C Duration of storm = 4.00 hrs Storm time step = 10.00 min Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	3.57	1.17	25.64	2.17	8.12	3.17	4.22
0.33	4.07	1.33	108.92	2.33	6.96	3.33	3.93
0.50	4.76	1.50	33.31	2.50	6.12	3.50	3.68
0.67	5.79	1.67	17.99	2.67	5.48	3.67	3.47
0.83	7.53	1.83	12.60	2.83	4.97	3.83	3.28
1.00	11.20	2.00	9.82	3.00	4.56	4.00	3.12

CALIB NASHYD (0002) ID= 1 DT= 1.0 min	Area (ha)= 0.95 Curve Number (CN)= 62.0 Ia (mm)= 7.21 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.57	1.017	25.64	2.017	8.12	3.02	4.22
0.033	3.57	1.033	25.64	2.033	8.12	3.03	4.22
0.050	3.57	1.050	25.64	2.050	8.12	3.05	4.22
0.067	3.57	1.067	25.64	2.067	8.12	3.07	4.22
0.083	3.57	1.083	25.64	2.083	8.12	3.08	4.22
0.100	3.57	1.100	25.64	2.100	8.12	3.10	4.22
0.117	3.57	1.117	25.64	2.117	8.12	3.12	4.22
0.133	3.57	1.133	25.64	2.133	8.12	3.13	4.22
0.150	3.57	1.150	25.64	2.150	8.12	3.15	4.22
0.167	3.57	1.167	25.64	2.167	8.12	3.17	4.22
0.183	4.07	1.183	108.92	2.183	6.96	3.18	3.93
0.200	4.07	1.200	108.92	2.200	6.96	3.20	3.93
0.217	4.07	1.217	108.92	2.217	6.96	3.22	3.93
0.233	4.07	1.233	108.92	2.233	6.96	3.23	3.93
0.250	4.07	1.250	108.92	2.250	6.96	3.25	3.93
0.267	4.07	1.267	108.92	2.267	6.96	3.27	3.93

0.283	4.07	1.283	108.92	2.283	6.96	3.28	3.93
0.300	4.07	1.300	108.92	2.300	6.96	3.30	3.93
0.317	4.07	1.317	108.92	2.317	6.96	3.32	3.93
0.333	4.07	1.333	108.92	2.333	6.96	3.33	3.93
0.350	4.76	1.350	33.32	2.350	6.12	3.35	3.68
0.367	4.76	1.367	33.31	2.367	6.12	3.37	3.68
0.383	4.76	1.383	33.31	2.383	6.12	3.38	3.68
0.400	4.76	1.400	33.31	2.400	6.12	3.40	3.68
0.417	4.76	1.417	33.31	2.417	6.12	3.42	3.68
0.433	4.76	1.433	33.31	2.433	6.12	3.43	3.68
0.450	4.76	1.450	33.31	2.450	6.12	3.45	3.68
0.467	4.76	1.467	33.31	2.467	6.12	3.47	3.68
0.483	4.76	1.483	33.31	2.483	6.12	3.48	3.68
0.500	4.76	1.500	33.31	2.500	6.12	3.50	3.68
0.517	5.79	1.517	17.99	2.517	5.48	3.52	3.47
0.533	5.79	1.533	17.99	2.533	5.48	3.53	3.47
0.550	5.79	1.550	17.99	2.550	5.48	3.55	3.47
0.567	5.79	1.567	17.99	2.567	5.48	3.57	3.47
0.583	5.79	1.583	17.99	2.583	5.48	3.58	3.47
0.600	5.79	1.600	17.99	2.600	5.48	3.60	3.47
0.617	5.79	1.617	17.99	2.617	5.48	3.62	3.47
0.633	5.79	1.633	17.99	2.633	5.48	3.63	3.47
0.650	5.79	1.650	17.99	2.650	5.48	3.65	3.47
0.667	5.79	1.667	17.99	2.667	5.48	3.67	3.47
0.683	7.53	1.683	12.60	2.683	4.97	3.68	3.28
0.700	7.53	1.700	12.60	2.700	4.97	3.70	3.28
0.717	7.53	1.717	12.60	2.717	4.97	3.72	3.28
0.733	7.53	1.733	12.60	2.733	4.97	3.73	3.28
0.750	7.53	1.750	12.60	2.750	4.97	3.75	3.28
0.767	7.53	1.767	12.60	2.767	4.97	3.77	3.28
0.783	7.53	1.783	12.60	2.783	4.97	3.78	3.28
0.800	7.53	1.800	12.60	2.800	4.97	3.80	3.28
0.817	7.53	1.817	12.60	2.817	4.97	3.82	3.28
0.833	7.53	1.833	12.60	2.833	4.97	3.83	3.28
0.850	11.20	1.850	9.82	2.850	4.56	3.85	3.12
0.867	11.20	1.867	9.82	2.867	4.56	3.87	3.12
0.883	11.20	1.883	9.82	2.883	4.56	3.88	3.12
0.900	11.20	1.900	9.82	2.900	4.56	3.90	3.12
0.917	11.20	1.917	9.82	2.917	4.56	3.92	3.12
0.933	11.20	1.933	9.82	2.933	4.56	3.93	3.12
0.950	11.20	1.950	9.82	2.950	4.56	3.95	3.12
0.967	11.20	1.967	9.82	2.967	4.56	3.97	3.12
0.983	11.20	1.983	9.82	2.983	4.56	3.98	3.12
1.000	11.20	2.000	9.82	3.000	4.56	4.00	3.12

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.019 (i)
TIME TO PEAK (hrs)= 1.733

```
     RUNOFF VOLUME    (mm)=   9.426
     TOTAL RAINFALL   (mm)=  50.521
     RUNOFF COEFFICIENT   =   0.187

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.51
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      82.87         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     108.92        43.31
                 over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.79 (ii)    2.42 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.39         0.43
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.09         0.07          0.162 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      49.52        16.66          26.52
     TOTAL RAINFALL   (mm)=      50.52        50.52          50.52
     RUNOFF COEFFICIENT   =       0.98         0.33           0.52


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.019     1.73     9.43
      + ID2= 2 (  0201):     1.03   0.162     1.33    26.52
        ==========================================================
        ID = 3 (  0006):     1.98   0.165     1.33    18.32
```



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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190      0.0530
                          0.0120     0.0080   |   0.0200      0.0720
                          0.0150     0.0200   |   0.0220      0.0950
                          0.0170     0.0350   |   0.6940      0.1190

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980      0.165      1.33      18.32
   OUTFLOW: ID= 1 (  0011)      1.980      0.015      2.88      18.23

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.24
                  TIME SHIFT OF PEAK FLOW         (min)= 93.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0218

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.004 (i)
     TIME TO PEAK    (hrs)=   2.317
     RUNOFF VOLUME    (mm)=   6.609
     TOTAL RAINFALL   (mm)=  50.521
     RUNOFF COEFFICIENT   =   0.131

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
```

```
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     108.92        40.77
               over (min)        5.00         8.00
     Storage Coeff.  (min)=       1.40 (ii)    7.42 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.43         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.03          0.030 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.43           1.40
     RUNOFF VOLUME    (mm)=      49.52        16.26          17.91
     TOTAL RAINFALL   (mm)=      50.52        50.52          50.52
     RUNOFF COEFFICIENT   =       0.98         0.32           0.35

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     108.92        65.96
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.52 (ii)    2.09 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.42         0.47
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.05         0.05          0.102 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      49.52        19.59          28.57
     TOTAL RAINFALL   (mm)=      50.52        50.52          50.52
     RUNOFF COEFFICIENT   =       0.98         0.39           0.57
```



```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.030     1.40    17.91
     + ID2= 2 (  0203):     0.59   0.102     1.33    28.57
       ================================================
       ID = 3 (  0009):     1.04   0.127     1.33    23.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390      0.0320
                         0.0090     0.0060    |   0.0430      0.0380
                         0.0230     0.0130    |   0.0470      0.0450
                         0.0300     0.0190    |   0.0500      0.0510
                         0.0350     0.0260    |   0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.127      1.33      23.96
   OUTFLOW: ID= 1 (  0012)      1.040      0.022      1.90      23.80

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 17.26
                  TIME SHIFT OF PEAK FLOW         (min)= 34.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0125

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.022     1.90    23.80
     + ID2= 2 (  0202):     0.53   0.004     2.32     6.61
```

```
        ==================================================
        ID = 3 (  0013):     1.57   0.026     2.05    17.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


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59745-fe17-490c-9a07-be172503f5a6\sce


DATE: 11-25-2019                          TIME: 10:54:26

USER:



COMMENTS: _____


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  ** SIMULATION : 03. 10 yr - 4 hr Chicago      **
  ***********************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 975.865
| Ptotal= 59.69 mm |                          B=   4.699
--------------------                          C=   0.760
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  4.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    4.32 |  1.17   30.27 |'  2.17    9.72 |  3.17    5.09
                0.33    4.91 |  1.33  126.55 |'  2.33    8.35 |  3.33    4.74
                0.50    5.73 |  1.50   39.22 |'  2.50    7.35 |  3.50    4.45
                0.67    6.96 |  1.67   21.35 |'  2.67    6.59 |  3.67    4.19
                0.83    9.03 |  1.83   15.01 |'  2.83    5.99 |  3.83    3.97
                1.00   13.36 |  2.00   11.74 |'  3.00    5.50 |  4.00    3.77


--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    4.32 | 1.017   30.27 | 2.017    9.72 |  3.02    5.09
               0.033    4.32 | 1.033   30.27 | 2.033    9.72 |  3.03    5.09
               0.050    4.32 | 1.050   30.27 | 2.050    9.72 |  3.05    5.09
               0.067    4.32 | 1.067   30.27 | 2.067    9.72 |  3.07    5.09
               0.083    4.32 | 1.083   30.27 | 2.083    9.72 |  3.08    5.09
               0.100    4.32 | 1.100   30.27 | 2.100    9.72 |  3.10    5.09
               0.117    4.32 | 1.117   30.27 | 2.117    9.72 |  3.12    5.09
               0.133    4.32 | 1.133   30.27 | 2.133    9.72 |  3.13    5.09
               0.150    4.32 | 1.150   30.27 | 2.150    9.72 |  3.15    5.09
               0.167    4.32 | 1.167   30.27 | 2.167    9.72 |  3.17    5.09
               0.183    4.91 | 1.183  126.54 | 2.183    8.35 |  3.18    4.74
               0.200    4.91 | 1.200  126.55 | 2.200    8.35 |  3.20    4.74
               0.217    4.91 | 1.217  126.55 | 2.217    8.35 |  3.22    4.74
```

0.233	4.91	1.233	126.55	2.233	8.35	3.23	4.74
0.250	4.91	1.250	126.55	2.250	8.35	3.25	4.74
0.267	4.91	1.267	126.55	2.267	8.35	3.27	4.74
0.283	4.91	1.283	126.55	2.283	8.35	3.28	4.74
0.300	4.91	1.300	126.55	2.300	8.35	3.30	4.74
0.317	4.91	1.317	126.55	2.317	8.35	3.32	4.74
0.333	4.91	1.333	126.55	2.333	8.35	3.33	4.74
0.350	5.73	1.350	39.23	2.350	7.35	3.35	4.45
0.367	5.73	1.367	39.22	2.367	7.35	3.37	4.45
0.383	5.73	1.383	39.22	2.383	7.35	3.38	4.45
0.400	5.73	1.400	39.22	2.400	7.35	3.40	4.45
0.417	5.73	1.417	39.22	2.417	7.35	3.42	4.45
0.433	5.73	1.433	39.22	2.433	7.35	3.43	4.45
0.450	5.73	1.450	39.22	2.450	7.35	3.45	4.45
0.467	5.73	1.467	39.22	2.467	7.35	3.47	4.45
0.483	5.73	1.483	39.22	2.483	7.35	3.48	4.45
0.500	5.73	1.500	39.22	2.500	7.35	3.50	4.45
0.517	6.96	1.517	21.35	2.517	6.59	3.52	4.19
0.533	6.96	1.533	21.35	2.533	6.59	3.53	4.19
0.550	6.96	1.550	21.35	2.550	6.59	3.55	4.19
0.567	6.96	1.567	21.35	2.567	6.59	3.57	4.19
0.583	6.96	1.583	21.35	2.583	6.59	3.58	4.19
0.600	6.96	1.600	21.35	2.600	6.59	3.60	4.19
0.617	6.96	1.617	21.35	2.617	6.59	3.62	4.19
0.633	6.96	1.633	21.35	2.633	6.59	3.63	4.19
0.650	6.96	1.650	21.35	2.650	6.59	3.65	4.19
0.667	6.96	1.667	21.35	2.667	6.59	3.67	4.19
0.683	9.03	1.683	15.01	2.683	5.99	3.68	3.97
0.700	9.03	1.700	15.01	2.700	5.99	3.70	3.97
0.717	9.03	1.717	15.01	2.717	5.99	3.72	3.97
0.733	9.03	1.733	15.01	2.733	5.99	3.73	3.97
0.750	9.03	1.750	15.01	2.750	5.99	3.75	3.97
0.767	9.03	1.767	15.01	2.767	5.99	3.77	3.97
0.783	9.03	1.783	15.01	2.783	5.99	3.78	3.97
0.800	9.03	1.800	15.01	2.800	5.99	3.80	3.97
0.817	9.03	1.817	15.01	2.817	5.99	3.82	3.97
0.833	9.03	1.833	15.01	2.833	5.99	3.83	3.97
0.850	13.36	1.850	11.74	2.850	5.50	3.85	3.77
0.867	13.36	1.867	11.74	2.867	5.50	3.87	3.77
0.883	13.36	1.883	11.74	2.883	5.50	3.88	3.77
0.900	13.36	1.900	11.74	2.900	5.50	3.90	3.77
0.917	13.36	1.917	11.74	2.917	5.50	3.92	3.77
0.933	13.36	1.933	11.74	2.933	5.50	3.93	3.77
0.950	13.36	1.950	11.74	2.950	5.50	3.95	3.77
0.967	13.36	1.967	11.74	2.967	5.50	3.97	3.77
0.983	13.36	1.983	11.74	2.983	5.50	3.98	3.77
1.000	13.36	2.000	11.74	3.000	5.50	4.00	3.77

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.026 (i)
TIME TO PEAK (hrs)= 1.717
RUNOFF VOLUME (mm)= 13.232
TOTAL RAINFALL (mm)= 59.695
RUNOFF COEFFICIENT = 0.222

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

CALIB	
STANDHYD (0201)	Area (ha)= 1.03
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		126.55	58.34	
over (min)		5.00	3.00	
Storage Coeff. (min)=		1.69 (ii)	2.28 (ii)	
Unit Hyd. Tpeak (min)=		5.00	3.00	
Unit Hyd. peak (cms)=		0.40	0.45	
				TOTALS
PEAK FLOW	(cms)=	0.11	0.09	0.201 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	58.69	22.26	33.19
TOTAL RAINFALL	(mm)=	59.69	59.69	59.69
RUNOFF COEFFICIENT	=	0.98	0.37	0.56

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):		0.95	0.026	1.72	13.23
+ ID2= 2 (0201):		1.03	0.201	1.33	33.19

```
        ================================================
        ID = 3 (  0006):     1.98   0.206     1.33    23.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190     0.0530
                          0.0120     0.0080   |   0.0200     0.0720
                          0.0150     0.0200   |   0.0220     0.0950
                          0.0170     0.0350   |   0.6940     0.1190

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)     1.980      0.206      1.33      23.61
   OUTFLOW: ID= 1 (  0011)     1.980      0.016      3.30      23.53

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.92
                  TIME SHIFT OF PEAK FLOW         (min)=118.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0301

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.006 (i)
     TIME TO PEAK    (hrs)=   2.283
     RUNOFF VOLUME    (mm)=   9.587
     TOTAL RAINFALL   (mm)=  59.695
     RUNOFF COEFFICIENT   =   0.161

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                            IMPERVIOUS    PERVIOUS (i)
```



```
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     126.55        55.05
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.32 (ii)    6.99 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.44         0.16
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.04          0.042 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.40           1.38
     RUNOFF VOLUME    (mm)=      58.69        21.77          23.61
     TOTAL RAINFALL   (mm)=      59.69        59.69          59.69
     RUNOFF COEFFICIENT   =       0.98         0.36           0.40

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     126.55        87.40
               over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.43 (ii)    1.97 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.43         0.56
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.07          0.129 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      58.69        25.82          35.68
```

```
     TOTAL RAINFALL   (mm)=      59.69        59.69          59.69
     RUNOFF COEFFICIENT   =       0.98         0.43           0.60


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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-------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.042     1.38    23.61
      + ID2= 2 (  0203):     0.59   0.129     1.33    35.68
        ====================================================
        ID = 3 (  0009):     1.04   0.165     1.33    30.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0390     0.0320
                         0.0090     0.0060   |   0.0430     0.0380
                         0.0230     0.0130   |   0.0470     0.0450
                         0.0300     0.0190   |   0.0500     0.0510
                         0.0350     0.0260   |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040     0.165      1.33      30.46
   OUTFLOW: ID= 1 (  0012)     1.040     0.026      1.92      30.29

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 16.01
                  TIME SHIFT OF PEAK FLOW         (min)= 35.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0159

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-------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
```



```
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.026     1.92    30.29
      + ID2= 2 (  0202):     0.53   0.006     2.28     9.59
        ====================================================
        ID = 3 (  0013):     1.57   0.032     2.12    23.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 FINISH
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\5f7
234c1-c902-4628-8bfb-fc176af5e59e\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\5f7
234c1-c902-4628-8bfb-fc176af5e59e\sce


DATE: 11-25-2019                          TIME: 10:54:26

USER:
```

COMMENTS: _____

```
  **********************************************
  ** SIMULATION : 04. 25 yr - 4 hr Chicago      **
  **********************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1146.275
| Ptotal= 71.24 mm |                          B=   4.922
--------------------                          C=   0.757
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  4.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	5.22	1.17	36.37	2.17	11.74	3.17	6.15
0.33	5.94	1.33	148.15	2.33	10.09	3.33	5.74
0.50	6.93	1.50	47.06	2.50	8.89	3.50	5.38
0.67	8.42	1.67	25.72	2.67	7.96	3.67	5.08
0.83	10.91	1.83	18.11	2.83	7.24	3.83	4.80
1.00	16.13	2.00	14.17	3.00	6.65	4.00	4.57

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

         NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
0.017	5.22	1.017	36.37	2.017	11.74	3.02	6.15
0.033	5.22	1.033	36.37	2.033	11.74	3.03	6.15
0.050	5.22	1.050	36.37	2.050	11.74	3.05	6.15
0.067	5.22	1.067	36.37	2.067	11.74	3.07	6.15
0.083	5.22	1.083	36.37	2.083	11.74	3.08	6.15

0.100	5.22	1.100	36.37	2.100	11.74	3.10	6.15
0.117	5.22	1.117	36.37	2.117	11.74	3.12	6.15
0.133	5.22	1.133	36.37	2.133	11.74	3.13	6.15
0.150	5.22	1.150	36.37	2.150	11.74	3.15	6.15
0.167	5.22	1.167	36.37	2.167	11.74	3.17	6.15
0.183	5.94	1.183	148.15	2.183	10.09	3.18	5.74
0.200	5.94	1.200	148.15	2.200	10.09	3.20	5.74
0.217	5.94	1.217	148.15	2.217	10.09	3.22	5.74
0.233	5.94	1.233	148.15	2.233	10.09	3.23	5.74
0.250	5.94	1.250	148.15	2.250	10.09	3.25	5.74
0.267	5.94	1.267	148.15	2.267	10.09	3.27	5.74
0.283	5.94	1.283	148.15	2.283	10.09	3.28	5.74
0.300	5.94	1.300	148.15	2.300	10.09	3.30	5.74
0.317	5.94	1.317	148.15	2.317	10.09	3.32	5.74
0.333	5.94	1.333	148.15	2.333	10.09	3.33	5.74
0.350	6.93	1.350	47.06	2.350	8.89	3.35	5.38
0.367	6.93	1.367	47.06	2.367	8.89	3.37	5.38
0.383	6.93	1.383	47.06	2.383	8.89	3.38	5.38
0.400	6.93	1.400	47.06	2.400	8.89	3.40	5.38
0.417	6.93	1.417	47.06	2.417	8.89	3.42	5.38
0.433	6.93	1.433	47.06	2.433	8.89	3.43	5.38
0.450	6.93	1.450	47.06	2.450	8.89	3.45	5.38
0.467	6.93	1.467	47.06	2.467	8.89	3.47	5.38
0.483	6.93	1.483	47.06	2.483	8.89	3.48	5.38
0.500	6.93	1.500	47.06	2.500	8.89	3.50	5.38
0.517	8.42	1.517	25.72	2.517	7.96	3.52	5.08
0.533	8.42	1.533	25.72	2.533	7.96	3.53	5.08
0.550	8.42	1.550	25.72	2.550	7.96	3.55	5.08
0.567	8.42	1.567	25.72	2.567	7.96	3.57	5.08
0.583	8.42	1.583	25.72	2.583	7.96	3.58	5.08
0.600	8.42	1.600	25.72	2.600	7.96	3.60	5.08
0.617	8.42	1.617	25.72	2.617	7.96	3.62	5.08
0.633	8.42	1.633	25.72	2.633	7.96	3.63	5.08
0.650	8.42	1.650	25.72	2.650	7.96	3.65	5.08
0.667	8.42	1.667	25.72	2.667	7.96	3.67	5.08
0.683	10.91	1.683	18.11	2.683	7.24	3.68	4.80
0.700	10.91	1.700	18.11	2.700	7.24	3.70	4.80
0.717	10.91	1.717	18.11	2.717	7.24	3.72	4.80
0.733	10.91	1.733	18.11	2.733	7.24	3.73	4.80
0.750	10.91	1.750	18.11	2.750	7.24	3.75	4.80
0.767	10.91	1.767	18.11	2.767	7.24	3.77	4.80
0.783	10.91	1.783	18.11	2.783	7.24	3.78	4.80
0.800	10.91	1.800	18.11	2.800	7.24	3.80	4.80
0.817	10.91	1.817	18.11	2.817	7.24	3.82	4.80
0.833	10.91	1.833	18.11	2.833	7.24	3.83	4.80
0.850	16.13	1.850	14.17	2.850	6.65	3.85	4.57
0.867	16.13	1.867	14.17	2.867	6.65	3.87	4.57
0.883	16.13	1.883	14.17	2.883	6.65	3.88	4.57
0.900	16.13	1.900	14.17	2.900	6.65	3.90	4.57

0.917	16.13	1.917	14.17	2.917	6.65	3.92	4.57
0.933	16.13	1.933	14.17	2.933	6.65	3.93	4.57
0.950	16.13	1.950	14.17	2.950	6.65	3.95	4.57
0.967	16.13	1.967	14.17	2.967	6.65	3.97	4.57
0.983	16.13	1.983	14.17	2.983	6.65	3.98	4.57
1.000	16.13	2.000	14.17	3.000	6.65	4.00	4.57

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.038 (i)
TIME TO PEAK (hrs)= 1.717
RUNOFF VOLUME (mm)= 18.658
TOTAL RAINFALL (mm)= 71.236
RUNOFF COEFFICIENT = 0.262

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

CALIB
STANDHYD (0201) | Area (ha)= 1.03
ID= 1 DT= 1.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.51
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	82.87	6.00
Mannings n	=	0.013	0.035
Max.Eff.Inten.(mm/hr)=		148.15	78.83
over (min)		5.00	3.00
Storage Coeff. (min)=		1.58 (ii)	2.14 (ii)
Unit Hyd. Tpeak (min)=		5.00	3.00
Unit Hyd. peak (cms)=		0.41	0.46

				TOTALS
PEAK FLOW	(cms)=	0.13	0.13	0.252 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	70.24	29.92	42.01
TOTAL RAINFALL	(mm)=	71.24	71.24	71.24
RUNOFF COEFFICIENT	=	0.99	0.42	0.59

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)
1 + 2 = 3

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):		0.95	0.038	1.72	18.66
+ ID2= 2 (0201):		1.03	0.252	1.33	42.01
ID = 3 (0006):		1.98	0.261	1.33	30.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0190	0.0530
0.0120	0.0080	0.0200	0.0720
0.0150	0.0200	0.0220	0.0950
0.0170	0.0350	0.6940	0.1190

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0006)	1.980	0.261	1.33	30.81
OUTFLOW: ID= 1 (0011)	1.980	0.018	3.83	30.72

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.83
TIME SHIFT OF PEAK FLOW (min)=150.00
MAXIMUM STORAGE USED (ha.m.)= 0.0422

CALIB
NASHYD (0202) | Area (ha)= 0.53 Curve Number (CN)= 55.0
ID= 1 DT= 1.0 min | Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.67

Unit Hyd Qpeak (cms)= 0.030

PEAK FLOW (cms)= 0.009 (i)
TIME TO PEAK (hrs)= 2.267
RUNOFF VOLUME (mm)= 13.934
TOTAL RAINFALL (mm)= 71.236
RUNOFF COEFFICIENT = 0.196

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

CALIB			
STANDHYD (0001)	Area (ha)= 0.45		
ID= 1 DT= 1.0 min	Total Imp(%)= 30.00	Dir. Conn.(%)= 5.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.14	0.31	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	2.00	2.00	
Length (m)=	54.77	40.00	
Mannings n =	0.013	0.035	
Max.Eff.Inten.(mm/hr)=	148.15	74.56	
over (min)	5.00	7.00	
Storage Coeff. (min)=	1.24 (ii)	6.56 (ii)	
Unit Hyd. Tpeak (min)=	5.00	7.00	
Unit Hyd. peak (cms)=	0.45	0.17	
			TOTALS
PEAK FLOW (cms)=	0.01	0.05	0.057 (iii)
TIME TO PEAK (hrs)=	1.33	1.40	1.38
RUNOFF VOLUME (mm)=	70.24	29.32	31.36
TOTAL RAINFALL (mm)=	71.24	71.24	71.24
RUNOFF COEFFICIENT =	0.99	0.41	0.44

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0203)	Area (ha)= 0.59		
ID= 1 DT= 1.0 min	Total Imp(%)= 60.00	Dir. Conn.(%)= 30.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.35	0.24	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	2.00	5.00	
Length (m)=	62.72	6.00	
Mannings n =	0.013	0.035	
Max.Eff.Inten.(mm/hr)=	148.15	116.21	

over (min)	5.00	2.00	
Storage Coeff. (min)=	1.34 (ii)	1.85 (ii)	
Unit Hyd. Tpeak (min)=	5.00	2.00	
Unit Hyd. peak (cms)=	0.44	0.59	
			TOTALS
PEAK FLOW (cms)=	0.07	0.09	0.161 (iii)
TIME TO PEAK (hrs)=	1.33	1.33	1.33
RUNOFF VOLUME (mm)=	70.24	34.21	45.02
TOTAL RAINFALL (mm)=	71.24	71.24	71.24
RUNOFF COEFFICIENT =	0.99	0.48	0.63

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0009)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0001):	0.45	0.057	1.38	31.36
+ ID2= 2 (0203):	0.59	0.161	1.33	45.02
ID = 3 (0009):	1.04	0.210	1.33	39.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0012)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0390	0.0320
	0.0090	0.0060	0.0430	0.0380
	0.0230	0.0130	0.0470	0.0450
	0.0300	0.0190	0.0500	0.0510
	0.0350	0.0260	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0009)	1.040	0.210	1.33	39.11
OUTFLOW: ID= 1 (0012)	1.040	0.031	1.98	38.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.91

```
                  TIME SHIFT OF PEAK FLOW         (min)= 39.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0209

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.031     1.98    38.94
     + ID2= 2 (  0202):     0.53   0.009     2.27    13.93
       ================================================
       ID = 3 (  0013):     1.57   0.040     2.18    30.50

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\99c
56c75-21db-4af6-a394-a751e92bed8e\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\99c
56c75-21db-4af6-a394-a751e92bed8e\sce


DATE: 11-25-2019                          TIME: 10:54:26
```



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USER:


COMMENTS: _____________________________________________

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  ***********************************************
  ** SIMULATION : 05. 50 yr - 4 hr Chicago      **
  ***********************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A=1236.408
| Ptotal= 79.47 mm |                          B=   4.699
--------------------                          C=   0.751
                       used in:   INTENSITY =  A / (t + B)^C

                       Duration of storm  =  4.00 hrs
                       Storm time step    = 10.00 min
                       Time to peak ratio =  0.33

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.17    5.94 |  1.17   40.23 |  2.17   13.20 |  3.17    6.98
                0.33    6.74 |  1.33  164.26 |  2.33   11.37 |  3.33    6.51
                0.50    7.85 |  1.50   51.93 |  2.50   10.03 |  3.50    6.12
                0.67    9.50 |  1.67   28.58 |  2.67    9.00 |  3.67    5.77
                0.83   12.27 |  1.83   20.23 |  2.83    8.19 |  3.83    5.47
                1.00   18.04 |  2.00   15.89 |  3.00    7.53 |  4.00    5.20


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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
                0.017   5.94 | 1.017   40.23 | 2.017   13.20 |  3.02    6.98
                0.033   5.94 | 1.033   40.23 | 2.033   13.20 |  3.03    6.98
```

0.050	5.94	1.050	40.23	2.050	13.20	3.05	6.98
0.067	5.94	1.067	40.23	2.067	13.20	3.07	6.98
0.083	5.94	1.083	40.23	2.083	13.20	3.08	6.98
0.100	5.94	1.100	40.23	2.100	13.20	3.10	6.98
0.117	5.94	1.117	40.23	2.117	13.20	3.12	6.98
0.133	5.94	1.133	40.23	2.133	13.20	3.13	6.98
0.150	5.94	1.150	40.23	2.150	13.20	3.15	6.98
0.167	5.94	1.167	40.23	2.167	13.20	3.17	6.98
0.183	6.74	1.183	164.26	2.183	11.37	3.18	6.51
0.200	6.74	1.200	164.26	2.200	11.37	3.20	6.51
0.217	6.74	1.217	164.26	2.217	11.37	3.22	6.51
0.233	6.74	1.233	164.26	2.233	11.37	3.23	6.51
0.250	6.74	1.250	164.26	2.250	11.37	3.25	6.51
0.267	6.74	1.267	164.26	2.267	11.37	3.27	6.51
0.283	6.74	1.283	164.26	2.283	11.37	3.28	6.51
0.300	6.74	1.300	164.26	2.300	11.37	3.30	6.51
0.317	6.74	1.317	164.26	2.317	11.37	3.32	6.51
0.333	6.74	1.333	164.26	2.333	11.37	3.33	6.51
0.350	7.85	1.350	51.94	2.350	10.03	3.35	6.12
0.367	7.85	1.367	51.93	2.367	10.03	3.37	6.12
0.383	7.85	1.383	51.93	2.383	10.03	3.38	6.12
0.400	7.85	1.400	51.93	2.400	10.03	3.40	6.12
0.417	7.85	1.417	51.93	2.417	10.03	3.42	6.12
0.433	7.85	1.433	51.93	2.433	10.03	3.43	6.12
0.450	7.85	1.450	51.93	2.450	10.03	3.45	6.12
0.467	7.85	1.467	51.93	2.467	10.03	3.47	6.12
0.483	7.85	1.483	51.93	2.483	10.03	3.48	6.12
0.500	7.85	1.500	51.93	2.500	10.03	3.50	6.12
0.517	9.50	1.517	28.58	2.517	9.00	3.52	5.77
0.533	9.50	1.533	28.58	2.533	9.00	3.53	5.77
0.550	9.50	1.550	28.58	2.550	9.00	3.55	5.77
0.567	9.50	1.567	28.58	2.567	9.00	3.57	5.77
0.583	9.50	1.583	28.58	2.583	9.00	3.58	5.77
0.600	9.50	1.600	28.58	2.600	9.00	3.60	5.77
0.617	9.50	1.617	28.58	2.617	9.00	3.62	5.77
0.633	9.50	1.633	28.58	2.633	9.00	3.63	5.77
0.650	9.50	1.650	28.58	2.650	9.00	3.65	5.77
0.667	9.50	1.667	28.58	2.667	9.00	3.67	5.77
0.683	12.27	1.683	20.23	2.683	8.19	3.68	5.47
0.700	12.27	1.700	20.23	2.700	8.19	3.70	5.47
0.717	12.27	1.717	20.23	2.717	8.19	3.72	5.47
0.733	12.27	1.733	20.23	2.733	8.19	3.73	5.47
0.750	12.27	1.750	20.23	2.750	8.19	3.75	5.47
0.767	12.27	1.767	20.23	2.767	8.19	3.77	5.47
0.783	12.27	1.783	20.23	2.783	8.19	3.78	5.47
0.800	12.27	1.800	20.23	2.800	8.19	3.80	5.47
0.817	12.27	1.817	20.23	2.817	8.19	3.82	5.47
0.833	12.27	1.833	20.23	2.833	8.19	3.83	5.47
0.850	18.04	1.850	15.89	2.850	7.53	3.85	5.20

0.867	18.04	1.867	15.89	2.867	7.53	3.87	5.20
0.883	18.04	1.883	15.89	2.883	7.53	3.88	5.20
0.900	18.04	1.900	15.89	2.900	7.53	3.90	5.20
0.917	18.04	1.917	15.89	2.917	7.53	3.92	5.20
0.933	18.04	1.933	15.89	2.933	7.53	3.93	5.20
0.950	18.04	1.950	15.89	2.950	7.53	3.95	5.20
0.967	18.04	1.967	15.89	2.967	7.53	3.97	5.20
0.983	18.04	1.983	15.89	2.983	7.53	3.98	5.20
1.000	18.04	2.000	15.89	3.000	7.53	4.00	5.20

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.046 (i)
TIME TO PEAK (hrs)= 1.700
RUNOFF VOLUME (mm)= 22.907
TOTAL RAINFALL (mm)= 79.470
RUNOFF COEFFICIENT = 0.288

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

CALIB
STANDHYD (0201) | Area (ha)= 1.03
ID= 1 DT= 1.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		164.26	94.93	
over (min)		5.00	3.00	
Storage Coeff. (min)=		1.52 (ii)	2.05 (ii)	
Unit Hyd. Tpeak (min)=		5.00	3.00	
Unit Hyd. peak (cms)=		0.42	0.47	
				TOTALS
PEAK FLOW	(cms)=	0.14	0.15	0.292 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	78.47	35.72	48.54
TOTAL RAINFALL	(mm)=	79.47	79.47	79.47
RUNOFF COEFFICIENT	=	0.99	0.45	0.61

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

```
          THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.046     1.70    22.91
      + ID2= 2 (  0201):     1.03   0.292     1.33    48.54
        ================================================
        ID = 3 (  0006):     1.98   0.303     1.33    36.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190      0.0530
                          0.0120     0.0080   |   0.0200      0.0720
                          0.0150     0.0200   |   0.0220      0.0950
                          0.0170     0.0350   |   0.6940      0.1190

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)     1.980      0.303      1.33      36.24
   OUTFLOW: ID= 1 (  0011)     1.980      0.019      4.02      36.16

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.22
                  TIME SHIFT OF PEAK FLOW         (min)=161.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0517

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 55.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.012 (i)
     TIME TO PEAK    (hrs)=   2.250
     RUNOFF VOLUME    (mm)=  17.402
     TOTAL RAINFALL   (mm)=  79.470
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     RUNOFF COEFFICIENT   =   0.219

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     164.26        89.91
               over (min)         5.00         7.00
     Storage Coeff.  (min)=       1.19 (ii)    6.30 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.45         0.17
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.06          0.069 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.40           1.38
     RUNOFF VOLUME    (mm)=      78.47        35.05          37.21
     TOTAL RAINFALL   (mm)=      79.47        79.47          79.47
     RUNOFF COEFFICIENT   =       0.99         0.44           0.47

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
```

```
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     164.26       138.59
               over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.29 (ii)    1.77 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.44         0.60
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.08         0.10          0.185 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      78.47        40.50          51.89
     TOTAL RAINFALL   (mm)=      79.47        79.47          79.47
     RUNOFF COEFFICIENT   =       0.99         0.51           0.65


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.069     1.38    37.21
     + ID2= 2 (  0203):     0.59   0.185     1.33    51.89
       ====================================================
       ID = 3 (  0009):     1.04   0.245     1.33    45.54

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390     0.0320
                         0.0090     0.0060    |   0.0430     0.0380
                         0.0230     0.0130    |   0.0470     0.0450
                         0.0300     0.0190    |   0.0500     0.0510
                         0.0350     0.0260    |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040      0.245      1.33      45.54
```



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   OUTFLOW: ID= 1 (  0012)      1.040      0.034      2.03      45.38

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.91
                  TIME SHIFT OF PEAK FLOW         (min)= 42.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0248

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.034     2.03    45.38
     + ID2= 2 (  0202):     0.53   0.012     2.25    17.40
       ====================================================
       ID = 3 (  0013):     1.57   0.046     2.20    35.93

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L
      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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
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6a53a-2777-4eda-9566-ae0f5d2f79ad\sce
  Summary filename:
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6a53a-2777-4eda-9566-ae0f5d2f79ad\sce
```

DATE: 11-25-2019 TIME: 10:54:26

USER:

COMMENTS: _____

```
  ************************************************
  ** SIMULATION : 06. 100 yr - 4 hr Chicago     **
  ************************************************
```

CHICAGO STORM Ptotal= 87.58 mm	IDF curve parameters: A=1426.408 B= 5.273 C= 0.759

used in: INTENSITY = A / (t + B)^C

Duration of storm = 4.00 hrs
Storm time step = 10.00 min
Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.17	6.41	1.17	45.22	2.17	14.50	3.17	7.56
0.33	7.29	1.33	180.15	2.33	12.44	3.33	7.04
0.50	8.52	1.50	58.54	2.50	10.94	3.50	6.60
0.67	10.36	1.67	31.96	2.67	9.80	3.67	6.22
0.83	13.45	1.83	22.45	2.83	8.90	3.83	5.89
1.00	19.96	2.00	17.52	3.00	8.16	4.00	5.59

CALIB NASHYD (0002) ID= 1 DT= 1.0 min	Area (ha)= 0.95 Curve Number (CN)= 62.0 Ia (mm)= 7.21 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	6.41	1.017	45.22	2.017	14.50	3.02	7.56
0.033	6.41	1.033	45.22	2.033	14.50	3.03	7.56
0.050	6.41	1.050	45.22	2.050	14.50	3.05	7.56
0.067	6.41	1.067	45.22	2.067	14.50	3.07	7.56
0.083	6.41	1.083	45.22	2.083	14.50	3.08	7.56
0.100	6.41	1.100	45.22	2.100	14.50	3.10	7.56
0.117	6.41	1.117	45.22	2.117	14.50	3.12	7.56
0.133	6.41	1.133	45.22	2.133	14.50	3.13	7.56
0.150	6.41	1.150	45.22	2.150	14.50	3.15	7.56
0.167	6.41	1.167	45.22	2.167	14.50	3.17	7.56
0.183	7.29	1.183	180.15	2.183	12.44	3.18	7.04
0.200	7.29	1.200	180.15	2.200	12.44	3.20	7.04
0.217	7.29	1.217	180.15	2.217	12.44	3.22	7.04
0.233	7.29	1.233	180.15	2.233	12.44	3.23	7.04
0.250	7.29	1.250	180.15	2.250	12.44	3.25	7.04
0.267	7.29	1.267	180.15	2.267	12.44	3.27	7.04
0.283	7.29	1.283	180.15	2.283	12.44	3.28	7.04
0.300	7.29	1.300	180.15	2.300	12.44	3.30	7.04
0.317	7.29	1.317	180.15	2.317	12.44	3.32	7.04
0.333	7.29	1.333	180.15	2.333	12.44	3.33	7.04
0.350	8.52	1.350	58.55	2.350	10.94	3.35	6.60
0.367	8.52	1.367	58.54	2.367	10.94	3.37	6.60
0.383	8.52	1.383	58.54	2.383	10.94	3.38	6.60
0.400	8.52	1.400	58.54	2.400	10.94	3.40	6.60
0.417	8.52	1.417	58.54	2.417	10.94	3.42	6.60
0.433	8.52	1.433	58.54	2.433	10.94	3.43	6.60
0.450	8.52	1.450	58.54	2.450	10.94	3.45	6.60
0.467	8.52	1.467	58.54	2.467	10.94	3.47	6.60
0.483	8.52	1.483	58.54	2.483	10.94	3.48	6.60
0.500	8.52	1.500	58.54	2.500	10.94	3.50	6.60
0.517	10.36	1.517	31.96	2.517	9.80	3.52	6.22
0.533	10.36	1.533	31.96	2.533	9.80	3.53	6.22
0.550	10.36	1.550	31.96	2.550	9.80	3.55	6.22
0.567	10.36	1.567	31.96	2.567	9.80	3.57	6.22
0.583	10.36	1.583	31.96	2.583	9.80	3.58	6.22
0.600	10.36	1.600	31.96	2.600	9.80	3.60	6.22
0.617	10.36	1.617	31.96	2.617	9.80	3.62	6.22
0.633	10.36	1.633	31.96	2.633	9.80	3.63	6.22
0.650	10.36	1.650	31.96	2.650	9.80	3.65	6.22
0.667	10.36	1.667	31.96	2.667	9.80	3.67	6.22
0.683	13.45	1.683	22.45	2.683	8.90	3.68	5.89
0.700	13.45	1.700	22.45	2.700	8.90	3.70	5.89
0.717	13.45	1.717	22.45	2.717	8.90	3.72	5.89
0.733	13.45	1.733	22.45	2.733	8.90	3.73	5.89
0.750	13.45	1.750	22.45	2.750	8.90	3.75	5.89
0.767	13.45	1.767	22.45	2.767	8.90	3.77	5.89
0.783	13.45	1.783	22.45	2.783	8.90	3.78	5.89
0.800	13.45	1.800	22.45	2.800	8.90	3.80	5.89

0.817	13.45	1.817	22.45	2.817	8.90	3.82	5.89
0.833	13.45	1.833	22.45	2.833	8.90	3.83	5.89
0.850	19.96	1.850	17.52	2.850	8.16	3.85	5.59
0.867	19.96	1.867	17.52	2.867	8.16	3.87	5.59
0.883	19.96	1.883	17.52	2.883	8.16	3.88	5.59
0.900	19.96	1.900	17.52	2.900	8.16	3.90	5.59
0.917	19.96	1.917	17.52	2.917	8.16	3.92	5.59
0.933	19.96	1.933	17.52	2.933	8.16	3.93	5.59
0.950	19.96	1.950	17.52	2.950	8.16	3.95	5.59
0.967	19.96	1.967	17.52	2.967	8.16	3.97	5.59
0.983	19.96	1.983	17.52	2.983	8.16	3.98	5.59
1.000	19.96	2.000	17.52	3.000	8.16	4.00	5.59

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.056 (i)
TIME TO PEAK (hrs)= 1.700
RUNOFF VOLUME (mm)= 27.364
TOTAL RAINFALL (mm)= 87.580
RUNOFF COEFFICIENT = 0.312

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

CALIB	
STANDHYD (0201)	Area (ha)= 1.03
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		180.15	111.67	
over (min)		5.00	2.00	
Storage Coeff. (min)=		1.46 (ii)	1.98 (ii)	
Unit Hyd. Tpeak (min)=		5.00	2.00	
Unit Hyd. peak (cms)=		0.42	0.56	
				TOTALS
PEAK FLOW	(cms)=	0.15	0.18	0.338 (iii)
TIME TO PEAK	(hrs)=	1.33	1.33	1.33
RUNOFF VOLUME	(mm)=	86.58	41.66	55.14
TOTAL RAINFALL	(mm)=	87.58	87.58	87.58
RUNOFF COEFFICIENT	=	0.99	0.48	0.63

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):		0.95	0.056	1.70	27.36
+ ID2= 2 (0201):		1.03	0.338	1.33	55.14
ID = 3 (0006):		1.98	0.352	1.33	41.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0190	0.0530
	0.0120	0.0080	0.0200	0.0720
	0.0150	0.0200	0.0220	0.0950
	0.0170	0.0350	0.6940	0.1190

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0006)	1.980	0.352	1.33	41.81
OUTFLOW: ID= 1 (0011)	1.980	0.019	4.02	41.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.53
TIME SHIFT OF PEAK FLOW (min)=161.00
MAXIMUM STORAGE USED (ha.m.)= 0.0617

CALIB			
NASHYD (0202)	Area (ha)= 0.53	Curve Number (CN)= 55.0	
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.67		

Unit Hyd Qpeak (cms)= 0.030

PEAK FLOW (cms)= 0.015 (i)

```
     TIME TO PEAK    (hrs)=   2.250
     RUNOFF VOLUME    (mm)=  21.086
     TOTAL RAINFALL   (mm)=  87.580
     RUNOFF COEFFICIENT   =   0.241

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     180.15       105.90
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.14 (ii)    6.07 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.46         0.18
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.07          0.081 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.40           1.38
     RUNOFF VOLUME    (mm)=      86.58        40.93          43.20
     TOTAL RAINFALL   (mm)=      87.58        87.58          87.58
     RUNOFF COEFFICIENT   =       0.99         0.47           0.49

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
```



```
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     180.15       161.65
               over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.24 (ii)    1.71 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.45         0.62
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.09         0.12          0.210 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.33           1.33
     RUNOFF VOLUME    (mm)=      86.58        46.91          58.81
     TOTAL RAINFALL   (mm)=      87.58        87.58          87.58
     RUNOFF COEFFICIENT   =       0.99         0.54           0.67


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.081     1.38    43.20
      + ID2= 2 (  0203):     0.59   0.210     1.33    58.81
        ================================================
        ID = 3 (  0009):     1.04   0.281     1.33    52.06

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0390     0.0320
                          0.0090     0.0060   |   0.0430     0.0380
                          0.0230     0.0130   |   0.0470     0.0450
                          0.0300     0.0190   |   0.0500     0.0510
                          0.0350     0.0260   |   0.0000     0.0000
```

```
                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)    1.040      0.281      1.33      52.06
   OUTFLOW: ID= 1 (  0012)    1.040      0.037      2.05      51.89

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.18
                  TIME SHIFT OF PEAK FLOW         (min)= 43.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0291

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.037     2.05    51.89
      + ID2= 2 (  0202):     0.53   0.015     2.25    21.09
        ================================================
        ID = 3 (  0013):     1.57   0.051     2.20    41.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\d57
0e508-1585-414e-ba9f-113e388c0a46\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\d57
0e508-1585-414e-ba9f-113e388c0a46\sce


DATE: 11-25-2019                          TIME: 10:52:31

USER:



COMMENTS: _____


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------------------------
  ************************************************
  ** SIMULATION : 01. 2 yr - 6 hr SCS Type II   **
  ************************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
```



```
|                  |              ac070188-4af9-488a-9e63-f7619aadcb3e\cb7c6532
| Ptotal= 42.30 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                          Duration of storm    =  6.00 hrs
                          Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.69 |  1.75    4.23 |  3.25    9.31 |  4.75    2.54
                0.50    1.69 |  2.00    4.23 |  3.50    9.31 |  5.00    2.54
                0.75    2.54 |  2.25    5.08 |  3.75    4.23 |  5.25    1.69
                1.00    2.54 |  2.50    5.08 |  4.00    4.23 |  5.50    1.69
                1.25    2.54 |  2.75   25.38 |  4.25    3.38 |  5.75    1.69
                1.50    2.54 |  3.00   65.99 |  4.50    3.38 |  6.00    1.69

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    1.69 | 1.517    4.23 | 3.017    9.31 |  4.52    2.54
               0.033    1.69 | 1.533    4.23 | 3.033    9.31 |  4.53    2.54
               0.050    1.69 | 1.550    4.23 | 3.050    9.31 |  4.55    2.54
               0.067    1.69 | 1.567    4.23 | 3.067    9.31 |  4.57    2.54
               0.083    1.69 | 1.583    4.23 | 3.083    9.31 |  4.58    2.54
               0.100    1.69 | 1.600    4.23 | 3.100    9.31 |  4.60    2.54
               0.117    1.69 | 1.617    4.23 | 3.117    9.31 |  4.62    2.54
               0.133    1.69 | 1.633    4.23 | 3.133    9.31 |  4.63    2.54
               0.150    1.69 | 1.650    4.23 | 3.150    9.31 |  4.65    2.54
               0.167    1.69 | 1.667    4.23 | 3.167    9.31 |  4.67    2.54
               0.183    1.69 | 1.683    4.23 | 3.183    9.31 |  4.68    2.54
               0.200    1.69 | 1.700    4.23 | 3.200    9.31 |  4.70    2.54
               0.217    1.69 | 1.717    4.23 | 3.217    9.31 |  4.72    2.54
               0.233    1.69 | 1.733    4.23 | 3.233    9.31 |  4.73    2.54
               0.250    1.69 | 1.750    4.23 | 3.250    9.31 |  4.75    2.54
               0.267    1.69 | 1.767    4.23 | 3.267    9.31 |  4.77    2.54
               0.283    1.69 | 1.783    4.23 | 3.283    9.31 |  4.78    2.54
               0.300    1.69 | 1.800    4.23 | 3.300    9.31 |  4.80    2.54
               0.317    1.69 | 1.817    4.23 | 3.317    9.31 |  4.82    2.54
               0.333    1.69 | 1.833    4.23 | 3.333    9.31 |  4.83    2.54
               0.350    1.69 | 1.850    4.23 | 3.350    9.31 |  4.85    2.54
```

0.367	1.69	1.867	4.23	3.367	9.31	4.87	2.54
0.383	1.69	1.883	4.23	3.383	9.31	4.88	2.54
0.400	1.69	1.900	4.23	3.400	9.31	4.90	2.54
0.417	1.69	1.917	4.23	3.417	9.31	4.92	2.54
0.433	1.69	1.933	4.23	3.433	9.31	4.93	2.54
0.450	1.69	1.950	4.23	3.450	9.31	4.95	2.54
0.467	1.69	1.967	4.23	3.467	9.31	4.97	2.54
0.483	1.69	1.983	4.23	3.483	9.31	4.98	2.54
0.500	1.69	2.000	4.23	3.500	9.31	5.00	2.54
0.517	2.54	2.017	5.08	3.517	4.23	5.02	1.69
0.533	2.54	2.033	5.08	3.533	4.23	5.03	1.69
0.550	2.54	2.050	5.08	3.550	4.23	5.05	1.69
0.567	2.54	2.067	5.08	3.567	4.23	5.07	1.69
0.583	2.54	2.083	5.08	3.583	4.23	5.08	1.69
0.600	2.54	2.100	5.08	3.600	4.23	5.10	1.69
0.617	2.54	2.117	5.08	3.617	4.23	5.12	1.69
0.633	2.54	2.133	5.08	3.633	4.23	5.13	1.69
0.650	2.54	2.150	5.08	3.650	4.23	5.15	1.69
0.667	2.54	2.167	5.08	3.667	4.23	5.17	1.69
0.683	2.54	2.183	5.08	3.683	4.23	5.18	1.69
0.700	2.54	2.200	5.08	3.700	4.23	5.20	1.69
0.717	2.54	2.217	5.08	3.717	4.23	5.22	1.69
0.733	2.54	2.233	5.08	3.733	4.23	5.23	1.69
0.750	2.54	2.250	5.08	3.750	4.23	5.25	1.69
0.767	2.54	2.267	5.08	3.767	4.23	5.27	1.69
0.783	2.54	2.283	5.08	3.783	4.23	5.28	1.69
0.800	2.54	2.300	5.08	3.800	4.23	5.30	1.69
0.817	2.54	2.317	5.08	3.817	4.23	5.32	1.69
0.833	2.54	2.333	5.08	3.833	4.23	5.33	1.69
0.850	2.54	2.350	5.08	3.850	4.23	5.35	1.69
0.867	2.54	2.367	5.08	3.867	4.23	5.37	1.69
0.883	2.54	2.383	5.08	3.883	4.23	5.38	1.69
0.900	2.54	2.400	5.08	3.900	4.23	5.40	1.69
0.917	2.54	2.417	5.08	3.917	4.23	5.42	1.69
0.933	2.54	2.433	5.08	3.933	4.23	5.43	1.69
0.950	2.54	2.450	5.08	3.950	4.23	5.45	1.69
0.967	2.54	2.467	5.08	3.967	4.23	5.47	1.69
0.983	2.54	2.483	5.08	3.983	4.23	5.48	1.69
1.000	2.54	2.500	5.08	4.000	4.23	5.50	1.69
1.017	2.54	2.517	25.38	4.017	3.38	5.52	1.69
1.033	2.54	2.533	25.38	4.033	3.38	5.53	1.69
1.050	2.54	2.550	25.38	4.050	3.38	5.55	1.69
1.067	2.54	2.567	25.38	4.067	3.38	5.57	1.69
1.083	2.54	2.583	25.38	4.083	3.38	5.58	1.69
1.100	2.54	2.600	25.38	4.100	3.38	5.60	1.69
1.117	2.54	2.617	25.38	4.117	3.38	5.62	1.69
1.133	2.54	2.633	25.38	4.133	3.38	5.63	1.69
1.150	2.54	2.650	25.38	4.150	3.38	5.65	1.69
1.167	2.54	2.667	25.38	4.167	3.38	5.67	1.69

1.183	2.54	2.683	25.38	4.183	3.38	5.68	1.69
1.200	2.54	2.700	25.38	4.200	3.38	5.70	1.69
1.217	2.54	2.717	25.38	4.217	3.38	5.72	1.69
1.233	2.54	2.733	25.38	4.233	3.38	5.73	1.69
1.250	2.54	2.750	25.38	4.250	3.38	5.75	1.69
1.267	2.54	2.767	65.98	4.267	3.38	5.77	1.69
1.283	2.54	2.783	65.99	4.283	3.38	5.78	1.69
1.300	2.54	2.800	65.99	4.300	3.38	5.80	1.69
1.317	2.54	2.817	65.99	4.317	3.38	5.82	1.69
1.333	2.54	2.833	65.99	4.333	3.38	5.83	1.69
1.350	2.54	2.850	65.99	4.350	3.38	5.85	1.69
1.367	2.54	2.867	65.99	4.367	3.38	5.87	1.69
1.383	2.54	2.883	65.99	4.383	3.38	5.88	1.69
1.400	2.54	2.900	65.99	4.400	3.38	5.90	1.69
1.417	2.54	2.917	65.99	4.417	3.38	5.92	1.69
1.433	2.54	2.933	65.99	4.433	3.38	5.93	1.69
1.450	2.54	2.950	65.99	4.450	3.38	5.95	1.69
1.467	2.54	2.967	65.99	4.467	3.38	5.97	1.69
1.483	2.54	2.983	65.99	4.483	3.38	5.98	1.69
1.500	2.54	3.000	65.99	4.500	3.38	6.00	1.69

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.014 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 6.454
TOTAL RAINFALL (mm)= 42.300
RUNOFF COEFFICIENT = 0.153

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

CALIB
STANDHYD (0201) | Area (ha)= 1.03
ID= 1 DT= 1.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.51
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	82.87	6.00
Mannings n	=	0.013	0.035
Max.Eff.Inten.(mm/hr)=		65.99	33.61
over (min)		5.00	3.00
Storage Coeff. (min)=		2.19 (ii)	2.95 (ii)
Unit Hyd. Tpeak (min)=		5.00	3.00
Unit Hyd. peak (cms)=		0.36	0.38

```
                                                    *TOTALS*
PEAK FLOW       (cms)=       0.06         0.05          0.106 (iii)
TIME TO PEAK    (hrs)=       3.00         3.00           3.00
RUNOFF VOLUME    (mm)=      41.30        12.09          20.85
TOTAL RAINFALL   (mm)=      42.30        42.30          42.30
RUNOFF COEFFICIENT   =       0.98         0.29           0.49


  (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
       CN*  =  68.0    Ia = Dep. Storage  (Above)
 (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.014     3.25     6.45
      + ID2= 2 (  0201):     1.03   0.106     3.00    20.85
        ====================================================
        ID = 3 (  0006):     1.98   0.113     3.00    13.94

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
```

```
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0190     0.0530
                         0.0120     0.0080    |   0.0200     0.0720
                         0.0150     0.0200    |   0.0220     0.0950
                         0.0170     0.0350    |   0.6940     0.1190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)    1.980      0.113      3.00      13.94
   OUTFLOW: ID= 1 (  0011)    1.980      0.014      3.90      13.86

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 12.27
                  TIME SHIFT OF PEAK FLOW         (min)= 54.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0155
```

```
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.003 (i)
     TIME TO PEAK    (hrs)=   3.783
     RUNOFF VOLUME    (mm)=   4.193
     TOTAL RAINFALL   (mm)=  42.300
     RUNOFF COEFFICIENT   =   0.099

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.31
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      54.77         40.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=      65.99         31.76
               over (min)        5.00         10.00
     Storage Coeff.  (min)=       1.71 (ii)     9.07 (ii)
     Unit Hyd. Tpeak (min)=       5.00         10.00
     Unit Hyd. peak  (cms)=       0.40          0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.00          0.02          0.022 (iii)
     TIME TO PEAK    (hrs)=       3.00          3.08           3.05
     RUNOFF VOLUME    (mm)=      41.30         11.77          13.23
     TOTAL RAINFALL   (mm)=      42.30         42.30          42.30
     RUNOFF COEFFICIENT   =       0.98          0.28           0.31

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      65.99        49.93
                   over (min)       5.00         3.00
     Storage Coeff.  (min)=       1.85 (ii)    2.55 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.39         0.42
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.03          0.066 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.00           3.00
     RUNOFF VOLUME    (mm)=      41.30        14.44          22.49
     TOTAL RAINFALL   (mm)=      42.30        42.30          42.30
     RUNOFF COEFFICIENT   =       0.98         0.34           0.53


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.022     3.05    13.23
     + ID2= 2 (  0203):     0.59   0.066     3.00    22.49
       ================================================
       ID = 3 (  0009):     1.04   0.087     3.00    18.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
```



```
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0390     0.0320
                         0.0090     0.0060   |   0.0430     0.0380
                         0.0230     0.0130   |   0.0470     0.0450
                         0.0300     0.0190   |   0.0500     0.0510
                         0.0350     0.0260   |   0.0000     0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.087      3.00      18.49
   OUTFLOW: ID= 1 (  0012)      1.040      0.017      3.50      18.33

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.43
                  TIME SHIFT OF PEAK FLOW         (min)= 30.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0100

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.017     3.50    18.33
     + ID2= 2 (  0202):     0.53   0.003     3.78     4.19
       ================================================
       ID = 3 (  0013):     1.57   0.020     3.55    13.55

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

Output filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\590
71595-3fb5-4e2e-925a-6e02e46ad4fa\sce
Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\590
71595-3fb5-4e2e-925a-6e02e46ad4fa\sce

DATE: 11-25-2019 TIME: 10:52:31

USER:

COMMENTS: _____

****
** SIMULATION : 02. 5 yr - 6 hr SCS Type II **
****

MASS STORM	Filename: C:\Users\iblechta\AppD ata\Local\Temp\ ac070188-4af9-488a-9e63-f7619aadcb3e\f9a556d8
Ptotal= 59.50 mm	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 6.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.38	1.75	5.95	3.25	13.09	4.75	3.57
0.50	2.38	2.00	5.95	3.50	13.09	5.00	3.57
0.75	3.57	2.25	7.14	3.75	5.95	5.25	2.38
1.00	3.57	2.50	7.14	4.00	5.95	5.50	2.38
1.25	3.57	2.75	35.70	4.25	4.76	5.75	2.38
1.50	3.57	3.00	92.82	4.50	4.76	6.00	2.38

CALIB

NASHYD (0002)	Area (ha)= 0.95 Curve Number (CN)= 62.0
ID= 1 DT= 1.0 min	Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.38	1.517	5.95	3.017	13.10	4.52	3.57
0.033	2.38	1.533	5.95	3.033	13.09	4.53	3.57
0.050	2.38	1.550	5.95	3.050	13.09	4.55	3.57
0.067	2.38	1.567	5.95	3.067	13.09	4.57	3.57
0.083	2.38	1.583	5.95	3.083	13.09	4.58	3.57
0.100	2.38	1.600	5.95	3.100	13.09	4.60	3.57
0.117	2.38	1.617	5.95	3.117	13.09	4.62	3.57
0.133	2.38	1.633	5.95	3.133	13.09	4.63	3.57
0.150	2.38	1.650	5.95	3.150	13.09	4.65	3.57
0.167	2.38	1.667	5.95	3.167	13.09	4.67	3.57
0.183	2.38	1.683	5.95	3.183	13.09	4.68	3.57
0.200	2.38	1.700	5.95	3.200	13.09	4.70	3.57
0.217	2.38	1.717	5.95	3.217	13.09	4.72	3.57
0.233	2.38	1.733	5.95	3.233	13.09	4.73	3.57
0.250	2.38	1.750	5.95	3.250	13.09	4.75	3.57
0.267	2.38	1.767	5.95	3.267	13.09	4.77	3.57
0.283	2.38	1.783	5.95	3.283	13.09	4.78	3.57
0.300	2.38	1.800	5.95	3.300	13.09	4.80	3.57
0.317	2.38	1.817	5.95	3.317	13.09	4.82	3.57
0.333	2.38	1.833	5.95	3.333	13.09	4.83	3.57
0.350	2.38	1.850	5.95	3.350	13.09	4.85	3.57
0.367	2.38	1.867	5.95	3.367	13.09	4.87	3.57
0.383	2.38	1.883	5.95	3.383	13.09	4.88	3.57
0.400	2.38	1.900	5.95	3.400	13.09	4.90	3.57
0.417	2.38	1.917	5.95	3.417	13.09	4.92	3.57
0.433	2.38	1.933	5.95	3.433	13.09	4.93	3.57
0.450	2.38	1.950	5.95	3.450	13.09	4.95	3.57
0.467	2.38	1.967	5.95	3.467	13.09	4.97	3.57
0.483	2.38	1.983	5.95	3.483	13.09	4.98	3.57
0.500	2.38	2.000	5.95	3.500	13.09	5.00	3.57
0.517	3.57	2.017	7.14	3.517	5.95	5.02	2.38
0.533	3.57	2.033	7.14	3.533	5.95	5.03	2.38
0.550	3.57	2.050	7.14	3.550	5.95	5.05	2.38
0.567	3.57	2.067	7.14	3.567	5.95	5.07	2.38
0.583	3.57	2.083	7.14	3.583	5.95	5.08	2.38
0.600	3.57	2.100	7.14	3.600	5.95	5.10	2.38
0.617	3.57	2.117	7.14	3.617	5.95	5.12	2.38
0.633	3.57	2.133	7.14	3.633	5.95	5.13	2.38
0.650	3.57	2.150	7.14	3.650	5.95	5.15	2.38

0.667	3.57	2.167	7.14	3.667	5.95	5.17	2.38
0.683	3.57	2.183	7.14	3.683	5.95	5.18	2.38
0.700	3.57	2.200	7.14	3.700	5.95	5.20	2.38
0.717	3.57	2.217	7.14	3.717	5.95	5.22	2.38
0.733	3.57	2.233	7.14	3.733	5.95	5.23	2.38
0.750	3.57	2.250	7.14	3.750	5.95	5.25	2.38
0.767	3.57	2.267	7.14	3.767	5.95	5.27	2.38
0.783	3.57	2.283	7.14	3.783	5.95	5.28	2.38
0.800	3.57	2.300	7.14	3.800	5.95	5.30	2.38
0.817	3.57	2.317	7.14	3.817	5.95	5.32	2.38
0.833	3.57	2.333	7.14	3.833	5.95	5.33	2.38
0.850	3.57	2.350	7.14	3.850	5.95	5.35	2.38
0.867	3.57	2.367	7.14	3.867	5.95	5.37	2.38
0.883	3.57	2.383	7.14	3.883	5.95	5.38	2.38
0.900	3.57	2.400	7.14	3.900	5.95	5.40	2.38
0.917	3.57	2.417	7.14	3.917	5.95	5.42	2.38
0.933	3.57	2.433	7.14	3.933	5.95	5.43	2.38
0.950	3.57	2.450	7.14	3.950	5.95	5.45	2.38
0.967	3.57	2.467	7.14	3.967	5.95	5.47	2.38
0.983	3.57	2.483	7.14	3.983	5.95	5.48	2.38
1.000	3.57	2.500	7.14	4.000	5.95	5.50	2.38
1.017	3.57	2.517	35.70	4.017	4.76	5.52	2.38
1.033	3.57	2.533	35.70	4.033	4.76	5.53	2.38
1.050	3.57	2.550	35.70	4.050	4.76	5.55	2.38
1.067	3.57	2.567	35.70	4.067	4.76	5.57	2.38
1.083	3.57	2.583	35.70	4.083	4.76	5.58	2.38
1.100	3.57	2.600	35.70	4.100	4.76	5.60	2.38
1.117	3.57	2.617	35.70	4.117	4.76	5.62	2.38
1.133	3.57	2.633	35.70	4.133	4.76	5.63	2.38
1.150	3.57	2.650	35.70	4.150	4.76	5.65	2.38
1.167	3.57	2.667	35.70	4.167	4.76	5.67	2.38
1.183	3.57	2.683	35.70	4.183	4.76	5.68	2.38
1.200	3.57	2.700	35.70	4.200	4.76	5.70	2.38
1.217	3.57	2.717	35.70	4.217	4.76	5.72	2.38
1.233	3.57	2.733	35.70	4.233	4.76	5.73	2.38
1.250	3.57	2.750	35.70	4.250	4.76	5.75	2.38
1.267	3.57	2.767	92.81	4.267	4.76	5.77	2.38
1.283	3.57	2.783	92.82	4.283	4.76	5.78	2.38
1.300	3.57	2.800	92.82	4.300	4.76	5.80	2.38
1.317	3.57	2.817	92.82	4.317	4.76	5.82	2.38
1.333	3.57	2.833	92.82	4.333	4.76	5.83	2.38
1.350	3.57	2.850	92.82	4.350	4.76	5.85	2.38
1.367	3.57	2.867	92.82	4.367	4.76	5.87	2.38
1.383	3.57	2.883	92.82	4.383	4.76	5.88	2.38
1.400	3.57	2.900	92.82	4.400	4.76	5.90	2.38
1.417	3.57	2.917	92.82	4.417	4.76	5.92	2.38
1.433	3.57	2.933	92.82	4.433	4.76	5.93	2.38
1.450	3.57	2.950	92.82	4.450	4.76	5.95	2.38
1.467	3.57	2.967	92.82	4.467	4.76	5.97	2.38

1.483	3.57	2.983	92.82	4.483	4.76	5.98	2.38
1.500	3.57	3.000	92.82	4.500	4.76	6.00	2.38

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.030 (i)
TIME TO PEAK (hrs)= 3.233
RUNOFF VOLUME (mm)= 13.147
TOTAL RAINFALL (mm)= 59.500
RUNOFF COEFFICIENT = 0.221

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

CALIB
STANDHYD (0201)
ID= 1 DT= 1.0 min

Area (ha)= 1.03
Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.51
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	82.87	6.00
Mannings n	=	0.013	0.035
Max.Eff.Inten.(mm/hr)=		92.82	61.05
over (min)		5.00	3.00
Storage Coeff. (min)=		1.91 (ii)	2.58 (ii)
Unit Hyd. Tpeak (min)=		5.00	3.00
Unit Hyd. peak (cms)=		0.38	0.41

				TOTALS
PEAK FLOW	(cms)=	0.08	0.09	0.170 (iii)
TIME TO PEAK	(hrs)=	3.00	3.00	3.00
RUNOFF VOLUME	(mm)=	58.50	22.14	33.04
TOTAL RAINFALL	(mm)=	59.50	59.50	59.50
RUNOFF COEFFICIENT	=	0.98	0.37	0.56

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)

```
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0002):     0.95   0.030     3.23    13.15
     + ID2= 2 (  0201):     1.03   0.170     3.00    33.04
       ================================================
       ID = 3 (  0006):     1.98   0.187     3.00    23.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0190     0.0530
                         0.0120     0.0080   |   0.0200     0.0720
                         0.0150     0.0200   |   0.0220     0.0950
                         0.0170     0.0350   |   0.6940     0.1190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980      0.187      3.00      23.50
   OUTFLOW: ID= 1 (  0011)      1.980      0.016      4.40      23.41

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  8.71
                  TIME SHIFT OF PEAK FLOW         (min)= 84.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0294

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.007 (i)
     TIME TO PEAK    (hrs)=   3.733
     RUNOFF VOLUME    (mm)=   9.213
     TOTAL RAINFALL   (mm)=  59.500
     RUNOFF COEFFICIENT   =   0.155

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

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--------------------
| CALIB            |
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```
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      92.82        57.93
               over (min)        5.00         8.00
     Storage Coeff.  (min)=       1.49 (ii)    7.91 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.42         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.04          0.044 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.05           3.03
     RUNOFF VOLUME    (mm)=      58.50        21.65          23.48
     TOTAL RAINFALL   (mm)=      59.50        59.50          59.50
     RUNOFF COEFFICIENT   =       0.98         0.36           0.39

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
-------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      92.82        87.93
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.62 (ii)    2.23 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.41         0.45
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                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.05         0.06          0.106 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.00           3.00
     RUNOFF VOLUME    (mm)=      58.50        25.68          35.52
     TOTAL RAINFALL   (mm)=      59.50        59.50          59.50
     RUNOFF COEFFICIENT   =       0.98         0.43           0.60


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.044     3.03    23.48
      + ID2= 2 (  0203):     0.59   0.106     3.00    35.52
        ====================================================
        ID = 3 (  0009):     1.04   0.148     3.00    30.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390     0.0320
                         0.0090     0.0060    |   0.0430     0.0380
                         0.0230     0.0130    |   0.0470     0.0450
                         0.0300     0.0190    |   0.0500     0.0510
                         0.0350     0.0260    |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)    1.040      0.148      3.00      30.31
   OUTFLOW: ID= 1 (  0012)    1.040      0.027      3.48      30.15

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 18.40
                  TIME SHIFT OF PEAK FLOW         (min)= 29.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0166

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.027     3.48    30.15
      + ID2= 2 (  0202):     0.53   0.007     3.73     9.21
        ====================================================
        ID = 3 (  0013):     1.57   0.034     3.58    23.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\8d9
efe4d-2411-4579-b4b3-c7841ab5bb00\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\8d9
efe4d-2411-4579-b4b3-c7841ab5bb00\sce


DATE: 11-25-2019                          TIME: 10:52:31

USER:
```

COMMENTS: _____

```
  **********************************************
  ** SIMULATION : 03. 10 yr - 6 hr -SCS Type II **
  **********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ac070188-4af9-488a-9e63-f7619aadcb3e\b71dce07
| Ptotal= 70.80 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    =  6.00 hrs
                       Mass curve time step = 15.00 min
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.83	1.75	7.08	3.25	15.58	4.75	4.25
0.50	2.83	2.00	7.08	3.50	15.58	5.00	4.25
0.75	4.25	2.25	8.50	3.75	7.08	5.25	2.83
1.00	4.25	2.50	8.50	4.00	7.08	5.50	2.83
1.25	4.25	2.75	42.48	4.25	5.66	5.75	2.83
1.50	4.25	3.00	110.45	4.50	5.66	6.00	2.83

```
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
0.017	2.83	1.517	7.08	3.017	15.59	4.52	4.25
0.033	2.83	1.533	7.08	3.033	15.58	4.53	4.25
0.050	2.83	1.550	7.08	3.050	15.58	4.55	4.25
0.067	2.83	1.567	7.08	3.067	15.58	4.57	4.25
0.083	2.83	1.583	7.08	3.083	15.58	4.58	4.25
0.100	2.83	1.600	7.08	3.100	15.58	4.60	4.25
0.117	2.83	1.617	7.08	3.117	15.58	4.62	4.25
0.133	2.83	1.633	7.08	3.133	15.58	4.63	4.25

0.150	2.83	1.650	7.08	3.150	15.58	4.65	4.25
0.167	2.83	1.667	7.08	3.167	15.58	4.67	4.25
0.183	2.83	1.683	7.08	3.183	15.58	4.68	4.25
0.200	2.83	1.700	7.08	3.200	15.58	4.70	4.25
0.217	2.83	1.717	7.08	3.217	15.58	4.72	4.25
0.233	2.83	1.733	7.08	3.233	15.58	4.73	4.25
0.250	2.83	1.750	7.08	3.250	15.58	4.75	4.25
0.267	2.83	1.767	7.08	3.267	15.58	4.77	4.25
0.283	2.83	1.783	7.08	3.283	15.58	4.78	4.25
0.300	2.83	1.800	7.08	3.300	15.58	4.80	4.25
0.317	2.83	1.817	7.08	3.317	15.58	4.82	4.25
0.333	2.83	1.833	7.08	3.333	15.58	4.83	4.25
0.350	2.83	1.850	7.08	3.350	15.58	4.85	4.25
0.367	2.83	1.867	7.08	3.367	15.58	4.87	4.25
0.383	2.83	1.883	7.08	3.383	15.58	4.88	4.25
0.400	2.83	1.900	7.08	3.400	15.58	4.90	4.25
0.417	2.83	1.917	7.08	3.417	15.58	4.92	4.25
0.433	2.83	1.933	7.08	3.433	15.58	4.93	4.25
0.450	2.83	1.950	7.08	3.450	15.58	4.95	4.25
0.467	2.83	1.967	7.08	3.467	15.58	4.97	4.25
0.483	2.83	1.983	7.08	3.483	15.58	4.98	4.25
0.500	2.83	2.000	7.08	3.500	15.58	5.00	4.25
0.517	4.25	2.017	8.50	3.517	7.08	5.02	2.83
0.533	4.25	2.033	8.50	3.533	7.08	5.03	2.83
0.550	4.25	2.050	8.50	3.550	7.08	5.05	2.83
0.567	4.25	2.067	8.50	3.567	7.08	5.07	2.83
0.583	4.25	2.083	8.50	3.583	7.08	5.08	2.83
0.600	4.25	2.100	8.50	3.600	7.08	5.10	2.83
0.617	4.25	2.117	8.50	3.617	7.08	5.12	2.83
0.633	4.25	2.133	8.50	3.633	7.08	5.13	2.83
0.650	4.25	2.150	8.50	3.650	7.08	5.15	2.83
0.667	4.25	2.167	8.50	3.667	7.08	5.17	2.83
0.683	4.25	2.183	8.50	3.683	7.08	5.18	2.83
0.700	4.25	2.200	8.50	3.700	7.08	5.20	2.83
0.717	4.25	2.217	8.50	3.717	7.08	5.22	2.83
0.733	4.25	2.233	8.50	3.733	7.08	5.23	2.83
0.750	4.25	2.250	8.50	3.750	7.08	5.25	2.83
0.767	4.25	2.267	8.50	3.767	7.08	5.27	2.83
0.783	4.25	2.283	8.50	3.783	7.08	5.28	2.83
0.800	4.25	2.300	8.50	3.800	7.08	5.30	2.83
0.817	4.25	2.317	8.50	3.817	7.08	5.32	2.83
0.833	4.25	2.333	8.50	3.833	7.08	5.33	2.83
0.850	4.25	2.350	8.50	3.850	7.08	5.35	2.83
0.867	4.25	2.367	8.50	3.867	7.08	5.37	2.83
0.883	4.25	2.383	8.50	3.883	7.08	5.38	2.83
0.900	4.25	2.400	8.50	3.900	7.08	5.40	2.83
0.917	4.25	2.417	8.50	3.917	7.08	5.42	2.83
0.933	4.25	2.433	8.50	3.933	7.08	5.43	2.83
0.950	4.25	2.450	8.50	3.950	7.08	5.45	2.83

0.967	4.25	2.467	8.50	3.967	7.08	5.47	2.83
0.983	4.25	2.483	8.50	3.983	7.08	5.48	2.83
1.000	4.25	2.500	8.50	4.000	7.08	5.50	2.83
1.017	4.25	2.517	42.48	4.017	5.66	5.52	2.83
1.033	4.25	2.533	42.48	4.033	5.66	5.53	2.83
1.050	4.25	2.550	42.48	4.050	5.66	5.55	2.83
1.067	4.25	2.567	42.48	4.067	5.66	5.57	2.83
1.083	4.25	2.583	42.48	4.083	5.66	5.58	2.83
1.100	4.25	2.600	42.48	4.100	5.66	5.60	2.83
1.117	4.25	2.617	42.48	4.117	5.66	5.62	2.83
1.133	4.25	2.633	42.48	4.133	5.66	5.63	2.83
1.150	4.25	2.650	42.48	4.150	5.66	5.65	2.83
1.167	4.25	2.667	42.48	4.167	5.66	5.67	2.83
1.183	4.25	2.683	42.48	4.183	5.66	5.68	2.83
1.200	4.25	2.700	42.48	4.200	5.66	5.70	2.83
1.217	4.25	2.717	42.48	4.217	5.66	5.72	2.83
1.233	4.25	2.733	42.48	4.233	5.66	5.73	2.83
1.250	4.25	2.750	42.48	4.250	5.66	5.75	2.83
1.267	4.25	2.767	110.44	4.267	5.66	5.77	2.83
1.283	4.25	2.783	110.45	4.283	5.66	5.78	2.83
1.300	4.25	2.800	110.45	4.300	5.66	5.80	2.83
1.317	4.25	2.817	110.45	4.317	5.66	5.82	2.83
1.333	4.25	2.833	110.45	4.333	5.66	5.83	2.83
1.350	4.25	2.850	110.45	4.350	5.66	5.85	2.83
1.367	4.25	2.867	110.45	4.367	5.66	5.87	2.83
1.383	4.25	2.883	110.45	4.383	5.66	5.88	2.83
1.400	4.25	2.900	110.45	4.400	5.66	5.90	2.83
1.417	4.25	2.917	110.45	4.417	5.66	5.92	2.83
1.433	4.25	2.933	110.45	4.433	5.66	5.93	2.83
1.450	4.25	2.950	110.45	4.450	5.66	5.95	2.83
1.467	4.25	2.967	110.45	4.467	5.66	5.97	2.83
1.483	4.25	2.983	110.45	4.483	5.66	5.98	2.83
1.500	4.25	3.000	110.45	4.500	5.66	6.00	2.83

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.043 (i)
TIME TO PEAK (hrs)= 3.233
RUNOFF VOLUME (mm)= 18.441
TOTAL RAINFALL (mm)= 70.800
RUNOFF COEFFICIENT = 0.260

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

CALIB	
STANDHYD (0201)	Area (ha)= 1.03
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.51	0.51
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	2.00	5.00
Length (m)=	82.87	6.00
Mannings n =	0.013	0.035
Max.Eff.Inten.(mm/hr)=	110.45	81.26
over (min)	5.00	3.00
Storage Coeff. (min)=	1.78 (ii)	2.40 (ii)
Unit Hyd. Tpeak (min)=	5.00	3.00
Unit Hyd. peak (cms)=	0.39	0.43

			TOTALS
PEAK FLOW (cms)=	0.09	0.12	0.215 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	69.80	29.62	41.67
TOTAL RAINFALL (mm)=	70.80	70.80	70.80
RUNOFF COEFFICIENT =	0.99	0.42	0.59

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	0.95	0.043	3.23	18.44
+ ID2= 2 (0201):	1.03	0.215	3.00	41.67
ID = 3 (0006):	1.98	0.240	3.00	30.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0190	0.0530
	0.0120	0.0080	0.0200	0.0720
	0.0150	0.0200	0.0220	0.0950

```
                        0.0170     0.0350   |   0.6940      0.1190

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980      0.240      3.00      30.52
   OUTFLOW: ID= 1 (  0011)      1.980      0.018      4.58      30.44

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.34
                   TIME SHIFT OF PEAK FLOW         (min)= 95.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0404

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.010 (i)
     TIME TO PEAK    (hrs)=   3.717
     RUNOFF VOLUME    (mm)=  13.334
     TOTAL RAINFALL   (mm)=  70.800
     RUNOFF COEFFICIENT   =   0.188

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

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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.31
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      54.77         40.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=     110.45         77.27
                 over (min)        5.00          8.00
     Storage Coeff.  (min)=       1.39 (ii)     7.38 (ii)
     Unit Hyd. Tpeak (min)=       5.00          8.00
     Unit Hyd. peak  (cms)=       0.43          0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01          0.05          0.059 (iii)
     TIME TO PEAK    (hrs)=       3.00          3.05           3.03
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     RUNOFF VOLUME    (mm)=      69.80         29.03          31.06
     TOTAL RAINFALL   (mm)=      70.80         70.80          70.80
     RUNOFF COEFFICIENT   =       0.99          0.41           0.44

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35          0.24
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          5.00
     Length            (m)=      62.72          6.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=     110.45        115.30
                 over (min)        5.00          3.00
     Storage Coeff.  (min)=       1.51 (ii)     2.08 (ii)
     Unit Hyd. Tpeak (min)=       5.00          3.00
     Unit Hyd. peak  (cms)=       0.42          0.47
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.05          0.08           0.133 (iii)
     TIME TO PEAK    (hrs)=       3.00          3.00           3.00
     RUNOFF VOLUME    (mm)=      69.80         33.88          44.66
     TOTAL RAINFALL   (mm)=      70.80         70.80          70.80
     RUNOFF COEFFICIENT   =       0.99          0.48           0.63


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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| ADD HYD  (  0009)|
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|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.059     3.03    31.06
      + ID2= 2 (  0203):     0.59   0.133     3.00    44.66
        ================================================
        ID = 3 (  0009):     1.04   0.190     3.00    38.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0390     0.0320
                         0.0090     0.0060   |   0.0430     0.0380
                         0.0230     0.0130   |   0.0470     0.0450
                         0.0300     0.0190   |   0.0500     0.0510
                         0.0350     0.0260   |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040      0.190      3.00      38.77
   OUTFLOW: ID= 1 (  0012)     1.040      0.032      3.52      38.61

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 16.84
                  TIME SHIFT OF PEAK FLOW         (min)= 31.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0218

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.032     3.52    38.61
      + ID2= 2 (  0202):     0.53   0.010     3.72    13.33
        ================================================
        ID = 3 (  0013):     1.57   0.042     3.62    30.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
```



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        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\eba
b4531-5340-49ee-8c6c-fe26377d16ea\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\eba
b4531-5340-49ee-8c6c-fe26377d16ea\sce


DATE: 11-25-2019                          TIME: 10:52:31

USER:


COMMENTS: _____

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  ********************************************
  ** SIMULATION : 04. 25 yr - 6 hr -SCS Type II **
  ********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ac070188-4af9-488a-9e63-f7619aadcb3e\62c64705
| Ptotal= 85.20 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    =  6.00 hrs
                       Mass curve time step = 15.00 min
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	3.41	1.75	8.52	3.25	18.74	4.75	5.11
0.50	3.41	2.00	8.52	3.50	18.74	5.00	5.11
0.75	5.11	2.25	10.22	3.75	8.52	5.25	3.41
1.00	5.11	2.50	10.22	4.00	8.52	5.50	3.41
1.25	5.11	2.75	51.12	4.25	6.82	5.75	3.41
1.50	5.11	3.00	132.91	4.50	6.82	6.00	3.41

CALIB			
NASHYD (0002)	Area (ha)=	0.95	Curve Number (CN)= 62.0
ID= 1 DT= 1.0 min	Ia (mm)=	7.21	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	3.41	1.517	8.52	3.017	18.76	4.52	5.11
0.033	3.41	1.533	8.52	3.033	18.74	4.53	5.11
0.050	3.41	1.550	8.52	3.050	18.74	4.55	5.11
0.067	3.41	1.567	8.52	3.067	18.74	4.57	5.11
0.083	3.41	1.583	8.52	3.083	18.74	4.58	5.11
0.100	3.41	1.600	8.52	3.100	18.74	4.60	5.11
0.117	3.41	1.617	8.52	3.117	18.74	4.62	5.11
0.133	3.41	1.633	8.52	3.133	18.74	4.63	5.11
0.150	3.41	1.650	8.52	3.150	18.74	4.65	5.11
0.167	3.41	1.667	8.52	3.167	18.74	4.67	5.11
0.183	3.41	1.683	8.52	3.183	18.74	4.68	5.11
0.200	3.41	1.700	8.52	3.200	18.74	4.70	5.11
0.217	3.41	1.717	8.52	3.217	18.74	4.72	5.11
0.233	3.41	1.733	8.52	3.233	18.74	4.73	5.11
0.250	3.41	1.750	8.52	3.250	18.74	4.75	5.11
0.267	3.41	1.767	8.52	3.267	18.74	4.77	5.11
0.283	3.41	1.783	8.52	3.283	18.74	4.78	5.11
0.300	3.41	1.800	8.52	3.300	18.74	4.80	5.11
0.317	3.41	1.817	8.52	3.317	18.74	4.82	5.11
0.333	3.41	1.833	8.52	3.333	18.74	4.83	5.11
0.350	3.41	1.850	8.52	3.350	18.74	4.85	5.11
0.367	3.41	1.867	8.52	3.367	18.74	4.87	5.11
0.383	3.41	1.883	8.52	3.383	18.74	4.88	5.11
0.400	3.41	1.900	8.52	3.400	18.74	4.90	5.11
0.417	3.41	1.917	8.52	3.417	18.74	4.92	5.11
0.433	3.41	1.933	8.52	3.433	18.74	4.93	5.11

0.450	3.41	1.950	8.52	3.450	18.74	4.95	5.11
0.467	3.41	1.967	8.52	3.467	18.74	4.97	5.11
0.483	3.41	1.983	8.52	3.483	18.74	4.98	5.11
0.500	3.41	2.000	8.52	3.500	18.74	5.00	5.11
0.517	5.11	2.017	10.22	3.517	8.52	5.02	3.41
0.533	5.11	2.033	10.22	3.533	8.52	5.03	3.41
0.550	5.11	2.050	10.22	3.550	8.52	5.05	3.41
0.567	5.11	2.067	10.22	3.567	8.52	5.07	3.41
0.583	5.11	2.083	10.22	3.583	8.52	5.08	3.41
0.600	5.11	2.100	10.22	3.600	8.52	5.10	3.41
0.617	5.11	2.117	10.22	3.617	8.52	5.12	3.41
0.633	5.11	2.133	10.22	3.633	8.52	5.13	3.41
0.650	5.11	2.150	10.22	3.650	8.52	5.15	3.41
0.667	5.11	2.167	10.22	3.667	8.52	5.17	3.41
0.683	5.11	2.183	10.22	3.683	8.52	5.18	3.41
0.700	5.11	2.200	10.22	3.700	8.52	5.20	3.41
0.717	5.11	2.217	10.22	3.717	8.52	5.22	3.41
0.733	5.11	2.233	10.22	3.733	8.52	5.23	3.41
0.750	5.11	2.250	10.22	3.750	8.52	5.25	3.41
0.767	5.11	2.267	10.22	3.767	8.52	5.27	3.41
0.783	5.11	2.283	10.22	3.783	8.52	5.28	3.41
0.800	5.11	2.300	10.22	3.800	8.52	5.30	3.41
0.817	5.11	2.317	10.22	3.817	8.52	5.32	3.41
0.833	5.11	2.333	10.22	3.833	8.52	5.33	3.41
0.850	5.11	2.350	10.22	3.850	8.52	5.35	3.41
0.867	5.11	2.367	10.22	3.867	8.52	5.37	3.41
0.883	5.11	2.383	10.22	3.883	8.52	5.38	3.41
0.900	5.11	2.400	10.22	3.900	8.52	5.40	3.41
0.917	5.11	2.417	10.22	3.917	8.52	5.42	3.41
0.933	5.11	2.433	10.22	3.933	8.52	5.43	3.41
0.950	5.11	2.450	10.22	3.950	8.52	5.45	3.41
0.967	5.11	2.467	10.22	3.967	8.52	5.47	3.41
0.983	5.11	2.483	10.22	3.983	8.52	5.48	3.41
1.000	5.11	2.500	10.22	4.000	8.52	5.50	3.41
1.017	5.11	2.517	51.12	4.017	6.82	5.52	3.41
1.033	5.11	2.533	51.12	4.033	6.82	5.53	3.41
1.050	5.11	2.550	51.12	4.050	6.82	5.55	3.41
1.067	5.11	2.567	51.12	4.067	6.82	5.57	3.41
1.083	5.11	2.583	51.12	4.083	6.82	5.58	3.41
1.100	5.11	2.600	51.12	4.100	6.82	5.60	3.41
1.117	5.11	2.617	51.12	4.117	6.82	5.62	3.41
1.133	5.11	2.633	51.12	4.133	6.82	5.63	3.41
1.150	5.11	2.650	51.12	4.150	6.82	5.65	3.41
1.167	5.11	2.667	51.12	4.167	6.82	5.67	3.41
1.183	5.11	2.683	51.12	4.183	6.82	5.68	3.41
1.200	5.11	2.700	51.12	4.200	6.82	5.70	3.41
1.217	5.11	2.717	51.12	4.217	6.82	5.72	3.41
1.233	5.11	2.733	51.12	4.233	6.82	5.73	3.41
1.250	5.11	2.750	51.12	4.250	6.82	5.75	3.41

1.267	5.11	2.767	132.90	4.267	6.82	5.77	3.41
1.283	5.11	2.783	132.91	4.283	6.82	5.78	3.41
1.300	5.11	2.800	132.91	4.300	6.82	5.80	3.41
1.317	5.11	2.817	132.91	4.317	6.82	5.82	3.41
1.333	5.11	2.833	132.91	4.333	6.82	5.83	3.41
1.350	5.11	2.850	132.91	4.350	6.82	5.85	3.41
1.367	5.11	2.867	132.91	4.367	6.82	5.87	3.41
1.383	5.11	2.883	132.91	4.383	6.82	5.88	3.41
1.400	5.11	2.900	132.91	4.400	6.82	5.90	3.41
1.417	5.11	2.917	132.91	4.417	6.82	5.92	3.41
1.433	5.11	2.933	132.91	4.433	6.82	5.93	3.41
1.450	5.11	2.950	132.91	4.450	6.82	5.95	3.41
1.467	5.11	2.967	132.91	4.467	6.82	5.97	3.41
1.483	5.11	2.983	132.91	4.483	6.82	5.98	3.41
1.500	5.11	3.000	132.91	4.500	6.82	6.00	3.40

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.062 (i)
TIME TO PEAK (hrs)= 3.217
RUNOFF VOLUME (mm)= 26.030
TOTAL RAINFALL (mm)= 85.200
RUNOFF COEFFICIENT = 0.306

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

CALIB	
STANDHYD (0201)	Area (ha)= 1.03
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		132.91	108.78	
over (min)		5.00	3.00	
Storage Coeff. (min)=		1.65 (ii)	2.23 (ii)	
Unit Hyd. Tpeak (min)=		5.00	3.00	
Unit Hyd. peak (cms)=		0.40	0.45	
				TOTALS
PEAK FLOW	(cms)=	0.11	0.16	0.275 (iii)
TIME TO PEAK	(hrs)=	3.00	3.00	3.00
RUNOFF VOLUME	(mm)=	84.20	39.90	53.19
TOTAL RAINFALL	(mm)=	85.20	85.20	85.20

RUNOFF COEFFICIENT = 0.99 0.47 0.62

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0002):	0.95	0.062	3.22	26.03
	+ ID2= 2 (0201):	1.03	0.275	3.00	53.19
	ID = 3 (0006):	1.98	0.311	3.00	40.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0190	0.0530
	0.0120	0.0080	0.0200	0.0720
	0.0150	0.0200	0.0220	0.0950
	0.0170	0.0350	0.6940	0.1190

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0006)	1.980	0.311	3.00	40.16
OUTFLOW: ID= 1 (0011)	1.980	0.019	5.03	40.07

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.16
TIME SHIFT OF PEAK FLOW (min)=122.00
MAXIMUM STORAGE USED (ha.m.)= 0.0561

CALIB			
NASHYD (0202)	Area (ha)= 0.53	Curve Number (CN)= 54.0	
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.67		

```
     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.015 (i)
     TIME TO PEAK    (hrs)=   3.700
     RUNOFF VOLUME    (mm)=  19.392
     TOTAL RAINFALL   (mm)=  85.200
     RUNOFF COEFFICIENT   =   0.228

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

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| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     132.91       103.67
                 over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.29 (ii)    6.85 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.44         0.16
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.07          0.082 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.03          3.02
     RUNOFF VOLUME    (mm)=      84.20        39.18         41.42
     TOTAL RAINFALL   (mm)=      85.20        85.20         85.20
     RUNOFF COEFFICIENT   =       0.99         0.46          0.49

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
```



```
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     132.91       152.01
                 over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.40 (ii)    1.93 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.43         0.57
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.10          0.170 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.00          3.00
     RUNOFF VOLUME    (mm)=      84.20        45.01         56.76
     TOTAL RAINFALL   (mm)=      85.20        85.20         85.20
     RUNOFF COEFFICIENT   =       0.99         0.53          0.67


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.082     3.02    41.42
     + ID2= 2 (  0203):     0.59   0.170     3.00    56.76
       ================================================
       ID = 3 (  0009):     1.04   0.250     3.00    50.13

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0390     0.0320
                          0.0090     0.0060   |   0.0430     0.0380
                          0.0230     0.0130   |   0.0470     0.0450
```

```
                        0.0300     0.0190   |   0.0500      0.0510
                        0.0350     0.0260   |   0.0000      0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040     0.250      3.00      50.13
   OUTFLOW: ID= 1 (  0012)      1.040     0.037      3.53      49.96

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.85
                   TIME SHIFT OF PEAK FLOW         (min)= 32.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0292

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.037     3.53    49.96
      + ID2= 2 (  0202):     0.53   0.015     3.70    19.39
        ================================================
        ID = 3 (  0013):     1.57   0.051     3.63    39.64

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
================================================================================
========================

       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat
```



```
  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\778
b89d7-0cfa-466f-8ed8-50955b0a14e1\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\778
b89d7-0cfa-466f-8ed8-50955b0a14e1\sce


DATE: 11-25-2019                          TIME: 10:52:31

USER:


COMMENTS: _____________________________________________


--------------------------------------------------------------------------------
------------------------
  ***********************************************
  ** SIMULATION : 05. 50 yr - 6 hr -SCS Type II **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ac070188-4af9-488a-9e63-f7619aadcb3e\739813be
| Ptotal= 95.90 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    =  6.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    3.84 |  1.75    9.59 |  3.25   21.10 |  4.75    5.75
                0.50    3.84 |  2.00    9.59 |  3.50   21.10 |  5.00    5.75
                0.75    5.75 |  2.25   11.51 |  3.75    9.59 |  5.25    3.84
                1.00    5.75 |  2.50   11.51 |  4.00    9.59 |  5.50    3.84
                1.25    5.75 |  2.75   57.54 |  4.25    7.67 |  5.75    3.84
                1.50    5.75 |  3.00  149.60 |  4.50    7.67 |  6.00    3.84

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
0.017	3.84	1.517	9.59	3.017	21.11	4.52	5.75
0.033	3.84	1.533	9.59	3.033	21.10	4.53	5.75
0.050	3.84	1.550	9.59	3.050	21.10	4.55	5.75
0.067	3.84	1.567	9.59	3.067	21.10	4.57	5.75
0.083	3.84	1.583	9.59	3.083	21.10	4.58	5.75
0.100	3.84	1.600	9.59	3.100	21.10	4.60	5.75
0.117	3.84	1.617	9.59	3.117	21.10	4.62	5.75
0.133	3.84	1.633	9.59	3.133	21.10	4.63	5.75
0.150	3.84	1.650	9.59	3.150	21.10	4.65	5.75
0.167	3.84	1.667	9.59	3.167	21.10	4.67	5.75
0.183	3.84	1.683	9.59	3.183	21.10	4.68	5.75
0.200	3.84	1.700	9.59	3.200	21.10	4.70	5.75
0.217	3.84	1.717	9.59	3.217	21.10	4.72	5.75
0.233	3.84	1.733	9.59	3.233	21.10	4.73	5.75
0.250	3.84	1.750	9.59	3.250	21.10	4.75	5.75
0.267	3.84	1.767	9.59	3.267	21.10	4.77	5.75
0.283	3.84	1.783	9.59	3.283	21.10	4.78	5.75
0.300	3.84	1.800	9.59	3.300	21.10	4.80	5.75
0.317	3.84	1.817	9.59	3.317	21.10	4.82	5.75
0.333	3.84	1.833	9.59	3.333	21.10	4.83	5.75
0.350	3.84	1.850	9.59	3.350	21.10	4.85	5.75
0.367	3.84	1.867	9.59	3.367	21.10	4.87	5.75
0.383	3.84	1.883	9.59	3.383	21.10	4.88	5.75
0.400	3.84	1.900	9.59	3.400	21.10	4.90	5.75
0.417	3.84	1.917	9.59	3.417	21.10	4.92	5.75
0.433	3.84	1.933	9.59	3.433	21.10	4.93	5.75
0.450	3.84	1.950	9.59	3.450	21.10	4.95	5.75
0.467	3.84	1.967	9.59	3.467	21.10	4.97	5.75
0.483	3.84	1.983	9.59	3.483	21.10	4.98	5.75
0.500	3.84	2.000	9.59	3.500	21.10	5.00	5.75
0.517	5.75	2.017	11.51	3.517	9.59	5.02	3.84
0.533	5.75	2.033	11.51	3.533	9.59	5.03	3.84
0.550	5.75	2.050	11.51	3.550	9.59	5.05	3.84
0.567	5.75	2.067	11.51	3.567	9.59	5.07	3.84
0.583	5.75	2.083	11.51	3.583	9.59	5.08	3.84
0.600	5.75	2.100	11.51	3.600	9.59	5.10	3.84
0.617	5.75	2.117	11.51	3.617	9.59	5.12	3.84
0.633	5.75	2.133	11.51	3.633	9.59	5.13	3.84
0.650	5.75	2.150	11.51	3.650	9.59	5.15	3.84
0.667	5.75	2.167	11.51	3.667	9.59	5.17	3.84
0.683	5.75	2.183	11.51	3.683	9.59	5.18	3.84
0.700	5.75	2.200	11.51	3.700	9.59	5.20	3.84
0.717	5.75	2.217	11.51	3.717	9.59	5.22	3.84
0.733	5.75	2.233	11.51	3.733	9.59	5.23	3.84

0.750	5.75	2.250	11.51	3.750	9.59	5.25	3.84
0.767	5.75	2.267	11.51	3.767	9.59	5.27	3.84
0.783	5.75	2.283	11.51	3.783	9.59	5.28	3.84
0.800	5.75	2.300	11.51	3.800	9.59	5.30	3.84
0.817	5.75	2.317	11.51	3.817	9.59	5.32	3.84
0.833	5.75	2.333	11.51	3.833	9.59	5.33	3.84
0.850	5.75	2.350	11.51	3.850	9.59	5.35	3.84
0.867	5.75	2.367	11.51	3.867	9.59	5.37	3.84
0.883	5.75	2.383	11.51	3.883	9.59	5.38	3.84
0.900	5.75	2.400	11.51	3.900	9.59	5.40	3.84
0.917	5.75	2.417	11.51	3.917	9.59	5.42	3.84
0.933	5.75	2.433	11.51	3.933	9.59	5.43	3.84
0.950	5.75	2.450	11.51	3.950	9.59	5.45	3.84
0.967	5.75	2.467	11.51	3.967	9.59	5.47	3.84
0.983	5.75	2.483	11.51	3.983	9.59	5.48	3.84
1.000	5.75	2.500	11.51	4.000	9.59	5.50	3.84
1.017	5.75	2.517	57.54	4.017	7.67	5.52	3.84
1.033	5.75	2.533	57.54	4.033	7.67	5.53	3.84
1.050	5.75	2.550	57.54	4.050	7.67	5.55	3.84
1.067	5.75	2.567	57.54	4.067	7.67	5.57	3.84
1.083	5.75	2.583	57.54	4.083	7.67	5.58	3.84
1.100	5.75	2.600	57.54	4.100	7.67	5.60	3.84
1.117	5.75	2.617	57.54	4.117	7.67	5.62	3.84
1.133	5.75	2.633	57.54	4.133	7.67	5.63	3.84
1.150	5.75	2.650	57.54	4.150	7.67	5.65	3.84
1.167	5.75	2.667	57.54	4.167	7.67	5.67	3.84
1.183	5.75	2.683	57.54	4.183	7.67	5.68	3.84
1.200	5.75	2.700	57.54	4.200	7.67	5.70	3.84
1.217	5.75	2.717	57.54	4.217	7.67	5.72	3.84
1.233	5.75	2.733	57.54	4.233	7.67	5.73	3.84
1.250	5.75	2.750	57.54	4.250	7.67	5.75	3.84
1.267	5.75	2.767	149.59	4.267	7.67	5.77	3.84
1.283	5.75	2.783	149.60	4.283	7.67	5.78	3.84
1.300	5.75	2.800	149.60	4.300	7.67	5.80	3.84
1.317	5.75	2.817	149.60	4.317	7.67	5.82	3.84
1.333	5.75	2.833	149.60	4.333	7.67	5.83	3.84
1.350	5.75	2.850	149.60	4.350	7.67	5.85	3.84
1.367	5.75	2.867	149.60	4.367	7.67	5.87	3.84
1.383	5.75	2.883	149.60	4.383	7.67	5.88	3.84
1.400	5.75	2.900	149.60	4.400	7.67	5.90	3.84
1.417	5.75	2.917	149.60	4.417	7.67	5.92	3.84
1.433	5.75	2.933	149.60	4.433	7.67	5.93	3.84
1.450	5.75	2.950	149.60	4.450	7.67	5.95	3.84
1.467	5.75	2.967	149.60	4.467	7.67	5.97	3.84
1.483	5.75	2.983	149.60	4.483	7.67	5.98	3.84
1.500	5.75	3.000	149.60	4.500	7.67	6.00	3.83

Unit Hyd Qpeak (cms)= 0.117

```
     PEAK FLOW       (cms)=   0.077 (i)
     TIME TO PEAK    (hrs)=   3.217
     RUNOFF VOLUME    (mm)=  32.188
     TOTAL RAINFALL   (mm)=  95.900
     RUNOFF COEFFICIENT   =   0.336

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.51
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      82.87         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     149.60       130.18
                 over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.58 (ii)    2.13 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.41         0.46
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.13         0.19          0.321 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.00           3.00
     RUNOFF VOLUME    (mm)=      94.90        47.97          62.05
     TOTAL RAINFALL   (mm)=      95.90        95.90          95.90
     RUNOFF COEFFICIENT   =       0.99         0.50           0.65


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.077     3.22    32.19
      + ID2= 2 (  0201):     1.03   0.321     3.00    62.05
        ====================================================
```



```
        ID = 3 (  0006):     1.98   0.367     3.00    47.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190      0.0530
                          0.0120     0.0080   |   0.0200      0.0720
                          0.0150     0.0200   |   0.0220      0.0950
                          0.0170     0.0350   |   0.6940      0.1190

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980      0.367      3.00      47.72
   OUTFLOW: ID= 1 (  0011)      1.980      0.020      5.08      47.64

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.41
                  TIME SHIFT OF PEAK FLOW         (min)=125.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0690

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.019 (i)
     TIME TO PEAK    (hrs)=   3.700
     RUNOFF VOLUME    (mm)=  24.408
     TOTAL RAINFALL   (mm)=  95.900
     RUNOFF COEFFICIENT   =   0.255

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
```

```
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     149.60       124.24
                 over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.23 (ii)    6.54 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.45         0.17
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.09          0.099 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.03           3.02
     RUNOFF VOLUME    (mm)=      94.90        47.17          49.54
     TOTAL RAINFALL   (mm)=      95.90        95.90          95.90
     RUNOFF COEFFICIENT   =       0.99         0.49           0.52

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     149.60       180.22
                 over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.34 (ii)    1.84 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.44         0.59
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.12          0.197 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.00           3.00
     RUNOFF VOLUME    (mm)=      94.90        53.65          66.03
     TOTAL RAINFALL   (mm)=      95.90        95.90          95.90
```



```
     RUNOFF COEFFICIENT   =       0.99         0.56           0.69


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.099     3.02    49.54
     + ID2= 2 (  0203):     0.59   0.197     3.00    66.03
       ================================================
       ID = 3 (  0009):     1.04   0.295     3.00    58.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |  0.0390     0.0320
                          0.0090     0.0060   |  0.0430     0.0380
                          0.0230     0.0130   |  0.0470     0.0450
                          0.0300     0.0190   |  0.0500     0.0510
                          0.0350     0.0260   |  0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040      0.295      3.00      58.90
   OUTFLOW: ID= 1 (  0012)     1.040      0.041      3.53      58.73

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.93
                  TIME SHIFT OF PEAK FLOW         (min)= 32.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0351

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
```

```
  ID1= 1 (  0012):     1.04   0.041     3.53    58.73
+ ID2= 2 (  0202):     0.53   0.019     3.70    24.41
  ================================================
  ID = 3 (  0013):     1.57   0.059     3.63    47.15

 NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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   V    V   I    SSSSS  U   U    A    L
   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

   OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
  O   O    T      T    H   H   Y Y   MM MM  O   O
  O   O    T      T    H   H    Y    M   M  O   O
   OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\f77
e00cb-6b56-4058-8f4f-33513fb4ffc5\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\f77
e00cb-6b56-4058-8f4f-33513fb4ffc5\sce


DATE: 11-25-2019                          TIME: 10:52:31

USER:



COMMENTS: _____

--------------------------------------------------------------------------------
```



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-----------------------
  ********************************************
  ** SIMULATION : 06. 100 yr - 6 hr -SCS Type I **
  ********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              ac070188-4af9-488a-9e63-f7619aadcb3e\c61e9997
| Ptotal=106.50 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    =  6.00 hrs
                       Mass curve time step = 15.00 min

               TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.25    4.26 |  1.75   10.65 |  3.25   23.43 |  4.75    6.39
               0.50    4.26 |  2.00   10.65 |  3.50   23.43 |  5.00    6.39
               0.75    6.39 |  2.25   12.78 |  3.75   10.65 |  5.25    4.26
               1.00    6.39 |  2.50   12.78 |  4.00   10.65 |  5.50    4.26
               1.25    6.39 |  2.75   63.90 |  4.25    8.52 |  5.75    4.26
               1.50    6.39 |  3.00  166.14 |  4.50    8.52 |  6.00    4.26

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
              0.017    4.26 | 1.517   10.65 | 3.017   23.45 |  4.52    6.39
              0.033    4.26 | 1.533   10.65 | 3.033   23.43 |  4.53    6.39
              0.050    4.26 | 1.550   10.65 | 3.050   23.43 |  4.55    6.39
              0.067    4.26 | 1.567   10.65 | 3.067   23.43 |  4.57    6.39
              0.083    4.26 | 1.583   10.65 | 3.083   23.43 |  4.58    6.39
              0.100    4.26 | 1.600   10.65 | 3.100   23.43 |  4.60    6.39
              0.117    4.26 | 1.617   10.65 | 3.117   23.43 |  4.62    6.39
              0.133    4.26 | 1.633   10.65 | 3.133   23.43 |  4.63    6.39
              0.150    4.26 | 1.650   10.65 | 3.150   23.43 |  4.65    6.39
              0.167    4.26 | 1.667   10.65 | 3.167   23.43 |  4.67    6.39
              0.183    4.26 | 1.683   10.65 | 3.183   23.43 |  4.68    6.39
              0.200    4.26 | 1.700   10.65 | 3.200   23.43 |  4.70    6.39
              0.217    4.26 | 1.717   10.65 | 3.217   23.43 |  4.72    6.39
```

0.233	4.26	1.733	10.65	3.233	23.43	4.73	6.39
0.250	4.26	1.750	10.65	3.250	23.43	4.75	6.39
0.267	4.26	1.767	10.65	3.267	23.43	4.77	6.39
0.283	4.26	1.783	10.65	3.283	23.43	4.78	6.39
0.300	4.26	1.800	10.65	3.300	23.43	4.80	6.39
0.317	4.26	1.817	10.65	3.317	23.43	4.82	6.39
0.333	4.26	1.833	10.65	3.333	23.43	4.83	6.39
0.350	4.26	1.850	10.65	3.350	23.43	4.85	6.39
0.367	4.26	1.867	10.65	3.367	23.43	4.87	6.39
0.383	4.26	1.883	10.65	3.383	23.43	4.88	6.39
0.400	4.26	1.900	10.65	3.400	23.43	4.90	6.39
0.417	4.26	1.917	10.65	3.417	23.43	4.92	6.39
0.433	4.26	1.933	10.65	3.433	23.43	4.93	6.39
0.450	4.26	1.950	10.65	3.450	23.43	4.95	6.39
0.467	4.26	1.967	10.65	3.467	23.43	4.97	6.39
0.483	4.26	1.983	10.65	3.483	23.43	4.98	6.39
0.500	4.26	2.000	10.65	3.500	23.43	5.00	6.39
0.517	6.39	2.017	12.78	3.517	10.65	5.02	4.26
0.533	6.39	2.033	12.78	3.533	10.65	5.03	4.26
0.550	6.39	2.050	12.78	3.550	10.65	5.05	4.26
0.567	6.39	2.067	12.78	3.567	10.65	5.07	4.26
0.583	6.39	2.083	12.78	3.583	10.65	5.08	4.26
0.600	6.39	2.100	12.78	3.600	10.65	5.10	4.26
0.617	6.39	2.117	12.78	3.617	10.65	5.12	4.26
0.633	6.39	2.133	12.78	3.633	10.65	5.13	4.26
0.650	6.39	2.150	12.78	3.650	10.65	5.15	4.26
0.667	6.39	2.167	12.78	3.667	10.65	5.17	4.26
0.683	6.39	2.183	12.78	3.683	10.65	5.18	4.26
0.700	6.39	2.200	12.78	3.700	10.65	5.20	4.26
0.717	6.39	2.217	12.78	3.717	10.65	5.22	4.26
0.733	6.39	2.233	12.78	3.733	10.65	5.23	4.26
0.750	6.39	2.250	12.78	3.750	10.65	5.25	4.26
0.767	6.39	2.267	12.78	3.767	10.65	5.27	4.26
0.783	6.39	2.283	12.78	3.783	10.65	5.28	4.26
0.800	6.39	2.300	12.78	3.800	10.65	5.30	4.26
0.817	6.39	2.317	12.78	3.817	10.65	5.32	4.26
0.833	6.39	2.333	12.78	3.833	10.65	5.33	4.26
0.850	6.39	2.350	12.78	3.850	10.65	5.35	4.26
0.867	6.39	2.367	12.78	3.867	10.65	5.37	4.26
0.883	6.39	2.383	12.78	3.883	10.65	5.38	4.26
0.900	6.39	2.400	12.78	3.900	10.65	5.40	4.26
0.917	6.39	2.417	12.78	3.917	10.65	5.42	4.26
0.933	6.39	2.433	12.78	3.933	10.65	5.43	4.26
0.950	6.39	2.450	12.78	3.950	10.65	5.45	4.26
0.967	6.39	2.467	12.78	3.967	10.65	5.47	4.26
0.983	6.39	2.483	12.78	3.983	10.65	5.48	4.26
1.000	6.39	2.500	12.78	4.000	10.65	5.50	4.26
1.017	6.39	2.517	63.89	4.017	8.52	5.52	4.26
1.033	6.39	2.533	63.90	4.033	8.52	5.53	4.26

1.050	6.39	2.550	63.90	4.050	8.52	5.55	4.26
1.067	6.39	2.567	63.90	4.067	8.52	5.57	4.26
1.083	6.39	2.583	63.90	4.083	8.52	5.58	4.26
1.100	6.39	2.600	63.90	4.100	8.52	5.60	4.26
1.117	6.39	2.617	63.90	4.117	8.52	5.62	4.26
1.133	6.39	2.633	63.90	4.133	8.52	5.63	4.26
1.150	6.39	2.650	63.90	4.150	8.52	5.65	4.26
1.167	6.39	2.667	63.90	4.167	8.52	5.67	4.26
1.183	6.39	2.683	63.90	4.183	8.52	5.68	4.26
1.200	6.39	2.700	63.90	4.200	8.52	5.70	4.26
1.217	6.39	2.717	63.90	4.217	8.52	5.72	4.26
1.233	6.39	2.733	63.90	4.233	8.52	5.73	4.26
1.250	6.39	2.750	63.90	4.250	8.52	5.75	4.26
1.267	6.39	2.767	166.13	4.267	8.52	5.77	4.26
1.283	6.39	2.783	166.14	4.283	8.52	5.78	4.26
1.300	6.39	2.800	166.14	4.300	8.52	5.80	4.26
1.317	6.39	2.817	166.14	4.317	8.52	5.82	4.26
1.333	6.39	2.833	166.14	4.333	8.52	5.83	4.26
1.350	6.39	2.850	166.14	4.350	8.52	5.85	4.26
1.367	6.39	2.867	166.14	4.367	8.52	5.87	4.26
1.383	6.39	2.883	166.14	4.383	8.52	5.88	4.26
1.400	6.39	2.900	166.14	4.400	8.52	5.90	4.26
1.417	6.39	2.917	166.14	4.417	8.52	5.92	4.26
1.433	6.39	2.933	166.14	4.433	8.52	5.93	4.26
1.450	6.39	2.950	166.14	4.450	8.52	5.95	4.26
1.467	6.39	2.967	166.14	4.467	8.52	5.97	4.26
1.483	6.39	2.983	166.14	4.483	8.52	5.98	4.26
1.500	6.39	3.000	166.14	4.500	8.52	6.00	4.25

```
     Unit Hyd Qpeak  (cms)=   0.117

     PEAK FLOW       (cms)=   0.093 (i)
     TIME TO PEAK    (hrs)=   3.217
     RUNOFF VOLUME    (mm)=  38.665
     TOTAL RAINFALL   (mm)= 106.500
     RUNOFF COEFFICIENT   =   0.363

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51          0.51
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          5.00
```

```
     Length            (m)=      82.87         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     166.14       152.01
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.51 (ii)    2.04 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.42         0.47
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.14         0.22          0.368 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.00          3.00
     RUNOFF VOLUME    (mm)=     105.50        56.26         71.03
     TOTAL RAINFALL   (mm)=     106.50       106.50        106.50
     RUNOFF COEFFICIENT   =       0.99         0.53          0.67


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.093     3.22    38.66
      + ID2= 2 (  0201):     1.03   0.368     3.00    71.03
        ==========================================================
        ID = 3 (  0006):     1.98   0.423     3.00    55.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |  0.0190     0.0530
                         0.0120     0.0080    |  0.0200     0.0720
                         0.0150     0.0200    |  0.0220     0.0950
                         0.0170     0.0350    |  0.6940     0.1190

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)     1.980      0.423      3.00      55.50
```



```
   OUTFLOW: ID= 1 (  0011)      1.980      0.021      5.18      55.42

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.94
                  TIME SHIFT OF PEAK FLOW         (min)=131.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0824

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.023 (i)
     TIME TO PEAK    (hrs)=   3.683
     RUNOFF VOLUME    (mm)=  29.761
     TOTAL RAINFALL   (mm)= 106.500
     RUNOFF COEFFICIENT   =   0.279

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.31
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      54.77         40.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=     166.14        145.24
               over (min)        5.00          7.00
     Storage Coeff.  (min)=       1.18 (ii)     6.27 (ii)
     Unit Hyd. Tpeak (min)=       5.00          7.00
     Unit Hyd. peak  (cms)=       0.45          0.17
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01          0.11          0.117 (iii)
     TIME TO PEAK    (hrs)=       3.00          3.03          3.02
     RUNOFF VOLUME    (mm)=     105.50         55.38         57.88
     TOTAL RAINFALL   (mm)=     106.50        106.50        106.50
     RUNOFF COEFFICIENT   =       0.99          0.52          0.54

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
```

```
             YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      72.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     166.14       208.73
               over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.28 (ii)    1.76 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.44         0.60
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.08         0.14          0.224 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.00           3.00
     RUNOFF VOLUME    (mm)=     105.50        62.47          75.38
     TOTAL RAINFALL   (mm)=     106.50       106.50         106.50
     RUNOFF COEFFICIENT   =       0.99         0.59           0.71


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.117     3.02    57.88
      + ID2= 2 (  0203):     0.59   0.224     3.00    75.38
        ================================================
```



```
        ID = 3 (  0009):     1.04   0.340     3.00    67.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0390      0.0320
                          0.0090     0.0060   |   0.0430      0.0380
                          0.0230     0.0130   |   0.0470      0.0450
                          0.0300     0.0190   |   0.0500      0.0510
                          0.0350     0.0260   |   0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.340      3.00      67.81
   OUTFLOW: ID= 1 (  0012)      1.040      0.045      3.55      67.64

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 13.18
                  TIME SHIFT OF PEAK FLOW         (min)= 33.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0411

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.045     3.55    67.64
      + ID2= 2 (  0202):     0.53   0.023     3.68    29.76
        ================================================
        ID = 3 (  0013):     1.57   0.067     3.65    54.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 FINISH
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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\68b
eb414-6acf-4e89-ba4b-a18471e33512\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\68b
eb414-6acf-4e89-ba4b-a18471e33512\sce


DATE: 11-25-2019                          TIME: 10:51:15

USER:



COMMENTS: _____


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  ************************************************
  ** SIMULATION : 01. 2 yr - 12 hr SCS Type II  **
  ************************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
```



```
|                  |              72a28c55-49d3-46ad-bad1-32ebf82b8caf\e7cc13f9
| Ptotal= 46.70 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                          Duration of storm    = 12.00 hrs
                          Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.17 |  3.25    1.87 |  6.25    8.41 |  9.25    1.63
                0.50    1.17 |  3.50    1.87 |  6.50    8.41 |  9.50    1.63
                0.75    1.17 |  3.75    1.87 |  6.75    3.74 |  9.75    1.63
                1.00    1.17 |  4.00    1.87 |  7.00    3.74 | 10.00    1.63
                1.25    1.17 |  4.25    2.80 |  7.25    2.80 | 10.25    0.93
                1.50    1.17 |  4.50    2.80 |  7.50    2.80 | 10.50    0.93
                1.75    1.17 |  4.75    3.74 |  7.75    2.80 | 10.75    0.93
                2.00    1.17 |  5.00    3.74 |  8.00    2.80 | 11.00    0.93
                2.25    1.40 |  5.25    5.60 |  8.25    1.63 | 11.25    0.93
                2.50    1.40 |  5.50    5.60 |  8.50    1.63 | 11.50    0.93
                2.75    1.40 |  5.75   22.42 |  8.75    1.63 | 11.75    0.93
                3.00    1.40 |  6.00   61.64 |  9.00    1.63 | 12.00    0.93

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    1.17 | 3.017    1.87 | 6.017    8.41 |  9.02    1.63
               0.033    1.17 | 3.033    1.87 | 6.033    8.41 |  9.03    1.63
               0.050    1.17 | 3.050    1.87 | 6.050    8.41 |  9.05    1.63
               0.067    1.17 | 3.067    1.87 | 6.067    8.41 |  9.07    1.63
               0.083    1.17 | 3.083    1.87 | 6.083    8.41 |  9.08    1.63
               0.100    1.17 | 3.100    1.87 | 6.100    8.41 |  9.10    1.63
               0.117    1.17 | 3.117    1.87 | 6.117    8.41 |  9.12    1.63
               0.133    1.17 | 3.133    1.87 | 6.133    8.41 |  9.13    1.63
               0.150    1.17 | 3.150    1.87 | 6.150    8.41 |  9.15    1.63
               0.167    1.17 | 3.167    1.87 | 6.167    8.41 |  9.17    1.63
               0.183    1.17 | 3.183    1.87 | 6.183    8.41 |  9.18    1.63
               0.200    1.17 | 3.200    1.87 | 6.200    8.41 |  9.20    1.63
               0.217    1.17 | 3.217    1.87 | 6.217    8.41 |  9.22    1.63
               0.233    1.17 | 3.233    1.87 | 6.233    8.41 |  9.23    1.63
               0.250    1.17 | 3.250    1.87 | 6.250    8.41 |  9.25    1.63
```

0.267	1.17	3.267	1.87	6.267	8.41	9.27	1.63
0.283	1.17	3.283	1.87	6.283	8.41	9.28	1.63
0.300	1.17	3.300	1.87	6.300	8.41	9.30	1.63
0.317	1.17	3.317	1.87	6.317	8.41	9.32	1.63
0.333	1.17	3.333	1.87	6.333	8.41	9.33	1.63
0.350	1.17	3.350	1.87	6.350	8.41	9.35	1.63
0.367	1.17	3.367	1.87	6.367	8.41	9.37	1.63
0.383	1.17	3.383	1.87	6.383	8.41	9.38	1.63
0.400	1.17	3.400	1.87	6.400	8.41	9.40	1.63
0.417	1.17	3.417	1.87	6.417	8.41	9.42	1.63
0.433	1.17	3.433	1.87	6.433	8.41	9.43	1.63
0.450	1.17	3.450	1.87	6.450	8.41	9.45	1.63
0.467	1.17	3.467	1.87	6.467	8.41	9.47	1.63
0.483	1.17	3.483	1.87	6.483	8.41	9.48	1.63
0.500	1.17	3.500	1.87	6.500	8.40	9.50	1.63
0.517	1.17	3.517	1.87	6.517	3.74	9.52	1.63
0.533	1.17	3.533	1.87	6.533	3.74	9.53	1.63
0.550	1.17	3.550	1.87	6.550	3.74	9.55	1.63
0.567	1.17	3.567	1.87	6.567	3.74	9.57	1.63
0.583	1.17	3.583	1.87	6.583	3.74	9.58	1.63
0.600	1.17	3.600	1.87	6.600	3.74	9.60	1.63
0.617	1.17	3.617	1.87	6.617	3.74	9.62	1.63
0.633	1.17	3.633	1.87	6.633	3.74	9.63	1.63
0.650	1.17	3.650	1.87	6.650	3.74	9.65	1.63
0.667	1.17	3.667	1.87	6.667	3.74	9.67	1.63
0.683	1.17	3.683	1.87	6.683	3.74	9.68	1.63
0.700	1.17	3.700	1.87	6.700	3.74	9.70	1.63
0.717	1.17	3.717	1.87	6.717	3.74	9.72	1.63
0.733	1.17	3.733	1.87	6.733	3.74	9.73	1.63
0.750	1.17	3.750	1.87	6.750	3.74	9.75	1.63
0.767	1.17	3.767	1.87	6.767	3.74	9.77	1.63
0.783	1.17	3.783	1.87	6.783	3.74	9.78	1.63
0.800	1.17	3.800	1.87	6.800	3.74	9.80	1.63
0.817	1.17	3.817	1.87	6.817	3.74	9.82	1.63
0.833	1.17	3.833	1.87	6.833	3.74	9.83	1.63
0.850	1.17	3.850	1.87	6.850	3.74	9.85	1.63
0.867	1.17	3.867	1.87	6.867	3.74	9.87	1.63
0.883	1.17	3.883	1.87	6.883	3.74	9.88	1.63
0.900	1.17	3.900	1.87	6.900	3.74	9.90	1.63
0.917	1.17	3.917	1.87	6.917	3.74	9.92	1.63
0.933	1.17	3.933	1.87	6.933	3.74	9.93	1.63
0.950	1.17	3.950	1.87	6.950	3.74	9.95	1.63
0.967	1.17	3.967	1.87	6.967	3.74	9.97	1.63
0.983	1.17	3.983	1.87	6.983	3.74	9.98	1.63
1.000	1.17	4.000	1.87	7.000	3.73	10.00	1.63
1.017	1.17	4.017	2.80	7.017	2.80	10.02	0.93
1.033	1.17	4.033	2.80	7.033	2.80	10.03	0.93
1.050	1.17	4.050	2.80	7.050	2.80	10.05	0.93
1.067	1.17	4.067	2.80	7.067	2.80	10.07	0.93

1.083	1.17	4.083	2.80	7.083	2.80	10.08	0.93
1.100	1.17	4.100	2.80	7.100	2.80	10.10	0.93
1.117	1.17	4.117	2.80	7.117	2.80	10.12	0.93
1.133	1.17	4.133	2.80	7.133	2.80	10.13	0.93
1.150	1.17	4.150	2.80	7.150	2.80	10.15	0.93
1.167	1.17	4.167	2.80	7.167	2.80	10.17	0.93
1.183	1.17	4.183	2.80	7.183	2.80	10.18	0.93
1.200	1.17	4.200	2.80	7.200	2.80	10.20	0.93
1.217	1.17	4.217	2.80	7.217	2.80	10.22	0.93
1.233	1.17	4.233	2.80	7.233	2.80	10.23	0.93
1.250	1.17	4.250	2.80	7.250	2.80	10.25	0.93
1.267	1.17	4.267	2.80	7.267	2.80	10.27	0.93
1.283	1.17	4.283	2.80	7.283	2.80	10.28	0.93
1.300	1.17	4.300	2.80	7.300	2.80	10.30	0.93
1.317	1.17	4.317	2.80	7.317	2.80	10.32	0.93
1.333	1.17	4.333	2.80	7.333	2.80	10.33	0.93
1.350	1.17	4.350	2.80	7.350	2.80	10.35	0.93
1.367	1.17	4.367	2.80	7.367	2.80	10.37	0.93
1.383	1.17	4.383	2.80	7.383	2.80	10.38	0.93
1.400	1.17	4.400	2.80	7.400	2.80	10.40	0.93
1.417	1.17	4.417	2.80	7.417	2.80	10.42	0.93
1.433	1.17	4.433	2.80	7.433	2.80	10.43	0.93
1.450	1.17	4.450	2.80	7.450	2.80	10.45	0.93
1.467	1.17	4.467	2.80	7.467	2.80	10.47	0.93
1.483	1.17	4.483	2.80	7.483	2.80	10.48	0.93
1.500	1.17	4.500	2.80	7.500	2.80	10.50	0.93
1.517	1.17	4.517	3.74	7.517	2.80	10.52	0.93
1.533	1.17	4.533	3.74	7.533	2.80	10.53	0.93
1.550	1.17	4.550	3.74	7.550	2.80	10.55	0.93
1.567	1.17	4.567	3.74	7.567	2.80	10.57	0.93
1.583	1.17	4.583	3.74	7.583	2.80	10.58	0.93
1.600	1.17	4.600	3.74	7.600	2.80	10.60	0.93
1.617	1.17	4.617	3.74	7.617	2.80	10.62	0.93
1.633	1.17	4.633	3.74	7.633	2.80	10.63	0.93
1.650	1.17	4.650	3.74	7.650	2.80	10.65	0.93
1.667	1.17	4.667	3.74	7.667	2.80	10.67	0.93
1.683	1.17	4.683	3.74	7.683	2.80	10.68	0.93
1.700	1.17	4.700	3.74	7.700	2.80	10.70	0.93
1.717	1.17	4.717	3.74	7.717	2.80	10.72	0.93
1.733	1.17	4.733	3.74	7.733	2.80	10.73	0.93
1.750	1.17	4.750	3.74	7.750	2.80	10.75	0.93
1.767	1.17	4.767	3.74	7.767	2.80	10.77	0.93
1.783	1.17	4.783	3.74	7.783	2.80	10.78	0.93
1.800	1.17	4.800	3.74	7.800	2.80	10.80	0.93
1.817	1.17	4.817	3.74	7.817	2.80	10.82	0.93
1.833	1.17	4.833	3.74	7.833	2.80	10.83	0.93
1.850	1.17	4.850	3.74	7.850	2.80	10.85	0.93
1.867	1.17	4.867	3.74	7.867	2.80	10.87	0.93
1.883	1.17	4.883	3.74	7.883	2.80	10.88	0.93

1.900	1.17	4.900	3.74	7.900	2.80	10.90	0.93
1.917	1.17	4.917	3.74	7.917	2.80	10.92	0.93
1.933	1.17	4.933	3.74	7.933	2.80	10.93	0.93
1.950	1.17	4.950	3.74	7.950	2.80	10.95	0.93
1.967	1.17	4.967	3.74	7.967	2.80	10.97	0.93
1.983	1.17	4.983	3.74	7.983	2.80	10.98	0.93
2.000	1.17	5.000	3.74	8.000	2.80	11.00	0.93
2.017	1.40	5.017	5.60	8.017	1.63	11.02	0.93
2.033	1.40	5.033	5.60	8.033	1.63	11.03	0.93
2.050	1.40	5.050	5.60	8.050	1.63	11.05	0.93
2.067	1.40	5.067	5.60	8.067	1.63	11.07	0.93
2.083	1.40	5.083	5.60	8.083	1.63	11.08	0.93
2.100	1.40	5.100	5.60	8.100	1.63	11.10	0.93
2.117	1.40	5.117	5.60	8.117	1.63	11.12	0.93
2.133	1.40	5.133	5.60	8.133	1.63	11.13	0.93
2.150	1.40	5.150	5.60	8.150	1.63	11.15	0.93
2.167	1.40	5.167	5.60	8.167	1.63	11.17	0.93
2.183	1.40	5.183	5.60	8.183	1.63	11.18	0.93
2.200	1.40	5.200	5.60	8.200	1.63	11.20	0.93
2.217	1.40	5.217	5.60	8.217	1.63	11.22	0.93
2.233	1.40	5.233	5.60	8.233	1.63	11.23	0.93
2.250	1.40	5.250	5.60	8.250	1.63	11.25	0.93
2.267	1.40	5.267	5.60	8.267	1.63	11.27	0.93
2.283	1.40	5.283	5.60	8.283	1.63	11.28	0.93
2.300	1.40	5.300	5.60	8.300	1.63	11.30	0.93
2.317	1.40	5.317	5.60	8.317	1.63	11.32	0.93
2.333	1.40	5.333	5.60	8.333	1.63	11.33	0.93
2.350	1.40	5.350	5.60	8.350	1.63	11.35	0.93
2.367	1.40	5.367	5.60	8.367	1.63	11.37	0.93
2.383	1.40	5.383	5.60	8.383	1.63	11.38	0.93
2.400	1.40	5.400	5.60	8.400	1.63	11.40	0.93
2.417	1.40	5.417	5.60	8.417	1.63	11.42	0.93
2.433	1.40	5.433	5.60	8.433	1.63	11.43	0.93
2.450	1.40	5.450	5.60	8.450	1.63	11.45	0.93
2.467	1.40	5.467	5.60	8.467	1.63	11.47	0.93
2.483	1.40	5.483	5.60	8.483	1.63	11.48	0.93
2.500	1.40	5.500	5.62	8.500	1.63	11.50	0.93
2.517	1.40	5.517	22.42	8.517	1.63	11.52	0.93
2.533	1.40	5.533	22.42	8.533	1.63	11.53	0.93
2.550	1.40	5.550	22.42	8.550	1.63	11.55	0.93
2.567	1.40	5.567	22.42	8.567	1.63	11.57	0.93
2.583	1.40	5.583	22.42	8.583	1.63	11.58	0.93
2.600	1.40	5.600	22.42	8.600	1.63	11.60	0.93
2.617	1.40	5.617	22.42	8.617	1.63	11.62	0.93
2.633	1.40	5.633	22.42	8.633	1.63	11.63	0.93
2.650	1.40	5.650	22.42	8.650	1.63	11.65	0.93
2.667	1.40	5.667	22.42	8.667	1.63	11.67	0.93
2.683	1.40	5.683	22.42	8.683	1.63	11.68	0.93
2.700	1.40	5.700	22.42	8.700	1.63	11.70	0.93

2.717	1.40	5.717	22.42	8.717	1.63	11.72	0.93
2.733	1.40	5.733	22.42	8.733	1.63	11.73	0.93
2.750	1.40	5.750	22.46	8.750	1.63	11.75	0.93
2.767	1.40	5.767	61.64	8.767	1.63	11.77	0.93
2.783	1.40	5.783	61.64	8.783	1.63	11.78	0.93
2.800	1.40	5.800	61.64	8.800	1.63	11.80	0.93
2.817	1.40	5.817	61.64	8.817	1.63	11.82	0.93
2.833	1.40	5.833	61.64	8.833	1.63	11.83	0.93
2.850	1.40	5.850	61.64	8.850	1.63	11.85	0.93
2.867	1.40	5.867	61.64	8.867	1.63	11.87	0.93
2.883	1.40	5.883	61.64	8.883	1.63	11.88	0.93
2.900	1.40	5.900	61.64	8.900	1.63	11.90	0.93
2.917	1.40	5.917	61.64	8.917	1.63	11.92	0.93
2.933	1.40	5.933	61.64	8.933	1.63	11.93	0.93
2.950	1.40	5.950	61.64	8.950	1.63	11.95	0.93
2.967	1.40	5.967	61.64	8.967	1.63	11.97	0.93
2.983	1.40	5.983	61.64	8.983	1.63	11.98	0.93
3.000	1.40	6.000	61.57	9.000	1.63	12.00	0.93

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.016 (i)
TIME TO PEAK (hrs)= 6.233
RUNOFF VOLUME (mm)= 7.989
TOTAL RAINFALL (mm)= 46.700
RUNOFF COEFFICIENT = 0.171

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

CALIB
STANDHYD (0201) | Area (ha)= 1.03
ID= 1 DT= 1.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.51
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	82.87	6.00
Mannings n	=	0.013	0.035
Max.Eff.Inten.(mm/hr)=		61.64	33.58
over (min)		5.00	4.00
Storage Coeff. (min)=		2.25 (ii)	3.04 (ii)
Unit Hyd. Tpeak (min)=		5.00	4.00
Unit Hyd. peak (cms)=		0.35	0.34

				TOTALS
PEAK FLOW	(cms)=	0.05	0.05	0.101 (iii)

```
     TIME TO PEAK    (hrs)=       6.00         6.00          6.00
     RUNOFF VOLUME    (mm)=      45.70        14.47         23.84
     TOTAL RAINFALL   (mm)=      46.70        46.70         46.70
     RUNOFF COEFFICIENT   =       0.98         0.31          0.51


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.016     6.23     7.99
      + ID2= 2 (  0201):     1.03   0.101     6.00    23.84
        ================================================
        ID = 3 (  0006):     1.98   0.110     6.00    16.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0190     0.0530
                         0.0120     0.0080    |   0.0200     0.0720
                         0.0150     0.0200    |   0.0220     0.0950
                         0.0170     0.0350    |   0.6940     0.1190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)    1.980      0.110      6.00      16.24
   OUTFLOW: ID= 1 (  0011)    1.980      0.014      6.80      16.15

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 12.69
                  TIME SHIFT OF PEAK FLOW         (min)= 48.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0156

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
```



```
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.003 (i)
     TIME TO PEAK    (hrs)=   6.733
     RUNOFF VOLUME    (mm)=   5.322
     TOTAL RAINFALL   (mm)=  46.700
     RUNOFF COEFFICIENT   =   0.114

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n             =    0.013        0.035

     Max.Eff.Inten.(mm/hr)=      61.64        31.76
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.75 (ii)    9.32 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.39         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.02          0.022 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.07           6.03
     RUNOFF VOLUME    (mm)=      45.70        14.11          15.68
     TOTAL RAINFALL   (mm)=      46.70        46.70          46.70
     RUNOFF COEFFICIENT   =       0.98         0.30           0.34

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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| CALIB           |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      61.64        49.50
                 over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.90 (ii)    2.62 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.38         0.41
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.03          0.064 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=      45.70        17.14          25.71
     TOTAL RAINFALL   (mm)=      46.70        46.70          46.70
     RUNOFF COEFFICIENT   =       0.98         0.37           0.55


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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-------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.022     6.03    15.68
      + ID2= 2 (  0203):     0.59   0.064     6.00    25.71
        ================================================
        ID = 3 (  0009):     1.04   0.085     6.00    21.37

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
```



```
                          0.0000     0.0000   |   0.0390      0.0320
                          0.0090     0.0060   |   0.0430      0.0380
                          0.0230     0.0130   |   0.0470      0.0450
                          0.0300     0.0190   |   0.0500      0.0510
                          0.0350     0.0260   |   0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.085      6.00      21.37
   OUTFLOW: ID= 1 (  0012)      1.040      0.017      6.38      21.21

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 20.13
                  TIME SHIFT OF PEAK FLOW         (min)= 23.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0100

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-------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.017     6.38    21.21
      + ID2= 2 (  0202):     0.53   0.003     6.73     5.32
        ================================================
        ID = 3 (  0013):     1.57   0.020     6.53    15.84

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\ba9
a504e-7e5d-4ee7-bfac-95c294318ba8\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\ba9
a504e-7e5d-4ee7-bfac-95c294318ba8\sce


DATE: 11-25-2019                          TIME: 10:51:15

USER:



COMMENTS: _____________________________________________________

--------------------------------------------------------------------------------
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  ***********************************************
  ** SIMULATION : 02. 5 yr - 12 hr SCS Type II  **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              72a28c55-49d3-46ad-bad1-32ebf82b8caf\173d3882
| Ptotal= 64.30 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                     Duration of storm    = 12.00 hrs
                     Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.61 |  3.25    2.57 |  6.25   11.57 |  9.25    2.25
                0.50    1.61 |  3.50    2.57 |  6.50   11.57 |  9.50    2.25
                0.75    1.61 |  3.75    2.57 |  6.75    5.14 |  9.75    2.25
                1.00    1.61 |  4.00    2.57 |  7.00    5.14 | 10.00    2.25
                1.25    1.61 |  4.25    3.86 |  7.25    3.86 | 10.25    1.29
                1.50    1.61 |  4.50    3.86 |  7.50    3.86 | 10.50    1.29
                1.75    1.61 |  4.75    5.14 |  7.75    3.86 | 10.75    1.29
                2.00    1.61 |  5.00    5.14 |  8.00    3.86 | 11.00    1.29
                2.25    1.93 |  5.25    7.72 |  8.25    2.25 | 11.25    1.29
                2.50    1.93 |  5.50    7.72 |  8.50    2.25 | 11.50    1.29
                2.75    1.93 |  5.75   30.86 |  8.75    2.25 | 11.75    1.29
                3.00    1.93 |  6.00   84.88 |  9.00    2.25 | 12.00    1.29
```



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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
                0.017   1.61 | 3.017   2.57 | 6.017   11.57 | 9.02    2.25
                0.033   1.61 | 3.033   2.57 | 6.033   11.57 | 9.03    2.25
                0.050   1.61 | 3.050   2.57 | 6.050   11.57 | 9.05    2.25
                0.067   1.61 | 3.067   2.57 | 6.067   11.57 | 9.07    2.25
                0.083   1.61 | 3.083   2.57 | 6.083   11.57 | 9.08    2.25
                0.100   1.61 | 3.100   2.57 | 6.100   11.57 | 9.10    2.25
                0.117   1.61 | 3.117   2.57 | 6.117   11.57 | 9.12    2.25
                0.133   1.61 | 3.133   2.57 | 6.133   11.57 | 9.13    2.25
                0.150   1.61 | 3.150   2.57 | 6.150   11.57 | 9.15    2.25
                0.167   1.61 | 3.167   2.57 | 6.167   11.57 | 9.17    2.25
                0.183   1.61 | 3.183   2.57 | 6.183   11.57 | 9.18    2.25
                0.200   1.61 | 3.200   2.57 | 6.200   11.57 | 9.20    2.25
                0.217   1.61 | 3.217   2.57 | 6.217   11.57 | 9.22    2.25
                0.233   1.61 | 3.233   2.57 | 6.233   11.57 | 9.23    2.25
                0.250   1.61 | 3.250   2.57 | 6.250   11.57 | 9.25    2.25
                0.267   1.61 | 3.267   2.57 | 6.267   11.57 | 9.27    2.25
                0.283   1.61 | 3.283   2.57 | 6.283   11.57 | 9.28    2.25
                0.300   1.61 | 3.300   2.57 | 6.300   11.57 | 9.30    2.25
                0.317   1.61 | 3.317   2.57 | 6.317   11.57 | 9.32    2.25
                0.333   1.61 | 3.333   2.57 | 6.333   11.57 | 9.33    2.25
                0.350   1.61 | 3.350   2.57 | 6.350   11.57 | 9.35    2.25
                0.367   1.61 | 3.367   2.57 | 6.367   11.57 | 9.37    2.25
                0.383   1.61 | 3.383   2.57 | 6.383   11.57 | 9.38    2.25
                0.400   1.61 | 3.400   2.57 | 6.400   11.57 | 9.40    2.25
                0.417   1.61 | 3.417   2.57 | 6.417   11.57 | 9.42    2.25
                0.433   1.61 | 3.433   2.57 | 6.433   11.57 | 9.43    2.25
                0.450   1.61 | 3.450   2.57 | 6.450   11.57 | 9.45    2.25
                0.467   1.61 | 3.467   2.57 | 6.467   11.57 | 9.47    2.25
                0.483   1.61 | 3.483   2.57 | 6.483   11.57 | 9.48    2.25
                0.500   1.61 | 3.500   2.57 | 6.500   11.56 | 9.50    2.25
                0.517   1.61 | 3.517   2.57 | 6.517    5.14 | 9.52    2.25
                0.533   1.61 | 3.533   2.57 | 6.533    5.14 | 9.53    2.25
                0.550   1.61 | 3.550   2.57 | 6.550    5.14 | 9.55    2.25
                0.567   1.61 | 3.567   2.57 | 6.567    5.14 | 9.57    2.25
                0.583   1.61 | 3.583   2.57 | 6.583    5.14 | 9.58    2.25
```

0.600	1.61	3.600	2.57	6.600	5.14	9.60	2.25
0.617	1.61	3.617	2.57	6.617	5.14	9.62	2.25
0.633	1.61	3.633	2.57	6.633	5.14	9.63	2.25
0.650	1.61	3.650	2.57	6.650	5.14	9.65	2.25
0.667	1.61	3.667	2.57	6.667	5.14	9.67	2.25
0.683	1.61	3.683	2.57	6.683	5.14	9.68	2.25
0.700	1.61	3.700	2.57	6.700	5.14	9.70	2.25
0.717	1.61	3.717	2.57	6.717	5.14	9.72	2.25
0.733	1.61	3.733	2.57	6.733	5.14	9.73	2.25
0.750	1.61	3.750	2.57	6.750	5.14	9.75	2.25
0.767	1.61	3.767	2.57	6.767	5.14	9.77	2.25
0.783	1.61	3.783	2.57	6.783	5.14	9.78	2.25
0.800	1.61	3.800	2.57	6.800	5.14	9.80	2.25
0.817	1.61	3.817	2.57	6.817	5.14	9.82	2.25
0.833	1.61	3.833	2.57	6.833	5.14	9.83	2.25
0.850	1.61	3.850	2.57	6.850	5.14	9.85	2.25
0.867	1.61	3.867	2.57	6.867	5.14	9.87	2.25
0.883	1.61	3.883	2.57	6.883	5.14	9.88	2.25
0.900	1.61	3.900	2.57	6.900	5.14	9.90	2.25
0.917	1.61	3.917	2.57	6.917	5.14	9.92	2.25
0.933	1.61	3.933	2.57	6.933	5.14	9.93	2.25
0.950	1.61	3.950	2.57	6.950	5.14	9.95	2.25
0.967	1.61	3.967	2.57	6.967	5.14	9.97	2.25
0.983	1.61	3.983	2.57	6.983	5.14	9.98	2.25
1.000	1.61	4.000	2.57	7.000	5.14	10.00	2.25
1.017	1.61	4.017	3.86	7.017	3.86	10.02	1.29
1.033	1.61	4.033	3.86	7.033	3.86	10.03	1.29
1.050	1.61	4.050	3.86	7.050	3.86	10.05	1.29
1.067	1.61	4.067	3.86	7.067	3.86	10.07	1.29
1.083	1.61	4.083	3.86	7.083	3.86	10.08	1.29
1.100	1.61	4.100	3.86	7.100	3.86	10.10	1.29
1.117	1.61	4.117	3.86	7.117	3.86	10.12	1.29
1.133	1.61	4.133	3.86	7.133	3.86	10.13	1.29
1.150	1.61	4.150	3.86	7.150	3.86	10.15	1.29
1.167	1.61	4.167	3.86	7.167	3.86	10.17	1.29
1.183	1.61	4.183	3.86	7.183	3.86	10.18	1.29
1.200	1.61	4.200	3.86	7.200	3.86	10.20	1.29
1.217	1.61	4.217	3.86	7.217	3.86	10.22	1.29
1.233	1.61	4.233	3.86	7.233	3.86	10.23	1.29
1.250	1.61	4.250	3.86	7.250	3.86	10.25	1.29
1.267	1.61	4.267	3.86	7.267	3.86	10.27	1.29
1.283	1.61	4.283	3.86	7.283	3.86	10.28	1.29
1.300	1.61	4.300	3.86	7.300	3.86	10.30	1.29
1.317	1.61	4.317	3.86	7.317	3.86	10.32	1.29
1.333	1.61	4.333	3.86	7.333	3.86	10.33	1.29
1.350	1.61	4.350	3.86	7.350	3.86	10.35	1.29
1.367	1.61	4.367	3.86	7.367	3.86	10.37	1.29
1.383	1.61	4.383	3.86	7.383	3.86	10.38	1.29
1.400	1.61	4.400	3.86	7.400	3.86	10.40	1.29

1.417	1.61	4.417	3.86	7.417	3.86	10.42	1.29
1.433	1.61	4.433	3.86	7.433	3.86	10.43	1.29
1.450	1.61	4.450	3.86	7.450	3.86	10.45	1.29
1.467	1.61	4.467	3.86	7.467	3.86	10.47	1.29
1.483	1.61	4.483	3.86	7.483	3.86	10.48	1.29
1.500	1.61	4.500	3.86	7.500	3.86	10.50	1.29
1.517	1.61	4.517	5.14	7.517	3.86	10.52	1.29
1.533	1.61	4.533	5.14	7.533	3.86	10.53	1.29
1.550	1.61	4.550	5.14	7.550	3.86	10.55	1.29
1.567	1.61	4.567	5.14	7.567	3.86	10.57	1.29
1.583	1.61	4.583	5.14	7.583	3.86	10.58	1.29
1.600	1.61	4.600	5.14	7.600	3.86	10.60	1.29
1.617	1.61	4.617	5.14	7.617	3.86	10.62	1.29
1.633	1.61	4.633	5.14	7.633	3.86	10.63	1.29
1.650	1.61	4.650	5.14	7.650	3.86	10.65	1.29
1.667	1.61	4.667	5.14	7.667	3.86	10.67	1.29
1.683	1.61	4.683	5.14	7.683	3.86	10.68	1.29
1.700	1.61	4.700	5.14	7.700	3.86	10.70	1.29
1.717	1.61	4.717	5.14	7.717	3.86	10.72	1.29
1.733	1.61	4.733	5.14	7.733	3.86	10.73	1.29
1.750	1.61	4.750	5.14	7.750	3.86	10.75	1.29
1.767	1.61	4.767	5.14	7.767	3.86	10.77	1.29
1.783	1.61	4.783	5.14	7.783	3.86	10.78	1.29
1.800	1.61	4.800	5.14	7.800	3.86	10.80	1.29
1.817	1.61	4.817	5.14	7.817	3.86	10.82	1.29
1.833	1.61	4.833	5.14	7.833	3.86	10.83	1.29
1.850	1.61	4.850	5.14	7.850	3.86	10.85	1.29
1.867	1.61	4.867	5.14	7.867	3.86	10.87	1.29
1.883	1.61	4.883	5.14	7.883	3.86	10.88	1.29
1.900	1.61	4.900	5.14	7.900	3.86	10.90	1.29
1.917	1.61	4.917	5.14	7.917	3.86	10.92	1.29
1.933	1.61	4.933	5.14	7.933	3.86	10.93	1.29
1.950	1.61	4.950	5.14	7.950	3.86	10.95	1.29
1.967	1.61	4.967	5.14	7.967	3.86	10.97	1.29
1.983	1.61	4.983	5.14	7.983	3.86	10.98	1.29
2.000	1.61	5.000	5.15	8.000	3.85	11.00	1.29
2.017	1.93	5.017	7.72	8.017	2.25	11.02	1.29
2.033	1.93	5.033	7.72	8.033	2.25	11.03	1.29
2.050	1.93	5.050	7.72	8.050	2.25	11.05	1.29
2.067	1.93	5.067	7.72	8.067	2.25	11.07	1.29
2.083	1.93	5.083	7.72	8.083	2.25	11.08	1.29
2.100	1.93	5.100	7.72	8.100	2.25	11.10	1.29
2.117	1.93	5.117	7.72	8.117	2.25	11.12	1.29
2.133	1.93	5.133	7.72	8.133	2.25	11.13	1.29
2.150	1.93	5.150	7.72	8.150	2.25	11.15	1.29
2.167	1.93	5.167	7.72	8.167	2.25	11.17	1.29
2.183	1.93	5.183	7.72	8.183	2.25	11.18	1.29
2.200	1.93	5.200	7.72	8.200	2.25	11.20	1.29
2.217	1.93	5.217	7.72	8.217	2.25	11.22	1.29

2.233	1.93	5.233	7.72	8.233	2.25	11.23	1.29
2.250	1.93	5.250	7.72	8.250	2.25	11.25	1.29
2.267	1.93	5.267	7.72	8.267	2.25	11.27	1.29
2.283	1.93	5.283	7.72	8.283	2.25	11.28	1.29
2.300	1.93	5.300	7.72	8.300	2.25	11.30	1.29
2.317	1.93	5.317	7.72	8.317	2.25	11.32	1.29
2.333	1.93	5.333	7.72	8.333	2.25	11.33	1.29
2.350	1.93	5.350	7.72	8.350	2.25	11.35	1.29
2.367	1.93	5.367	7.72	8.367	2.25	11.37	1.29
2.383	1.93	5.383	7.72	8.383	2.25	11.38	1.29
2.400	1.93	5.400	7.72	8.400	2.25	11.40	1.29
2.417	1.93	5.417	7.72	8.417	2.25	11.42	1.29
2.433	1.93	5.433	7.72	8.433	2.25	11.43	1.29
2.450	1.93	5.450	7.72	8.450	2.25	11.45	1.29
2.467	1.93	5.467	7.72	8.467	2.25	11.47	1.29
2.483	1.93	5.483	7.72	8.483	2.25	11.48	1.29
2.500	1.93	5.500	7.74	8.500	2.25	11.50	1.29
2.517	1.93	5.517	30.86	8.517	2.25	11.52	1.29
2.533	1.93	5.533	30.86	8.533	2.25	11.53	1.29
2.550	1.93	5.550	30.86	8.550	2.25	11.55	1.29
2.567	1.93	5.567	30.86	8.567	2.25	11.57	1.29
2.583	1.93	5.583	30.86	8.583	2.25	11.58	1.29
2.600	1.93	5.600	30.86	8.600	2.25	11.60	1.29
2.617	1.93	5.617	30.86	8.617	2.25	11.62	1.29
2.633	1.93	5.633	30.86	8.633	2.25	11.63	1.29
2.650	1.93	5.650	30.86	8.650	2.25	11.65	1.29
2.667	1.93	5.667	30.86	8.667	2.25	11.67	1.29
2.683	1.93	5.683	30.86	8.683	2.25	11.68	1.29
2.700	1.93	5.700	30.86	8.700	2.25	11.70	1.29
2.717	1.93	5.717	30.86	8.717	2.25	11.72	1.29
2.733	1.93	5.733	30.86	8.733	2.25	11.73	1.29
2.750	1.93	5.750	30.93	8.750	2.25	11.75	1.29
2.767	1.93	5.767	84.88	8.767	2.25	11.77	1.29
2.783	1.93	5.783	84.88	8.783	2.25	11.78	1.29
2.800	1.93	5.800	84.88	8.800	2.25	11.80	1.29
2.817	1.93	5.817	84.88	8.817	2.25	11.82	1.29
2.833	1.93	5.833	84.88	8.833	2.25	11.83	1.29
2.850	1.93	5.850	84.88	8.850	2.25	11.85	1.29
2.867	1.93	5.867	84.88	8.867	2.25	11.87	1.29
2.883	1.93	5.883	84.88	8.883	2.25	11.88	1.29
2.900	1.93	5.900	84.88	8.900	2.25	11.90	1.29
2.917	1.93	5.917	84.88	8.917	2.25	11.92	1.29
2.933	1.93	5.933	84.88	8.933	2.25	11.93	1.29
2.950	1.93	5.950	84.88	8.950	2.25	11.95	1.29
2.967	1.93	5.967	84.88	8.967	2.25	11.97	1.29
2.983	1.93	5.983	84.88	8.983	2.25	11.98	1.29
3.000	1.93	6.000	84.77	9.000	2.25	12.00	1.29

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.031 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 15.317
TOTAL RAINFALL (mm)= 64.299
RUNOFF COEFFICIENT = 0.238

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

CALIB			
STANDHYD (0201)	Area (ha)= 1.03		
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 30.00	
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.51	0.51	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	2.00	5.00	
Length (m)=	82.87	6.00	
Mannings n =	0.013	0.035	
Max.Eff.Inten.(mm/hr)=	84.88	58.20	
over (min)	5.00	3.00	
Storage Coeff. (min)=	1.98 (ii)	2.67 (ii)	
Unit Hyd. Tpeak (min)=	5.00	3.00	
Unit Hyd. peak (cms)=	0.38	0.40	
			TOTALS
PEAK FLOW (cms)=	0.07	0.09	0.158 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	63.30	25.24	36.66
TOTAL RAINFALL (mm)=	64.30	64.30	64.30
RUNOFF COEFFICIENT =	0.98	0.39	0.57

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	0.95	0.031	6.22	15.32
+ ID2= 2 (0201):	1.03	0.158	6.00	36.66

```
        ================================================
        ID = 3 (  0006):     1.98   0.176     6.00    26.42

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190     0.0530
                          0.0120     0.0080   |   0.0200     0.0720
                          0.0150     0.0200   |   0.0220     0.0950
                          0.0170     0.0350   |   0.6940     0.1190

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)     1.980      0.176      6.00      26.42
   OUTFLOW: ID= 1 (  0011)     1.980      0.016      7.12      26.33

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.12
                  TIME SHIFT OF PEAK FLOW         (min)= 67.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0282

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.007 (i)
     TIME TO PEAK    (hrs)=   6.700
     RUNOFF VOLUME    (mm)=  10.893
     TOTAL RAINFALL   (mm)=  64.299
     RUNOFF COEFFICIENT   =   0.169

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                            IMPERVIOUS    PERVIOUS (i)
```



```
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      84.88        55.27
               over (min)        5.00         9.00
     Storage Coeff.  (min)=       1.54 (ii)    8.20 (ii)
     Unit Hyd. Tpeak (min)=       5.00         9.00
     Unit Hyd. peak  (cms)=       0.41         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.04          0.041 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.05           6.03
     RUNOFF VOLUME    (mm)=      63.30        24.71          26.63
     TOTAL RAINFALL   (mm)=      64.30        64.30          64.30
     RUNOFF COEFFICIENT   =       0.98         0.38           0.41

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------

                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      84.88        83.38
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.67 (ii)    2.31 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.40         0.44
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.04         0.06          0.098 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=      63.30        29.10          39.36
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```
     TOTAL RAINFALL   (mm)=      64.30        64.30          64.30
     RUNOFF COEFFICIENT   =       0.98         0.45           0.61


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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-------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.041     6.03    26.63
      + ID2= 2 (  0203):     0.59   0.098     6.00    39.36
        ====================================================
        ID = 3 (  0009):     1.04   0.137     6.00    33.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000   |   0.0390     0.0320
                         0.0090     0.0060   |   0.0430     0.0380
                         0.0230     0.0130   |   0.0470     0.0450
                         0.0300     0.0190   |   0.0500     0.0510
                         0.0350     0.0260   |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040     0.137      6.00      33.85
   OUTFLOW: ID= 1 (  0012)     1.040     0.027      6.37      33.69

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.40
                  TIME SHIFT OF PEAK FLOW         (min)= 22.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0161

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-------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
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```
-------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.027     6.37    33.69
      + ID2= 2 (  0202):     0.53   0.007     6.70    10.89
        ====================================================
        ID = 3 (  0013):     1.57   0.033     6.55    25.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\c71
a189c-a165-4c72-9662-082422dd9d3e\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\c71
a189c-a165-4c72-9662-082422dd9d3e\sce


DATE: 11-25-2019                           TIME: 10:51:15

USER:


COMMENTS: _____________________________________________________
```

****
** SIMULATION : 03. 10 yr - 12 hr -SCS Type I **
****

MASS STORM / Ptotal= 76.00 mm	Filename: C:\Users\iblechta\AppData\Local\Temp\72a28c55-49d3-46ad-bad1-32ebf82b8caf\956397d6
	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 12.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.90	3.25	3.04	6.25	13.68	9.25	2.66
0.50	1.90	3.50	3.04	6.50	13.68	9.50	2.66
0.75	1.90	3.75	3.04	6.75	6.08	9.75	2.66
1.00	1.90	4.00	3.04	7.00	6.08	10.00	2.66
1.25	1.90	4.25	4.56	7.25	4.56	10.25	1.52
1.50	1.90	4.50	4.56	7.50	4.56	10.50	1.52
1.75	1.90	4.75	6.08	7.75	4.56	10.75	1.52
2.00	1.90	5.00	6.08	8.00	4.56	11.00	1.52
2.25	2.28	5.25	9.12	8.25	2.66	11.25	1.52
2.50	2.28	5.50	9.12	8.50	2.66	11.50	1.52
2.75	2.28	5.75	36.48	8.75	2.66	11.75	1.52
3.00	2.28	6.00	100.32	9.00	2.66	12.00	1.52

CALIB / NASHYD (0002) / ID= 1 DT= 1.0 min	Area (ha)= 0.95	Curve Number (CN)= 62.0
	Ia (mm)= 7.21	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	1.90	3.017	3.04	6.017	13.68	9.02	2.66
0.033	1.90	3.033	3.04	6.033	13.68	9.03	2.66
0.050	1.90	3.050	3.04	6.050	13.68	9.05	2.66
0.067	1.90	3.067	3.04	6.067	13.68	9.07	2.66
0.083	1.90	3.083	3.04	6.083	13.68	9.08	2.66
0.100	1.90	3.100	3.04	6.100	13.68	9.10	2.66

0.117	1.90	3.117	3.04	6.117	13.68	9.12	2.66
0.133	1.90	3.133	3.04	6.133	13.68	9.13	2.66
0.150	1.90	3.150	3.04	6.150	13.68	9.15	2.66
0.167	1.90	3.167	3.04	6.167	13.68	9.17	2.66
0.183	1.90	3.183	3.04	6.183	13.68	9.18	2.66
0.200	1.90	3.200	3.04	6.200	13.68	9.20	2.66
0.217	1.90	3.217	3.04	6.217	13.68	9.22	2.66
0.233	1.90	3.233	3.04	6.233	13.68	9.23	2.66
0.250	1.90	3.250	3.04	6.250	13.68	9.25	2.66
0.267	1.90	3.267	3.04	6.267	13.68	9.27	2.66
0.283	1.90	3.283	3.04	6.283	13.68	9.28	2.66
0.300	1.90	3.300	3.04	6.300	13.68	9.30	2.66
0.317	1.90	3.317	3.04	6.317	13.68	9.32	2.66
0.333	1.90	3.333	3.04	6.333	13.68	9.33	2.66
0.350	1.90	3.350	3.04	6.350	13.68	9.35	2.66
0.367	1.90	3.367	3.04	6.367	13.68	9.37	2.66
0.383	1.90	3.383	3.04	6.383	13.68	9.38	2.66
0.400	1.90	3.400	3.04	6.400	13.68	9.40	2.66
0.417	1.90	3.417	3.04	6.417	13.68	9.42	2.66
0.433	1.90	3.433	3.04	6.433	13.68	9.43	2.66
0.450	1.90	3.450	3.04	6.450	13.68	9.45	2.66
0.467	1.90	3.467	3.04	6.467	13.68	9.47	2.66
0.483	1.90	3.483	3.04	6.483	13.68	9.48	2.66
0.500	1.90	3.500	3.04	6.500	13.67	9.50	2.66
0.517	1.90	3.517	3.04	6.517	6.08	9.52	2.66
0.533	1.90	3.533	3.04	6.533	6.08	9.53	2.66
0.550	1.90	3.550	3.04	6.550	6.08	9.55	2.66
0.567	1.90	3.567	3.04	6.567	6.08	9.57	2.66
0.583	1.90	3.583	3.04	6.583	6.08	9.58	2.66
0.600	1.90	3.600	3.04	6.600	6.08	9.60	2.66
0.617	1.90	3.617	3.04	6.617	6.08	9.62	2.66
0.633	1.90	3.633	3.04	6.633	6.08	9.63	2.66
0.650	1.90	3.650	3.04	6.650	6.08	9.65	2.66
0.667	1.90	3.667	3.04	6.667	6.08	9.67	2.66
0.683	1.90	3.683	3.04	6.683	6.08	9.68	2.66
0.700	1.90	3.700	3.04	6.700	6.08	9.70	2.66
0.717	1.90	3.717	3.04	6.717	6.08	9.72	2.66
0.733	1.90	3.733	3.04	6.733	6.08	9.73	2.66
0.750	1.90	3.750	3.04	6.750	6.08	9.75	2.66
0.767	1.90	3.767	3.04	6.767	6.08	9.77	2.66
0.783	1.90	3.783	3.04	6.783	6.08	9.78	2.66
0.800	1.90	3.800	3.04	6.800	6.08	9.80	2.66
0.817	1.90	3.817	3.04	6.817	6.08	9.82	2.66
0.833	1.90	3.833	3.04	6.833	6.08	9.83	2.66
0.850	1.90	3.850	3.04	6.850	6.08	9.85	2.66
0.867	1.90	3.867	3.04	6.867	6.08	9.87	2.66
0.883	1.90	3.883	3.04	6.883	6.08	9.88	2.66
0.900	1.90	3.900	3.04	6.900	6.08	9.90	2.66
0.917	1.90	3.917	3.04	6.917	6.08	9.92	2.66

0.933	1.90	3.933	3.04	6.933	6.08	9.93	2.66
0.950	1.90	3.950	3.04	6.950	6.08	9.95	2.66
0.967	1.90	3.967	3.04	6.967	6.08	9.97	2.66
0.983	1.90	3.983	3.04	6.983	6.08	9.98	2.66
1.000	1.90	4.000	3.04	7.000	6.08	10.00	2.66
1.017	1.90	4.017	4.56	7.017	4.56	10.02	1.52
1.033	1.90	4.033	4.56	7.033	4.56	10.03	1.52
1.050	1.90	4.050	4.56	7.050	4.56	10.05	1.52
1.067	1.90	4.067	4.56	7.067	4.56	10.07	1.52
1.083	1.90	4.083	4.56	7.083	4.56	10.08	1.52
1.100	1.90	4.100	4.56	7.100	4.56	10.10	1.52
1.117	1.90	4.117	4.56	7.117	4.56	10.12	1.52
1.133	1.90	4.133	4.56	7.133	4.56	10.13	1.52
1.150	1.90	4.150	4.56	7.150	4.56	10.15	1.52
1.167	1.90	4.167	4.56	7.167	4.56	10.17	1.52
1.183	1.90	4.183	4.56	7.183	4.56	10.18	1.52
1.200	1.90	4.200	4.56	7.200	4.56	10.20	1.52
1.217	1.90	4.217	4.56	7.217	4.56	10.22	1.52
1.233	1.90	4.233	4.56	7.233	4.56	10.23	1.52
1.250	1.90	4.250	4.56	7.250	4.56	10.25	1.52
1.267	1.90	4.267	4.56	7.267	4.56	10.27	1.52
1.283	1.90	4.283	4.56	7.283	4.56	10.28	1.52
1.300	1.90	4.300	4.56	7.300	4.56	10.30	1.52
1.317	1.90	4.317	4.56	7.317	4.56	10.32	1.52
1.333	1.90	4.333	4.56	7.333	4.56	10.33	1.52
1.350	1.90	4.350	4.56	7.350	4.56	10.35	1.52
1.367	1.90	4.367	4.56	7.367	4.56	10.37	1.52
1.383	1.90	4.383	4.56	7.383	4.56	10.38	1.52
1.400	1.90	4.400	4.56	7.400	4.56	10.40	1.52
1.417	1.90	4.417	4.56	7.417	4.56	10.42	1.52
1.433	1.90	4.433	4.56	7.433	4.56	10.43	1.52
1.450	1.90	4.450	4.56	7.450	4.56	10.45	1.52
1.467	1.90	4.467	4.56	7.467	4.56	10.47	1.52
1.483	1.90	4.483	4.56	7.483	4.56	10.48	1.52
1.500	1.90	4.500	4.56	7.500	4.56	10.50	1.52
1.517	1.90	4.517	6.08	7.517	4.56	10.52	1.52
1.533	1.90	4.533	6.08	7.533	4.56	10.53	1.52
1.550	1.90	4.550	6.08	7.550	4.56	10.55	1.52
1.567	1.90	4.567	6.08	7.567	4.56	10.57	1.52
1.583	1.90	4.583	6.08	7.583	4.56	10.58	1.52
1.600	1.90	4.600	6.08	7.600	4.56	10.60	1.52
1.617	1.90	4.617	6.08	7.617	4.56	10.62	1.52
1.633	1.90	4.633	6.08	7.633	4.56	10.63	1.52
1.650	1.90	4.650	6.08	7.650	4.56	10.65	1.52
1.667	1.90	4.667	6.08	7.667	4.56	10.67	1.52
1.683	1.90	4.683	6.08	7.683	4.56	10.68	1.52
1.700	1.90	4.700	6.08	7.700	4.56	10.70	1.52
1.717	1.90	4.717	6.08	7.717	4.56	10.72	1.52
1.733	1.90	4.733	6.08	7.733	4.56	10.73	1.52

1.750	1.90	4.750	6.08	7.750	4.56	10.75	1.52
1.767	1.90	4.767	6.08	7.767	4.56	10.77	1.52
1.783	1.90	4.783	6.08	7.783	4.56	10.78	1.52
1.800	1.90	4.800	6.08	7.800	4.56	10.80	1.52
1.817	1.90	4.817	6.08	7.817	4.56	10.82	1.52
1.833	1.90	4.833	6.08	7.833	4.56	10.83	1.52
1.850	1.90	4.850	6.08	7.850	4.56	10.85	1.52
1.867	1.90	4.867	6.08	7.867	4.56	10.87	1.52
1.883	1.90	4.883	6.08	7.883	4.56	10.88	1.52
1.900	1.90	4.900	6.08	7.900	4.56	10.90	1.52
1.917	1.90	4.917	6.08	7.917	4.56	10.92	1.52
1.933	1.90	4.933	6.08	7.933	4.56	10.93	1.52
1.950	1.90	4.950	6.08	7.950	4.56	10.95	1.52
1.967	1.90	4.967	6.08	7.967	4.56	10.97	1.52
1.983	1.90	4.983	6.08	7.983	4.56	10.98	1.52
2.000	1.90	5.000	6.08	8.000	4.55	11.00	1.52
2.017	2.28	5.017	9.12	8.017	2.66	11.02	1.52
2.033	2.28	5.033	9.12	8.033	2.66	11.03	1.52
2.050	2.28	5.050	9.12	8.050	2.66	11.05	1.52
2.067	2.28	5.067	9.12	8.067	2.66	11.07	1.52
2.083	2.28	5.083	9.12	8.083	2.66	11.08	1.52
2.100	2.28	5.100	9.12	8.100	2.66	11.10	1.52
2.117	2.28	5.117	9.12	8.117	2.66	11.12	1.52
2.133	2.28	5.133	9.12	8.133	2.66	11.13	1.52
2.150	2.28	5.150	9.12	8.150	2.66	11.15	1.52
2.167	2.28	5.167	9.12	8.167	2.66	11.17	1.52
2.183	2.28	5.183	9.12	8.183	2.66	11.18	1.52
2.200	2.28	5.200	9.12	8.200	2.66	11.20	1.52
2.217	2.28	5.217	9.12	8.217	2.66	11.22	1.52
2.233	2.28	5.233	9.12	8.233	2.66	11.23	1.52
2.250	2.28	5.250	9.12	8.250	2.66	11.25	1.52
2.267	2.28	5.267	9.12	8.267	2.66	11.27	1.52
2.283	2.28	5.283	9.12	8.283	2.66	11.28	1.52
2.300	2.28	5.300	9.12	8.300	2.66	11.30	1.52
2.317	2.28	5.317	9.12	8.317	2.66	11.32	1.52
2.333	2.28	5.333	9.12	8.333	2.66	11.33	1.52
2.350	2.28	5.350	9.12	8.350	2.66	11.35	1.52
2.367	2.28	5.367	9.12	8.367	2.66	11.37	1.52
2.383	2.28	5.383	9.12	8.383	2.66	11.38	1.52
2.400	2.28	5.400	9.12	8.400	2.66	11.40	1.52
2.417	2.28	5.417	9.12	8.417	2.66	11.42	1.52
2.433	2.28	5.433	9.12	8.433	2.66	11.43	1.52
2.450	2.28	5.450	9.12	8.450	2.66	11.45	1.52
2.467	2.28	5.467	9.12	8.467	2.66	11.47	1.52
2.483	2.28	5.483	9.12	8.483	2.66	11.48	1.52
2.500	2.28	5.500	9.15	8.500	2.66	11.50	1.52
2.517	2.28	5.517	36.48	8.517	2.66	11.52	1.52
2.533	2.28	5.533	36.48	8.533	2.66	11.53	1.52
2.550	2.28	5.550	36.48	8.550	2.66	11.55	1.52

2.567	2.28	5.567	36.48	8.567	2.66	11.57	1.52
2.583	2.28	5.583	36.48	8.583	2.66	11.58	1.52
2.600	2.28	5.600	36.48	8.600	2.66	11.60	1.52
2.617	2.28	5.617	36.48	8.617	2.66	11.62	1.52
2.633	2.28	5.633	36.48	8.633	2.66	11.63	1.52
2.650	2.28	5.650	36.48	8.650	2.66	11.65	1.52
2.667	2.28	5.667	36.48	8.667	2.66	11.67	1.52
2.683	2.28	5.683	36.48	8.683	2.66	11.68	1.52
2.700	2.28	5.700	36.48	8.700	2.66	11.70	1.52
2.717	2.28	5.717	36.48	8.717	2.66	11.72	1.52
2.733	2.28	5.733	36.48	8.733	2.66	11.73	1.52
2.750	2.28	5.750	36.56	8.750	2.66	11.75	1.52
2.767	2.28	5.767	100.32	8.767	2.66	11.77	1.52
2.783	2.28	5.783	100.32	8.783	2.66	11.78	1.52
2.800	2.28	5.800	100.32	8.800	2.66	11.80	1.52
2.817	2.28	5.817	100.32	8.817	2.66	11.82	1.52
2.833	2.28	5.833	100.32	8.833	2.66	11.83	1.52
2.850	2.28	5.850	100.32	8.850	2.66	11.85	1.52
2.867	2.28	5.867	100.32	8.867	2.66	11.87	1.52
2.883	2.28	5.883	100.32	8.883	2.66	11.88	1.52
2.900	2.28	5.900	100.32	8.900	2.66	11.90	1.52
2.917	2.28	5.917	100.32	8.917	2.66	11.92	1.52
2.933	2.28	5.933	100.32	8.933	2.66	11.93	1.52
2.950	2.28	5.950	100.32	8.950	2.66	11.95	1.52
2.967	2.28	5.967	100.32	8.967	2.66	11.97	1.52
2.983	2.28	5.983	100.32	8.983	2.66	11.98	1.52
3.000	2.28	6.000	100.20	9.000	2.66	12.00	1.52

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.043 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 21.080
TOTAL RAINFALL (mm)= 75.999
RUNOFF COEFFICIENT = 0.277

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

CALIB
STANDHYD (0201)
ID= 1 DT= 1.0 min

Area (ha)= 1.03
Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.51	0.51
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	2.00	5.00
Length (m)=	82.87	6.00

Mannings n =	0.013	0.035
Max.Eff.Inten.(mm/hr)=	100.32	76.33
over (min)	5.00	3.00
Storage Coeff. (min)=	1.85 (ii)	2.50 (ii)
Unit Hyd. Tpeak (min)=	5.00	3.00
Unit Hyd. peak (cms)=	0.39	0.42

			TOTALS
PEAK FLOW (cms)=	0.09	0.11	0.198 (iii)
TIME TO PEAK (hrs)=	6.00	6.00	6.00
RUNOFF VOLUME (mm)=	75.00	33.24	45.77
TOTAL RAINFALL (mm)=	76.00	76.00	76.00
RUNOFF COEFFICIENT =	0.99	0.44	0.60

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0002):	0.95	0.043	6.22	21.08
+ ID2= 2 (0201):	1.03	0.198	6.00	45.77
ID = 3 (0006):	1.98	0.224	6.00	33.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)
IN= 2---> OUT= 1
DT= 1.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0190	0.0530
0.0120	0.0080	0.0200	0.0720
0.0150	0.0200	0.0220	0.0950
0.0170	0.0350	0.6940	0.1190

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0006)	1.980	0.224	6.00	33.92
OUTFLOW: ID= 1 (0011)	1.980	0.017	7.38	33.84

```
                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.74
                  TIME SHIFT OF PEAK FLOW         (min)= 83.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0381

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.010 (i)
     TIME TO PEAK    (hrs)=   6.683
     RUNOFF VOLUME    (mm)=  15.426
     TOTAL RAINFALL   (mm)=  75.999
     RUNOFF COEFFICIENT   =   0.203

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.14         0.31
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      2.00         2.00
     Length            (m)=     54.77        40.00
     Mannings n           =     0.013        0.035

     Max.Eff.Inten.(mm/hr)=    100.32        72.64
                 over (min)       5.00         8.00
     Storage Coeff.  (min)=      1.44 (ii)    7.67 (ii)
     Unit Hyd. Tpeak (min)=      5.00         8.00
     Unit Hyd. peak  (cms)=      0.42         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.01         0.05          0.055 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.05           6.03
     RUNOFF VOLUME    (mm)=     75.00        32.60          34.71
     TOTAL RAINFALL   (mm)=     76.00        76.00          76.00
     RUNOFF COEFFICIENT   =      0.99         0.43           0.46

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.
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       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------

                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.35         0.24
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      2.00         5.00
     Length            (m)=     62.72         6.00
     Mannings n           =     0.013        0.035

     Max.Eff.Inten.(mm/hr)=    100.32       107.82
                 over (min)       5.00         3.00
     Storage Coeff.  (min)=      1.57 (ii)    2.16 (ii)
     Unit Hyd. Tpeak (min)=      5.00         3.00
     Unit Hyd. peak  (cms)=      0.41         0.46
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.05         0.07          0.122 (iii)
     TIME TO PEAK    (hrs)=      6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=     75.00        37.82          48.97
     TOTAL RAINFALL   (mm)=     76.00        76.00          76.00
     RUNOFF COEFFICIENT   =      0.99         0.50           0.64


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):      0.45   0.055     6.03    34.71
     + ID2= 2 (  0203):      0.59   0.122     6.00    48.97
       ================================================
       ID = 3 (  0009):      1.04   0.176     6.00    42.80
```

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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0390      0.0320
                          0.0090     0.0060   |   0.0430      0.0380
                          0.0230     0.0130   |   0.0470      0.0450
                          0.0300     0.0190   |   0.0500      0.0510
                          0.0350     0.0260   |   0.0000      0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.176      6.00      42.80
   OUTFLOW: ID= 1 (  0012)      1.040      0.031      6.42      42.64

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 17.80
                  TIME SHIFT OF PEAK FLOW         (min)= 25.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0209

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.031     6.42    42.64
     + ID2= 2 (  0202):     0.53   0.010     6.68    15.43
       ================================================
       ID = 3 (  0013):     1.57   0.041     6.58    33.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 FINISH
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       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
```



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        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\3fa
28d38-2635-45ee-807e-c860f7d9839e\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\3fa
28d38-2635-45ee-807e-c860f7d9839e\sce


DATE: 11-25-2019                          TIME: 10:51:15

USER:



COMMENTS: _____________________________________________


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  ***********************************************
  ** SIMULATION : 04. 25 yr - 12 hr -SCS Type I **
  ***********************************************

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| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              72a28c55-49d3-46ad-bad1-32ebf82b8caf\21f66434
| Ptotal= 90.70 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 12.00 hrs
                       Mass curve time step = 15.00 min
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.27	3.25	3.63	6.25	16.33	9.25	3.17
0.50	2.27	3.50	3.63	6.50	16.33	9.50	3.17
0.75	2.27	3.75	3.63	6.75	7.26	9.75	3.17
1.00	2.27	4.00	3.63	7.00	7.26	10.00	3.17
1.25	2.27	4.25	5.44	7.25	5.44	10.25	1.81
1.50	2.27	4.50	5.44	7.50	5.44	10.50	1.81
1.75	2.27	4.75	7.26	7.75	5.44	10.75	1.81
2.00	2.27	5.00	7.26	8.00	5.44	11.00	1.81
2.25	2.72	5.25	10.88	8.25	3.17	11.25	1.81
2.50	2.72	5.50	10.88	8.50	3.17	11.50	1.81
2.75	2.72	5.75	43.54	8.75	3.17	11.75	1.81
3.00	2.72	6.00	119.72	9.00	3.17	12.00	1.81

CALIB			
NASHYD (0002)	Area (ha)=	0.95	Curve Number (CN)= 62.0
ID= 1 DT= 1.0 min	Ia (mm)=	7.21	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.27	3.017	3.63	6.017	16.33	9.02	3.17
0.033	2.27	3.033	3.63	6.033	16.33	9.03	3.17
0.050	2.27	3.050	3.63	6.050	16.33	9.05	3.17
0.067	2.27	3.067	3.63	6.067	16.33	9.07	3.17
0.083	2.27	3.083	3.63	6.083	16.33	9.08	3.17
0.100	2.27	3.100	3.63	6.100	16.33	9.10	3.17
0.117	2.27	3.117	3.63	6.117	16.33	9.12	3.17
0.133	2.27	3.133	3.63	6.133	16.33	9.13	3.17
0.150	2.27	3.150	3.63	6.150	16.33	9.15	3.17
0.167	2.27	3.167	3.63	6.167	16.33	9.17	3.17
0.183	2.27	3.183	3.63	6.183	16.33	9.18	3.17
0.200	2.27	3.200	3.63	6.200	16.33	9.20	3.17
0.217	2.27	3.217	3.63	6.217	16.33	9.22	3.17
0.233	2.27	3.233	3.63	6.233	16.33	9.23	3.17
0.250	2.27	3.250	3.63	6.250	16.33	9.25	3.17
0.267	2.27	3.267	3.63	6.267	16.33	9.27	3.17
0.283	2.27	3.283	3.63	6.283	16.33	9.28	3.17
0.300	2.27	3.300	3.63	6.300	16.33	9.30	3.17
0.317	2.27	3.317	3.63	6.317	16.33	9.32	3.17
0.333	2.27	3.333	3.63	6.333	16.33	9.33	3.17
0.350	2.27	3.350	3.63	6.350	16.33	9.35	3.17

0.367	2.27	3.367	3.63	6.367	16.33	9.37	3.17
0.383	2.27	3.383	3.63	6.383	16.33	9.38	3.17
0.400	2.27	3.400	3.63	6.400	16.33	9.40	3.17
0.417	2.27	3.417	3.63	6.417	16.33	9.42	3.17
0.433	2.27	3.433	3.63	6.433	16.33	9.43	3.17
0.450	2.27	3.450	3.63	6.450	16.33	9.45	3.17
0.467	2.27	3.467	3.63	6.467	16.33	9.47	3.17
0.483	2.27	3.483	3.63	6.483	16.33	9.48	3.17
0.500	2.27	3.500	3.63	6.500	16.31	9.50	3.17
0.517	2.27	3.517	3.63	6.517	7.26	9.52	3.17
0.533	2.27	3.533	3.63	6.533	7.26	9.53	3.17
0.550	2.27	3.550	3.63	6.550	7.26	9.55	3.17
0.567	2.27	3.567	3.63	6.567	7.26	9.57	3.17
0.583	2.27	3.583	3.63	6.583	7.26	9.58	3.17
0.600	2.27	3.600	3.63	6.600	7.26	9.60	3.17
0.617	2.27	3.617	3.63	6.617	7.26	9.62	3.17
0.633	2.27	3.633	3.63	6.633	7.26	9.63	3.17
0.650	2.27	3.650	3.63	6.650	7.26	9.65	3.17
0.667	2.27	3.667	3.63	6.667	7.26	9.67	3.17
0.683	2.27	3.683	3.63	6.683	7.26	9.68	3.17
0.700	2.27	3.700	3.63	6.700	7.26	9.70	3.17
0.717	2.27	3.717	3.63	6.717	7.26	9.72	3.17
0.733	2.27	3.733	3.63	6.733	7.26	9.73	3.17
0.750	2.27	3.750	3.63	6.750	7.26	9.75	3.17
0.767	2.27	3.767	3.63	6.767	7.26	9.77	3.17
0.783	2.27	3.783	3.63	6.783	7.26	9.78	3.17
0.800	2.27	3.800	3.63	6.800	7.26	9.80	3.17
0.817	2.27	3.817	3.63	6.817	7.26	9.82	3.17
0.833	2.27	3.833	3.63	6.833	7.26	9.83	3.17
0.850	2.27	3.850	3.63	6.850	7.26	9.85	3.17
0.867	2.27	3.867	3.63	6.867	7.26	9.87	3.17
0.883	2.27	3.883	3.63	6.883	7.26	9.88	3.17
0.900	2.27	3.900	3.63	6.900	7.26	9.90	3.17
0.917	2.27	3.917	3.63	6.917	7.26	9.92	3.17
0.933	2.27	3.933	3.63	6.933	7.26	9.93	3.17
0.950	2.27	3.950	3.63	6.950	7.26	9.95	3.17
0.967	2.27	3.967	3.63	6.967	7.26	9.97	3.17
0.983	2.27	3.983	3.63	6.983	7.26	9.98	3.17
1.000	2.27	4.000	3.63	7.000	7.25	10.00	3.17
1.017	2.27	4.017	5.44	7.017	5.44	10.02	1.81
1.033	2.27	4.033	5.44	7.033	5.44	10.03	1.81
1.050	2.27	4.050	5.44	7.050	5.44	10.05	1.81
1.067	2.27	4.067	5.44	7.067	5.44	10.07	1.81
1.083	2.27	4.083	5.44	7.083	5.44	10.08	1.81
1.100	2.27	4.100	5.44	7.100	5.44	10.10	1.81
1.117	2.27	4.117	5.44	7.117	5.44	10.12	1.81
1.133	2.27	4.133	5.44	7.133	5.44	10.13	1.81
1.150	2.27	4.150	5.44	7.150	5.44	10.15	1.81
1.167	2.27	4.167	5.44	7.167	5.44	10.17	1.81

1.183	2.27	4.183	5.44	7.183	5.44	10.18	1.81
1.200	2.27	4.200	5.44	7.200	5.44	10.20	1.81
1.217	2.27	4.217	5.44	7.217	5.44	10.22	1.81
1.233	2.27	4.233	5.44	7.233	5.44	10.23	1.81
1.250	2.27	4.250	5.44	7.250	5.44	10.25	1.81
1.267	2.27	4.267	5.44	7.267	5.44	10.27	1.81
1.283	2.27	4.283	5.44	7.283	5.44	10.28	1.81
1.300	2.27	4.300	5.44	7.300	5.44	10.30	1.81
1.317	2.27	4.317	5.44	7.317	5.44	10.32	1.81
1.333	2.27	4.333	5.44	7.333	5.44	10.33	1.81
1.350	2.27	4.350	5.44	7.350	5.44	10.35	1.81
1.367	2.27	4.367	5.44	7.367	5.44	10.37	1.81
1.383	2.27	4.383	5.44	7.383	5.44	10.38	1.81
1.400	2.27	4.400	5.44	7.400	5.44	10.40	1.81
1.417	2.27	4.417	5.44	7.417	5.44	10.42	1.81
1.433	2.27	4.433	5.44	7.433	5.44	10.43	1.81
1.450	2.27	4.450	5.44	7.450	5.44	10.45	1.81
1.467	2.27	4.467	5.44	7.467	5.44	10.47	1.81
1.483	2.27	4.483	5.44	7.483	5.44	10.48	1.81
1.500	2.27	4.500	5.44	7.500	5.44	10.50	1.81
1.517	2.27	4.517	7.26	7.517	5.44	10.52	1.81
1.533	2.27	4.533	7.26	7.533	5.44	10.53	1.81
1.550	2.27	4.550	7.26	7.550	5.44	10.55	1.81
1.567	2.27	4.567	7.26	7.567	5.44	10.57	1.81
1.583	2.27	4.583	7.26	7.583	5.44	10.58	1.81
1.600	2.27	4.600	7.26	7.600	5.44	10.60	1.81
1.617	2.27	4.617	7.26	7.617	5.44	10.62	1.81
1.633	2.27	4.633	7.26	7.633	5.44	10.63	1.81
1.650	2.27	4.650	7.26	7.650	5.44	10.65	1.81
1.667	2.27	4.667	7.26	7.667	5.44	10.67	1.81
1.683	2.27	4.683	7.26	7.683	5.44	10.68	1.81
1.700	2.27	4.700	7.26	7.700	5.44	10.70	1.81
1.717	2.27	4.717	7.26	7.717	5.44	10.72	1.81
1.733	2.27	4.733	7.26	7.733	5.44	10.73	1.81
1.750	2.27	4.750	7.26	7.750	5.44	10.75	1.81
1.767	2.27	4.767	7.26	7.767	5.44	10.77	1.81
1.783	2.27	4.783	7.26	7.783	5.44	10.78	1.81
1.800	2.27	4.800	7.26	7.800	5.44	10.80	1.81
1.817	2.27	4.817	7.26	7.817	5.44	10.82	1.81
1.833	2.27	4.833	7.26	7.833	5.44	10.83	1.81
1.850	2.27	4.850	7.26	7.850	5.44	10.85	1.81
1.867	2.27	4.867	7.26	7.867	5.44	10.87	1.81
1.883	2.27	4.883	7.26	7.883	5.44	10.88	1.81
1.900	2.27	4.900	7.26	7.900	5.44	10.90	1.81
1.917	2.27	4.917	7.26	7.917	5.44	10.92	1.81
1.933	2.27	4.933	7.26	7.933	5.44	10.93	1.81
1.950	2.27	4.950	7.26	7.950	5.44	10.95	1.81
1.967	2.27	4.967	7.26	7.967	5.44	10.97	1.81
1.983	2.27	4.983	7.26	7.983	5.44	10.98	1.81

2.000	2.27	5.000	7.26	8.000	5.44	11.00	1.81
2.017	2.72	5.017	10.88	8.017	3.17	11.02	1.81
2.033	2.72	5.033	10.88	8.033	3.17	11.03	1.81
2.050	2.72	5.050	10.88	8.050	3.17	11.05	1.81
2.067	2.72	5.067	10.88	8.067	3.17	11.07	1.81
2.083	2.72	5.083	10.88	8.083	3.17	11.08	1.81
2.100	2.72	5.100	10.88	8.100	3.17	11.10	1.81
2.117	2.72	5.117	10.88	8.117	3.17	11.12	1.81
2.133	2.72	5.133	10.88	8.133	3.17	11.13	1.81
2.150	2.72	5.150	10.88	8.150	3.17	11.15	1.81
2.167	2.72	5.167	10.88	8.167	3.17	11.17	1.81
2.183	2.72	5.183	10.88	8.183	3.17	11.18	1.81
2.200	2.72	5.200	10.88	8.200	3.17	11.20	1.81
2.217	2.72	5.217	10.88	8.217	3.17	11.22	1.81
2.233	2.72	5.233	10.88	8.233	3.17	11.23	1.81
2.250	2.72	5.250	10.88	8.250	3.17	11.25	1.81
2.267	2.72	5.267	10.88	8.267	3.17	11.27	1.81
2.283	2.72	5.283	10.88	8.283	3.17	11.28	1.81
2.300	2.72	5.300	10.88	8.300	3.17	11.30	1.81
2.317	2.72	5.317	10.88	8.317	3.17	11.32	1.81
2.333	2.72	5.333	10.88	8.333	3.17	11.33	1.81
2.350	2.72	5.350	10.88	8.350	3.17	11.35	1.81
2.367	2.72	5.367	10.88	8.367	3.17	11.37	1.81
2.383	2.72	5.383	10.88	8.383	3.17	11.38	1.81
2.400	2.72	5.400	10.88	8.400	3.17	11.40	1.81
2.417	2.72	5.417	10.88	8.417	3.17	11.42	1.81
2.433	2.72	5.433	10.88	8.433	3.17	11.43	1.81
2.450	2.72	5.450	10.88	8.450	3.17	11.45	1.81
2.467	2.72	5.467	10.88	8.467	3.17	11.47	1.81
2.483	2.72	5.483	10.88	8.483	3.17	11.48	1.81
2.500	2.72	5.500	10.92	8.500	3.17	11.50	1.81
2.517	2.72	5.517	43.54	8.517	3.17	11.52	1.81
2.533	2.72	5.533	43.54	8.533	3.17	11.53	1.81
2.550	2.72	5.550	43.54	8.550	3.17	11.55	1.81
2.567	2.72	5.567	43.54	8.567	3.17	11.57	1.81
2.583	2.72	5.583	43.54	8.583	3.17	11.58	1.81
2.600	2.72	5.600	43.54	8.600	3.17	11.60	1.81
2.617	2.72	5.617	43.54	8.617	3.17	11.62	1.81
2.633	2.72	5.633	43.54	8.633	3.17	11.63	1.81
2.650	2.72	5.650	43.54	8.650	3.17	11.65	1.81
2.667	2.72	5.667	43.54	8.667	3.17	11.67	1.81
2.683	2.72	5.683	43.54	8.683	3.17	11.68	1.81
2.700	2.72	5.700	43.54	8.700	3.17	11.70	1.81
2.717	2.72	5.717	43.54	8.717	3.17	11.72	1.81
2.733	2.72	5.733	43.54	8.733	3.17	11.73	1.81
2.750	2.72	5.750	43.63	8.750	3.17	11.75	1.81
2.767	2.72	5.767	119.72	8.767	3.17	11.77	1.81
2.783	2.72	5.783	119.72	8.783	3.17	11.78	1.81
2.800	2.72	5.800	119.72	8.800	3.17	11.80	1.81

2.817	2.72	5.817	119.72	8.817	3.17	11.82	1.81
2.833	2.72	5.833	119.72	8.833	3.17	11.83	1.81
2.850	2.72	5.850	119.72	8.850	3.17	11.85	1.81
2.867	2.72	5.867	119.72	8.867	3.17	11.87	1.81
2.883	2.72	5.883	119.72	8.883	3.17	11.88	1.81
2.900	2.72	5.900	119.72	8.900	3.17	11.90	1.81
2.917	2.72	5.917	119.72	8.917	3.17	11.92	1.81
2.933	2.72	5.933	119.72	8.933	3.17	11.93	1.81
2.950	2.72	5.950	119.72	8.950	3.17	11.95	1.81
2.967	2.72	5.967	119.72	8.967	3.17	11.97	1.81
2.983	2.72	5.983	119.72	8.983	3.17	11.98	1.81
3.000	2.72	6.000	119.58	9.000	3.17	12.00	1.81

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.060 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 29.144
TOTAL RAINFALL (mm)= 90.699
RUNOFF COEFFICIENT = 0.321

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

CALIB					
STANDHYD (0201)	Area (ha)= 1.03				
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 30.00			

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		119.72	100.51	
over (min)		5.00	3.00	
Storage Coeff. (min)=		1.73 (ii)	2.33 (ii)	
Unit Hyd. Tpeak (min)=		5.00	3.00	
Unit Hyd. peak (cms)=		0.40	0.44	
				TOTALS
PEAK FLOW	(cms)=	0.10	0.15	0.250 (iii)
TIME TO PEAK	(hrs)=	6.00	6.00	6.00
RUNOFF VOLUME	(mm)=	89.70	44.01	57.71
TOTAL RAINFALL	(mm)=	90.70	90.70	90.70
RUNOFF COEFFICIENT	=	0.99	0.49	0.64

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0002):	0.95	0.060	6.22	29.14
+ ID2= 2 (0201):	1.03	0.250	6.00	57.71
ID = 3 (0006):	1.98	0.287	6.00	44.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0190	0.0530
	0.0120	0.0080	0.0200	0.0720
	0.0150	0.0200	0.0220	0.0950
	0.0170	0.0350	0.6940	0.1190

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (0006)	1.980	0.287	6.00	44.01
OUTFLOW: ID= 1 (0011)	1.980	0.019	8.03	43.92

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.58
TIME SHIFT OF PEAK FLOW (min)=122.00
MAXIMUM STORAGE USED (ha.m.)= 0.0523

CALIB			
NASHYD (0202)	Area (ha)= 0.53	Curve Number (CN)= 54.0	
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.67		

Unit Hyd Qpeak (cms)= 0.030

PEAK FLOW (cms)= 0.014 (i)

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     TIME TO PEAK    (hrs)=   6.667
     RUNOFF VOLUME    (mm)=  21.922
     TOTAL RAINFALL   (mm)=  90.699
     RUNOFF COEFFICIENT   =   0.242

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

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| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
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                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     119.72        95.85
               over (min)        5.00         8.00
     Storage Coeff.  (min)=       1.35 (ii)    7.15 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.43         0.15
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.07          0.074 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.03           6.03
     RUNOFF VOLUME    (mm)=      89.70        43.24          45.56
     TOTAL RAINFALL   (mm)=      90.70        90.70          90.70
     RUNOFF COEFFICIENT   =       0.99         0.48           0.50

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
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                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
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     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n            =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     119.72       139.94
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.46 (ii)    2.01 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.42         0.48
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.09          0.153 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=      89.70        49.42          61.50
     TOTAL RAINFALL   (mm)=      90.70        90.70          90.70
     RUNOFF COEFFICIENT   =       0.99         0.54           0.68


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.074     6.03    45.56
      + ID2= 2 (  0203):     0.59   0.153     6.00    61.50
        ================================================
        ID = 3 (  0009):     1.04   0.226     6.00    54.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0390     0.0320
                          0.0090     0.0060   |   0.0430     0.0380
                          0.0230     0.0130   |   0.0470     0.0450
                          0.0300     0.0190   |   0.0500     0.0510
                          0.0350     0.0260   |   0.0000     0.0000
```

```
                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040     0.226      6.00      54.60
   OUTFLOW: ID= 1 (  0012)      1.040     0.036      6.52      54.44

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 15.96
                  TIME SHIFT OF PEAK FLOW         (min)= 31.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0275

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.036     6.52    54.44
     + ID2= 2 (  0202):     0.53   0.014     6.67    21.92
       ================================================
       ID = 3 (  0013):     1.57   0.050     6.60    43.46

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\9ee
41113-8f82-4b36-bbef-2ba4022fd11e\sce
```



```
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\9ee
41113-8f82-4b36-bbef-2ba4022fd11e\sce


DATE: 11-25-2019                          TIME: 10:51:15

USER:


COMMENTS: _____________________________________________


--------------------------------------------------------------------------------
------------------------
  ***********************************************
  ** SIMULATION : 05. 50 yr - 12 hr -SCS Type I **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              72a28c55-49d3-46ad-bad1-32ebf82b8caf\03909c95
| Ptotal=101.70 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 12.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.54 |  3.25    4.07 |  6.25   18.31 |  9.25    3.56
                0.50    2.54 |  3.50    4.07 |  6.50   18.31 |  9.50    3.56
                0.75    2.54 |  3.75    4.07 |  6.75    8.14 |  9.75    3.56
                1.00    2.54 |  4.00    4.07 |  7.00    8.14 | 10.00    3.56
                1.25    2.54 |  4.25    6.10 |  7.25    6.10 | 10.25    2.03
                1.50    2.54 |  4.50    6.10 |  7.50    6.10 | 10.50    2.03
                1.75    2.54 |  4.75    8.14 |  7.75    6.10 | 10.75    2.03
                2.00    2.54 |  5.00    8.14 |  8.00    6.10 | 11.00    2.03
                2.25    3.05 |  5.25   12.20 |  8.25    3.56 | 11.25    2.03
                2.50    3.05 |  5.50   12.20 |  8.50    3.56 | 11.50    2.03
                2.75    3.05 |  5.75   48.82 |  8.75    3.56 | 11.75    2.03
                3.00    3.05 |  6.00  134.24 |  9.00    3.56 | 12.00    2.03

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
```

---------- U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	2.54	3.017	4.07	6.017	18.31	9.02	3.56
0.033	2.54	3.033	4.07	6.033	18.31	9.03	3.56
0.050	2.54	3.050	4.07	6.050	18.31	9.05	3.56
0.067	2.54	3.067	4.07	6.067	18.31	9.07	3.56
0.083	2.54	3.083	4.07	6.083	18.31	9.08	3.56
0.100	2.54	3.100	4.07	6.100	18.31	9.10	3.56
0.117	2.54	3.117	4.07	6.117	18.31	9.12	3.56
0.133	2.54	3.133	4.07	6.133	18.31	9.13	3.56
0.150	2.54	3.150	4.07	6.150	18.31	9.15	3.56
0.167	2.54	3.167	4.07	6.167	18.31	9.17	3.56
0.183	2.54	3.183	4.07	6.183	18.31	9.18	3.56
0.200	2.54	3.200	4.07	6.200	18.31	9.20	3.56
0.217	2.54	3.217	4.07	6.217	18.31	9.22	3.56
0.233	2.54	3.233	4.07	6.233	18.31	9.23	3.56
0.250	2.54	3.250	4.07	6.250	18.31	9.25	3.56
0.267	2.54	3.267	4.07	6.267	18.31	9.27	3.56
0.283	2.54	3.283	4.07	6.283	18.31	9.28	3.56
0.300	2.54	3.300	4.07	6.300	18.31	9.30	3.56
0.317	2.54	3.317	4.07	6.317	18.31	9.32	3.56
0.333	2.54	3.333	4.07	6.333	18.31	9.33	3.56
0.350	2.54	3.350	4.07	6.350	18.31	9.35	3.56
0.367	2.54	3.367	4.07	6.367	18.31	9.37	3.56
0.383	2.54	3.383	4.07	6.383	18.31	9.38	3.56
0.400	2.54	3.400	4.07	6.400	18.31	9.40	3.56
0.417	2.54	3.417	4.07	6.417	18.31	9.42	3.56
0.433	2.54	3.433	4.07	6.433	18.31	9.43	3.56
0.450	2.54	3.450	4.07	6.450	18.31	9.45	3.56
0.467	2.54	3.467	4.07	6.467	18.31	9.47	3.56
0.483	2.54	3.483	4.07	6.483	18.31	9.48	3.56
0.500	2.54	3.500	4.07	6.500	18.29	9.50	3.56
0.517	2.54	3.517	4.07	6.517	8.14	9.52	3.56
0.533	2.54	3.533	4.07	6.533	8.14	9.53	3.56
0.550	2.54	3.550	4.07	6.550	8.14	9.55	3.56
0.567	2.54	3.567	4.07	6.567	8.14	9.57	3.56
0.583	2.54	3.583	4.07	6.583	8.14	9.58	3.56
0.600	2.54	3.600	4.07	6.600	8.14	9.60	3.56
0.617	2.54	3.617	4.07	6.617	8.14	9.62	3.56
0.633	2.54	3.633	4.07	6.633	8.14	9.63	3.56
0.650	2.54	3.650	4.07	6.650	8.14	9.65	3.56
0.667	2.54	3.667	4.07	6.667	8.14	9.67	3.56
0.683	2.54	3.683	4.07	6.683	8.14	9.68	3.56

0.700	2.54	3.700	4.07	6.700	8.14	9.70	3.56
0.717	2.54	3.717	4.07	6.717	8.14	9.72	3.56
0.733	2.54	3.733	4.07	6.733	8.14	9.73	3.56
0.750	2.54	3.750	4.07	6.750	8.14	9.75	3.56
0.767	2.54	3.767	4.07	6.767	8.14	9.77	3.56
0.783	2.54	3.783	4.07	6.783	8.14	9.78	3.56
0.800	2.54	3.800	4.07	6.800	8.14	9.80	3.56
0.817	2.54	3.817	4.07	6.817	8.14	9.82	3.56
0.833	2.54	3.833	4.07	6.833	8.14	9.83	3.56
0.850	2.54	3.850	4.07	6.850	8.14	9.85	3.56
0.867	2.54	3.867	4.07	6.867	8.14	9.87	3.56
0.883	2.54	3.883	4.07	6.883	8.14	9.88	3.56
0.900	2.54	3.900	4.07	6.900	8.14	9.90	3.56
0.917	2.54	3.917	4.07	6.917	8.14	9.92	3.56
0.933	2.54	3.933	4.07	6.933	8.14	9.93	3.56
0.950	2.54	3.950	4.07	6.950	8.14	9.95	3.56
0.967	2.54	3.967	4.07	6.967	8.14	9.97	3.56
0.983	2.54	3.983	4.07	6.983	8.14	9.98	3.56
1.000	2.54	4.000	4.07	7.000	8.13	10.00	3.56
1.017	2.54	4.017	6.10	7.017	6.10	10.02	2.03
1.033	2.54	4.033	6.10	7.033	6.10	10.03	2.03
1.050	2.54	4.050	6.10	7.050	6.10	10.05	2.03
1.067	2.54	4.067	6.10	7.067	6.10	10.07	2.03
1.083	2.54	4.083	6.10	7.083	6.10	10.08	2.03
1.100	2.54	4.100	6.10	7.100	6.10	10.10	2.03
1.117	2.54	4.117	6.10	7.117	6.10	10.12	2.03
1.133	2.54	4.133	6.10	7.133	6.10	10.13	2.03
1.150	2.54	4.150	6.10	7.150	6.10	10.15	2.03
1.167	2.54	4.167	6.10	7.167	6.10	10.17	2.03
1.183	2.54	4.183	6.10	7.183	6.10	10.18	2.03
1.200	2.54	4.200	6.10	7.200	6.10	10.20	2.03
1.217	2.54	4.217	6.10	7.217	6.10	10.22	2.03
1.233	2.54	4.233	6.10	7.233	6.10	10.23	2.03
1.250	2.54	4.250	6.10	7.250	6.10	10.25	2.03
1.267	2.54	4.267	6.10	7.267	6.10	10.27	2.03
1.283	2.54	4.283	6.10	7.283	6.10	10.28	2.03
1.300	2.54	4.300	6.10	7.300	6.10	10.30	2.03
1.317	2.54	4.317	6.10	7.317	6.10	10.32	2.03
1.333	2.54	4.333	6.10	7.333	6.10	10.33	2.03
1.350	2.54	4.350	6.10	7.350	6.10	10.35	2.03
1.367	2.54	4.367	6.10	7.367	6.10	10.37	2.03
1.383	2.54	4.383	6.10	7.383	6.10	10.38	2.03
1.400	2.54	4.400	6.10	7.400	6.10	10.40	2.03
1.417	2.54	4.417	6.10	7.417	6.10	10.42	2.03
1.433	2.54	4.433	6.10	7.433	6.10	10.43	2.03
1.450	2.54	4.450	6.10	7.450	6.10	10.45	2.03
1.467	2.54	4.467	6.10	7.467	6.10	10.47	2.03
1.483	2.54	4.483	6.10	7.483	6.10	10.48	2.03
1.500	2.54	4.500	6.10	7.500	6.10	10.50	2.03

1.517	2.54	4.517	8.14	7.517	6.10	10.52	2.03
1.533	2.54	4.533	8.14	7.533	6.10	10.53	2.03
1.550	2.54	4.550	8.14	7.550	6.10	10.55	2.03
1.567	2.54	4.567	8.14	7.567	6.10	10.57	2.03
1.583	2.54	4.583	8.14	7.583	6.10	10.58	2.03
1.600	2.54	4.600	8.14	7.600	6.10	10.60	2.03
1.617	2.54	4.617	8.14	7.617	6.10	10.62	2.03
1.633	2.54	4.633	8.14	7.633	6.10	10.63	2.03
1.650	2.54	4.650	8.14	7.650	6.10	10.65	2.03
1.667	2.54	4.667	8.14	7.667	6.10	10.67	2.03
1.683	2.54	4.683	8.14	7.683	6.10	10.68	2.03
1.700	2.54	4.700	8.14	7.700	6.10	10.70	2.03
1.717	2.54	4.717	8.14	7.717	6.10	10.72	2.03
1.733	2.54	4.733	8.14	7.733	6.10	10.73	2.03
1.750	2.54	4.750	8.14	7.750	6.10	10.75	2.03
1.767	2.54	4.767	8.14	7.767	6.10	10.77	2.03
1.783	2.54	4.783	8.14	7.783	6.10	10.78	2.03
1.800	2.54	4.800	8.14	7.800	6.10	10.80	2.03
1.817	2.54	4.817	8.14	7.817	6.10	10.82	2.03
1.833	2.54	4.833	8.14	7.833	6.10	10.83	2.03
1.850	2.54	4.850	8.14	7.850	6.10	10.85	2.03
1.867	2.54	4.867	8.14	7.867	6.10	10.87	2.03
1.883	2.54	4.883	8.14	7.883	6.10	10.88	2.03
1.900	2.54	4.900	8.14	7.900	6.10	10.90	2.03
1.917	2.54	4.917	8.14	7.917	6.10	10.92	2.03
1.933	2.54	4.933	8.14	7.933	6.10	10.93	2.03
1.950	2.54	4.950	8.14	7.950	6.10	10.95	2.03
1.967	2.54	4.967	8.14	7.967	6.10	10.97	2.03
1.983	2.54	4.983	8.14	7.983	6.10	10.98	2.03
2.000	2.54	5.000	8.14	8.000	6.09	11.00	2.03
2.017	3.05	5.017	12.20	8.017	3.56	11.02	2.03
2.033	3.05	5.033	12.20	8.033	3.56	11.03	2.03
2.050	3.05	5.050	12.20	8.050	3.56	11.05	2.03
2.067	3.05	5.067	12.20	8.067	3.56	11.07	2.03
2.083	3.05	5.083	12.20	8.083	3.56	11.08	2.03
2.100	3.05	5.100	12.20	8.100	3.56	11.10	2.03
2.117	3.05	5.117	12.20	8.117	3.56	11.12	2.03
2.133	3.05	5.133	12.20	8.133	3.56	11.13	2.03
2.150	3.05	5.150	12.20	8.150	3.56	11.15	2.03
2.167	3.05	5.167	12.20	8.167	3.56	11.17	2.03
2.183	3.05	5.183	12.20	8.183	3.56	11.18	2.03
2.200	3.05	5.200	12.20	8.200	3.56	11.20	2.03
2.217	3.05	5.217	12.20	8.217	3.56	11.22	2.03
2.233	3.05	5.233	12.20	8.233	3.56	11.23	2.03
2.250	3.05	5.250	12.20	8.250	3.56	11.25	2.03
2.267	3.05	5.267	12.20	8.267	3.56	11.27	2.03
2.283	3.05	5.283	12.20	8.283	3.56	11.28	2.03
2.300	3.05	5.300	12.20	8.300	3.56	11.30	2.03
2.317	3.05	5.317	12.20	8.317	3.56	11.32	2.03

2.333	3.05	5.333	12.20	8.333	3.56	11.33	2.03
2.350	3.05	5.350	12.20	8.350	3.56	11.35	2.03
2.367	3.05	5.367	12.20	8.367	3.56	11.37	2.03
2.383	3.05	5.383	12.20	8.383	3.56	11.38	2.03
2.400	3.05	5.400	12.20	8.400	3.56	11.40	2.03
2.417	3.05	5.417	12.20	8.417	3.56	11.42	2.03
2.433	3.05	5.433	12.20	8.433	3.56	11.43	2.03
2.450	3.05	5.450	12.20	8.450	3.56	11.45	2.03
2.467	3.05	5.467	12.20	8.467	3.56	11.47	2.03
2.483	3.05	5.483	12.20	8.483	3.56	11.48	2.03
2.500	3.05	5.500	12.24	8.500	3.56	11.50	2.03
2.517	3.05	5.517	48.82	8.517	3.56	11.52	2.03
2.533	3.05	5.533	48.82	8.533	3.56	11.53	2.03
2.550	3.05	5.550	48.82	8.550	3.56	11.55	2.03
2.567	3.05	5.567	48.82	8.567	3.56	11.57	2.03
2.583	3.05	5.583	48.82	8.583	3.56	11.58	2.03
2.600	3.05	5.600	48.82	8.600	3.56	11.60	2.03
2.617	3.05	5.617	48.82	8.617	3.56	11.62	2.03
2.633	3.05	5.633	48.82	8.633	3.56	11.63	2.03
2.650	3.05	5.650	48.82	8.650	3.56	11.65	2.03
2.667	3.05	5.667	48.82	8.667	3.56	11.67	2.03
2.683	3.05	5.683	48.82	8.683	3.56	11.68	2.03
2.700	3.05	5.700	48.82	8.700	3.56	11.70	2.03
2.717	3.05	5.717	48.82	8.717	3.56	11.72	2.03
2.733	3.05	5.733	48.82	8.733	3.56	11.73	2.03
2.750	3.05	5.750	48.92	8.750	3.56	11.75	2.03
2.767	3.05	5.767	134.24	8.767	3.56	11.77	2.03
2.783	3.05	5.783	134.24	8.783	3.56	11.78	2.03
2.800	3.05	5.800	134.24	8.800	3.56	11.80	2.03
2.817	3.05	5.817	134.24	8.817	3.56	11.82	2.03
2.833	3.05	5.833	134.24	8.833	3.56	11.83	2.03
2.850	3.05	5.850	134.24	8.850	3.56	11.85	2.03
2.867	3.05	5.867	134.24	8.867	3.56	11.87	2.03
2.883	3.05	5.883	134.24	8.883	3.56	11.88	2.03
2.900	3.05	5.900	134.24	8.900	3.56	11.90	2.03
2.917	3.05	5.917	134.24	8.917	3.56	11.92	2.03
2.933	3.05	5.933	134.24	8.933	3.56	11.93	2.03
2.950	3.05	5.950	134.24	8.950	3.56	11.95	2.03
2.967	3.05	5.967	134.24	8.967	3.56	11.97	2.03
2.983	3.05	5.983	134.24	8.983	3.56	11.98	2.03
3.000	3.05	6.000	134.08	9.000	3.56	12.00	2.03

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.073 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 35.688
TOTAL RAINFALL (mm)= 101.699
RUNOFF COEFFICIENT = 0.351

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

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| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.51
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      82.87         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     134.24       119.38
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.65 (ii)    2.22 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.40         0.45
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.12         0.18          0.291 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00          6.00
     RUNOFF VOLUME    (mm)=     100.70        52.47         66.94
     TOTAL RAINFALL   (mm)=     101.70       101.70        101.70
     RUNOFF COEFFICIENT   =       0.99         0.52          0.66


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.073     6.22    35.69
      + ID2= 2 (  0201):     1.03   0.291     6.00    66.94
        ================================================
        ID = 3 (  0006):     1.98   0.337     6.00    51.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190      0.0530
                          0.0120     0.0080   |   0.0200      0.0720
                          0.0150     0.0200   |   0.0220      0.0950
                          0.0170     0.0350   |   0.6940      0.1190

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980      0.337      6.00      51.95
   OUTFLOW: ID= 1 (  0011)      1.980      0.020      8.07      51.86

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.81
                  TIME SHIFT OF PEAK FLOW         (min)=124.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0640

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.018 (i)
     TIME TO PEAK    (hrs)=   6.667
     RUNOFF VOLUME    (mm)=  27.295
     TOTAL RAINFALL   (mm)= 101.699
     RUNOFF COEFFICIENT   =   0.268

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035
```

```
     Max.Eff.Inten.(mm/hr)=     134.24       113.98
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.29 (ii)    6.83 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.44         0.16
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.08          0.091 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.03          6.02
     RUNOFF VOLUME    (mm)=     100.70        51.62         54.07
     TOTAL RAINFALL   (mm)=     101.70       101.70        101.70
     RUNOFF COEFFICIENT   =       0.99         0.51          0.53

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     134.24       164.71
               over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.39 (ii)    1.92 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.43         0.57
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.11          0.178 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00          6.00
     RUNOFF VOLUME    (mm)=     100.70        58.45         71.12
     TOTAL RAINFALL   (mm)=     101.70       101.70        101.70
     RUNOFF COEFFICIENT   =       0.99         0.57          0.70


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
```



```
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.091     6.02    54.07
      + ID2= 2 (  0203):     0.59   0.178     6.00    71.12
        ================================================
        ID = 3 (  0009):     1.04   0.267     6.00    63.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0390      0.0320
                          0.0090     0.0060   |   0.0430      0.0380
                          0.0230     0.0130   |   0.0470      0.0450
                          0.0300     0.0190   |   0.0500      0.0510
                          0.0350     0.0260   |   0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.267      6.00      63.74
   OUTFLOW: ID= 1 (  0012)      1.040      0.040      6.52      63.58

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.80
                  TIME SHIFT OF PEAK FLOW         (min)= 31.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0329

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.040     6.52    63.58
      + ID2= 2 (  0202):     0.53   0.018     6.67    27.29
        ================================================
        ID = 3 (  0013):     1.57   0.057     6.60    51.33
```

```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\903
0eec5-db00-4d08-9082-1f99cc0e2877\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\903
0eec5-db00-4d08-9082-1f99cc0e2877\sce


DATE: 11-25-2019                          TIME: 10:51:15

USER:



COMMENTS: _____________________________________________________


---------------------------------------------------------------------------
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  ***********************************************
  ** SIMULATION : 06. 100 yr - 12 hr -SCS Type  **
  ***********************************************
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--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              72a28c55-49d3-46ad-bad1-32ebf82b8caf\38f44fc5
| Ptotal=112.50 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 12.00 hrs
                       Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.81 |  3.25    4.50 |  6.25   20.25 |  9.25    3.94
                0.50    2.81 |  3.50    4.50 |  6.50   20.25 |  9.50    3.94
                0.75    2.81 |  3.75    4.50 |  6.75    9.00 |  9.75    3.94
                1.00    2.81 |  4.00    4.50 |  7.00    9.00 | 10.00    3.94
                1.25    2.81 |  4.25    6.75 |  7.25    6.75 | 10.25    2.25
                1.50    2.81 |  4.50    6.75 |  7.50    6.75 | 10.50    2.25
                1.75    2.81 |  4.75    9.00 |  7.75    6.75 | 10.75    2.25
                2.00    2.81 |  5.00    9.00 |  8.00    6.75 | 11.00    2.25
                2.25    3.37 |  5.25   13.50 |  8.25    3.94 | 11.25    2.25
                2.50    3.37 |  5.50   13.50 |  8.50    3.94 | 11.50    2.25
                2.75    3.37 |  5.75   54.00 |  8.75    3.94 | 11.75    2.25
                3.00    3.37 |  6.00  148.50 |  9.00    3.94 | 12.00    2.25

---------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 62.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

       NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    2.81 | 3.017    4.50 | 6.017   20.25 |  9.02    3.94
               0.033    2.81 | 3.033    4.50 | 6.033   20.25 |  9.03    3.94
               0.050    2.81 | 3.050    4.50 | 6.050   20.25 |  9.05    3.94
               0.067    2.81 | 3.067    4.50 | 6.067   20.25 |  9.07    3.94
               0.083    2.81 | 3.083    4.50 | 6.083   20.25 |  9.08    3.94
               0.100    2.81 | 3.100    4.50 | 6.100   20.25 |  9.10    3.94
               0.117    2.81 | 3.117    4.50 | 6.117   20.25 |  9.12    3.94
               0.133    2.81 | 3.133    4.50 | 6.133   20.25 |  9.13    3.94
               0.150    2.81 | 3.150    4.50 | 6.150   20.25 |  9.15    3.94
               0.167    2.81 | 3.167    4.50 | 6.167   20.25 |  9.17    3.94
               0.183    2.81 | 3.183    4.50 | 6.183   20.25 |  9.18    3.94
               0.200    2.81 | 3.200    4.50 | 6.200   20.25 |  9.20    3.94
```

0.217	2.81	3.217	4.50	6.217	20.25	9.22	3.94
0.233	2.81	3.233	4.50	6.233	20.25	9.23	3.94
0.250	2.81	3.250	4.50	6.250	20.25	9.25	3.94
0.267	2.81	3.267	4.50	6.267	20.25	9.27	3.94
0.283	2.81	3.283	4.50	6.283	20.25	9.28	3.94
0.300	2.81	3.300	4.50	6.300	20.25	9.30	3.94
0.317	2.81	3.317	4.50	6.317	20.25	9.32	3.94
0.333	2.81	3.333	4.50	6.333	20.25	9.33	3.94
0.350	2.81	3.350	4.50	6.350	20.25	9.35	3.94
0.367	2.81	3.367	4.50	6.367	20.25	9.37	3.94
0.383	2.81	3.383	4.50	6.383	20.25	9.38	3.94
0.400	2.81	3.400	4.50	6.400	20.25	9.40	3.94
0.417	2.81	3.417	4.50	6.417	20.25	9.42	3.94
0.433	2.81	3.433	4.50	6.433	20.25	9.43	3.94
0.450	2.81	3.450	4.50	6.450	20.25	9.45	3.94
0.467	2.81	3.467	4.50	6.467	20.25	9.47	3.94
0.483	2.81	3.483	4.50	6.483	20.25	9.48	3.94
0.500	2.81	3.500	4.50	6.500	20.23	9.50	3.94
0.517	2.81	3.517	4.50	6.517	9.00	9.52	3.94
0.533	2.81	3.533	4.50	6.533	9.00	9.53	3.94
0.550	2.81	3.550	4.50	6.550	9.00	9.55	3.94
0.567	2.81	3.567	4.50	6.567	9.00	9.57	3.94
0.583	2.81	3.583	4.50	6.583	9.00	9.58	3.94
0.600	2.81	3.600	4.50	6.600	9.00	9.60	3.94
0.617	2.81	3.617	4.50	6.617	9.00	9.62	3.94
0.633	2.81	3.633	4.50	6.633	9.00	9.63	3.94
0.650	2.81	3.650	4.50	6.650	9.00	9.65	3.94
0.667	2.81	3.667	4.50	6.667	9.00	9.67	3.94
0.683	2.81	3.683	4.50	6.683	9.00	9.68	3.94
0.700	2.81	3.700	4.50	6.700	9.00	9.70	3.94
0.717	2.81	3.717	4.50	6.717	9.00	9.72	3.94
0.733	2.81	3.733	4.50	6.733	9.00	9.73	3.94
0.750	2.81	3.750	4.50	6.750	9.00	9.75	3.94
0.767	2.81	3.767	4.50	6.767	9.00	9.77	3.94
0.783	2.81	3.783	4.50	6.783	9.00	9.78	3.94
0.800	2.81	3.800	4.50	6.800	9.00	9.80	3.94
0.817	2.81	3.817	4.50	6.817	9.00	9.82	3.94
0.833	2.81	3.833	4.50	6.833	9.00	9.83	3.94
0.850	2.81	3.850	4.50	6.850	9.00	9.85	3.94
0.867	2.81	3.867	4.50	6.867	9.00	9.87	3.94
0.883	2.81	3.883	4.50	6.883	9.00	9.88	3.94
0.900	2.81	3.900	4.50	6.900	9.00	9.90	3.94
0.917	2.81	3.917	4.50	6.917	9.00	9.92	3.94
0.933	2.81	3.933	4.50	6.933	9.00	9.93	3.94
0.950	2.81	3.950	4.50	6.950	9.00	9.95	3.94
0.967	2.81	3.967	4.50	6.967	9.00	9.97	3.94
0.983	2.81	3.983	4.50	6.983	9.00	9.98	3.94
1.000	2.81	4.000	4.50	7.000	9.00	10.00	3.94
1.017	2.81	4.017	6.75	7.017	6.75	10.02	2.25

1.033	2.81	4.033	6.75	7.033	6.75	10.03	2.25
1.050	2.81	4.050	6.75	7.050	6.75	10.05	2.25
1.067	2.81	4.067	6.75	7.067	6.75	10.07	2.25
1.083	2.81	4.083	6.75	7.083	6.75	10.08	2.25
1.100	2.81	4.100	6.75	7.100	6.75	10.10	2.25
1.117	2.81	4.117	6.75	7.117	6.75	10.12	2.25
1.133	2.81	4.133	6.75	7.133	6.75	10.13	2.25
1.150	2.81	4.150	6.75	7.150	6.75	10.15	2.25
1.167	2.81	4.167	6.75	7.167	6.75	10.17	2.25
1.183	2.81	4.183	6.75	7.183	6.75	10.18	2.25
1.200	2.81	4.200	6.75	7.200	6.75	10.20	2.25
1.217	2.81	4.217	6.75	7.217	6.75	10.22	2.25
1.233	2.81	4.233	6.75	7.233	6.75	10.23	2.25
1.250	2.81	4.250	6.75	7.250	6.75	10.25	2.25
1.267	2.81	4.267	6.75	7.267	6.75	10.27	2.25
1.283	2.81	4.283	6.75	7.283	6.75	10.28	2.25
1.300	2.81	4.300	6.75	7.300	6.75	10.30	2.25
1.317	2.81	4.317	6.75	7.317	6.75	10.32	2.25
1.333	2.81	4.333	6.75	7.333	6.75	10.33	2.25
1.350	2.81	4.350	6.75	7.350	6.75	10.35	2.25
1.367	2.81	4.367	6.75	7.367	6.75	10.37	2.25
1.383	2.81	4.383	6.75	7.383	6.75	10.38	2.25
1.400	2.81	4.400	6.75	7.400	6.75	10.40	2.25
1.417	2.81	4.417	6.75	7.417	6.75	10.42	2.25
1.433	2.81	4.433	6.75	7.433	6.75	10.43	2.25
1.450	2.81	4.450	6.75	7.450	6.75	10.45	2.25
1.467	2.81	4.467	6.75	7.467	6.75	10.47	2.25
1.483	2.81	4.483	6.75	7.483	6.75	10.48	2.25
1.500	2.81	4.500	6.75	7.500	6.75	10.50	2.25
1.517	2.81	4.517	9.00	7.517	6.75	10.52	2.25
1.533	2.81	4.533	9.00	7.533	6.75	10.53	2.25
1.550	2.81	4.550	9.00	7.550	6.75	10.55	2.25
1.567	2.81	4.567	9.00	7.567	6.75	10.57	2.25
1.583	2.81	4.583	9.00	7.583	6.75	10.58	2.25
1.600	2.81	4.600	9.00	7.600	6.75	10.60	2.25
1.617	2.81	4.617	9.00	7.617	6.75	10.62	2.25
1.633	2.81	4.633	9.00	7.633	6.75	10.63	2.25
1.650	2.81	4.650	9.00	7.650	6.75	10.65	2.25
1.667	2.81	4.667	9.00	7.667	6.75	10.67	2.25
1.683	2.81	4.683	9.00	7.683	6.75	10.68	2.25
1.700	2.81	4.700	9.00	7.700	6.75	10.70	2.25
1.717	2.81	4.717	9.00	7.717	6.75	10.72	2.25
1.733	2.81	4.733	9.00	7.733	6.75	10.73	2.25
1.750	2.81	4.750	9.00	7.750	6.75	10.75	2.25
1.767	2.81	4.767	9.00	7.767	6.75	10.77	2.25
1.783	2.81	4.783	9.00	7.783	6.75	10.78	2.25
1.800	2.81	4.800	9.00	7.800	6.75	10.80	2.25
1.817	2.81	4.817	9.00	7.817	6.75	10.82	2.25
1.833	2.81	4.833	9.00	7.833	6.75	10.83	2.25

1.850	2.81	4.850	9.00	7.850	6.75	10.85	2.25
1.867	2.81	4.867	9.00	7.867	6.75	10.87	2.25
1.883	2.81	4.883	9.00	7.883	6.75	10.88	2.25
1.900	2.81	4.900	9.00	7.900	6.75	10.90	2.25
1.917	2.81	4.917	9.00	7.917	6.75	10.92	2.25
1.933	2.81	4.933	9.00	7.933	6.75	10.93	2.25
1.950	2.81	4.950	9.00	7.950	6.75	10.95	2.25
1.967	2.81	4.967	9.00	7.967	6.75	10.97	2.25
1.983	2.81	4.983	9.00	7.983	6.75	10.98	2.25
2.000	2.81	5.000	9.00	8.000	6.74	11.00	2.25
2.017	3.37	5.017	13.50	8.017	3.94	11.02	2.25
2.033	3.38	5.033	13.50	8.033	3.94	11.03	2.25
2.050	3.38	5.050	13.50	8.050	3.94	11.05	2.25
2.067	3.38	5.067	13.50	8.067	3.94	11.07	2.25
2.083	3.38	5.083	13.50	8.083	3.94	11.08	2.25
2.100	3.38	5.100	13.50	8.100	3.94	11.10	2.25
2.117	3.38	5.117	13.50	8.117	3.94	11.12	2.25
2.133	3.38	5.133	13.50	8.133	3.94	11.13	2.25
2.150	3.38	5.150	13.50	8.150	3.94	11.15	2.25
2.167	3.38	5.167	13.50	8.167	3.94	11.17	2.25
2.183	3.38	5.183	13.50	8.183	3.94	11.18	2.25
2.200	3.38	5.200	13.50	8.200	3.94	11.20	2.25
2.217	3.38	5.217	13.50	8.217	3.94	11.22	2.25
2.233	3.38	5.233	13.50	8.233	3.94	11.23	2.25
2.250	3.38	5.250	13.50	8.250	3.94	11.25	2.25
2.267	3.37	5.267	13.50	8.267	3.94	11.27	2.25
2.283	3.37	5.283	13.50	8.283	3.94	11.28	2.25
2.300	3.37	5.300	13.50	8.300	3.94	11.30	2.25
2.317	3.37	5.317	13.50	8.317	3.94	11.32	2.25
2.333	3.37	5.333	13.50	8.333	3.94	11.33	2.25
2.350	3.37	5.350	13.50	8.350	3.94	11.35	2.25
2.367	3.37	5.367	13.50	8.367	3.94	11.37	2.25
2.383	3.37	5.383	13.50	8.383	3.94	11.38	2.25
2.400	3.37	5.400	13.50	8.400	3.94	11.40	2.25
2.417	3.37	5.417	13.50	8.417	3.94	11.42	2.25
2.433	3.37	5.433	13.50	8.433	3.94	11.43	2.25
2.450	3.37	5.450	13.50	8.450	3.94	11.45	2.25
2.467	3.37	5.467	13.50	8.467	3.94	11.47	2.25
2.483	3.37	5.483	13.50	8.483	3.94	11.48	2.25
2.500	3.37	5.500	13.54	8.500	3.94	11.50	2.25
2.517	3.37	5.517	54.00	8.517	3.94	11.52	2.25
2.533	3.38	5.533	54.00	8.533	3.94	11.53	2.25
2.550	3.38	5.550	54.00	8.550	3.94	11.55	2.25
2.567	3.38	5.567	54.00	8.567	3.94	11.57	2.25
2.583	3.38	5.583	54.00	8.583	3.94	11.58	2.25
2.600	3.38	5.600	54.00	8.600	3.94	11.60	2.25
2.617	3.38	5.617	54.00	8.617	3.94	11.62	2.25
2.633	3.38	5.633	54.00	8.633	3.94	11.63	2.25
2.650	3.38	5.650	54.00	8.650	3.94	11.65	2.25

2.667	3.38	5.667	54.00	8.667	3.94	11.67	2.25
2.683	3.38	5.683	54.00	8.683	3.94	11.68	2.25
2.700	3.38	5.700	54.00	8.700	3.94	11.70	2.25
2.717	3.38	5.717	54.00	8.717	3.94	11.72	2.25
2.733	3.38	5.733	54.00	8.733	3.94	11.73	2.25
2.750	3.38	5.750	54.11	8.750	3.94	11.75	2.25
2.767	3.37	5.767	148.50	8.767	3.94	11.77	2.25
2.783	3.38	5.783	148.50	8.783	3.94	11.78	2.25
2.800	3.38	5.800	148.50	8.800	3.94	11.80	2.25
2.817	3.38	5.817	148.50	8.817	3.94	11.82	2.25
2.833	3.38	5.833	148.50	8.833	3.94	11.83	2.25
2.850	3.38	5.850	148.50	8.850	3.94	11.85	2.25
2.867	3.38	5.867	148.50	8.867	3.94	11.87	2.25
2.883	3.38	5.883	148.50	8.883	3.94	11.88	2.25
2.900	3.38	5.900	148.50	8.900	3.94	11.90	2.25
2.917	3.38	5.917	148.50	8.917	3.94	11.92	2.25
2.933	3.38	5.933	148.50	8.933	3.94	11.93	2.25
2.950	3.38	5.950	148.50	8.950	3.94	11.95	2.25
2.967	3.38	5.967	148.50	8.967	3.94	11.97	2.25
2.983	3.38	5.983	148.50	8.983	3.94	11.98	2.25
3.000	3.38	6.000	148.32	9.000	3.94	12.00	2.25

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 6.217
RUNOFF VOLUME (mm)= 42.479
TOTAL RAINFALL (mm)= 112.499
RUNOFF COEFFICIENT = 0.378

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

CALIB
STANDHYD (0201) | Area (ha)= 1.03
ID= 1 DT= 1.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.51
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	82.87	6.00
Mannings n	=	0.013	0.035
Max.Eff.Inten.(mm/hr)=	over (min)	148.50	138.38
		5.00	3.00
Storage Coeff.	(min)=	1.58 (ii)	2.14 (ii)
Unit Hyd. Tpeak	(min)=	5.00	3.00

```
     Unit Hyd. peak  (cms)=       0.41         0.46
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.13         0.20          0.331 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00          6.00
     RUNOFF VOLUME    (mm)=     111.50        61.06         76.19
     TOTAL RAINFALL   (mm)=     112.50       112.50        112.50
     RUNOFF COEFFICIENT   =       0.99         0.54          0.68


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.088     6.22    42.48
      + ID2= 2 (  0201):     1.03   0.331     6.00    76.19
        ================================================
        ID = 3 (  0006):     1.98   0.386     6.00    60.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190      0.0530
                          0.0120     0.0080   |   0.0200      0.0720
                          0.0150     0.0200   |   0.0220      0.0950
                          0.0170     0.0350   |   0.6940      0.1190

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)     1.980      0.386      6.00      60.02
   OUTFLOW: ID= 1 (  0011)     1.980      0.020      8.13      59.93

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.27
                  TIME SHIFT OF PEAK FLOW         (min)=128.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0761

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--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.022 (i)
     TIME TO PEAK    (hrs)=   6.650
     RUNOFF VOLUME    (mm)=  32.947
     TOTAL RAINFALL   (mm)= 112.499
     RUNOFF COEFFICIENT   =   0.293

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

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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14          0.31
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          2.00
     Length            (m)=      54.77         40.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=     148.50        132.28
               over (min)          5.00          7.00
     Storage Coeff.  (min)=       1.23 (ii)     6.56 (ii)
     Unit Hyd. Tpeak (min)=       5.00          7.00
     Unit Hyd. peak  (cms)=       0.45          0.17
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01          0.10          0.106 (iii)
     TIME TO PEAK    (hrs)=       5.98          6.03          6.02
     RUNOFF VOLUME    (mm)=     111.50         60.14         62.70
     TOTAL RAINFALL   (mm)=     112.50        112.50        112.50
     RUNOFF COEFFICIENT   =       0.99          0.53          0.56

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     148.50       189.46
               over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.34 (ii)    1.84 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.44         0.59
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.13          0.201 (iii)
     TIME TO PEAK    (hrs)=       6.00         6.00           6.00
     RUNOFF VOLUME    (mm)=     111.50        67.56          80.74
     TOTAL RAINFALL   (mm)=     112.50       112.50         112.50
     RUNOFF COEFFICIENT   =       0.99         0.60           0.72


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.106     6.02    62.70
      + ID2= 2 (  0203):     0.59   0.201     6.00    80.74
        ================================================
        ID = 3 (  0009):     1.04   0.306     6.00    72.93

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0012)|
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```
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |   (cms)     (ha.m.)
                          0.0000     0.0000    |   0.0390      0.0320
                          0.0090     0.0060    |   0.0430      0.0380
                          0.0230     0.0130    |   0.0470      0.0450
                          0.0300     0.0190    |   0.0500      0.0510
                          0.0350     0.0260    |   0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.306      6.00      72.93
   OUTFLOW: ID= 1 (  0012)      1.040      0.043      6.53      72.77

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.08
                  TIME SHIFT OF PEAK FLOW         (min)= 32.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0382

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.043     6.53    72.77
      + ID2= 2 (  0202):     0.53   0.022     6.65    32.95
        ================================================
        ID = 3 (  0013):     1.57   0.065     6.62    59.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\441
260e4-573f-408b-bdd3-1552bed91120\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\441
260e4-573f-408b-bdd3-1552bed91120\sce


DATE: 11-25-2019                          TIME: 10:50:34

USER:



COMMENTS: _____

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  ***********************************************
  ** SIMULATION : 01. 2 yr - 24 hr SCS Type II  **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
```



```
|                  |              c4b20de3-13ae-4582-bae8-d7364cf8a3a5\1c639733
| Ptotal= 55.00 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                          Duration of storm    = 24.00 hrs
                          Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    0.60 |  6.25    1.10 | 12.25    7.92 | 18.25    0.99
                0.50    0.60 |  6.50    1.10 | 12.50    7.92 | 18.50    0.99
                0.75    0.60 |  6.75    1.10 | 12.75    4.07 | 18.75    0.99
                1.00    0.60 |  7.00    1.10 | 13.00    4.07 | 19.00    0.99
                1.25    0.60 |  7.25    1.10 | 13.25    0.77 | 19.25    0.99
                1.50    0.60 |  7.50    1.10 | 13.50    0.77 | 19.50    0.99
                1.75    0.60 |  7.75    1.10 | 13.75    4.51 | 19.75    0.99
                2.00    0.60 |  8.00    1.10 | 14.00    4.51 | 20.00    0.99
                2.25    0.72 |  8.25    1.49 | 14.25    1.65 | 20.25    0.66
                2.50    0.71 |  8.50    1.48 | 14.50    1.65 | 20.50    0.66
                2.75    0.72 |  8.75    1.49 | 14.75    1.65 | 20.75    0.66
                3.00    0.71 |  9.00    1.49 | 15.00    1.65 | 21.00    0.66
                3.25    0.71 |  9.25    1.76 | 15.25    1.65 | 21.25    0.66
                3.50    0.71 |  9.50    1.76 | 15.50    1.65 | 21.50    0.66
                3.75    0.72 |  9.75    1.98 | 15.75    1.65 | 21.75    0.66
                4.00    0.71 | 10.00    1.98 | 16.00    1.65 | 22.00    0.66
                4.25    0.88 | 10.25    2.53 | 16.25    0.99 | 22.25    0.66
                4.50    0.88 | 10.50    2.53 | 16.50    0.99 | 22.50    0.66
                4.75    0.88 | 10.75    3.41 | 16.75    0.99 | 22.75    0.66
                5.00    0.88 | 11.00    3.41 | 17.00    0.99 | 23.00    0.66
                5.25    0.88 | 11.25    5.28 | 17.25    0.99 | 23.25    0.66
                5.50    0.88 | 11.50    5.28 | 17.50    0.99 | 23.50    0.66
                5.75    0.88 | 11.75   22.88 | 17.75    0.99 | 23.75    0.66
                6.00    0.88 | 12.00   60.72 | 18.00    0.99 | 24.00    0.66

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    0.60 | 6.017    1.10 |12.017    7.96 | 18.02    0.99
               0.033    0.60 | 6.033    1.10 |12.033    7.92 | 18.03    0.99
               0.050    0.60 | 6.050    1.10 |12.050    7.92 | 18.05    0.99
```

0.067	0.60	6.067	1.10	12.067	7.92	18.07	0.99
0.083	0.60	6.083	1.10	12.083	7.92	18.08	0.99
0.100	0.60	6.100	1.10	12.100	7.92	18.10	0.99
0.117	0.60	6.117	1.10	12.117	7.92	18.12	0.99
0.133	0.60	6.133	1.10	12.133	7.92	18.13	0.99
0.150	0.60	6.150	1.10	12.150	7.92	18.15	0.99
0.167	0.60	6.167	1.10	12.167	7.92	18.17	0.99
0.183	0.60	6.183	1.10	12.183	7.92	18.18	0.99
0.200	0.60	6.200	1.10	12.200	7.92	18.20	0.99
0.217	0.60	6.217	1.10	12.217	7.92	18.22	0.99
0.233	0.60	6.233	1.10	12.233	7.92	18.23	0.99
0.250	0.60	6.250	1.10	12.250	7.92	18.25	0.99
0.267	0.61	6.267	1.10	12.267	7.92	18.27	0.99
0.283	0.60	6.283	1.10	12.283	7.92	18.28	0.99
0.300	0.60	6.300	1.10	12.300	7.92	18.30	0.99
0.317	0.60	6.317	1.10	12.317	7.92	18.32	0.99
0.333	0.60	6.333	1.10	12.333	7.92	18.33	0.99
0.350	0.60	6.350	1.10	12.350	7.92	18.35	0.99
0.367	0.60	6.367	1.10	12.367	7.92	18.37	0.99
0.383	0.60	6.383	1.10	12.383	7.92	18.38	0.99
0.400	0.60	6.400	1.10	12.400	7.92	18.40	0.99
0.417	0.60	6.417	1.10	12.417	7.92	18.42	0.99
0.433	0.60	6.433	1.10	12.433	7.92	18.43	0.99
0.450	0.60	6.450	1.10	12.450	7.92	18.45	0.99
0.467	0.60	6.467	1.10	12.467	7.92	18.47	0.99
0.483	0.60	6.483	1.10	12.483	7.92	18.48	0.99
0.500	0.61	6.500	1.10	12.500	7.92	18.50	0.99
0.517	0.60	6.517	1.10	12.517	4.07	18.52	0.99
0.533	0.60	6.533	1.10	12.533	4.07	18.53	0.99
0.550	0.60	6.550	1.10	12.550	4.07	18.55	0.99
0.567	0.60	6.567	1.10	12.567	4.07	18.57	0.99
0.583	0.60	6.583	1.10	12.583	4.07	18.58	0.99
0.600	0.60	6.600	1.10	12.600	4.07	18.60	0.99
0.617	0.60	6.617	1.10	12.617	4.07	18.62	0.99
0.633	0.60	6.633	1.10	12.633	4.07	18.63	0.99
0.650	0.60	6.650	1.10	12.650	4.07	18.65	0.99
0.667	0.60	6.667	1.10	12.667	4.07	18.67	0.99
0.683	0.60	6.683	1.10	12.683	4.07	18.68	0.99
0.700	0.60	6.700	1.10	12.700	4.07	18.70	0.99
0.717	0.60	6.717	1.10	12.717	4.07	18.72	0.99
0.733	0.60	6.733	1.10	12.733	4.07	18.73	0.99
0.750	0.60	6.750	1.10	12.750	4.07	18.75	0.99
0.767	0.60	6.767	1.10	12.767	4.07	18.77	0.99
0.783	0.60	6.783	1.10	12.783	4.07	18.78	0.99
0.800	0.60	6.800	1.10	12.800	4.07	18.80	0.99
0.817	0.60	6.817	1.10	12.817	4.07	18.82	0.99
0.833	0.60	6.833	1.10	12.833	4.07	18.83	0.99
0.850	0.60	6.850	1.10	12.850	4.07	18.85	0.99
0.867	0.60	6.867	1.10	12.867	4.07	18.87	0.99

0.883	0.60	6.883	1.10	12.883	4.07	18.88	0.99
0.900	0.60	6.900	1.10	12.900	4.07	18.90	0.99
0.917	0.60	6.917	1.10	12.917	4.07	18.92	0.99
0.933	0.60	6.933	1.10	12.933	4.07	18.93	0.99
0.950	0.60	6.950	1.10	12.950	4.07	18.95	0.99
0.967	0.60	6.967	1.10	12.967	4.07	18.97	0.99
0.983	0.60	6.983	1.10	12.983	4.07	18.98	0.99
1.000	0.60	7.000	1.10	13.000	4.07	19.00	0.99
1.017	0.60	7.017	1.10	13.017	0.78	19.02	0.99
1.033	0.60	7.033	1.10	13.033	0.77	19.03	0.99
1.050	0.60	7.050	1.10	13.050	0.77	19.05	0.99
1.067	0.60	7.067	1.10	13.067	0.77	19.07	0.99
1.083	0.60	7.083	1.10	13.083	0.77	19.08	0.99
1.100	0.60	7.100	1.10	13.100	0.77	19.10	0.99
1.117	0.60	7.117	1.10	13.117	0.77	19.12	0.99
1.133	0.60	7.133	1.10	13.133	0.77	19.13	0.99
1.150	0.60	7.150	1.10	13.150	0.77	19.15	0.99
1.167	0.60	7.167	1.10	13.167	0.77	19.17	0.99
1.183	0.60	7.183	1.10	13.183	0.77	19.18	0.99
1.200	0.60	7.200	1.10	13.200	0.77	19.20	0.99
1.217	0.60	7.217	1.10	13.217	0.77	19.22	0.99
1.233	0.60	7.233	1.10	13.233	0.77	19.23	0.99
1.250	0.60	7.250	1.10	13.250	0.77	19.25	0.99
1.267	0.60	7.267	1.10	13.267	0.77	19.27	0.99
1.283	0.60	7.283	1.10	13.283	0.77	19.28	0.99
1.300	0.60	7.300	1.10	13.300	0.77	19.30	0.99
1.317	0.60	7.317	1.10	13.317	0.77	19.32	0.99
1.333	0.60	7.333	1.10	13.333	0.77	19.33	0.99
1.350	0.60	7.350	1.10	13.350	0.77	19.35	0.99
1.367	0.60	7.367	1.10	13.367	0.77	19.37	0.99
1.383	0.60	7.383	1.10	13.383	0.77	19.38	0.99
1.400	0.60	7.400	1.10	13.400	0.77	19.40	0.99
1.417	0.60	7.417	1.10	13.417	0.77	19.42	0.99
1.433	0.60	7.433	1.10	13.433	0.77	19.43	0.99
1.450	0.60	7.450	1.10	13.450	0.77	19.45	0.99
1.467	0.60	7.467	1.10	13.467	0.77	19.47	0.99
1.483	0.60	7.483	1.10	13.483	0.77	19.48	0.99
1.500	0.60	7.500	1.10	13.500	0.77	19.50	0.99
1.517	0.60	7.517	1.10	13.517	4.50	19.52	0.99
1.533	0.60	7.533	1.10	13.533	4.51	19.53	0.99
1.550	0.60	7.550	1.10	13.550	4.51	19.55	0.99
1.567	0.60	7.567	1.10	13.567	4.51	19.57	0.99
1.583	0.60	7.583	1.10	13.583	4.51	19.58	0.99
1.600	0.60	7.600	1.10	13.600	4.51	19.60	0.99
1.617	0.60	7.617	1.10	13.617	4.51	19.62	0.99
1.633	0.60	7.633	1.10	13.633	4.51	19.63	0.99
1.650	0.60	7.650	1.10	13.650	4.51	19.65	0.99
1.667	0.60	7.667	1.10	13.667	4.51	19.67	0.99
1.683	0.60	7.683	1.10	13.683	4.51	19.68	0.99

1.700	0.60	7.700	1.10	13.700	4.51	19.70	0.99
1.717	0.60	7.717	1.10	13.717	4.51	19.72	0.99
1.733	0.60	7.733	1.10	13.733	4.51	19.73	0.99
1.750	0.60	7.750	1.10	13.750	4.51	19.75	0.99
1.767	0.60	7.767	1.10	13.767	4.51	19.77	0.99
1.783	0.60	7.783	1.10	13.783	4.51	19.78	0.99
1.800	0.60	7.800	1.10	13.800	4.51	19.80	0.99
1.817	0.60	7.817	1.10	13.817	4.51	19.82	0.99
1.833	0.60	7.833	1.10	13.833	4.51	19.83	0.99
1.850	0.60	7.850	1.10	13.850	4.51	19.85	0.99
1.867	0.60	7.867	1.10	13.867	4.51	19.87	0.99
1.883	0.60	7.883	1.10	13.883	4.51	19.88	0.99
1.900	0.60	7.900	1.10	13.900	4.51	19.90	0.99
1.917	0.60	7.917	1.10	13.917	4.51	19.92	0.99
1.933	0.60	7.933	1.10	13.933	4.51	19.93	0.99
1.950	0.60	7.950	1.10	13.950	4.51	19.95	0.99
1.967	0.60	7.967	1.10	13.967	4.51	19.97	0.99
1.983	0.60	7.983	1.10	13.983	4.51	19.98	0.99
2.000	0.60	8.000	1.10	14.000	4.51	20.00	0.99
2.017	0.71	8.017	1.49	14.017	1.66	20.02	0.66
2.033	0.72	8.033	1.49	14.033	1.65	20.03	0.66
2.050	0.72	8.050	1.49	14.050	1.65	20.05	0.66
2.067	0.72	8.067	1.49	14.067	1.65	20.07	0.66
2.083	0.72	8.083	1.49	14.083	1.65	20.08	0.66
2.100	0.72	8.100	1.49	14.100	1.65	20.10	0.66
2.117	0.72	8.117	1.49	14.117	1.65	20.12	0.66
2.133	0.72	8.133	1.49	14.133	1.65	20.13	0.66
2.150	0.72	8.150	1.49	14.150	1.65	20.15	0.66
2.167	0.72	8.167	1.49	14.167	1.65	20.17	0.66
2.183	0.72	8.183	1.49	14.183	1.65	20.18	0.66
2.200	0.72	8.200	1.49	14.200	1.65	20.20	0.66
2.217	0.72	8.217	1.49	14.217	1.65	20.22	0.66
2.233	0.72	8.233	1.49	14.233	1.65	20.23	0.66
2.250	0.72	8.250	1.48	14.250	1.65	20.25	0.66
2.267	0.71	8.267	1.48	14.267	1.65	20.27	0.66
2.283	0.71	8.283	1.48	14.283	1.65	20.28	0.66
2.300	0.71	8.300	1.48	14.300	1.65	20.30	0.66
2.317	0.71	8.317	1.48	14.317	1.65	20.32	0.66
2.333	0.71	8.333	1.48	14.333	1.65	20.33	0.66
2.350	0.71	8.350	1.48	14.350	1.65	20.35	0.66
2.367	0.71	8.367	1.48	14.367	1.65	20.37	0.66
2.383	0.71	8.383	1.48	14.383	1.65	20.38	0.66
2.400	0.71	8.400	1.48	14.400	1.65	20.40	0.66
2.417	0.71	8.417	1.48	14.417	1.65	20.42	0.66
2.433	0.71	8.433	1.48	14.433	1.65	20.43	0.66
2.450	0.71	8.450	1.48	14.450	1.65	20.45	0.66
2.467	0.71	8.467	1.48	14.467	1.65	20.47	0.66
2.483	0.71	8.483	1.48	14.483	1.65	20.48	0.66
2.500	0.71	8.500	1.48	14.500	1.65	20.50	0.66

2.517	0.71	8.517	1.49	14.517	1.65	20.52	0.66
2.533	0.72	8.533	1.49	14.533	1.65	20.53	0.66
2.550	0.72	8.550	1.49	14.550	1.65	20.55	0.66
2.567	0.72	8.567	1.49	14.567	1.65	20.57	0.66
2.583	0.72	8.583	1.49	14.583	1.65	20.58	0.66
2.600	0.72	8.600	1.49	14.600	1.65	20.60	0.66
2.617	0.72	8.617	1.49	14.617	1.65	20.62	0.66
2.633	0.72	8.633	1.49	14.633	1.65	20.63	0.66
2.650	0.72	8.650	1.49	14.650	1.65	20.65	0.66
2.667	0.72	8.667	1.49	14.667	1.65	20.67	0.66
2.683	0.72	8.683	1.49	14.683	1.65	20.68	0.66
2.700	0.72	8.700	1.49	14.700	1.65	20.70	0.66
2.717	0.72	8.717	1.49	14.717	1.65	20.72	0.66
2.733	0.72	8.733	1.49	14.733	1.65	20.73	0.66
2.750	0.72	8.750	1.48	14.750	1.65	20.75	0.66
2.767	0.71	8.767	1.49	14.767	1.65	20.77	0.66
2.783	0.71	8.783	1.49	14.783	1.65	20.78	0.66
2.800	0.71	8.800	1.49	14.800	1.65	20.80	0.66
2.817	0.71	8.817	1.49	14.817	1.65	20.82	0.66
2.833	0.71	8.833	1.49	14.833	1.65	20.83	0.66
2.850	0.71	8.850	1.49	14.850	1.65	20.85	0.66
2.867	0.71	8.867	1.49	14.867	1.65	20.87	0.66
2.883	0.71	8.883	1.49	14.883	1.65	20.88	0.66
2.900	0.71	8.900	1.49	14.900	1.65	20.90	0.66
2.917	0.71	8.917	1.49	14.917	1.65	20.92	0.66
2.933	0.71	8.933	1.49	14.933	1.65	20.93	0.66
2.950	0.71	8.950	1.49	14.950	1.65	20.95	0.66
2.967	0.71	8.967	1.49	14.967	1.65	20.97	0.66
2.983	0.71	8.983	1.49	14.983	1.65	20.98	0.66
3.000	0.71	9.000	1.49	15.000	1.65	21.00	0.66
3.017	0.71	9.017	1.76	15.017	1.65	21.02	0.66
3.033	0.71	9.033	1.76	15.033	1.65	21.03	0.66
3.050	0.71	9.050	1.76	15.050	1.65	21.05	0.66
3.067	0.71	9.067	1.76	15.067	1.65	21.07	0.66
3.083	0.71	9.083	1.76	15.083	1.65	21.08	0.66
3.100	0.71	9.100	1.76	15.100	1.65	21.10	0.66
3.117	0.71	9.117	1.76	15.117	1.65	21.12	0.66
3.133	0.71	9.133	1.76	15.133	1.65	21.13	0.66
3.150	0.71	9.150	1.76	15.150	1.65	21.15	0.66
3.167	0.71	9.167	1.76	15.167	1.65	21.17	0.66
3.183	0.71	9.183	1.76	15.183	1.65	21.18	0.66
3.200	0.71	9.200	1.76	15.200	1.65	21.20	0.66
3.217	0.71	9.217	1.76	15.217	1.65	21.22	0.66
3.233	0.71	9.233	1.76	15.233	1.65	21.23	0.66
3.250	0.71	9.250	1.76	15.250	1.65	21.25	0.66
3.267	0.71	9.267	1.76	15.267	1.65	21.27	0.66
3.283	0.71	9.283	1.76	15.283	1.65	21.28	0.66
3.300	0.71	9.300	1.76	15.300	1.65	21.30	0.66
3.317	0.71	9.317	1.76	15.317	1.65	21.32	0.66

3.333	0.71	9.333	1.76	15.333	1.65	21.33	0.66
3.350	0.71	9.350	1.76	15.350	1.65	21.35	0.66
3.367	0.71	9.367	1.76	15.367	1.65	21.37	0.66
3.383	0.71	9.383	1.76	15.383	1.65	21.38	0.66
3.400	0.71	9.400	1.76	15.400	1.65	21.40	0.66
3.417	0.71	9.417	1.76	15.417	1.65	21.42	0.66
3.433	0.71	9.433	1.76	15.433	1.65	21.43	0.66
3.450	0.71	9.450	1.76	15.450	1.65	21.45	0.66
3.467	0.71	9.467	1.76	15.467	1.65	21.47	0.66
3.483	0.71	9.483	1.76	15.483	1.65	21.48	0.66
3.500	0.71	9.500	1.76	15.500	1.65	21.50	0.66
3.517	0.71	9.517	1.98	15.517	1.65	21.52	0.66
3.533	0.72	9.533	1.98	15.533	1.65	21.53	0.66
3.550	0.72	9.550	1.98	15.550	1.65	21.55	0.66
3.567	0.72	9.567	1.98	15.567	1.65	21.57	0.66
3.583	0.72	9.583	1.98	15.583	1.65	21.58	0.66
3.600	0.72	9.600	1.98	15.600	1.65	21.60	0.66
3.617	0.72	9.617	1.98	15.617	1.65	21.62	0.66
3.633	0.72	9.633	1.98	15.633	1.65	21.63	0.66
3.650	0.72	9.650	1.98	15.650	1.65	21.65	0.66
3.667	0.72	9.667	1.98	15.667	1.65	21.67	0.66
3.683	0.72	9.683	1.98	15.683	1.65	21.68	0.66
3.700	0.72	9.700	1.98	15.700	1.65	21.70	0.66
3.717	0.72	9.717	1.98	15.717	1.65	21.72	0.66
3.733	0.72	9.733	1.98	15.733	1.65	21.73	0.66
3.750	0.72	9.750	1.98	15.750	1.65	21.75	0.66
3.767	0.71	9.767	1.98	15.767	1.65	21.77	0.66
3.783	0.71	9.783	1.98	15.783	1.65	21.78	0.66
3.800	0.71	9.800	1.98	15.800	1.65	21.80	0.66
3.817	0.71	9.817	1.98	15.817	1.65	21.82	0.66
3.833	0.71	9.833	1.98	15.833	1.65	21.83	0.66
3.850	0.71	9.850	1.98	15.850	1.65	21.85	0.66
3.867	0.71	9.867	1.98	15.867	1.65	21.87	0.66
3.883	0.71	9.883	1.98	15.883	1.65	21.88	0.66
3.900	0.71	9.900	1.98	15.900	1.65	21.90	0.66
3.917	0.71	9.917	1.98	15.917	1.65	21.92	0.66
3.933	0.71	9.933	1.98	15.933	1.65	21.93	0.66
3.950	0.71	9.950	1.98	15.950	1.65	21.95	0.66
3.967	0.71	9.967	1.98	15.967	1.65	21.97	0.66
3.983	0.71	9.983	1.98	15.983	1.65	21.98	0.66
4.000	0.71	10.000	1.98	16.000	1.65	22.00	0.66
4.017	0.88	10.017	2.53	16.017	0.99	22.02	0.66
4.033	0.88	10.033	2.53	16.033	0.99	22.03	0.66
4.050	0.88	10.050	2.53	16.050	0.99	22.05	0.66
4.067	0.88	10.067	2.53	16.067	0.99	22.07	0.66
4.083	0.88	10.083	2.53	16.083	0.99	22.08	0.66
4.100	0.88	10.100	2.53	16.100	0.99	22.10	0.66
4.117	0.88	10.117	2.53	16.117	0.99	22.12	0.66
4.133	0.88	10.133	2.53	16.133	0.99	22.13	0.66

4.150	0.88	10.150	2.53	16.150	0.99	22.15	0.66
4.167	0.88	10.167	2.53	16.167	0.99	22.17	0.66
4.183	0.88	10.183	2.53	16.183	0.99	22.18	0.66
4.200	0.88	10.200	2.53	16.200	0.99	22.20	0.66
4.217	0.88	10.217	2.53	16.217	0.99	22.22	0.66
4.233	0.88	10.233	2.53	16.233	0.99	22.23	0.66
4.250	0.88	10.250	2.53	16.250	0.99	22.25	0.66
4.267	0.88	10.267	2.53	16.267	0.99	22.27	0.66
4.283	0.88	10.283	2.53	16.283	0.99	22.28	0.66
4.300	0.88	10.300	2.53	16.300	0.99	22.30	0.66
4.317	0.88	10.317	2.53	16.317	0.99	22.32	0.66
4.333	0.88	10.333	2.53	16.333	0.99	22.33	0.66
4.350	0.88	10.350	2.53	16.350	0.99	22.35	0.66
4.367	0.88	10.367	2.53	16.367	0.99	22.37	0.66
4.383	0.88	10.383	2.53	16.383	0.99	22.38	0.66
4.400	0.88	10.400	2.53	16.400	0.99	22.40	0.66
4.417	0.88	10.417	2.53	16.417	0.99	22.42	0.66
4.433	0.88	10.433	2.53	16.433	0.99	22.43	0.66
4.450	0.88	10.450	2.53	16.450	0.99	22.45	0.66
4.467	0.88	10.467	2.53	16.467	0.99	22.47	0.66
4.483	0.88	10.483	2.53	16.483	0.99	22.48	0.66
4.500	0.88	10.500	2.53	16.500	0.99	22.50	0.66
4.517	0.88	10.517	3.41	16.517	0.99	22.52	0.66
4.533	0.88	10.533	3.41	16.533	0.99	22.53	0.66
4.550	0.88	10.550	3.41	16.550	0.99	22.55	0.66
4.567	0.88	10.567	3.41	16.567	0.99	22.57	0.66
4.583	0.88	10.583	3.41	16.583	0.99	22.58	0.66
4.600	0.88	10.600	3.41	16.600	0.99	22.60	0.66
4.617	0.88	10.617	3.41	16.617	0.99	22.62	0.66
4.633	0.88	10.633	3.41	16.633	0.99	22.63	0.66
4.650	0.88	10.650	3.41	16.650	0.99	22.65	0.66
4.667	0.88	10.667	3.41	16.667	0.99	22.67	0.66
4.683	0.88	10.683	3.41	16.683	0.99	22.68	0.66
4.700	0.88	10.700	3.41	16.700	0.99	22.70	0.66
4.717	0.88	10.717	3.41	16.717	0.99	22.72	0.66
4.733	0.88	10.733	3.41	16.733	0.99	22.73	0.66
4.750	0.88	10.750	3.41	16.750	0.99	22.75	0.66
4.767	0.88	10.767	3.41	16.767	0.99	22.77	0.66
4.783	0.88	10.783	3.41	16.783	0.99	22.78	0.66
4.800	0.88	10.800	3.41	16.800	0.99	22.80	0.66
4.817	0.88	10.817	3.41	16.817	0.99	22.82	0.66
4.833	0.88	10.833	3.41	16.833	0.99	22.83	0.66
4.850	0.88	10.850	3.41	16.850	0.99	22.85	0.66
4.867	0.88	10.867	3.41	16.867	0.99	22.87	0.66
4.883	0.88	10.883	3.41	16.883	0.99	22.88	0.66
4.900	0.88	10.900	3.41	16.900	0.99	22.90	0.66
4.917	0.88	10.917	3.41	16.917	0.99	22.92	0.66
4.933	0.88	10.933	3.41	16.933	0.99	22.93	0.66
4.950	0.88	10.950	3.41	16.950	0.99	22.95	0.66

4.967	0.88	10.967	3.41	16.967	0.99	22.97	0.66
4.983	0.88	10.983	3.41	16.983	0.99	22.98	0.66
5.000	0.88	11.000	3.41	17.000	0.99	23.00	0.66
5.017	0.88	11.017	5.28	17.017	0.99	23.02	0.66
5.033	0.88	11.033	5.28	17.033	0.99	23.03	0.66
5.050	0.88	11.050	5.28	17.050	0.99	23.05	0.66
5.067	0.88	11.067	5.28	17.067	0.99	23.07	0.66
5.083	0.88	11.083	5.28	17.083	0.99	23.08	0.66
5.100	0.88	11.100	5.28	17.100	0.99	23.10	0.66
5.117	0.88	11.117	5.28	17.117	0.99	23.12	0.66
5.133	0.88	11.133	5.28	17.133	0.99	23.13	0.66
5.150	0.88	11.150	5.28	17.150	0.99	23.15	0.66
5.167	0.88	11.167	5.28	17.167	0.99	23.17	0.66
5.183	0.88	11.183	5.28	17.183	0.99	23.18	0.66
5.200	0.88	11.200	5.28	17.200	0.99	23.20	0.66
5.217	0.88	11.217	5.28	17.217	0.99	23.22	0.66
5.233	0.88	11.233	5.28	17.233	0.99	23.23	0.66
5.250	0.88	11.250	5.28	17.250	0.99	23.25	0.66
5.267	0.88	11.267	5.28	17.267	0.99	23.27	0.66
5.283	0.88	11.283	5.28	17.283	0.99	23.28	0.66
5.300	0.88	11.300	5.28	17.300	0.99	23.30	0.66
5.317	0.88	11.317	5.28	17.317	0.99	23.32	0.66
5.333	0.88	11.333	5.28	17.333	0.99	23.33	0.66
5.350	0.88	11.350	5.28	17.350	0.99	23.35	0.66
5.367	0.88	11.367	5.28	17.367	0.99	23.37	0.66
5.383	0.88	11.383	5.28	17.383	0.99	23.38	0.66
5.400	0.88	11.400	5.28	17.400	0.99	23.40	0.66
5.417	0.88	11.417	5.28	17.417	0.99	23.42	0.66
5.433	0.88	11.433	5.28	17.433	0.99	23.43	0.66
5.450	0.88	11.450	5.28	17.450	0.99	23.45	0.66
5.467	0.88	11.467	5.28	17.467	0.99	23.47	0.66
5.483	0.88	11.483	5.28	17.483	0.99	23.48	0.66
5.500	0.88	11.500	5.28	17.500	0.99	23.50	0.66
5.517	0.88	11.517	22.88	17.517	0.99	23.52	0.66
5.533	0.88	11.533	22.88	17.533	0.99	23.53	0.66
5.550	0.88	11.550	22.88	17.550	0.99	23.55	0.66
5.567	0.88	11.567	22.88	17.567	0.99	23.57	0.66
5.583	0.88	11.583	22.88	17.583	0.99	23.58	0.66
5.600	0.88	11.600	22.88	17.600	0.99	23.60	0.66
5.617	0.88	11.617	22.88	17.617	0.99	23.62	0.66
5.633	0.88	11.633	22.88	17.633	0.99	23.63	0.66
5.650	0.88	11.650	22.88	17.650	0.99	23.65	0.66
5.667	0.88	11.667	22.88	17.667	0.99	23.67	0.66
5.683	0.88	11.683	22.88	17.683	0.99	23.68	0.66
5.700	0.88	11.700	22.88	17.700	0.99	23.70	0.66
5.717	0.88	11.717	22.88	17.717	0.99	23.72	0.66
5.733	0.88	11.733	22.88	17.733	0.99	23.73	0.66
5.750	0.88	11.750	22.88	17.750	0.99	23.75	0.66
5.767	0.88	11.767	60.70	17.767	0.99	23.77	0.66

5.783	0.88	11.783	60.72	17.783	0.99	23.78	0.66
5.800	0.88	11.800	60.72	17.800	0.99	23.80	0.66
5.817	0.88	11.817	60.72	17.817	0.99	23.82	0.66
5.833	0.88	11.833	60.72	17.833	0.99	23.83	0.66
5.850	0.88	11.850	60.72	17.850	0.99	23.85	0.66
5.867	0.88	11.867	60.72	17.867	0.99	23.87	0.66
5.883	0.88	11.883	60.72	17.883	0.99	23.88	0.66
5.900	0.88	11.900	60.72	17.900	0.99	23.90	0.66
5.917	0.88	11.917	60.72	17.917	0.99	23.92	0.66
5.933	0.88	11.933	60.72	17.933	0.99	23.93	0.66
5.950	0.88	11.950	60.72	17.950	0.99	23.95	0.66
5.967	0.88	11.967	60.72	17.967	0.99	23.97	0.66
5.983	0.88	11.983	60.72	17.983	0.99	23.98	0.66
6.000	0.88	12.000	60.72	18.000	0.99	24.00	0.66

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.020 (i)
TIME TO PEAK (hrs)= 12.217
RUNOFF VOLUME (mm)= 9.279
TOTAL RAINFALL (mm)= 55.001
RUNOFF COEFFICIENT = 0.169

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

CALIB
STANDHYD (0201) | Area (ha)= 1.03
ID= 1 DT= 1.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		60.72	36.56	
over (min)		5.00	4.00	
Storage Coeff. (min)=		2.26 (ii)	3.05 (ii)	
Unit Hyd. Tpeak (min)=		5.00	4.00	
Unit Hyd. peak (cms)=		0.35	0.33	
				TOTALS
PEAK FLOW	(cms)=	0.05	0.05	0.104 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	54.00	19.33	29.73
TOTAL RAINFALL	(mm)=	55.00	55.00	55.00
RUNOFF COEFFICIENT	=	0.98	0.35	0.54

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0002):     0.95   0.020    12.22     9.28
     + ID2= 2 (  0201):     1.03   0.104    12.00    29.73
       ================================================
       ID = 3 (  0006):     1.98   0.116    12.00    21.21

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190     0.0530
                          0.0120     0.0080   |   0.0200     0.0720
                          0.0150     0.0200   |   0.0220     0.0950
                          0.0170     0.0350   |   0.6940     0.1190

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)     1.980      0.116     12.00      21.21
   OUTFLOW: ID= 1 (  0011)     1.980      0.014     12.93      21.13

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 12.37
                  TIME SHIFT OF PEAK FLOW         (min)= 56.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0176

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030
```



```
     PEAK FLOW       (cms)=   0.004 (i)
     TIME TO PEAK    (hrs)=  12.683
     RUNOFF VOLUME    (mm)=   5.613
     TOTAL RAINFALL   (mm)=  55.001
     RUNOFF COEFFICIENT   =   0.102

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      60.72        34.64
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.77 (ii)    9.38 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.39         0.12
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.02          0.025 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.07          12.03
     RUNOFF VOLUME    (mm)=      54.00        18.89          20.64
     TOTAL RAINFALL   (mm)=      55.00        55.00          55.00
     RUNOFF COEFFICIENT   =       0.98         0.34           0.38

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
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                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      60.72        53.27
                 over (min)       5.00         3.00
     Storage Coeff.  (min)=       1.91 (ii)    2.64 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.38         0.41
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.04          0.066 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      54.00        22.57          32.00
     TOTAL RAINFALL   (mm)=      55.00        55.00          55.00
     RUNOFF COEFFICIENT   =       0.98         0.41           0.58


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.025    12.03    20.64
      + ID2= 2 (  0203):     0.59   0.066    12.00    32.00
        ====================================================
        ID = 3 (  0009):     1.04   0.089    12.00    27.08

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390     0.0320
                         0.0090     0.0060    |   0.0430     0.0380
                         0.0230     0.0130    |   0.0470     0.0450
                         0.0300     0.0190    |   0.0500     0.0510
```



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                         0.0350     0.0260   |   0.0000      0.0000

                                  AREA     QPEAK     TPEAK       R.V.
                                  (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.089     12.00      27.08
   OUTFLOW: ID= 1 (  0012)      1.040      0.019     12.33      26.92

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 20.86
                  TIME SHIFT OF PEAK FLOW         (min)= 20.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0108

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.019    12.33    26.92
      + ID2= 2 (  0202):     0.53   0.004    12.68     5.61
        ====================================================
        ID = 3 (  0013):     1.57   0.022    12.52    20.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
```

C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\6f4
55f38-c450-406d-9b97-3b37197469b4\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\6f4
55f38-c450-406d-9b97-3b37197469b4\sce

DATE: 11-25-2019 TIME: 10:50:34

USER:

COMMENTS: _____

  ****
  ** SIMULATION : 02. 5 yr - 24 hr SCS Type II **
  ****

| MASS STORM | Filename: C:\Users\iblechta\AppD
| | ata\Local\Temp\
| | c4b20de3-13ae-4582-bae8-d7364cf8a3a5\37c4f75b
| Ptotal= 76.00 mm | Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 24.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.84	6.25	1.52	12.25	10.94	18.25	1.37
0.50	0.84	6.50	1.52	12.50	10.94	18.50	1.37
0.75	0.84	6.75	1.52	12.75	5.62	18.75	1.37
1.00	0.84	7.00	1.52	13.00	5.62	19.00	1.37
1.25	0.84	7.25	1.52	13.25	1.06	19.25	1.37
1.50	0.84	7.50	1.52	13.50	1.06	19.50	1.37
1.75	0.84	7.75	1.52	13.75	6.23	19.75	1.37
2.00	0.84	8.00	1.52	14.00	6.23	20.00	1.37
2.25	0.99	8.25	2.05	14.25	2.28	20.25	0.91
2.50	0.99	8.50	2.05	14.50	2.28	20.50	0.91
2.75	0.99	8.75	2.05	14.75	2.28	20.75	0.91
3.00	0.99	9.00	2.05	15.00	2.28	21.00	0.91
3.25	0.99	9.25	2.43	15.25	2.28	21.25	0.91
3.50	0.99	9.50	2.43	15.50	2.28	21.50	0.91
3.75	0.99	9.75	2.74	15.75	2.28	21.75	0.91
4.00	0.99	10.00	2.74	16.00	2.28	22.00	0.91

4.25	1.22	10.25	3.50	16.25	1.37	22.25	0.91
4.50	1.22	10.50	3.50	16.50	1.37	22.50	0.91
4.75	1.22	10.75	4.71	16.75	1.37	22.75	0.91
5.00	1.22	11.00	4.71	17.00	1.37	23.00	0.91
5.25	1.22	11.25	7.30	17.25	1.37	23.25	0.91
5.50	1.22	11.50	7.30	17.50	1.37	23.50	0.91
5.75	1.22	11.75	31.62	17.75	1.37	23.75	0.91
6.00	1.22	12.00	83.90	18.00	1.37	24.00	0.91

| CALIB | |
| NASHYD (0002)| Area (ha)= 0.95 Curve Number (CN)= 64.0
|ID= 1 DT= 1.0 min | Ia (mm)= 7.21 # of Linear Res.(N)= 3.00
| | U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.84	6.017	1.52	12.017	10.99	18.02	1.37
0.033	0.84	6.033	1.52	12.033	10.94	18.03	1.37
0.050	0.84	6.050	1.52	12.050	10.94	18.05	1.37
0.067	0.84	6.067	1.52	12.067	10.94	18.07	1.37
0.083	0.84	6.083	1.52	12.083	10.94	18.08	1.37
0.100	0.84	6.100	1.52	12.100	10.94	18.10	1.37
0.117	0.84	6.117	1.52	12.117	10.94	18.12	1.37
0.133	0.84	6.133	1.52	12.133	10.94	18.13	1.37
0.150	0.84	6.150	1.52	12.150	10.94	18.15	1.37
0.167	0.84	6.167	1.52	12.167	10.94	18.17	1.37
0.183	0.84	6.183	1.52	12.183	10.94	18.18	1.37
0.200	0.84	6.200	1.52	12.200	10.94	18.20	1.37
0.217	0.84	6.217	1.52	12.217	10.94	18.22	1.37
0.233	0.84	6.233	1.52	12.233	10.94	18.23	1.37
0.250	0.84	6.250	1.52	12.250	10.94	18.25	1.37
0.267	0.84	6.267	1.52	12.267	10.94	18.27	1.37
0.283	0.84	6.283	1.52	12.283	10.94	18.28	1.37
0.300	0.84	6.300	1.52	12.300	10.94	18.30	1.37
0.317	0.84	6.317	1.52	12.317	10.94	18.32	1.37
0.333	0.84	6.333	1.52	12.333	10.94	18.33	1.37
0.350	0.84	6.350	1.52	12.350	10.94	18.35	1.37
0.367	0.84	6.367	1.52	12.367	10.94	18.37	1.37
0.383	0.84	6.383	1.52	12.383	10.94	18.38	1.37
0.400	0.84	6.400	1.52	12.400	10.94	18.40	1.37
0.417	0.84	6.417	1.52	12.417	10.94	18.42	1.37
0.433	0.84	6.433	1.52	12.433	10.94	18.43	1.37
0.450	0.84	6.450	1.52	12.450	10.94	18.45	1.37

0.467	0.84	6.467	1.52	12.467	10.94	18.47	1.37
0.483	0.84	6.483	1.52	12.483	10.94	18.48	1.37
0.500	0.84	6.500	1.52	12.500	10.94	18.50	1.37
0.517	0.84	6.517	1.52	12.517	5.63	18.52	1.37
0.533	0.84	6.533	1.52	12.533	5.62	18.53	1.37
0.550	0.84	6.550	1.52	12.550	5.62	18.55	1.37
0.567	0.84	6.567	1.52	12.567	5.62	18.57	1.37
0.583	0.84	6.583	1.52	12.583	5.62	18.58	1.37
0.600	0.84	6.600	1.52	12.600	5.62	18.60	1.37
0.617	0.84	6.617	1.52	12.617	5.62	18.62	1.37
0.633	0.84	6.633	1.52	12.633	5.62	18.63	1.37
0.650	0.84	6.650	1.52	12.650	5.62	18.65	1.37
0.667	0.84	6.667	1.52	12.667	5.62	18.67	1.37
0.683	0.84	6.683	1.52	12.683	5.62	18.68	1.37
0.700	0.84	6.700	1.52	12.700	5.62	18.70	1.37
0.717	0.84	6.717	1.52	12.717	5.62	18.72	1.37
0.733	0.84	6.733	1.52	12.733	5.62	18.73	1.37
0.750	0.84	6.750	1.52	12.750	5.62	18.75	1.37
0.767	0.84	6.767	1.52	12.767	5.62	18.77	1.37
0.783	0.84	6.783	1.52	12.783	5.62	18.78	1.37
0.800	0.84	6.800	1.52	12.800	5.62	18.80	1.37
0.817	0.84	6.817	1.52	12.817	5.62	18.82	1.37
0.833	0.84	6.833	1.52	12.833	5.62	18.83	1.37
0.850	0.84	6.850	1.52	12.850	5.62	18.85	1.37
0.867	0.84	6.867	1.52	12.867	5.62	18.87	1.37
0.883	0.84	6.883	1.52	12.883	5.62	18.88	1.37
0.900	0.84	6.900	1.52	12.900	5.62	18.90	1.37
0.917	0.84	6.917	1.52	12.917	5.62	18.92	1.37
0.933	0.84	6.933	1.52	12.933	5.62	18.93	1.37
0.950	0.84	6.950	1.52	12.950	5.62	18.95	1.37
0.967	0.84	6.967	1.52	12.967	5.62	18.97	1.37
0.983	0.84	6.983	1.52	12.983	5.62	18.98	1.37
1.000	0.84	7.000	1.52	13.000	5.62	19.00	1.37
1.017	0.84	7.017	1.52	13.017	1.07	19.02	1.37
1.033	0.84	7.033	1.52	13.033	1.06	19.03	1.37
1.050	0.84	7.050	1.52	13.050	1.06	19.05	1.37
1.067	0.84	7.067	1.52	13.067	1.06	19.07	1.37
1.083	0.84	7.083	1.52	13.083	1.06	19.08	1.37
1.100	0.84	7.100	1.52	13.100	1.06	19.10	1.37
1.117	0.84	7.117	1.52	13.117	1.06	19.12	1.37
1.133	0.84	7.133	1.52	13.133	1.06	19.13	1.37
1.150	0.84	7.150	1.52	13.150	1.06	19.15	1.37
1.167	0.84	7.167	1.52	13.167	1.06	19.17	1.37
1.183	0.84	7.183	1.52	13.183	1.06	19.18	1.37
1.200	0.84	7.200	1.52	13.200	1.06	19.20	1.37
1.217	0.84	7.217	1.52	13.217	1.06	19.22	1.37
1.233	0.84	7.233	1.52	13.233	1.06	19.23	1.37
1.250	0.84	7.250	1.52	13.250	1.06	19.25	1.37
1.267	0.84	7.267	1.52	13.267	1.06	19.27	1.37

1.283	0.84	7.283	1.52	13.283	1.06	19.28	1.37
1.300	0.84	7.300	1.52	13.300	1.06	19.30	1.37
1.317	0.84	7.317	1.52	13.317	1.06	19.32	1.37
1.333	0.84	7.333	1.52	13.333	1.06	19.33	1.37
1.350	0.84	7.350	1.52	13.350	1.06	19.35	1.37
1.367	0.84	7.367	1.52	13.367	1.06	19.37	1.37
1.383	0.84	7.383	1.52	13.383	1.06	19.38	1.37
1.400	0.84	7.400	1.52	13.400	1.06	19.40	1.37
1.417	0.84	7.417	1.52	13.417	1.06	19.42	1.37
1.433	0.84	7.433	1.52	13.433	1.06	19.43	1.37
1.450	0.84	7.450	1.52	13.450	1.06	19.45	1.37
1.467	0.84	7.467	1.52	13.467	1.06	19.47	1.37
1.483	0.84	7.483	1.52	13.483	1.06	19.48	1.37
1.500	0.84	7.500	1.52	13.500	1.06	19.50	1.37
1.517	0.84	7.517	1.52	13.517	6.22	19.52	1.37
1.533	0.84	7.533	1.52	13.533	6.23	19.53	1.37
1.550	0.84	7.550	1.52	13.550	6.23	19.55	1.37
1.567	0.84	7.567	1.52	13.567	6.23	19.57	1.37
1.583	0.84	7.583	1.52	13.583	6.23	19.58	1.37
1.600	0.84	7.600	1.52	13.600	6.23	19.60	1.37
1.617	0.84	7.617	1.52	13.617	6.23	19.62	1.37
1.633	0.84	7.633	1.52	13.633	6.23	19.63	1.37
1.650	0.84	7.650	1.52	13.650	6.23	19.65	1.37
1.667	0.84	7.667	1.52	13.667	6.23	19.67	1.37
1.683	0.84	7.683	1.52	13.683	6.23	19.68	1.37
1.700	0.84	7.700	1.52	13.700	6.23	19.70	1.37
1.717	0.84	7.717	1.52	13.717	6.23	19.72	1.37
1.733	0.84	7.733	1.52	13.733	6.23	19.73	1.37
1.750	0.84	7.750	1.52	13.750	6.23	19.75	1.37
1.767	0.84	7.767	1.52	13.767	6.23	19.77	1.37
1.783	0.84	7.783	1.52	13.783	6.23	19.78	1.37
1.800	0.84	7.800	1.52	13.800	6.23	19.80	1.37
1.817	0.84	7.817	1.52	13.817	6.23	19.82	1.37
1.833	0.84	7.833	1.52	13.833	6.23	19.83	1.37
1.850	0.84	7.850	1.52	13.850	6.23	19.85	1.37
1.867	0.84	7.867	1.52	13.867	6.23	19.87	1.37
1.883	0.84	7.883	1.52	13.883	6.23	19.88	1.37
1.900	0.84	7.900	1.52	13.900	6.23	19.90	1.37
1.917	0.84	7.917	1.52	13.917	6.23	19.92	1.37
1.933	0.84	7.933	1.52	13.933	6.23	19.93	1.37
1.950	0.84	7.950	1.52	13.950	6.23	19.95	1.37
1.967	0.84	7.967	1.52	13.967	6.23	19.97	1.37
1.983	0.84	7.983	1.52	13.983	6.23	19.98	1.37
2.000	0.84	8.000	1.52	14.000	6.23	20.00	1.37
2.017	0.99	8.017	2.05	14.017	2.29	20.02	0.92
2.033	0.99	8.033	2.05	14.033	2.28	20.03	0.91
2.050	0.99	8.050	2.05	14.050	2.28	20.05	0.91
2.067	0.99	8.067	2.05	14.067	2.28	20.07	0.91
2.083	0.99	8.083	2.05	14.083	2.28	20.08	0.91

2.100	0.99	8.100	2.05	14.100	2.28	20.10	0.91
2.117	0.99	8.117	2.05	14.117	2.28	20.12	0.91
2.133	0.99	8.133	2.05	14.133	2.28	20.13	0.91
2.150	0.99	8.150	2.05	14.150	2.28	20.15	0.91
2.167	0.99	8.167	2.05	14.167	2.28	20.17	0.91
2.183	0.99	8.183	2.05	14.183	2.28	20.18	0.91
2.200	0.99	8.200	2.05	14.200	2.28	20.20	0.91
2.217	0.99	8.217	2.05	14.217	2.28	20.22	0.91
2.233	0.99	8.233	2.05	14.233	2.28	20.23	0.91
2.250	0.99	8.250	2.05	14.250	2.28	20.25	0.91
2.267	0.99	8.267	2.05	14.267	2.28	20.27	0.91
2.283	0.99	8.283	2.05	14.283	2.28	20.28	0.91
2.300	0.99	8.300	2.05	14.300	2.28	20.30	0.91
2.317	0.99	8.317	2.05	14.317	2.28	20.32	0.91
2.333	0.99	8.333	2.05	14.333	2.28	20.33	0.91
2.350	0.99	8.350	2.05	14.350	2.28	20.35	0.91
2.367	0.99	8.367	2.05	14.367	2.28	20.37	0.91
2.383	0.99	8.383	2.05	14.383	2.28	20.38	0.91
2.400	0.99	8.400	2.05	14.400	2.28	20.40	0.91
2.417	0.99	8.417	2.05	14.417	2.28	20.42	0.91
2.433	0.99	8.433	2.05	14.433	2.28	20.43	0.91
2.450	0.99	8.450	2.05	14.450	2.28	20.45	0.91
2.467	0.99	8.467	2.05	14.467	2.28	20.47	0.91
2.483	0.99	8.483	2.05	14.483	2.28	20.48	0.91
2.500	0.99	8.500	2.05	14.500	2.28	20.50	0.91
2.517	0.99	8.517	2.05	14.517	2.28	20.52	0.91
2.533	0.99	8.533	2.05	14.533	2.28	20.53	0.91
2.550	0.99	8.550	2.05	14.550	2.28	20.55	0.91
2.567	0.99	8.567	2.05	14.567	2.28	20.57	0.91
2.583	0.99	8.583	2.05	14.583	2.28	20.58	0.91
2.600	0.99	8.600	2.05	14.600	2.28	20.60	0.91
2.617	0.99	8.617	2.05	14.617	2.28	20.62	0.91
2.633	0.99	8.633	2.05	14.633	2.28	20.63	0.91
2.650	0.99	8.650	2.05	14.650	2.28	20.65	0.91
2.667	0.99	8.667	2.05	14.667	2.28	20.67	0.91
2.683	0.99	8.683	2.05	14.683	2.28	20.68	0.91
2.700	0.99	8.700	2.05	14.700	2.28	20.70	0.91
2.717	0.99	8.717	2.05	14.717	2.28	20.72	0.91
2.733	0.99	8.733	2.05	14.733	2.28	20.73	0.91
2.750	0.99	8.750	2.05	14.750	2.28	20.75	0.91
2.767	0.99	8.767	2.05	14.767	2.28	20.77	0.91
2.783	0.99	8.783	2.05	14.783	2.28	20.78	0.91
2.800	0.99	8.800	2.05	14.800	2.28	20.80	0.91
2.817	0.99	8.817	2.05	14.817	2.28	20.82	0.91
2.833	0.99	8.833	2.05	14.833	2.28	20.83	0.91
2.850	0.99	8.850	2.05	14.850	2.28	20.85	0.91
2.867	0.99	8.867	2.05	14.867	2.28	20.87	0.91
2.883	0.99	8.883	2.05	14.883	2.28	20.88	0.91
2.900	0.99	8.900	2.05	14.900	2.28	20.90	0.91

2.917	0.99	8.917	2.05	14.917	2.28	20.92	0.91
2.933	0.99	8.933	2.05	14.933	2.28	20.93	0.91
2.950	0.99	8.950	2.05	14.950	2.28	20.95	0.91
2.967	0.99	8.967	2.05	14.967	2.28	20.97	0.91
2.983	0.99	8.983	2.05	14.983	2.28	20.98	0.91
3.000	0.99	9.000	2.05	15.000	2.28	21.00	0.91
3.017	0.99	9.017	2.43	15.017	2.28	21.02	0.91
3.033	0.99	9.033	2.43	15.033	2.28	21.03	0.91
3.050	0.99	9.050	2.43	15.050	2.28	21.05	0.91
3.067	0.99	9.067	2.43	15.067	2.28	21.07	0.91
3.083	0.99	9.083	2.43	15.083	2.28	21.08	0.91
3.100	0.99	9.100	2.43	15.100	2.28	21.10	0.91
3.117	0.99	9.117	2.43	15.117	2.28	21.12	0.91
3.133	0.99	9.133	2.43	15.133	2.28	21.13	0.91
3.150	0.99	9.150	2.43	15.150	2.28	21.15	0.91
3.167	0.99	9.167	2.43	15.167	2.28	21.17	0.91
3.183	0.99	9.183	2.43	15.183	2.28	21.18	0.91
3.200	0.99	9.200	2.43	15.200	2.28	21.20	0.91
3.217	0.99	9.217	2.43	15.217	2.28	21.22	0.91
3.233	0.99	9.233	2.43	15.233	2.28	21.23	0.91
3.250	0.99	9.250	2.43	15.250	2.28	21.25	0.91
3.267	0.99	9.267	2.43	15.267	2.28	21.27	0.91
3.283	0.99	9.283	2.43	15.283	2.28	21.28	0.91
3.300	0.99	9.300	2.43	15.300	2.28	21.30	0.91
3.317	0.99	9.317	2.43	15.317	2.28	21.32	0.91
3.333	0.99	9.333	2.43	15.333	2.28	21.33	0.91
3.350	0.99	9.350	2.43	15.350	2.28	21.35	0.91
3.367	0.99	9.367	2.43	15.367	2.28	21.37	0.91
3.383	0.99	9.383	2.43	15.383	2.28	21.38	0.91
3.400	0.99	9.400	2.43	15.400	2.28	21.40	0.91
3.417	0.99	9.417	2.43	15.417	2.28	21.42	0.91
3.433	0.99	9.433	2.43	15.433	2.28	21.43	0.91
3.450	0.99	9.450	2.43	15.450	2.28	21.45	0.91
3.467	0.99	9.467	2.43	15.467	2.28	21.47	0.91
3.483	0.99	9.483	2.43	15.483	2.28	21.48	0.91
3.500	0.99	9.500	2.43	15.500	2.28	21.50	0.91
3.517	0.99	9.517	2.74	15.517	2.28	21.52	0.91
3.533	0.99	9.533	2.74	15.533	2.28	21.53	0.91
3.550	0.99	9.550	2.74	15.550	2.28	21.55	0.91
3.567	0.99	9.567	2.74	15.567	2.28	21.57	0.91
3.583	0.99	9.583	2.74	15.583	2.28	21.58	0.91
3.600	0.99	9.600	2.74	15.600	2.28	21.60	0.91
3.617	0.99	9.617	2.74	15.617	2.28	21.62	0.91
3.633	0.99	9.633	2.74	15.633	2.28	21.63	0.91
3.650	0.99	9.650	2.74	15.650	2.28	21.65	0.91
3.667	0.99	9.667	2.74	15.667	2.28	21.67	0.91
3.683	0.99	9.683	2.74	15.683	2.28	21.68	0.91
3.700	0.99	9.700	2.74	15.700	2.28	21.70	0.91
3.717	0.99	9.717	2.74	15.717	2.28	21.72	0.91

3.733	0.99	9.733	2.74	15.733	2.28	21.73	0.91
3.750	0.99	9.750	2.74	15.750	2.28	21.75	0.91
3.767	0.99	9.767	2.74	15.767	2.28	21.77	0.91
3.783	0.99	9.783	2.74	15.783	2.28	21.78	0.91
3.800	0.99	9.800	2.74	15.800	2.28	21.80	0.91
3.817	0.99	9.817	2.74	15.817	2.28	21.82	0.91
3.833	0.99	9.833	2.74	15.833	2.28	21.83	0.91
3.850	0.99	9.850	2.74	15.850	2.28	21.85	0.91
3.867	0.99	9.867	2.74	15.867	2.28	21.87	0.91
3.883	0.99	9.883	2.74	15.883	2.28	21.88	0.91
3.900	0.99	9.900	2.74	15.900	2.28	21.90	0.91
3.917	0.99	9.917	2.74	15.917	2.28	21.92	0.91
3.933	0.99	9.933	2.74	15.933	2.28	21.93	0.91
3.950	0.99	9.950	2.74	15.950	2.28	21.95	0.91
3.967	0.99	9.967	2.74	15.967	2.28	21.97	0.91
3.983	0.99	9.983	2.74	15.983	2.28	21.98	0.91
4.000	0.99	10.000	2.74	16.000	2.28	22.00	0.91
4.017	1.22	10.017	3.50	16.017	1.37	22.02	0.91
4.033	1.22	10.033	3.50	16.033	1.37	22.03	0.91
4.050	1.22	10.050	3.50	16.050	1.37	22.05	0.91
4.067	1.22	10.067	3.50	16.067	1.37	22.07	0.91
4.083	1.22	10.083	3.50	16.083	1.37	22.08	0.91
4.100	1.22	10.100	3.50	16.100	1.37	22.10	0.91
4.117	1.22	10.117	3.50	16.117	1.37	22.12	0.91
4.133	1.22	10.133	3.50	16.133	1.37	22.13	0.91
4.150	1.22	10.150	3.50	16.150	1.37	22.15	0.91
4.167	1.22	10.167	3.50	16.167	1.37	22.17	0.91
4.183	1.22	10.183	3.50	16.183	1.37	22.18	0.91
4.200	1.22	10.200	3.50	16.200	1.37	22.20	0.91
4.217	1.22	10.217	3.50	16.217	1.37	22.22	0.91
4.233	1.22	10.233	3.50	16.233	1.37	22.23	0.91
4.250	1.22	10.250	3.50	16.250	1.37	22.25	0.91
4.267	1.22	10.267	3.50	16.267	1.37	22.27	0.91
4.283	1.22	10.283	3.50	16.283	1.37	22.28	0.91
4.300	1.22	10.300	3.50	16.300	1.37	22.30	0.91
4.317	1.22	10.317	3.50	16.317	1.37	22.32	0.91
4.333	1.22	10.333	3.50	16.333	1.37	22.33	0.91
4.350	1.22	10.350	3.50	16.350	1.37	22.35	0.91
4.367	1.22	10.367	3.50	16.367	1.37	22.37	0.91
4.383	1.22	10.383	3.50	16.383	1.37	22.38	0.91
4.400	1.22	10.400	3.50	16.400	1.37	22.40	0.91
4.417	1.22	10.417	3.50	16.417	1.37	22.42	0.91
4.433	1.22	10.433	3.50	16.433	1.37	22.43	0.91
4.450	1.22	10.450	3.50	16.450	1.37	22.45	0.91
4.467	1.22	10.467	3.50	16.467	1.37	22.47	0.91
4.483	1.22	10.483	3.50	16.483	1.37	22.48	0.91
4.500	1.22	10.500	3.50	16.500	1.37	22.50	0.91
4.517	1.22	10.517	4.71	16.517	1.37	22.52	0.91
4.533	1.22	10.533	4.71	16.533	1.37	22.53	0.91

4.550	1.22	10.550	4.71	16.550	1.37	22.55	0.91
4.567	1.22	10.567	4.71	16.567	1.37	22.57	0.91
4.583	1.22	10.583	4.71	16.583	1.37	22.58	0.91
4.600	1.22	10.600	4.71	16.600	1.37	22.60	0.91
4.617	1.22	10.617	4.71	16.617	1.37	22.62	0.91
4.633	1.22	10.633	4.71	16.633	1.37	22.63	0.91
4.650	1.22	10.650	4.71	16.650	1.37	22.65	0.91
4.667	1.22	10.667	4.71	16.667	1.37	22.67	0.91
4.683	1.22	10.683	4.71	16.683	1.37	22.68	0.91
4.700	1.22	10.700	4.71	16.700	1.37	22.70	0.91
4.717	1.22	10.717	4.71	16.717	1.37	22.72	0.91
4.733	1.22	10.733	4.71	16.733	1.37	22.73	0.91
4.750	1.22	10.750	4.71	16.750	1.37	22.75	0.91
4.767	1.22	10.767	4.71	16.767	1.37	22.77	0.91
4.783	1.22	10.783	4.71	16.783	1.37	22.78	0.91
4.800	1.22	10.800	4.71	16.800	1.37	22.80	0.91
4.817	1.22	10.817	4.71	16.817	1.37	22.82	0.91
4.833	1.22	10.833	4.71	16.833	1.37	22.83	0.91
4.850	1.22	10.850	4.71	16.850	1.37	22.85	0.91
4.867	1.22	10.867	4.71	16.867	1.37	22.87	0.91
4.883	1.22	10.883	4.71	16.883	1.37	22.88	0.91
4.900	1.22	10.900	4.71	16.900	1.37	22.90	0.91
4.917	1.22	10.917	4.71	16.917	1.37	22.92	0.91
4.933	1.22	10.933	4.71	16.933	1.37	22.93	0.91
4.950	1.22	10.950	4.71	16.950	1.37	22.95	0.91
4.967	1.22	10.967	4.71	16.967	1.37	22.97	0.91
4.983	1.22	10.983	4.71	16.983	1.37	22.98	0.91
5.000	1.22	11.000	4.71	17.000	1.37	23.00	0.91
5.017	1.22	11.017	7.30	17.017	1.37	23.02	0.91
5.033	1.22	11.033	7.30	17.033	1.37	23.03	0.91
5.050	1.22	11.050	7.30	17.050	1.37	23.05	0.91
5.067	1.22	11.067	7.30	17.067	1.37	23.07	0.91
5.083	1.22	11.083	7.30	17.083	1.37	23.08	0.91
5.100	1.22	11.100	7.30	17.100	1.37	23.10	0.91
5.117	1.22	11.117	7.30	17.117	1.37	23.12	0.91
5.133	1.22	11.133	7.30	17.133	1.37	23.13	0.91
5.150	1.22	11.150	7.30	17.150	1.37	23.15	0.91
5.167	1.22	11.167	7.30	17.167	1.37	23.17	0.91
5.183	1.22	11.183	7.30	17.183	1.37	23.18	0.91
5.200	1.22	11.200	7.30	17.200	1.37	23.20	0.91
5.217	1.22	11.217	7.30	17.217	1.37	23.22	0.91
5.233	1.22	11.233	7.30	17.233	1.37	23.23	0.91
5.250	1.22	11.250	7.30	17.250	1.37	23.25	0.91
5.267	1.22	11.267	7.30	17.267	1.37	23.27	0.91
5.283	1.22	11.283	7.30	17.283	1.37	23.28	0.91
5.300	1.22	11.300	7.30	17.300	1.37	23.30	0.91
5.317	1.22	11.317	7.30	17.317	1.37	23.32	0.91
5.333	1.22	11.333	7.30	17.333	1.37	23.33	0.91
5.350	1.22	11.350	7.30	17.350	1.37	23.35	0.91

5.367	1.22	11.367	7.30	17.367	1.37	23.37	0.91
5.383	1.22	11.383	7.30	17.383	1.37	23.38	0.91
5.400	1.22	11.400	7.30	17.400	1.37	23.40	0.91
5.417	1.22	11.417	7.30	17.417	1.37	23.42	0.91
5.433	1.22	11.433	7.30	17.433	1.37	23.43	0.91
5.450	1.22	11.450	7.30	17.450	1.37	23.45	0.91
5.467	1.22	11.467	7.30	17.467	1.37	23.47	0.91
5.483	1.22	11.483	7.30	17.483	1.37	23.48	0.91
5.500	1.22	11.500	7.30	17.500	1.37	23.50	0.91
5.517	1.22	11.517	31.61	17.517	1.37	23.52	0.91
5.533	1.22	11.533	31.62	17.533	1.37	23.53	0.91
5.550	1.22	11.550	31.62	17.550	1.37	23.55	0.91
5.567	1.22	11.567	31.62	17.567	1.37	23.57	0.91
5.583	1.22	11.583	31.62	17.583	1.37	23.58	0.91
5.600	1.22	11.600	31.62	17.600	1.37	23.60	0.91
5.617	1.22	11.617	31.62	17.617	1.37	23.62	0.91
5.633	1.22	11.633	31.62	17.633	1.37	23.63	0.91
5.650	1.22	11.650	31.62	17.650	1.37	23.65	0.91
5.667	1.22	11.667	31.62	17.667	1.37	23.67	0.91
5.683	1.22	11.683	31.62	17.683	1.37	23.68	0.91
5.700	1.22	11.700	31.62	17.700	1.37	23.70	0.91
5.717	1.22	11.717	31.62	17.717	1.37	23.72	0.91
5.733	1.22	11.733	31.62	17.733	1.37	23.73	0.91
5.750	1.22	11.750	31.62	17.750	1.37	23.75	0.91
5.767	1.22	11.767	83.88	17.767	1.37	23.77	0.91
5.783	1.22	11.783	83.90	17.783	1.37	23.78	0.91
5.800	1.22	11.800	83.90	17.800	1.37	23.80	0.91
5.817	1.22	11.817	83.90	17.817	1.37	23.82	0.91
5.833	1.22	11.833	83.90	17.833	1.37	23.83	0.91
5.850	1.22	11.850	83.90	17.850	1.37	23.85	0.91
5.867	1.22	11.867	83.90	17.867	1.37	23.87	0.91
5.883	1.22	11.883	83.90	17.883	1.37	23.88	0.91
5.900	1.22	11.900	83.90	17.900	1.37	23.90	0.91
5.917	1.22	11.917	83.90	17.917	1.37	23.92	0.91
5.933	1.22	11.933	83.90	17.933	1.37	23.93	0.91
5.950	1.22	11.950	83.90	17.950	1.37	23.95	0.91
5.967	1.22	11.967	83.90	17.967	1.37	23.97	0.91
5.983	1.22	11.983	83.90	17.983	1.37	23.98	0.91
6.000	1.22	12.000	83.90	18.000	1.37	24.00	0.91

```
Unit Hyd Qpeak  (cms)=   0.117

PEAK FLOW       (cms)=   0.038 (i)
TIME TO PEAK    (hrs)=  12.200
RUNOFF VOLUME    (mm)=  17.685
TOTAL RAINFALL   (mm)=  76.001
RUNOFF COEFFICIENT   =   0.233

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
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| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.51
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      82.87         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      83.90        62.67
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.99 (ii)    2.68 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.38         0.40
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.09          0.163 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      75.00        33.24          45.77
     TOTAL RAINFALL   (mm)=      76.00        76.00          76.00
     RUNOFF COEFFICIENT   =       0.99         0.44           0.60


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.038    12.20    17.69
      + ID2= 2 (  0201):     1.03   0.163    12.00    45.77
        ================================================
        ID = 3 (  0006):     1.98   0.188    12.00    34.54

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR(  0011)|
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IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0190	0.0530
	0.0120	0.0080	0.0200	0.0720
	0.0150	0.0200	0.0220	0.0950
	0.0170	0.0350	0.6940	0.1190

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0006)	1.980	0.188	12.00	34.54
OUTFLOW: ID= 1 (0011)	1.980	0.017	13.07	34.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.84
TIME SHIFT OF PEAK FLOW (min)= 64.00
MAXIMUM STORAGE USED (ha.m.)= 0.0319

CALIB			
NASHYD (0202)	Area (ha)= 0.53	Curve Number (CN)= 54.0	
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.67		

Unit Hyd Qpeak (cms)= 0.030

PEAK FLOW (cms)= 0.008 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 11.515
TOTAL RAINFALL (mm)= 76.001
RUNOFF COEFFICIENT = 0.152

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

CALIB			
STANDHYD (0001)	Area (ha)= 0.45		
ID= 1 DT= 1.0 min	Total Imp(%)= 30.00	Dir. Conn.(%)= 5.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.31
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	2.00	2.00
Length (m)=	54.77	40.00
Mannings n =	0.013	0.035
Max.Eff.Inten.(mm/hr)=	83.90	59.61
over (min)	5.00	9.00

Storage Coeff. (min)=	1.55 (ii)	8.24 (ii)	
Unit Hyd. Tpeak (min)=	5.00	9.00	
Unit Hyd. peak (cms)=	0.41	0.13	
			TOTALS
PEAK FLOW (cms)=	0.01	0.04	0.044 (iii)
TIME TO PEAK (hrs)=	12.00	12.05	12.03
RUNOFF VOLUME (mm)=	75.00	32.60	34.71
TOTAL RAINFALL (mm)=	76.00	76.00	76.00
RUNOFF COEFFICIENT =	0.99	0.43	0.46

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD (0203)	Area (ha)= 0.59		
ID= 1 DT= 1.0 min	Total Imp(%)= 60.00	Dir. Conn.(%)= 30.00	

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.35	0.24	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	2.00	5.00	
Length (m)=	62.72	6.00	
Mannings n =	0.013	0.035	
Max.Eff.Inten.(mm/hr)=	83.90	88.77	
over (min)	5.00	3.00	
Storage Coeff. (min)=	1.68 (ii)	2.32 (ii)	
Unit Hyd. Tpeak (min)=	5.00	3.00	
Unit Hyd. peak (cms)=	0.40	0.44	
			TOTALS
PEAK FLOW (cms)=	0.04	0.06	0.101 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	75.00	37.82	48.97
TOTAL RAINFALL (mm)=	76.00	76.00	76.00
RUNOFF COEFFICIENT =	0.99	0.50	0.64

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.044    12.03    34.71
      + ID2= 2 (  0203):     0.59   0.101    12.00    48.97
        ====================================================
        ID = 3 (  0009):     1.04   0.144    12.00    42.80

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390      0.0320
                         0.0090     0.0060    |   0.0430      0.0380
                         0.0230     0.0130    |   0.0470      0.0450
                         0.0300     0.0190    |   0.0500      0.0510
                         0.0350     0.0260    |   0.0000      0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.144     12.00      42.80
   OUTFLOW: ID= 1 (  0012)      1.040      0.028     12.33      42.64

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 19.59
                  TIME SHIFT OF PEAK FLOW         (min)= 20.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0174

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.028    12.33    42.64
      + ID2= 2 (  0202):     0.53   0.008    12.67    11.51
        ====================================================
        ID = 3 (  0013):     1.57   0.036    12.55    33.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\4ae
47598-ce70-47c4-8068-5d7835124efc\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\4ae
47598-ce70-47c4-8068-5d7835124efc\sce


DATE: 11-25-2019                          TIME: 10:50:34

USER:


COMMENTS: _____


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  ***********************************************
  ** SIMULATION : 03. 10 yr - 24 hr -SCS Type I **
  ***********************************************

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| MASS STORM       |    Filename: C:\Users\iblechta\AppD
```

	ata\Local\Temp\
	c4b20de3-13ae-4582-bae8-d7364cf8a3a5\426a4b15
Ptotal= 89.90 mm	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 24.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	0.99	6.25	1.80	12.25	12.95	18.25	1.62
0.50	0.99	6.50	1.80	12.50	12.95	18.50	1.62
0.75	0.99	6.75	1.80	12.75	6.65	18.75	1.62
1.00	0.99	7.00	1.80	13.00	6.65	19.00	1.62
1.25	0.99	7.25	1.80	13.25	1.26	19.25	1.62
1.50	0.99	7.50	1.80	13.50	1.26	19.50	1.62
1.75	0.99	7.75	1.80	13.75	7.37	19.75	1.62
2.00	0.99	8.00	1.80	14.00	7.37	20.00	1.62
2.25	1.17	8.25	2.43	14.25	2.70	20.25	1.08
2.50	1.17	8.50	2.43	14.50	2.70	20.50	1.08
2.75	1.17	8.75	2.43	14.75	2.70	20.75	1.08
3.00	1.17	9.00	2.43	15.00	2.70	21.00	1.08
3.25	1.17	9.25	2.88	15.25	2.70	21.25	1.08
3.50	1.17	9.50	2.88	15.50	2.70	21.50	1.08
3.75	1.17	9.75	3.24	15.75	2.70	21.75	1.08
4.00	1.17	10.00	3.24	16.00	2.70	22.00	1.08
4.25	1.44	10.25	4.14	16.25	1.62	22.25	1.08
4.50	1.44	10.50	4.14	16.50	1.62	22.50	1.08
4.75	1.44	10.75	5.57	16.75	1.62	22.75	1.08
5.00	1.44	11.00	5.57	17.00	1.62	23.00	1.08
5.25	1.44	11.25	8.63	17.25	1.62	23.25	1.08
5.50	1.44	11.50	8.63	17.50	1.62	23.50	1.08
5.75	1.44	11.75	37.40	17.75	1.62	23.75	1.08
6.00	1.44	12.00	99.25	18.00	1.62	24.00	1.08

CALIB NASHYD (0002) ID= 1 DT= 1.0 min	Area (ha)= 0.95 Curve Number (CN)= 64.0 Ia (mm)= 7.21 # of Linear Res.(N)= 3.00 U.H. Tp(hrs)= 0.31

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	0.99	6.017	1.80	12.017	13.00	18.02	1.62
0.033	0.99	6.033	1.80	12.033	12.95	18.03	1.62

0.050	0.99	6.050	1.80	12.050	12.95	18.05	1.62
0.067	0.99	6.067	1.80	12.067	12.95	18.07	1.62
0.083	0.99	6.083	1.80	12.083	12.95	18.08	1.62
0.100	0.99	6.100	1.80	12.100	12.95	18.10	1.62
0.117	0.99	6.117	1.80	12.117	12.95	18.12	1.62
0.133	0.99	6.133	1.80	12.133	12.95	18.13	1.62
0.150	0.99	6.150	1.80	12.150	12.95	18.15	1.62
0.167	0.99	6.167	1.80	12.167	12.95	18.17	1.62
0.183	0.99	6.183	1.80	12.183	12.95	18.18	1.62
0.200	0.99	6.200	1.80	12.200	12.95	18.20	1.62
0.217	0.99	6.217	1.80	12.217	12.95	18.22	1.62
0.233	0.99	6.233	1.80	12.233	12.95	18.23	1.62
0.250	0.99	6.250	1.80	12.250	12.95	18.25	1.62
0.267	0.99	6.267	1.80	12.267	12.95	18.27	1.62
0.283	0.99	6.283	1.80	12.283	12.95	18.28	1.62
0.300	0.99	6.300	1.80	12.300	12.95	18.30	1.62
0.317	0.99	6.317	1.80	12.317	12.95	18.32	1.62
0.333	0.99	6.333	1.80	12.333	12.95	18.33	1.62
0.350	0.99	6.350	1.80	12.350	12.95	18.35	1.62
0.367	0.99	6.367	1.80	12.367	12.95	18.37	1.62
0.383	0.99	6.383	1.80	12.383	12.95	18.38	1.62
0.400	0.99	6.400	1.80	12.400	12.95	18.40	1.62
0.417	0.99	6.417	1.80	12.417	12.95	18.42	1.62
0.433	0.99	6.433	1.80	12.433	12.95	18.43	1.62
0.450	0.99	6.450	1.80	12.450	12.95	18.45	1.62
0.467	0.99	6.467	1.80	12.467	12.95	18.47	1.62
0.483	0.99	6.483	1.80	12.483	12.95	18.48	1.62
0.500	0.99	6.500	1.80	12.500	12.95	18.50	1.62
0.517	0.99	6.517	1.80	12.517	6.66	18.52	1.62
0.533	0.99	6.533	1.80	12.533	6.65	18.53	1.62
0.550	0.99	6.550	1.80	12.550	6.65	18.55	1.62
0.567	0.99	6.567	1.80	12.567	6.65	18.57	1.62
0.583	0.99	6.583	1.80	12.583	6.65	18.58	1.62
0.600	0.99	6.600	1.80	12.600	6.65	18.60	1.62
0.617	0.99	6.617	1.80	12.617	6.65	18.62	1.62
0.633	0.99	6.633	1.80	12.633	6.65	18.63	1.62
0.650	0.99	6.650	1.80	12.650	6.65	18.65	1.62
0.667	0.99	6.667	1.80	12.667	6.65	18.67	1.62
0.683	0.99	6.683	1.80	12.683	6.65	18.68	1.62
0.700	0.99	6.700	1.80	12.700	6.65	18.70	1.62
0.717	0.99	6.717	1.80	12.717	6.65	18.72	1.62
0.733	0.99	6.733	1.80	12.733	6.65	18.73	1.62
0.750	0.99	6.750	1.80	12.750	6.65	18.75	1.62
0.767	0.99	6.767	1.80	12.767	6.65	18.77	1.62
0.783	0.99	6.783	1.80	12.783	6.65	18.78	1.62
0.800	0.99	6.800	1.80	12.800	6.65	18.80	1.62
0.817	0.99	6.817	1.80	12.817	6.65	18.82	1.62
0.833	0.99	6.833	1.80	12.833	6.65	18.83	1.62
0.850	0.99	6.850	1.80	12.850	6.65	18.85	1.62

0.867	0.99	6.867	1.80	12.867	6.65	18.87	1.62
0.883	0.99	6.883	1.80	12.883	6.65	18.88	1.62
0.900	0.99	6.900	1.80	12.900	6.65	18.90	1.62
0.917	0.99	6.917	1.80	12.917	6.65	18.92	1.62
0.933	0.99	6.933	1.80	12.933	6.65	18.93	1.62
0.950	0.99	6.950	1.80	12.950	6.65	18.95	1.62
0.967	0.99	6.967	1.80	12.967	6.65	18.97	1.62
0.983	0.99	6.983	1.80	12.983	6.65	18.98	1.62
1.000	0.99	7.000	1.80	13.000	6.65	19.00	1.62
1.017	0.99	7.017	1.80	13.017	1.27	19.02	1.62
1.033	0.99	7.033	1.80	13.033	1.26	19.03	1.62
1.050	0.99	7.050	1.80	13.050	1.26	19.05	1.62
1.067	0.99	7.067	1.80	13.067	1.26	19.07	1.62
1.083	0.99	7.083	1.80	13.083	1.26	19.08	1.62
1.100	0.99	7.100	1.80	13.100	1.26	19.10	1.62
1.117	0.99	7.117	1.80	13.117	1.26	19.12	1.62
1.133	0.99	7.133	1.80	13.133	1.26	19.13	1.62
1.150	0.99	7.150	1.80	13.150	1.26	19.15	1.62
1.167	0.99	7.167	1.80	13.167	1.26	19.17	1.62
1.183	0.99	7.183	1.80	13.183	1.26	19.18	1.62
1.200	0.99	7.200	1.80	13.200	1.26	19.20	1.62
1.217	0.99	7.217	1.80	13.217	1.26	19.22	1.62
1.233	0.99	7.233	1.80	13.233	1.26	19.23	1.62
1.250	0.99	7.250	1.80	13.250	1.26	19.25	1.62
1.267	0.99	7.267	1.80	13.267	1.26	19.27	1.62
1.283	0.99	7.283	1.80	13.283	1.26	19.28	1.62
1.300	0.99	7.300	1.80	13.300	1.26	19.30	1.62
1.317	0.99	7.317	1.80	13.317	1.26	19.32	1.62
1.333	0.99	7.333	1.80	13.333	1.26	19.33	1.62
1.350	0.99	7.350	1.80	13.350	1.26	19.35	1.62
1.367	0.99	7.367	1.80	13.367	1.26	19.37	1.62
1.383	0.99	7.383	1.80	13.383	1.26	19.38	1.62
1.400	0.99	7.400	1.80	13.400	1.26	19.40	1.62
1.417	0.99	7.417	1.80	13.417	1.26	19.42	1.62
1.433	0.99	7.433	1.80	13.433	1.26	19.43	1.62
1.450	0.99	7.450	1.80	13.450	1.26	19.45	1.62
1.467	0.99	7.467	1.80	13.467	1.26	19.47	1.62
1.483	0.99	7.483	1.80	13.483	1.26	19.48	1.62
1.500	0.99	7.500	1.80	13.500	1.26	19.50	1.62
1.517	0.99	7.517	1.80	13.517	7.36	19.52	1.62
1.533	0.99	7.533	1.80	13.533	7.37	19.53	1.62
1.550	0.99	7.550	1.80	13.550	7.37	19.55	1.62
1.567	0.99	7.567	1.80	13.567	7.37	19.57	1.62
1.583	0.99	7.583	1.80	13.583	7.37	19.58	1.62
1.600	0.99	7.600	1.80	13.600	7.37	19.60	1.62
1.617	0.99	7.617	1.80	13.617	7.37	19.62	1.62
1.633	0.99	7.633	1.80	13.633	7.37	19.63	1.62
1.650	0.99	7.650	1.80	13.650	7.37	19.65	1.62
1.667	0.99	7.667	1.80	13.667	7.37	19.67	1.62

1.683	0.99	7.683	1.80	13.683	7.37	19.68	1.62
1.700	0.99	7.700	1.80	13.700	7.37	19.70	1.62
1.717	0.99	7.717	1.80	13.717	7.37	19.72	1.62
1.733	0.99	7.733	1.80	13.733	7.37	19.73	1.62
1.750	0.99	7.750	1.80	13.750	7.37	19.75	1.62
1.767	0.99	7.767	1.80	13.767	7.37	19.77	1.62
1.783	0.99	7.783	1.80	13.783	7.37	19.78	1.62
1.800	0.99	7.800	1.80	13.800	7.37	19.80	1.62
1.817	0.99	7.817	1.80	13.817	7.37	19.82	1.62
1.833	0.99	7.833	1.80	13.833	7.37	19.83	1.62
1.850	0.99	7.850	1.80	13.850	7.37	19.85	1.62
1.867	0.99	7.867	1.80	13.867	7.37	19.87	1.62
1.883	0.99	7.883	1.80	13.883	7.37	19.88	1.62
1.900	0.99	7.900	1.80	13.900	7.37	19.90	1.62
1.917	0.99	7.917	1.80	13.917	7.37	19.92	1.62
1.933	0.99	7.933	1.80	13.933	7.37	19.93	1.62
1.950	0.99	7.950	1.80	13.950	7.37	19.95	1.62
1.967	0.99	7.967	1.80	13.967	7.37	19.97	1.62
1.983	0.99	7.983	1.80	13.983	7.37	19.98	1.62
2.000	0.99	8.000	1.80	14.000	7.37	20.00	1.62
2.017	1.17	8.017	2.43	14.017	2.71	20.02	1.08
2.033	1.17	8.033	2.43	14.033	2.70	20.03	1.08
2.050	1.17	8.050	2.43	14.050	2.70	20.05	1.08
2.067	1.17	8.067	2.43	14.067	2.70	20.07	1.08
2.083	1.17	8.083	2.43	14.083	2.70	20.08	1.08
2.100	1.17	8.100	2.43	14.100	2.70	20.10	1.08
2.117	1.17	8.117	2.43	14.117	2.70	20.12	1.08
2.133	1.17	8.133	2.43	14.133	2.70	20.13	1.08
2.150	1.17	8.150	2.43	14.150	2.70	20.15	1.08
2.167	1.17	8.167	2.43	14.167	2.70	20.17	1.08
2.183	1.17	8.183	2.43	14.183	2.70	20.18	1.08
2.200	1.17	8.200	2.43	14.200	2.70	20.20	1.08
2.217	1.17	8.217	2.43	14.217	2.70	20.22	1.08
2.233	1.17	8.233	2.43	14.233	2.70	20.23	1.08
2.250	1.17	8.250	2.43	14.250	2.70	20.25	1.08
2.267	1.17	8.267	2.43	14.267	2.70	20.27	1.08
2.283	1.17	8.283	2.43	14.283	2.70	20.28	1.08
2.300	1.17	8.300	2.43	14.300	2.70	20.30	1.08
2.317	1.17	8.317	2.43	14.317	2.70	20.32	1.08
2.333	1.17	8.333	2.43	14.333	2.70	20.33	1.08
2.350	1.17	8.350	2.43	14.350	2.70	20.35	1.08
2.367	1.17	8.367	2.43	14.367	2.70	20.37	1.08
2.383	1.17	8.383	2.43	14.383	2.70	20.38	1.08
2.400	1.17	8.400	2.43	14.400	2.70	20.40	1.08
2.417	1.17	8.417	2.43	14.417	2.70	20.42	1.08
2.433	1.17	8.433	2.43	14.433	2.70	20.43	1.08
2.450	1.17	8.450	2.43	14.450	2.70	20.45	1.08
2.467	1.17	8.467	2.43	14.467	2.70	20.47	1.08
2.483	1.17	8.483	2.43	14.483	2.70	20.48	1.08

2.500	1.17	8.500	2.43	14.500	2.70	20.50	1.08
2.517	1.17	8.517	2.43	14.517	2.70	20.52	1.08
2.533	1.17	8.533	2.43	14.533	2.70	20.53	1.08
2.550	1.17	8.550	2.43	14.550	2.70	20.55	1.08
2.567	1.17	8.567	2.43	14.567	2.70	20.57	1.08
2.583	1.17	8.583	2.43	14.583	2.70	20.58	1.08
2.600	1.17	8.600	2.43	14.600	2.70	20.60	1.08
2.617	1.17	8.617	2.43	14.617	2.70	20.62	1.08
2.633	1.17	8.633	2.43	14.633	2.70	20.63	1.08
2.650	1.17	8.650	2.43	14.650	2.70	20.65	1.08
2.667	1.17	8.667	2.43	14.667	2.70	20.67	1.08
2.683	1.17	8.683	2.43	14.683	2.70	20.68	1.08
2.700	1.17	8.700	2.43	14.700	2.70	20.70	1.08
2.717	1.17	8.717	2.43	14.717	2.70	20.72	1.08
2.733	1.17	8.733	2.43	14.733	2.70	20.73	1.08
2.750	1.17	8.750	2.43	14.750	2.70	20.75	1.08
2.767	1.17	8.767	2.43	14.767	2.70	20.77	1.08
2.783	1.17	8.783	2.43	14.783	2.70	20.78	1.08
2.800	1.17	8.800	2.43	14.800	2.70	20.80	1.08
2.817	1.17	8.817	2.43	14.817	2.70	20.82	1.08
2.833	1.17	8.833	2.43	14.833	2.70	20.83	1.08
2.850	1.17	8.850	2.43	14.850	2.70	20.85	1.08
2.867	1.17	8.867	2.43	14.867	2.70	20.87	1.08
2.883	1.17	8.883	2.43	14.883	2.70	20.88	1.08
2.900	1.17	8.900	2.43	14.900	2.70	20.90	1.08
2.917	1.17	8.917	2.43	14.917	2.70	20.92	1.08
2.933	1.17	8.933	2.43	14.933	2.70	20.93	1.08
2.950	1.17	8.950	2.43	14.950	2.70	20.95	1.08
2.967	1.17	8.967	2.43	14.967	2.70	20.97	1.08
2.983	1.17	8.983	2.43	14.983	2.70	20.98	1.08
3.000	1.17	9.000	2.43	15.000	2.70	21.00	1.08
3.017	1.17	9.017	2.88	15.017	2.70	21.02	1.08
3.033	1.17	9.033	2.88	15.033	2.70	21.03	1.08
3.050	1.17	9.050	2.88	15.050	2.70	21.05	1.08
3.067	1.17	9.067	2.88	15.067	2.70	21.07	1.08
3.083	1.17	9.083	2.88	15.083	2.70	21.08	1.08
3.100	1.17	9.100	2.88	15.100	2.70	21.10	1.08
3.117	1.17	9.117	2.88	15.117	2.70	21.12	1.08
3.133	1.17	9.133	2.88	15.133	2.70	21.13	1.08
3.150	1.17	9.150	2.88	15.150	2.70	21.15	1.08
3.167	1.17	9.167	2.88	15.167	2.70	21.17	1.08
3.183	1.17	9.183	2.88	15.183	2.70	21.18	1.08
3.200	1.17	9.200	2.88	15.200	2.70	21.20	1.08
3.217	1.17	9.217	2.88	15.217	2.70	21.22	1.08
3.233	1.17	9.233	2.88	15.233	2.70	21.23	1.08
3.250	1.17	9.250	2.88	15.250	2.70	21.25	1.08
3.267	1.17	9.267	2.88	15.267	2.70	21.27	1.08
3.283	1.17	9.283	2.88	15.283	2.70	21.28	1.08
3.300	1.17	9.300	2.88	15.300	2.70	21.30	1.08

3.317	1.17	9.317	2.88	15.317	2.70	21.32	1.08
3.333	1.17	9.333	2.88	15.333	2.70	21.33	1.08
3.350	1.17	9.350	2.88	15.350	2.70	21.35	1.08
3.367	1.17	9.367	2.88	15.367	2.70	21.37	1.08
3.383	1.17	9.383	2.88	15.383	2.70	21.38	1.08
3.400	1.17	9.400	2.88	15.400	2.70	21.40	1.08
3.417	1.17	9.417	2.88	15.417	2.70	21.42	1.08
3.433	1.17	9.433	2.88	15.433	2.70	21.43	1.08
3.450	1.17	9.450	2.88	15.450	2.70	21.45	1.08
3.467	1.17	9.467	2.88	15.467	2.70	21.47	1.08
3.483	1.17	9.483	2.88	15.483	2.70	21.48	1.08
3.500	1.17	9.500	2.88	15.500	2.70	21.50	1.08
3.517	1.17	9.517	3.24	15.517	2.70	21.52	1.08
3.533	1.17	9.533	3.24	15.533	2.70	21.53	1.08
3.550	1.17	9.550	3.24	15.550	2.70	21.55	1.08
3.567	1.17	9.567	3.24	15.567	2.70	21.57	1.08
3.583	1.17	9.583	3.24	15.583	2.70	21.58	1.08
3.600	1.17	9.600	3.24	15.600	2.70	21.60	1.08
3.617	1.17	9.617	3.24	15.617	2.70	21.62	1.08
3.633	1.17	9.633	3.24	15.633	2.70	21.63	1.08
3.650	1.17	9.650	3.24	15.650	2.70	21.65	1.08
3.667	1.17	9.667	3.24	15.667	2.70	21.67	1.08
3.683	1.17	9.683	3.24	15.683	2.70	21.68	1.08
3.700	1.17	9.700	3.24	15.700	2.70	21.70	1.08
3.717	1.17	9.717	3.24	15.717	2.70	21.72	1.08
3.733	1.17	9.733	3.24	15.733	2.70	21.73	1.08
3.750	1.17	9.750	3.24	15.750	2.70	21.75	1.08
3.767	1.17	9.767	3.24	15.767	2.70	21.77	1.08
3.783	1.17	9.783	3.24	15.783	2.70	21.78	1.08
3.800	1.17	9.800	3.24	15.800	2.70	21.80	1.08
3.817	1.17	9.817	3.24	15.817	2.70	21.82	1.08
3.833	1.17	9.833	3.24	15.833	2.70	21.83	1.08
3.850	1.17	9.850	3.24	15.850	2.70	21.85	1.08
3.867	1.17	9.867	3.24	15.867	2.70	21.87	1.08
3.883	1.17	9.883	3.24	15.883	2.70	21.88	1.08
3.900	1.17	9.900	3.24	15.900	2.70	21.90	1.08
3.917	1.17	9.917	3.24	15.917	2.70	21.92	1.08
3.933	1.17	9.933	3.24	15.933	2.70	21.93	1.08
3.950	1.17	9.950	3.24	15.950	2.70	21.95	1.08
3.967	1.17	9.967	3.24	15.967	2.70	21.97	1.08
3.983	1.17	9.983	3.24	15.983	2.70	21.98	1.08
4.000	1.17	10.000	3.24	16.000	2.70	22.00	1.08
4.017	1.44	10.017	4.14	16.017	1.62	22.02	1.08
4.033	1.44	10.033	4.14	16.033	1.62	22.03	1.08
4.050	1.44	10.050	4.14	16.050	1.62	22.05	1.08
4.067	1.44	10.067	4.14	16.067	1.62	22.07	1.08
4.083	1.44	10.083	4.14	16.083	1.62	22.08	1.08
4.100	1.44	10.100	4.14	16.100	1.62	22.10	1.08
4.117	1.44	10.117	4.14	16.117	1.62	22.12	1.08

4.133	1.44	10.133	4.14	16.133	1.62	22.13	1.08
4.150	1.44	10.150	4.14	16.150	1.62	22.15	1.08
4.167	1.44	10.167	4.14	16.167	1.62	22.17	1.08
4.183	1.44	10.183	4.14	16.183	1.62	22.18	1.08
4.200	1.44	10.200	4.14	16.200	1.62	22.20	1.08
4.217	1.44	10.217	4.14	16.217	1.62	22.22	1.08
4.233	1.44	10.233	4.14	16.233	1.62	22.23	1.08
4.250	1.44	10.250	4.14	16.250	1.62	22.25	1.08
4.267	1.44	10.267	4.14	16.267	1.62	22.27	1.08
4.283	1.44	10.283	4.14	16.283	1.62	22.28	1.08
4.300	1.44	10.300	4.14	16.300	1.62	22.30	1.08
4.317	1.44	10.317	4.14	16.317	1.62	22.32	1.08
4.333	1.44	10.333	4.14	16.333	1.62	22.33	1.08
4.350	1.44	10.350	4.14	16.350	1.62	22.35	1.08
4.367	1.44	10.367	4.14	16.367	1.62	22.37	1.08
4.383	1.44	10.383	4.14	16.383	1.62	22.38	1.08
4.400	1.44	10.400	4.14	16.400	1.62	22.40	1.08
4.417	1.44	10.417	4.14	16.417	1.62	22.42	1.08
4.433	1.44	10.433	4.14	16.433	1.62	22.43	1.08
4.450	1.44	10.450	4.14	16.450	1.62	22.45	1.08
4.467	1.44	10.467	4.14	16.467	1.62	22.47	1.08
4.483	1.44	10.483	4.14	16.483	1.62	22.48	1.08
4.500	1.44	10.500	4.14	16.500	1.62	22.50	1.08
4.517	1.44	10.517	5.57	16.517	1.62	22.52	1.08
4.533	1.44	10.533	5.57	16.533	1.62	22.53	1.08
4.550	1.44	10.550	5.57	16.550	1.62	22.55	1.08
4.567	1.44	10.567	5.57	16.567	1.62	22.57	1.08
4.583	1.44	10.583	5.57	16.583	1.62	22.58	1.08
4.600	1.44	10.600	5.57	16.600	1.62	22.60	1.08
4.617	1.44	10.617	5.57	16.617	1.62	22.62	1.08
4.633	1.44	10.633	5.57	16.633	1.62	22.63	1.08
4.650	1.44	10.650	5.57	16.650	1.62	22.65	1.08
4.667	1.44	10.667	5.57	16.667	1.62	22.67	1.08
4.683	1.44	10.683	5.57	16.683	1.62	22.68	1.08
4.700	1.44	10.700	5.57	16.700	1.62	22.70	1.08
4.717	1.44	10.717	5.57	16.717	1.62	22.72	1.08
4.733	1.44	10.733	5.57	16.733	1.62	22.73	1.08
4.750	1.44	10.750	5.57	16.750	1.62	22.75	1.08
4.767	1.44	10.767	5.57	16.767	1.62	22.77	1.08
4.783	1.44	10.783	5.57	16.783	1.62	22.78	1.08
4.800	1.44	10.800	5.57	16.800	1.62	22.80	1.08
4.817	1.44	10.817	5.57	16.817	1.62	22.82	1.08
4.833	1.44	10.833	5.57	16.833	1.62	22.83	1.08
4.850	1.44	10.850	5.57	16.850	1.62	22.85	1.08
4.867	1.44	10.867	5.57	16.867	1.62	22.87	1.08
4.883	1.44	10.883	5.57	16.883	1.62	22.88	1.08
4.900	1.44	10.900	5.57	16.900	1.62	22.90	1.08
4.917	1.44	10.917	5.57	16.917	1.62	22.92	1.08
4.933	1.44	10.933	5.57	16.933	1.62	22.93	1.08

4.950	1.44	10.950	5.57	16.950	1.62	22.95	1.08
4.967	1.44	10.967	5.57	16.967	1.62	22.97	1.08
4.983	1.44	10.983	5.57	16.983	1.62	22.98	1.08
5.000	1.44	11.000	5.57	17.000	1.62	23.00	1.08
5.017	1.44	11.017	8.63	17.017	1.62	23.02	1.08
5.033	1.44	11.033	8.63	17.033	1.62	23.03	1.08
5.050	1.44	11.050	8.63	17.050	1.62	23.05	1.08
5.067	1.44	11.067	8.63	17.067	1.62	23.07	1.08
5.083	1.44	11.083	8.63	17.083	1.62	23.08	1.08
5.100	1.44	11.100	8.63	17.100	1.62	23.10	1.08
5.117	1.44	11.117	8.63	17.117	1.62	23.12	1.08
5.133	1.44	11.133	8.63	17.133	1.62	23.13	1.08
5.150	1.44	11.150	8.63	17.150	1.62	23.15	1.08
5.167	1.44	11.167	8.63	17.167	1.62	23.17	1.08
5.183	1.44	11.183	8.63	17.183	1.62	23.18	1.08
5.200	1.44	11.200	8.63	17.200	1.62	23.20	1.08
5.217	1.44	11.217	8.63	17.217	1.62	23.22	1.08
5.233	1.44	11.233	8.63	17.233	1.62	23.23	1.08
5.250	1.44	11.250	8.63	17.250	1.62	23.25	1.08
5.267	1.44	11.267	8.63	17.267	1.62	23.27	1.08
5.283	1.44	11.283	8.63	17.283	1.62	23.28	1.08
5.300	1.44	11.300	8.63	17.300	1.62	23.30	1.08
5.317	1.44	11.317	8.63	17.317	1.62	23.32	1.08
5.333	1.44	11.333	8.63	17.333	1.62	23.33	1.08
5.350	1.44	11.350	8.63	17.350	1.62	23.35	1.08
5.367	1.44	11.367	8.63	17.367	1.62	23.37	1.08
5.383	1.44	11.383	8.63	17.383	1.62	23.38	1.08
5.400	1.44	11.400	8.63	17.400	1.62	23.40	1.08
5.417	1.44	11.417	8.63	17.417	1.62	23.42	1.08
5.433	1.44	11.433	8.63	17.433	1.62	23.43	1.08
5.450	1.44	11.450	8.63	17.450	1.62	23.45	1.08
5.467	1.44	11.467	8.63	17.467	1.62	23.47	1.08
5.483	1.44	11.483	8.63	17.483	1.62	23.48	1.08
5.500	1.44	11.500	8.63	17.500	1.62	23.50	1.08
5.517	1.44	11.517	37.39	17.517	1.62	23.52	1.08
5.533	1.44	11.533	37.40	17.533	1.62	23.53	1.08
5.550	1.44	11.550	37.40	17.550	1.62	23.55	1.08
5.567	1.44	11.567	37.40	17.567	1.62	23.57	1.08
5.583	1.44	11.583	37.40	17.583	1.62	23.58	1.08
5.600	1.44	11.600	37.40	17.600	1.62	23.60	1.08
5.617	1.44	11.617	37.40	17.617	1.62	23.62	1.08
5.633	1.44	11.633	37.40	17.633	1.62	23.63	1.08
5.650	1.44	11.650	37.40	17.650	1.62	23.65	1.08
5.667	1.44	11.667	37.40	17.667	1.62	23.67	1.08
5.683	1.44	11.683	37.40	17.683	1.62	23.68	1.08
5.700	1.44	11.700	37.40	17.700	1.62	23.70	1.08
5.717	1.44	11.717	37.40	17.717	1.62	23.72	1.08
5.733	1.44	11.733	37.40	17.733	1.62	23.73	1.08
5.750	1.44	11.750	37.40	17.750	1.62	23.75	1.08

5.767	1.44	11.767	99.22	17.767	1.62	23.77	1.08
5.783	1.44	11.783	99.25	17.783	1.62	23.78	1.08
5.800	1.44	11.800	99.25	17.800	1.62	23.80	1.08
5.817	1.44	11.817	99.25	17.817	1.62	23.82	1.08
5.833	1.44	11.833	99.25	17.833	1.62	23.83	1.08
5.850	1.44	11.850	99.25	17.850	1.62	23.85	1.08
5.867	1.44	11.867	99.25	17.867	1.62	23.87	1.08
5.883	1.44	11.883	99.25	17.883	1.62	23.88	1.08
5.900	1.44	11.900	99.25	17.900	1.62	23.90	1.08
5.917	1.44	11.917	99.25	17.917	1.62	23.92	1.08
5.933	1.44	11.933	99.25	17.933	1.62	23.93	1.08
5.950	1.44	11.950	99.25	17.950	1.62	23.95	1.08
5.967	1.44	11.967	99.25	17.967	1.62	23.97	1.08
5.983	1.44	11.983	99.25	17.983	1.62	23.98	1.08
6.000	1.44	12.000	99.25	18.000	1.62	24.00	1.08

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.052 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 24.211
TOTAL RAINFALL (mm)= 89.901
RUNOFF COEFFICIENT = 0.269

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

CALIB		
STANDHYD (0201)	Area (ha)= 1.03	
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00	Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		99.25	81.59	
over (min)		5.00	3.00	
Storage Coeff. (min)=		1.86 (ii)	2.51 (ii)	
Unit Hyd. Tpeak (min)=		5.00	3.00	
Unit Hyd. peak (cms)=		0.39	0.42	
				TOTALS
PEAK FLOW	(cms)=	0.09	0.12	0.204 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	88.90	43.40	57.05
TOTAL RAINFALL	(mm)=	89.90	89.90	89.90

RUNOFF COEFFICIENT =	0.99	0.48	0.63

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0002):	0.95	0.052	12.20	24.21
	+ ID2= 2 (0201):	1.03	0.204	12.00	57.05
	ID = 3 (0006):	1.98	0.238	12.00	44.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0190	0.0530
	0.0120	0.0080	0.0200	0.0720
	0.0150	0.0200	0.0220	0.0950
	0.0170	0.0350	0.6940	0.1190

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0006)	1.980	0.238	12.00	44.22
OUTFLOW: ID= 1 (0011)	1.980	0.018	13.08	44.14

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.50
TIME SHIFT OF PEAK FLOW (min)= 65.00
MAXIMUM STORAGE USED (ha.m.)= 0.0427

CALIB		
NASHYD (0202)	Area (ha)= 0.53	Curve Number (CN)= 54.0
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.67	

```
     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.012 (i)
     TIME TO PEAK    (hrs)=  12.650
     RUNOFF VOLUME    (mm)=  16.291
     TOTAL RAINFALL   (mm)=  89.901
     RUNOFF COEFFICIENT   =   0.181

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      99.25        77.76
                 over (min)       5.00         8.00
     Storage Coeff.  (min)=       1.45 (ii)    7.70 (ii)
     Unit Hyd. Tpeak (min)=       5.00         8.00
     Unit Hyd. peak  (cms)=       0.42         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.05          0.060 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.03          12.03
     RUNOFF VOLUME    (mm)=      88.90        42.65          44.95
     TOTAL RAINFALL   (mm)=      89.90        89.90          89.90
     RUNOFF COEFFICIENT   =       0.99         0.47           0.50

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
```



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--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      99.25       113.97
                 over (min)       5.00         3.00
     Storage Coeff.  (min)=       1.57 (ii)    2.17 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.41         0.46
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.05         0.08          0.125 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=      88.90        48.77          60.81
     TOTAL RAINFALL   (mm)=      89.90        89.90          89.90
     RUNOFF COEFFICIENT   =       0.99         0.54           0.68


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.060    12.03    44.95
     + ID2= 2 (  0203):     0.59   0.125    12.00    60.81
       ================================================
       ID = 3 (  0009):     1.04   0.184    12.00    53.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0390     0.0320
                          0.0090     0.0060   |   0.0430     0.0380
                          0.0230     0.0130   |   0.0470     0.0450
```

```
                        0.0300     0.0190   |   0.0500      0.0510
                        0.0350     0.0260   |   0.0000      0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040     0.184     12.00      53.95
   OUTFLOW: ID= 1 (  0012)      1.040     0.033     12.37      53.79

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 17.70
                   TIME SHIFT OF PEAK FLOW         (min)= 22.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0225

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.033    12.37    53.79
     + ID2= 2 (  0202):     0.53   0.012    12.65    16.29
       ================================================
       ID = 3 (  0013):     1.57   0.044    12.57    42.90

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat
```



```
  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\2ba
0fabb-02ff-43e9-b1e2-b00d59e6fd89\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\2ba
0fabb-02ff-43e9-b1e2-b00d59e6fd89\sce


DATE: 11-25-2019                          TIME: 10:50:34

USER:


COMMENTS: _____________________________________________


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  ***********************************************
  ** SIMULATION : 04. 25 yr - 24 hr -SCS Type I **
  ***********************************************

--------------------
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              c4b20de3-13ae-4582-bae8-d7364cf8a3a5\88a1cfba
| Ptotal=107.50 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                       Duration of storm    = 24.00 hrs
                       Mass curve time step = 15.00 min

                TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                 hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
                0.25     1.18 |  6.25     2.15 | 12.25    15.48 | 18.25     1.93
                0.50     1.18 |  6.50     2.15 | 12.50    15.48 | 18.50     1.94
                0.75     1.18 |  6.75     2.15 | 12.75     7.95 | 18.75     1.93
                1.00     1.18 |  7.00     2.15 | 13.00     7.96 | 19.00     1.94
                1.25     1.18 |  7.25     2.15 | 13.25     1.50 | 19.25     1.93
                1.50     1.18 |  7.50     2.15 | 13.50     1.50 | 19.50     1.94
                1.75     1.18 |  7.75     2.15 | 13.75     8.82 | 19.75     1.93
                2.00     1.18 |  8.00     2.15 | 14.00     8.82 | 20.00     1.94
                2.25     1.40 |  8.25     2.90 | 14.25     3.22 | 20.25     1.29
                2.50     1.40 |  8.50     2.90 | 14.50     3.22 | 20.50     1.29
                2.75     1.40 |  8.75     2.90 | 14.75     3.22 | 20.75     1.29
                3.00     1.40 |  9.00     2.90 | 15.00     3.23 | 21.00     1.29
                3.25     1.40 |  9.25     3.44 | 15.25     3.22 | 21.25     1.29
                3.50     1.40 |  9.50     3.44 | 15.50     3.22 | 21.50     1.29
                3.75     1.40 |  9.75     3.87 | 15.75     3.22 | 21.75     1.29
```

4.00	1.40	10.00	3.87	16.00	3.22	22.00	1.29
4.25	1.72	10.25	4.95	16.25	1.94	22.25	1.29
4.50	1.72	10.50	4.95	16.50	1.93	22.50	1.29
4.75	1.72	10.75	6.67	16.75	1.93	22.75	1.29
5.00	1.72	11.00	6.66	17.00	1.94	23.00	1.29
5.25	1.72	11.25	10.32	17.25	1.93	23.25	1.29
5.50	1.72	11.50	10.32	17.50	1.94	23.50	1.29
5.75	1.72	11.75	44.72	17.75	1.93	23.75	1.29
6.00	1.72	12.00	118.68	18.00	1.94	24.00	1.29

CALIB			
NASHYD (0002)	Area (ha)= 0.95	Curve Number (CN)= 64.0	
ID= 1 DT= 1.0 min	Ia (mm)= 7.21	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.31		

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	1.18	6.017	2.15	12.017	15.55	18.02	1.93
0.033	1.18	6.033	2.15	12.033	15.48	18.03	1.93
0.050	1.18	6.050	2.15	12.050	15.48	18.05	1.93
0.067	1.18	6.067	2.15	12.067	15.48	18.07	1.93
0.083	1.18	6.083	2.15	12.083	15.48	18.08	1.93
0.100	1.18	6.100	2.15	12.100	15.48	18.10	1.93
0.117	1.18	6.117	2.15	12.117	15.48	18.12	1.93
0.133	1.18	6.133	2.15	12.133	15.48	18.13	1.93
0.150	1.18	6.150	2.15	12.150	15.48	18.15	1.93
0.167	1.18	6.167	2.15	12.167	15.48	18.17	1.93
0.183	1.18	6.183	2.15	12.183	15.48	18.18	1.93
0.200	1.18	6.200	2.15	12.200	15.48	18.20	1.93
0.217	1.18	6.217	2.15	12.217	15.48	18.22	1.93
0.233	1.18	6.233	2.15	12.233	15.48	18.23	1.93
0.250	1.18	6.250	2.15	12.250	15.48	18.25	1.93
0.267	1.18	6.267	2.15	12.267	15.48	18.27	1.93
0.283	1.18	6.283	2.15	12.283	15.48	18.28	1.94
0.300	1.18	6.300	2.15	12.300	15.48	18.30	1.94
0.317	1.18	6.317	2.15	12.317	15.48	18.32	1.94
0.333	1.18	6.333	2.15	12.333	15.48	18.33	1.94
0.350	1.18	6.350	2.15	12.350	15.48	18.35	1.94
0.367	1.18	6.367	2.15	12.367	15.48	18.37	1.94
0.383	1.18	6.383	2.15	12.383	15.48	18.38	1.94
0.400	1.18	6.400	2.15	12.400	15.48	18.40	1.94
0.417	1.18	6.417	2.15	12.417	15.48	18.42	1.94
0.433	1.18	6.433	2.15	12.433	15.48	18.43	1.94

0.450	1.18	6.450	2.15	12.450	15.48	18.45	1.94
0.467	1.18	6.467	2.15	12.467	15.48	18.47	1.94
0.483	1.18	6.483	2.15	12.483	15.48	18.48	1.94
0.500	1.18	6.500	2.15	12.500	15.48	18.50	1.94
0.517	1.18	6.517	2.15	12.517	7.96	18.52	1.93
0.533	1.18	6.533	2.15	12.533	7.95	18.53	1.93
0.550	1.18	6.550	2.15	12.550	7.95	18.55	1.93
0.567	1.18	6.567	2.15	12.567	7.95	18.57	1.93
0.583	1.18	6.583	2.15	12.583	7.95	18.58	1.93
0.600	1.18	6.600	2.15	12.600	7.95	18.60	1.93
0.617	1.18	6.617	2.15	12.617	7.95	18.62	1.93
0.633	1.18	6.633	2.15	12.633	7.95	18.63	1.93
0.650	1.18	6.650	2.15	12.650	7.95	18.65	1.93
0.667	1.18	6.667	2.15	12.667	7.95	18.67	1.93
0.683	1.18	6.683	2.15	12.683	7.95	18.68	1.93
0.700	1.18	6.700	2.15	12.700	7.95	18.70	1.93
0.717	1.18	6.717	2.15	12.717	7.95	18.72	1.93
0.733	1.18	6.733	2.15	12.733	7.95	18.73	1.93
0.750	1.18	6.750	2.15	12.750	7.95	18.75	1.93
0.767	1.18	6.767	2.15	12.767	7.95	18.77	1.93
0.783	1.18	6.783	2.15	12.783	7.96	18.78	1.94
0.800	1.18	6.800	2.15	12.800	7.96	18.80	1.94
0.817	1.18	6.817	2.15	12.817	7.96	18.82	1.94
0.833	1.18	6.833	2.15	12.833	7.96	18.83	1.94
0.850	1.18	6.850	2.15	12.850	7.96	18.85	1.94
0.867	1.18	6.867	2.15	12.867	7.96	18.87	1.94
0.883	1.18	6.883	2.15	12.883	7.96	18.88	1.94
0.900	1.18	6.900	2.15	12.900	7.96	18.90	1.94
0.917	1.18	6.917	2.15	12.917	7.96	18.92	1.94
0.933	1.18	6.933	2.15	12.933	7.96	18.93	1.94
0.950	1.18	6.950	2.15	12.950	7.96	18.95	1.94
0.967	1.18	6.967	2.15	12.967	7.96	18.97	1.94
0.983	1.18	6.983	2.15	12.983	7.96	18.98	1.94
1.000	1.18	7.000	2.15	13.000	7.96	19.00	1.94
1.017	1.18	7.017	2.15	13.017	1.52	19.02	1.93
1.033	1.18	7.033	2.15	13.033	1.50	19.03	1.93
1.050	1.18	7.050	2.15	13.050	1.50	19.05	1.93
1.067	1.18	7.067	2.15	13.067	1.50	19.07	1.93
1.083	1.18	7.083	2.15	13.083	1.50	19.08	1.93
1.100	1.18	7.100	2.15	13.100	1.50	19.10	1.93
1.117	1.18	7.117	2.15	13.117	1.50	19.12	1.93
1.133	1.18	7.133	2.15	13.133	1.50	19.13	1.93
1.150	1.18	7.150	2.15	13.150	1.50	19.15	1.93
1.167	1.18	7.167	2.15	13.167	1.50	19.17	1.93
1.183	1.18	7.183	2.15	13.183	1.50	19.18	1.93
1.200	1.18	7.200	2.15	13.200	1.50	19.20	1.93
1.217	1.18	7.217	2.15	13.217	1.50	19.22	1.93
1.233	1.18	7.233	2.15	13.233	1.50	19.23	1.93
1.250	1.18	7.250	2.15	13.250	1.50	19.25	1.93

1.267	1.18	7.267	2.15	13.267	1.50	19.27	1.93
1.283	1.18	7.283	2.15	13.283	1.50	19.28	1.94
1.300	1.18	7.300	2.15	13.300	1.50	19.30	1.94
1.317	1.18	7.317	2.15	13.317	1.50	19.32	1.94
1.333	1.18	7.333	2.15	13.333	1.50	19.33	1.94
1.350	1.18	7.350	2.15	13.350	1.50	19.35	1.94
1.367	1.18	7.367	2.15	13.367	1.50	19.37	1.94
1.383	1.18	7.383	2.15	13.383	1.50	19.38	1.94
1.400	1.18	7.400	2.15	13.400	1.50	19.40	1.94
1.417	1.18	7.417	2.15	13.417	1.50	19.42	1.94
1.433	1.18	7.433	2.15	13.433	1.50	19.43	1.94
1.450	1.18	7.450	2.15	13.450	1.50	19.45	1.94
1.467	1.18	7.467	2.15	13.467	1.50	19.47	1.94
1.483	1.18	7.483	2.15	13.483	1.50	19.48	1.94
1.500	1.18	7.500	2.15	13.500	1.50	19.50	1.94
1.517	1.18	7.517	2.15	13.517	8.80	19.52	1.93
1.533	1.18	7.533	2.15	13.533	8.82	19.53	1.93
1.550	1.18	7.550	2.15	13.550	8.82	19.55	1.93
1.567	1.18	7.567	2.15	13.567	8.82	19.57	1.93
1.583	1.18	7.583	2.15	13.583	8.82	19.58	1.93
1.600	1.18	7.600	2.15	13.600	8.82	19.60	1.93
1.617	1.18	7.617	2.15	13.617	8.82	19.62	1.93
1.633	1.18	7.633	2.15	13.633	8.82	19.63	1.93
1.650	1.18	7.650	2.15	13.650	8.82	19.65	1.93
1.667	1.18	7.667	2.15	13.667	8.82	19.67	1.93
1.683	1.18	7.683	2.15	13.683	8.82	19.68	1.93
1.700	1.18	7.700	2.15	13.700	8.82	19.70	1.93
1.717	1.18	7.717	2.15	13.717	8.82	19.72	1.93
1.733	1.18	7.733	2.15	13.733	8.82	19.73	1.93
1.750	1.18	7.750	2.15	13.750	8.82	19.75	1.93
1.767	1.18	7.767	2.15	13.767	8.81	19.77	1.93
1.783	1.18	7.783	2.15	13.783	8.82	19.78	1.94
1.800	1.18	7.800	2.15	13.800	8.82	19.80	1.94
1.817	1.18	7.817	2.15	13.817	8.82	19.82	1.94
1.833	1.18	7.833	2.15	13.833	8.82	19.83	1.94
1.850	1.18	7.850	2.15	13.850	8.82	19.85	1.94
1.867	1.18	7.867	2.15	13.867	8.82	19.87	1.94
1.883	1.18	7.883	2.15	13.883	8.82	19.88	1.94
1.900	1.18	7.900	2.15	13.900	8.82	19.90	1.94
1.917	1.18	7.917	2.15	13.917	8.82	19.92	1.94
1.933	1.18	7.933	2.15	13.933	8.82	19.93	1.94
1.950	1.18	7.950	2.15	13.950	8.82	19.95	1.94
1.967	1.18	7.967	2.15	13.967	8.82	19.97	1.94
1.983	1.18	7.983	2.15	13.983	8.82	19.98	1.94
2.000	1.18	8.000	2.15	14.000	8.82	20.00	1.94
2.017	1.40	8.017	2.90	14.017	3.24	20.02	1.30
2.033	1.40	8.033	2.90	14.033	3.22	20.03	1.29
2.050	1.40	8.050	2.90	14.050	3.22	20.05	1.29
2.067	1.40	8.067	2.90	14.067	3.22	20.07	1.29

2.083	1.40	8.083	2.90	14.083	3.22	20.08	1.29
2.100	1.40	8.100	2.90	14.100	3.22	20.10	1.29
2.117	1.40	8.117	2.90	14.117	3.22	20.12	1.29
2.133	1.40	8.133	2.90	14.133	3.22	20.13	1.29
2.150	1.40	8.150	2.90	14.150	3.22	20.15	1.29
2.167	1.40	8.167	2.90	14.167	3.22	20.17	1.29
2.183	1.40	8.183	2.90	14.183	3.22	20.18	1.29
2.200	1.40	8.200	2.90	14.200	3.22	20.20	1.29
2.217	1.40	8.217	2.90	14.217	3.22	20.22	1.29
2.233	1.40	8.233	2.90	14.233	3.22	20.23	1.29
2.250	1.40	8.250	2.90	14.250	3.22	20.25	1.29
2.267	1.40	8.267	2.90	14.267	3.22	20.27	1.29
2.283	1.40	8.283	2.90	14.283	3.22	20.28	1.29
2.300	1.40	8.300	2.90	14.300	3.22	20.30	1.29
2.317	1.40	8.317	2.90	14.317	3.22	20.32	1.29
2.333	1.40	8.333	2.90	14.333	3.22	20.33	1.29
2.350	1.40	8.350	2.90	14.350	3.22	20.35	1.29
2.367	1.40	8.367	2.90	14.367	3.22	20.37	1.29
2.383	1.40	8.383	2.90	14.383	3.22	20.38	1.29
2.400	1.40	8.400	2.90	14.400	3.22	20.40	1.29
2.417	1.40	8.417	2.90	14.417	3.22	20.42	1.29
2.433	1.40	8.433	2.90	14.433	3.22	20.43	1.29
2.450	1.40	8.450	2.90	14.450	3.22	20.45	1.29
2.467	1.40	8.467	2.90	14.467	3.22	20.47	1.29
2.483	1.40	8.483	2.90	14.483	3.22	20.48	1.29
2.500	1.40	8.500	2.90	14.500	3.22	20.50	1.29
2.517	1.40	8.517	2.90	14.517	3.22	20.52	1.29
2.533	1.40	8.533	2.90	14.533	3.22	20.53	1.29
2.550	1.40	8.550	2.90	14.550	3.22	20.55	1.29
2.567	1.40	8.567	2.90	14.567	3.22	20.57	1.29
2.583	1.40	8.583	2.90	14.583	3.22	20.58	1.29
2.600	1.40	8.600	2.90	14.600	3.22	20.60	1.29
2.617	1.40	8.617	2.90	14.617	3.22	20.62	1.29
2.633	1.40	8.633	2.90	14.633	3.22	20.63	1.29
2.650	1.40	8.650	2.90	14.650	3.22	20.65	1.29
2.667	1.40	8.667	2.90	14.667	3.22	20.67	1.29
2.683	1.40	8.683	2.90	14.683	3.22	20.68	1.29
2.700	1.40	8.700	2.90	14.700	3.22	20.70	1.29
2.717	1.40	8.717	2.90	14.717	3.22	20.72	1.29
2.733	1.40	8.733	2.90	14.733	3.22	20.73	1.29
2.750	1.40	8.750	2.90	14.750	3.22	20.75	1.29
2.767	1.40	8.767	2.90	14.767	3.22	20.77	1.29
2.783	1.40	8.783	2.90	14.783	3.23	20.78	1.29
2.800	1.40	8.800	2.90	14.800	3.23	20.80	1.29
2.817	1.40	8.817	2.90	14.817	3.23	20.82	1.29
2.833	1.40	8.833	2.90	14.833	3.23	20.83	1.29
2.850	1.40	8.850	2.90	14.850	3.23	20.85	1.29
2.867	1.40	8.867	2.90	14.867	3.23	20.87	1.29
2.883	1.40	8.883	2.90	14.883	3.23	20.88	1.29

2.900	1.40	8.900	2.90	14.900	3.23	20.90	1.29
2.917	1.40	8.917	2.90	14.917	3.23	20.92	1.29
2.933	1.40	8.933	2.90	14.933	3.23	20.93	1.29
2.950	1.40	8.950	2.90	14.950	3.23	20.95	1.29
2.967	1.40	8.967	2.90	14.967	3.23	20.97	1.29
2.983	1.40	8.983	2.90	14.983	3.23	20.98	1.29
3.000	1.40	9.000	2.90	15.000	3.23	21.00	1.29
3.017	1.40	9.017	3.44	15.017	3.22	21.02	1.29
3.033	1.40	9.033	3.44	15.033	3.22	21.03	1.29
3.050	1.40	9.050	3.44	15.050	3.22	21.05	1.29
3.067	1.40	9.067	3.44	15.067	3.22	21.07	1.29
3.083	1.40	9.083	3.44	15.083	3.22	21.08	1.29
3.100	1.40	9.100	3.44	15.100	3.22	21.10	1.29
3.117	1.40	9.117	3.44	15.117	3.22	21.12	1.29
3.133	1.40	9.133	3.44	15.133	3.22	21.13	1.29
3.150	1.40	9.150	3.44	15.150	3.22	21.15	1.29
3.167	1.40	9.167	3.44	15.167	3.22	21.17	1.29
3.183	1.40	9.183	3.44	15.183	3.22	21.18	1.29
3.200	1.40	9.200	3.44	15.200	3.22	21.20	1.29
3.217	1.40	9.217	3.44	15.217	3.22	21.22	1.29
3.233	1.40	9.233	3.44	15.233	3.22	21.23	1.29
3.250	1.40	9.250	3.44	15.250	3.22	21.25	1.29
3.267	1.40	9.267	3.44	15.267	3.22	21.27	1.29
3.283	1.40	9.283	3.44	15.283	3.22	21.28	1.29
3.300	1.40	9.300	3.44	15.300	3.22	21.30	1.29
3.317	1.40	9.317	3.44	15.317	3.22	21.32	1.29
3.333	1.40	9.333	3.44	15.333	3.22	21.33	1.29
3.350	1.40	9.350	3.44	15.350	3.22	21.35	1.29
3.367	1.40	9.367	3.44	15.367	3.22	21.37	1.29
3.383	1.40	9.383	3.44	15.383	3.22	21.38	1.29
3.400	1.40	9.400	3.44	15.400	3.22	21.40	1.29
3.417	1.40	9.417	3.44	15.417	3.22	21.42	1.29
3.433	1.40	9.433	3.44	15.433	3.22	21.43	1.29
3.450	1.40	9.450	3.44	15.450	3.22	21.45	1.29
3.467	1.40	9.467	3.44	15.467	3.22	21.47	1.29
3.483	1.40	9.483	3.44	15.483	3.22	21.48	1.29
3.500	1.40	9.500	3.44	15.500	3.22	21.50	1.29
3.517	1.40	9.517	3.87	15.517	3.22	21.52	1.29
3.533	1.40	9.533	3.87	15.533	3.22	21.53	1.29
3.550	1.40	9.550	3.87	15.550	3.22	21.55	1.29
3.567	1.40	9.567	3.87	15.567	3.22	21.57	1.29
3.583	1.40	9.583	3.87	15.583	3.22	21.58	1.29
3.600	1.40	9.600	3.87	15.600	3.22	21.60	1.29
3.617	1.40	9.617	3.87	15.617	3.22	21.62	1.29
3.633	1.40	9.633	3.87	15.633	3.22	21.63	1.29
3.650	1.40	9.650	3.87	15.650	3.22	21.65	1.29
3.667	1.40	9.667	3.87	15.667	3.22	21.67	1.29
3.683	1.40	9.683	3.87	15.683	3.22	21.68	1.29
3.700	1.40	9.700	3.87	15.700	3.22	21.70	1.29

3.717	1.40	9.717	3.87	15.717	3.22	21.72	1.29
3.733	1.40	9.733	3.87	15.733	3.22	21.73	1.29
3.750	1.40	9.750	3.87	15.750	3.22	21.75	1.29
3.767	1.40	9.767	3.87	15.767	3.22	21.77	1.29
3.783	1.40	9.783	3.87	15.783	3.22	21.78	1.29
3.800	1.40	9.800	3.87	15.800	3.22	21.80	1.29
3.817	1.40	9.817	3.87	15.817	3.22	21.82	1.29
3.833	1.40	9.833	3.87	15.833	3.22	21.83	1.29
3.850	1.40	9.850	3.87	15.850	3.22	21.85	1.29
3.867	1.40	9.867	3.87	15.867	3.22	21.87	1.29
3.883	1.40	9.883	3.87	15.883	3.22	21.88	1.29
3.900	1.40	9.900	3.87	15.900	3.22	21.90	1.29
3.917	1.40	9.917	3.87	15.917	3.22	21.92	1.29
3.933	1.40	9.933	3.87	15.933	3.22	21.93	1.29
3.950	1.40	9.950	3.87	15.950	3.22	21.95	1.29
3.967	1.40	9.967	3.87	15.967	3.22	21.97	1.29
3.983	1.40	9.983	3.87	15.983	3.22	21.98	1.29
4.000	1.40	10.000	3.87	16.000	3.22	22.00	1.29
4.017	1.72	10.017	4.95	16.017	1.94	22.02	1.29
4.033	1.72	10.033	4.95	16.033	1.94	22.03	1.29
4.050	1.72	10.050	4.95	16.050	1.94	22.05	1.29
4.067	1.72	10.067	4.95	16.067	1.94	22.07	1.29
4.083	1.72	10.083	4.95	16.083	1.94	22.08	1.29
4.100	1.72	10.100	4.95	16.100	1.94	22.10	1.29
4.117	1.72	10.117	4.95	16.117	1.94	22.12	1.29
4.133	1.72	10.133	4.95	16.133	1.94	22.13	1.29
4.150	1.72	10.150	4.95	16.150	1.94	22.15	1.29
4.167	1.72	10.167	4.95	16.167	1.94	22.17	1.29
4.183	1.72	10.183	4.95	16.183	1.94	22.18	1.29
4.200	1.72	10.200	4.95	16.200	1.94	22.20	1.29
4.217	1.72	10.217	4.95	16.217	1.94	22.22	1.29
4.233	1.72	10.233	4.95	16.233	1.94	22.23	1.29
4.250	1.72	10.250	4.94	16.250	1.94	22.25	1.29
4.267	1.72	10.267	4.95	16.267	1.93	22.27	1.29
4.283	1.72	10.283	4.95	16.283	1.93	22.28	1.29
4.300	1.72	10.300	4.95	16.300	1.93	22.30	1.29
4.317	1.72	10.317	4.95	16.317	1.93	22.32	1.29
4.333	1.72	10.333	4.95	16.333	1.93	22.33	1.29
4.350	1.72	10.350	4.95	16.350	1.93	22.35	1.29
4.367	1.72	10.367	4.95	16.367	1.93	22.37	1.29
4.383	1.72	10.383	4.95	16.383	1.93	22.38	1.29
4.400	1.72	10.400	4.95	16.400	1.93	22.40	1.29
4.417	1.72	10.417	4.95	16.417	1.93	22.42	1.29
4.433	1.72	10.433	4.95	16.433	1.93	22.43	1.29
4.450	1.72	10.450	4.95	16.450	1.93	22.45	1.29
4.467	1.72	10.467	4.95	16.467	1.93	22.47	1.29
4.483	1.72	10.483	4.95	16.483	1.93	22.48	1.29
4.500	1.72	10.500	4.95	16.500	1.93	22.50	1.29
4.517	1.72	10.517	6.67	16.517	1.93	22.52	1.29

4.533	1.72	10.533	6.67	16.533	1.93	22.53	1.29
4.550	1.72	10.550	6.67	16.550	1.93	22.55	1.29
4.567	1.72	10.567	6.67	16.567	1.93	22.57	1.29
4.583	1.72	10.583	6.67	16.583	1.93	22.58	1.29
4.600	1.72	10.600	6.67	16.600	1.93	22.60	1.29
4.617	1.72	10.617	6.67	16.617	1.93	22.62	1.29
4.633	1.72	10.633	6.67	16.633	1.93	22.63	1.29
4.650	1.72	10.650	6.67	16.650	1.93	22.65	1.29
4.667	1.72	10.667	6.67	16.667	1.93	22.67	1.29
4.683	1.72	10.683	6.67	16.683	1.93	22.68	1.29
4.700	1.72	10.700	6.67	16.700	1.93	22.70	1.29
4.717	1.72	10.717	6.67	16.717	1.93	22.72	1.29
4.733	1.72	10.733	6.67	16.733	1.93	22.73	1.29
4.750	1.72	10.750	6.66	16.750	1.93	22.75	1.29
4.767	1.72	10.767	6.66	16.767	1.93	22.77	1.29
4.783	1.72	10.783	6.66	16.783	1.94	22.78	1.29
4.800	1.72	10.800	6.66	16.800	1.94	22.80	1.29
4.817	1.72	10.817	6.66	16.817	1.94	22.82	1.29
4.833	1.72	10.833	6.66	16.833	1.94	22.83	1.29
4.850	1.72	10.850	6.66	16.850	1.94	22.85	1.29
4.867	1.72	10.867	6.66	16.867	1.94	22.87	1.29
4.883	1.72	10.883	6.66	16.883	1.94	22.88	1.29
4.900	1.72	10.900	6.66	16.900	1.94	22.90	1.29
4.917	1.72	10.917	6.66	16.917	1.94	22.92	1.29
4.933	1.72	10.933	6.66	16.933	1.94	22.93	1.29
4.950	1.72	10.950	6.66	16.950	1.94	22.95	1.29
4.967	1.72	10.967	6.66	16.967	1.94	22.97	1.29
4.983	1.72	10.983	6.66	16.983	1.94	22.98	1.29
5.000	1.72	11.000	6.67	17.000	1.94	23.00	1.29
5.017	1.72	11.017	10.32	17.017	1.93	23.02	1.29
5.033	1.72	11.033	10.32	17.033	1.93	23.03	1.29
5.050	1.72	11.050	10.32	17.050	1.93	23.05	1.29
5.067	1.72	11.067	10.32	17.067	1.93	23.07	1.29
5.083	1.72	11.083	10.32	17.083	1.93	23.08	1.29
5.100	1.72	11.100	10.32	17.100	1.93	23.10	1.29
5.117	1.72	11.117	10.32	17.117	1.93	23.12	1.29
5.133	1.72	11.133	10.32	17.133	1.93	23.13	1.29
5.150	1.72	11.150	10.32	17.150	1.93	23.15	1.29
5.167	1.72	11.167	10.32	17.167	1.93	23.17	1.29
5.183	1.72	11.183	10.32	17.183	1.93	23.18	1.29
5.200	1.72	11.200	10.32	17.200	1.93	23.20	1.29
5.217	1.72	11.217	10.32	17.217	1.93	23.22	1.29
5.233	1.72	11.233	10.32	17.233	1.93	23.23	1.29
5.250	1.72	11.250	10.32	17.250	1.93	23.25	1.29
5.267	1.72	11.267	10.32	17.267	1.93	23.27	1.29
5.283	1.72	11.283	10.32	17.283	1.94	23.28	1.29
5.300	1.72	11.300	10.32	17.300	1.94	23.30	1.29
5.317	1.72	11.317	10.32	17.317	1.94	23.32	1.29
5.333	1.72	11.333	10.32	17.333	1.94	23.33	1.29

5.350	1.72	11.350	10.32	17.350	1.94	23.35	1.29
5.367	1.72	11.367	10.32	17.367	1.94	23.37	1.29
5.383	1.72	11.383	10.32	17.383	1.94	23.38	1.29
5.400	1.72	11.400	10.32	17.400	1.94	23.40	1.29
5.417	1.72	11.417	10.32	17.417	1.94	23.42	1.29
5.433	1.72	11.433	10.32	17.433	1.94	23.43	1.29
5.450	1.72	11.450	10.32	17.450	1.94	23.45	1.29
5.467	1.72	11.467	10.32	17.467	1.94	23.47	1.29
5.483	1.72	11.483	10.32	17.483	1.94	23.48	1.29
5.500	1.72	11.500	10.32	17.500	1.94	23.50	1.29
5.517	1.72	11.517	44.71	17.517	1.93	23.52	1.29
5.533	1.72	11.533	44.72	17.533	1.93	23.53	1.29
5.550	1.72	11.550	44.72	17.550	1.93	23.55	1.29
5.567	1.72	11.567	44.72	17.567	1.93	23.57	1.29
5.583	1.72	11.583	44.72	17.583	1.93	23.58	1.29
5.600	1.72	11.600	44.72	17.600	1.93	23.60	1.29
5.617	1.72	11.617	44.72	17.617	1.93	23.62	1.29
5.633	1.72	11.633	44.72	17.633	1.93	23.63	1.29
5.650	1.72	11.650	44.72	17.650	1.93	23.65	1.29
5.667	1.72	11.667	44.72	17.667	1.93	23.67	1.29
5.683	1.72	11.683	44.72	17.683	1.93	23.68	1.29
5.700	1.72	11.700	44.72	17.700	1.93	23.70	1.29
5.717	1.72	11.717	44.72	17.717	1.93	23.72	1.29
5.733	1.72	11.733	44.72	17.733	1.93	23.73	1.29
5.750	1.72	11.750	44.72	17.750	1.93	23.75	1.29
5.767	1.72	11.767	118.64	17.767	1.93	23.77	1.29
5.783	1.72	11.783	118.68	17.783	1.94	23.78	1.29
5.800	1.72	11.800	118.68	17.800	1.94	23.80	1.29
5.817	1.72	11.817	118.68	17.817	1.94	23.82	1.29
5.833	1.72	11.833	118.68	17.833	1.94	23.83	1.29
5.850	1.72	11.850	118.68	17.850	1.94	23.85	1.29
5.867	1.72	11.867	118.68	17.867	1.94	23.87	1.29
5.883	1.72	11.883	118.68	17.883	1.94	23.88	1.29
5.900	1.72	11.900	118.68	17.900	1.94	23.90	1.29
5.917	1.72	11.917	118.68	17.917	1.94	23.92	1.29
5.933	1.72	11.933	118.68	17.933	1.94	23.93	1.29
5.950	1.72	11.950	118.68	17.950	1.94	23.95	1.29
5.967	1.72	11.967	118.68	17.967	1.94	23.97	1.29
5.983	1.72	11.983	118.68	17.983	1.94	23.98	1.29
6.000	1.72	12.000	118.68	18.000	1.94	24.00	1.29

```
Unit Hyd Qpeak  (cms)=   0.117

PEAK FLOW       (cms)=   0.072 (i)
TIME TO PEAK    (hrs)=  12.200
RUNOFF VOLUME    (mm)=  33.350
TOTAL RAINFALL   (mm)= 107.501
RUNOFF COEFFICIENT   =   0.310
```

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.51
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      82.87         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     118.68       106.80
                   over (min)        5.00         3.00
     Storage Coeff.  (min)=       1.73 (ii)    2.34 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.40         0.44
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.10         0.16          0.258 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=     106.50        57.06          71.89
     TOTAL RAINFALL   (mm)=     107.50       107.50         107.50
     RUNOFF COEFFICIENT   =       0.99         0.53           0.67


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.072    12.20    33.35
      + ID2= 2 (  0201):     1.03   0.258    12.00    71.89
        ================================================
        ID = 3 (  0006):     1.98   0.305    12.00    57.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
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```
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190      0.0530
                          0.0120     0.0080   |   0.0200      0.0720
                          0.0150     0.0200   |   0.0220      0.0950
                          0.0170     0.0350   |   0.6940      0.1190

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980     0.305     12.00      57.24
   OUTFLOW: ID= 1 (  0011)      1.980     0.019     14.13      57.09

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.32
                  TIME SHIFT OF PEAK FLOW         (min)=128.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0583

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.017 (i)
     TIME TO PEAK    (hrs)=  12.633
     RUNOFF VOLUME    (mm)=  23.182
     TOTAL RAINFALL   (mm)= 107.501
     RUNOFF COEFFICIENT   =   0.216

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     118.68       102.00
```

```
                over (min)        5.00         8.00
      Storage Coeff.  (min)=      1.35 (ii)    7.17 (ii)
      Unit Hyd. Tpeak (min)=      5.00         8.00
      Unit Hyd. peak  (cms)=      0.43         0.15
                                                      *TOTALS*
      PEAK FLOW       (cms)=      0.01         0.07          0.080 (iii)
      TIME TO PEAK    (hrs)=     12.00        12.03          12.02
      RUNOFF VOLUME    (mm)=    106.50        56.16          58.67
      TOTAL RAINFALL   (mm)=    107.50       107.50         107.50
      RUNOFF COEFFICIENT   =      0.99         0.52           0.55

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      0.35         0.24
      Dep. Storage     (mm)=      1.00         5.00
      Average Slope     (%)=      2.00         5.00
      Length            (m)=     62.72         6.00
      Mannings n           =     0.013        0.035

      Max.Eff.Inten.(mm/hr)=    118.68       147.08
                over (min)        5.00         3.00
      Storage Coeff.  (min)=      1.46 (ii)    2.02 (ii)
      Unit Hyd. Tpeak (min)=      5.00         3.00
      Unit Hyd. peak  (cms)=      0.42         0.48
                                                      *TOTALS*
      PEAK FLOW       (cms)=      0.06         0.10          0.157 (iii)
      TIME TO PEAK    (hrs)=     12.00        12.00          12.00
      RUNOFF VOLUME    (mm)=    106.49        63.31          76.27
      TOTAL RAINFALL   (mm)=    107.50       107.50         107.50
      RUNOFF COEFFICIENT   =      0.99         0.59           0.71


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
```



```
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0001):     0.45   0.080    12.02    58.67
      + ID2= 2 (  0203):     0.59   0.157    12.00    76.27
        ================================================
        ID = 3 (  0009):     1.04   0.235    12.00    68.66

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390      0.0320
                         0.0090     0.0060    |   0.0430      0.0380
                         0.0230     0.0130    |   0.0470      0.0450
                         0.0300     0.0190    |   0.0500      0.0510
                         0.0350     0.0260    |   0.0000      0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040      0.235     12.00      68.66
   OUTFLOW: ID= 1 (  0012)     1.040      0.037     12.48      68.49

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)= 15.91
                 TIME SHIFT OF PEAK FLOW         (min)= 29.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.0296

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.037    12.48    68.49
      + ID2= 2 (  0202):     0.53   0.017    12.63    23.18
        ================================================
        ID = 3 (  0013):     1.57   0.054    12.58    55.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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================================================================================
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       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\c9b
0b6f1-dedc-440a-9803-25e4cd6e3802\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\c9b
0b6f1-dedc-440a-9803-25e4cd6e3802\sce


DATE: 11-25-2019                          TIME: 10:50:34

USER:



COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : 05. 50 yr - 24 hr -SCS Type I **
  ************************************************

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```
| MASS STORM       |    Filename: C:\Users\iblechta\AppD
|                  |              ata\Local\Temp\
|                  |              c4b20de3-13ae-4582-bae8-d7364cf8a3a5\5e8a3b18
| Ptotal=120.60 mm |    Comments: SCS Type II Distribution 6 Hour Storm (1
--------------------
                         Duration of storm    = 24.00 hrs
                         Mass curve time step = 15.00 min

                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.33 |  6.25    2.41 | 12.25   17.37 | 18.25    2.17
                0.50    1.33 |  6.50    2.41 | 12.50   17.37 | 18.50    2.17
                0.75    1.33 |  6.75    2.41 | 12.75    8.92 | 18.75    2.17
                1.00    1.33 |  7.00    2.41 | 13.00    8.92 | 19.00    2.17
                1.25    1.33 |  7.25    2.41 | 13.25    1.69 | 19.25    2.17
                1.50    1.33 |  7.50    2.41 | 13.50    1.69 | 19.50    2.17
                1.75    1.33 |  7.75    2.41 | 13.75    9.89 | 19.75    2.17
                2.00    1.33 |  8.00    2.41 | 14.00    9.89 | 20.00    2.17
                2.25    1.57 |  8.25    3.26 | 14.25    3.62 | 20.25    1.45
                2.50    1.57 |  8.50    3.26 | 14.50    3.62 | 20.50    1.45
                2.75    1.57 |  8.75    3.26 | 14.75    3.62 | 20.75    1.45
                3.00    1.57 |  9.00    3.26 | 15.00    3.62 | 21.00    1.45
                3.25    1.57 |  9.25    3.86 | 15.25    3.62 | 21.25    1.45
                3.50    1.57 |  9.50    3.86 | 15.50    3.62 | 21.50    1.45
                3.75    1.57 |  9.75    4.34 | 15.75    3.62 | 21.75    1.45
                4.00    1.57 | 10.00    4.34 | 16.00    3.62 | 22.00    1.45
                4.25    1.93 | 10.25    5.55 | 16.25    2.17 | 22.25    1.45
                4.50    1.93 | 10.50    5.55 | 16.50    2.17 | 22.50    1.45
                4.75    1.93 | 10.75    7.48 | 16.75    2.17 | 22.75    1.45
                5.00    1.93 | 11.00    7.48 | 17.00    2.17 | 23.00    1.45
                5.25    1.93 | 11.25   11.58 | 17.25    2.17 | 23.25    1.45
                5.50    1.93 | 11.50   11.58 | 17.50    2.17 | 23.50    1.45
                5.75    1.93 | 11.75   50.17 | 17.75    2.17 | 23.75    1.45
                6.00    1.93 | 12.00  133.14 | 18.00    2.17 | 24.00    1.45

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=   0.95   Curve Number   (CN)= 64.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=   7.21   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.31

        NOTE:  RAINFALL WAS TRANSFORMED TO   1.0 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
               0.017    1.33 | 6.017    2.41 |12.017   17.45 | 18.02    2.17
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0.033	1.33	6.033	2.41	12.033	17.37	18.03	2.17
0.050	1.33	6.050	2.41	12.050	17.37	18.05	2.17
0.067	1.33	6.067	2.41	12.067	17.37	18.07	2.17
0.083	1.33	6.083	2.41	12.083	17.37	18.08	2.17
0.100	1.33	6.100	2.41	12.100	17.37	18.10	2.17
0.117	1.33	6.117	2.41	12.117	17.37	18.12	2.17
0.133	1.33	6.133	2.41	12.133	17.37	18.13	2.17
0.150	1.33	6.150	2.41	12.150	17.37	18.15	2.17
0.167	1.33	6.167	2.41	12.167	17.37	18.17	2.17
0.183	1.33	6.183	2.41	12.183	17.37	18.18	2.17
0.200	1.33	6.200	2.41	12.200	17.37	18.20	2.17
0.217	1.33	6.217	2.41	12.217	17.37	18.22	2.17
0.233	1.33	6.233	2.41	12.233	17.37	18.23	2.17
0.250	1.33	6.250	2.41	12.250	17.37	18.25	2.17
0.267	1.33	6.267	2.41	12.267	17.37	18.27	2.17
0.283	1.33	6.283	2.41	12.283	17.37	18.28	2.17
0.300	1.33	6.300	2.41	12.300	17.37	18.30	2.17
0.317	1.33	6.317	2.41	12.317	17.37	18.32	2.17
0.333	1.33	6.333	2.41	12.333	17.37	18.33	2.17
0.350	1.33	6.350	2.41	12.350	17.37	18.35	2.17
0.367	1.33	6.367	2.41	12.367	17.37	18.37	2.17
0.383	1.33	6.383	2.41	12.383	17.37	18.38	2.17
0.400	1.33	6.400	2.41	12.400	17.37	18.40	2.17
0.417	1.33	6.417	2.41	12.417	17.37	18.42	2.17
0.433	1.33	6.433	2.41	12.433	17.37	18.43	2.17
0.450	1.33	6.450	2.41	12.450	17.37	18.45	2.17
0.467	1.33	6.467	2.41	12.467	17.37	18.47	2.17
0.483	1.33	6.483	2.41	12.483	17.37	18.48	2.17
0.500	1.33	6.500	2.41	12.500	17.37	18.50	2.17
0.517	1.33	6.517	2.41	12.517	8.93	18.52	2.17
0.533	1.33	6.533	2.41	12.533	8.92	18.53	2.17
0.550	1.33	6.550	2.41	12.550	8.92	18.55	2.17
0.567	1.33	6.567	2.41	12.567	8.92	18.57	2.17
0.583	1.33	6.583	2.41	12.583	8.92	18.58	2.17
0.600	1.33	6.600	2.41	12.600	8.92	18.60	2.17
0.617	1.33	6.617	2.41	12.617	8.92	18.62	2.17
0.633	1.33	6.633	2.41	12.633	8.92	18.63	2.17
0.650	1.33	6.650	2.41	12.650	8.92	18.65	2.17
0.667	1.33	6.667	2.41	12.667	8.92	18.67	2.17
0.683	1.33	6.683	2.41	12.683	8.92	18.68	2.17
0.700	1.33	6.700	2.41	12.700	8.92	18.70	2.17
0.717	1.33	6.717	2.41	12.717	8.92	18.72	2.17
0.733	1.33	6.733	2.41	12.733	8.92	18.73	2.17
0.750	1.33	6.750	2.41	12.750	8.92	18.75	2.17
0.767	1.33	6.767	2.41	12.767	8.92	18.77	2.17
0.783	1.33	6.783	2.41	12.783	8.92	18.78	2.17
0.800	1.33	6.800	2.41	12.800	8.92	18.80	2.17
0.817	1.33	6.817	2.41	12.817	8.92	18.82	2.17
0.833	1.33	6.833	2.41	12.833	8.92	18.83	2.17

0.850	1.33	6.850	2.41	12.850	8.92	18.85	2.17
0.867	1.33	6.867	2.41	12.867	8.92	18.87	2.17
0.883	1.33	6.883	2.41	12.883	8.92	18.88	2.17
0.900	1.33	6.900	2.41	12.900	8.92	18.90	2.17
0.917	1.33	6.917	2.41	12.917	8.92	18.92	2.17
0.933	1.33	6.933	2.41	12.933	8.92	18.93	2.17
0.950	1.33	6.950	2.41	12.950	8.92	18.95	2.17
0.967	1.33	6.967	2.41	12.967	8.92	18.97	2.17
0.983	1.33	6.983	2.41	12.983	8.92	18.98	2.17
1.000	1.33	7.000	2.41	13.000	8.92	19.00	2.17
1.017	1.33	7.017	2.41	13.017	1.70	19.02	2.17
1.033	1.33	7.033	2.41	13.033	1.69	19.03	2.17
1.050	1.33	7.050	2.41	13.050	1.69	19.05	2.17
1.067	1.33	7.067	2.41	13.067	1.69	19.07	2.17
1.083	1.33	7.083	2.41	13.083	1.69	19.08	2.17
1.100	1.33	7.100	2.41	13.100	1.69	19.10	2.17
1.117	1.33	7.117	2.41	13.117	1.69	19.12	2.17
1.133	1.33	7.133	2.41	13.133	1.69	19.13	2.17
1.150	1.33	7.150	2.41	13.150	1.69	19.15	2.17
1.167	1.33	7.167	2.41	13.167	1.69	19.17	2.17
1.183	1.33	7.183	2.41	13.183	1.69	19.18	2.17
1.200	1.33	7.200	2.41	13.200	1.69	19.20	2.17
1.217	1.33	7.217	2.41	13.217	1.69	19.22	2.17
1.233	1.33	7.233	2.41	13.233	1.69	19.23	2.17
1.250	1.33	7.250	2.41	13.250	1.69	19.25	2.17
1.267	1.33	7.267	2.41	13.267	1.69	19.27	2.17
1.283	1.33	7.283	2.41	13.283	1.69	19.28	2.17
1.300	1.33	7.300	2.41	13.300	1.69	19.30	2.17
1.317	1.33	7.317	2.41	13.317	1.69	19.32	2.17
1.333	1.33	7.333	2.41	13.333	1.69	19.33	2.17
1.350	1.33	7.350	2.41	13.350	1.69	19.35	2.17
1.367	1.33	7.367	2.41	13.367	1.69	19.37	2.17
1.383	1.33	7.383	2.41	13.383	1.69	19.38	2.17
1.400	1.33	7.400	2.41	13.400	1.69	19.40	2.17
1.417	1.33	7.417	2.41	13.417	1.69	19.42	2.17
1.433	1.33	7.433	2.41	13.433	1.69	19.43	2.17
1.450	1.33	7.450	2.41	13.450	1.69	19.45	2.17
1.467	1.33	7.467	2.41	13.467	1.69	19.47	2.17
1.483	1.33	7.483	2.41	13.483	1.69	19.48	2.17
1.500	1.33	7.500	2.41	13.500	1.69	19.50	2.17
1.517	1.33	7.517	2.41	13.517	9.87	19.52	2.17
1.533	1.33	7.533	2.41	13.533	9.89	19.53	2.17
1.550	1.33	7.550	2.41	13.550	9.89	19.55	2.17
1.567	1.33	7.567	2.41	13.567	9.89	19.57	2.17
1.583	1.33	7.583	2.41	13.583	9.89	19.58	2.17
1.600	1.33	7.600	2.41	13.600	9.89	19.60	2.17
1.617	1.33	7.617	2.41	13.617	9.89	19.62	2.17
1.633	1.33	7.633	2.41	13.633	9.89	19.63	2.17
1.650	1.33	7.650	2.41	13.650	9.89	19.65	2.17

1.667	1.33	7.667	2.41	13.667	9.89	19.67	2.17
1.683	1.33	7.683	2.41	13.683	9.89	19.68	2.17
1.700	1.33	7.700	2.41	13.700	9.89	19.70	2.17
1.717	1.33	7.717	2.41	13.717	9.89	19.72	2.17
1.733	1.33	7.733	2.41	13.733	9.89	19.73	2.17
1.750	1.33	7.750	2.41	13.750	9.89	19.75	2.17
1.767	1.33	7.767	2.41	13.767	9.89	19.77	2.17
1.783	1.33	7.783	2.41	13.783	9.89	19.78	2.17
1.800	1.33	7.800	2.41	13.800	9.89	19.80	2.17
1.817	1.33	7.817	2.41	13.817	9.89	19.82	2.17
1.833	1.33	7.833	2.41	13.833	9.89	19.83	2.17
1.850	1.33	7.850	2.41	13.850	9.89	19.85	2.17
1.867	1.33	7.867	2.41	13.867	9.89	19.87	2.17
1.883	1.33	7.883	2.41	13.883	9.89	19.88	2.17
1.900	1.33	7.900	2.41	13.900	9.89	19.90	2.17
1.917	1.33	7.917	2.41	13.917	9.89	19.92	2.17
1.933	1.33	7.933	2.41	13.933	9.89	19.93	2.17
1.950	1.33	7.950	2.41	13.950	9.89	19.95	2.17
1.967	1.33	7.967	2.41	13.967	9.89	19.97	2.17
1.983	1.33	7.983	2.41	13.983	9.89	19.98	2.17
2.000	1.33	8.000	2.41	14.000	9.89	20.00	2.17
2.017	1.57	8.017	3.26	14.017	3.63	20.02	1.45
2.033	1.57	8.033	3.26	14.033	3.62	20.03	1.45
2.050	1.57	8.050	3.26	14.050	3.62	20.05	1.45
2.067	1.57	8.067	3.26	14.067	3.62	20.07	1.45
2.083	1.57	8.083	3.26	14.083	3.62	20.08	1.45
2.100	1.57	8.100	3.26	14.100	3.62	20.10	1.45
2.117	1.57	8.117	3.26	14.117	3.62	20.12	1.45
2.133	1.57	8.133	3.26	14.133	3.62	20.13	1.45
2.150	1.57	8.150	3.26	14.150	3.62	20.15	1.45
2.167	1.57	8.167	3.26	14.167	3.62	20.17	1.45
2.183	1.57	8.183	3.26	14.183	3.62	20.18	1.45
2.200	1.57	8.200	3.26	14.200	3.62	20.20	1.45
2.217	1.57	8.217	3.26	14.217	3.62	20.22	1.45
2.233	1.57	8.233	3.26	14.233	3.62	20.23	1.45
2.250	1.57	8.250	3.26	14.250	3.62	20.25	1.45
2.267	1.57	8.267	3.26	14.267	3.62	20.27	1.45
2.283	1.57	8.283	3.26	14.283	3.62	20.28	1.45
2.300	1.57	8.300	3.26	14.300	3.62	20.30	1.45
2.317	1.57	8.317	3.26	14.317	3.62	20.32	1.45
2.333	1.57	8.333	3.26	14.333	3.62	20.33	1.45
2.350	1.57	8.350	3.26	14.350	3.62	20.35	1.45
2.367	1.57	8.367	3.26	14.367	3.62	20.37	1.45
2.383	1.57	8.383	3.26	14.383	3.62	20.38	1.45
2.400	1.57	8.400	3.26	14.400	3.62	20.40	1.45
2.417	1.57	8.417	3.26	14.417	3.62	20.42	1.45
2.433	1.57	8.433	3.26	14.433	3.62	20.43	1.45
2.450	1.57	8.450	3.26	14.450	3.62	20.45	1.45
2.467	1.57	8.467	3.26	14.467	3.62	20.47	1.45

2.483	1.57	8.483	3.26	14.483	3.62	20.48	1.45
2.500	1.57	8.500	3.26	14.500	3.62	20.50	1.45
2.517	1.57	8.517	3.26	14.517	3.62	20.52	1.45
2.533	1.57	8.533	3.26	14.533	3.62	20.53	1.45
2.550	1.57	8.550	3.26	14.550	3.62	20.55	1.45
2.567	1.57	8.567	3.26	14.567	3.62	20.57	1.45
2.583	1.57	8.583	3.26	14.583	3.62	20.58	1.45
2.600	1.57	8.600	3.26	14.600	3.62	20.60	1.45
2.617	1.57	8.617	3.26	14.617	3.62	20.62	1.45
2.633	1.57	8.633	3.26	14.633	3.62	20.63	1.45
2.650	1.57	8.650	3.26	14.650	3.62	20.65	1.45
2.667	1.57	8.667	3.26	14.667	3.62	20.67	1.45
2.683	1.57	8.683	3.26	14.683	3.62	20.68	1.45
2.700	1.57	8.700	3.26	14.700	3.62	20.70	1.45
2.717	1.57	8.717	3.26	14.717	3.62	20.72	1.45
2.733	1.57	8.733	3.26	14.733	3.62	20.73	1.45
2.750	1.57	8.750	3.26	14.750	3.62	20.75	1.45
2.767	1.57	8.767	3.26	14.767	3.62	20.77	1.45
2.783	1.57	8.783	3.26	14.783	3.62	20.78	1.45
2.800	1.57	8.800	3.26	14.800	3.62	20.80	1.45
2.817	1.57	8.817	3.26	14.817	3.62	20.82	1.45
2.833	1.57	8.833	3.26	14.833	3.62	20.83	1.45
2.850	1.57	8.850	3.26	14.850	3.62	20.85	1.45
2.867	1.57	8.867	3.26	14.867	3.62	20.87	1.45
2.883	1.57	8.883	3.26	14.883	3.62	20.88	1.45
2.900	1.57	8.900	3.26	14.900	3.62	20.90	1.45
2.917	1.57	8.917	3.26	14.917	3.62	20.92	1.45
2.933	1.57	8.933	3.26	14.933	3.62	20.93	1.45
2.950	1.57	8.950	3.26	14.950	3.62	20.95	1.45
2.967	1.57	8.967	3.26	14.967	3.62	20.97	1.45
2.983	1.57	8.983	3.26	14.983	3.62	20.98	1.45
3.000	1.57	9.000	3.26	15.000	3.62	21.00	1.45
3.017	1.57	9.017	3.86	15.017	3.62	21.02	1.45
3.033	1.57	9.033	3.86	15.033	3.62	21.03	1.45
3.050	1.57	9.050	3.86	15.050	3.62	21.05	1.45
3.067	1.57	9.067	3.86	15.067	3.62	21.07	1.45
3.083	1.57	9.083	3.86	15.083	3.62	21.08	1.45
3.100	1.57	9.100	3.86	15.100	3.62	21.10	1.45
3.117	1.57	9.117	3.86	15.117	3.62	21.12	1.45
3.133	1.57	9.133	3.86	15.133	3.62	21.13	1.45
3.150	1.57	9.150	3.86	15.150	3.62	21.15	1.45
3.167	1.57	9.167	3.86	15.167	3.62	21.17	1.45
3.183	1.57	9.183	3.86	15.183	3.62	21.18	1.45
3.200	1.57	9.200	3.86	15.200	3.62	21.20	1.45
3.217	1.57	9.217	3.86	15.217	3.62	21.22	1.45
3.233	1.57	9.233	3.86	15.233	3.62	21.23	1.45
3.250	1.57	9.250	3.86	15.250	3.62	21.25	1.45
3.267	1.57	9.267	3.86	15.267	3.62	21.27	1.45
3.283	1.57	9.283	3.86	15.283	3.62	21.28	1.45

3.300	1.57	9.300	3.86	15.300	3.62	21.30	1.45
3.317	1.57	9.317	3.86	15.317	3.62	21.32	1.45
3.333	1.57	9.333	3.86	15.333	3.62	21.33	1.45
3.350	1.57	9.350	3.86	15.350	3.62	21.35	1.45
3.367	1.57	9.367	3.86	15.367	3.62	21.37	1.45
3.383	1.57	9.383	3.86	15.383	3.62	21.38	1.45
3.400	1.57	9.400	3.86	15.400	3.62	21.40	1.45
3.417	1.57	9.417	3.86	15.417	3.62	21.42	1.45
3.433	1.57	9.433	3.86	15.433	3.62	21.43	1.45
3.450	1.57	9.450	3.86	15.450	3.62	21.45	1.45
3.467	1.57	9.467	3.86	15.467	3.62	21.47	1.45
3.483	1.57	9.483	3.86	15.483	3.62	21.48	1.45
3.500	1.57	9.500	3.86	15.500	3.62	21.50	1.45
3.517	1.57	9.517	4.34	15.517	3.62	21.52	1.45
3.533	1.57	9.533	4.34	15.533	3.62	21.53	1.45
3.550	1.57	9.550	4.34	15.550	3.62	21.55	1.45
3.567	1.57	9.567	4.34	15.567	3.62	21.57	1.45
3.583	1.57	9.583	4.34	15.583	3.62	21.58	1.45
3.600	1.57	9.600	4.34	15.600	3.62	21.60	1.45
3.617	1.57	9.617	4.34	15.617	3.62	21.62	1.45
3.633	1.57	9.633	4.34	15.633	3.62	21.63	1.45
3.650	1.57	9.650	4.34	15.650	3.62	21.65	1.45
3.667	1.57	9.667	4.34	15.667	3.62	21.67	1.45
3.683	1.57	9.683	4.34	15.683	3.62	21.68	1.45
3.700	1.57	9.700	4.34	15.700	3.62	21.70	1.45
3.717	1.57	9.717	4.34	15.717	3.62	21.72	1.45
3.733	1.57	9.733	4.34	15.733	3.62	21.73	1.45
3.750	1.57	9.750	4.34	15.750	3.62	21.75	1.45
3.767	1.57	9.767	4.34	15.767	3.62	21.77	1.45
3.783	1.57	9.783	4.34	15.783	3.62	21.78	1.45
3.800	1.57	9.800	4.34	15.800	3.62	21.80	1.45
3.817	1.57	9.817	4.34	15.817	3.62	21.82	1.45
3.833	1.57	9.833	4.34	15.833	3.62	21.83	1.45
3.850	1.57	9.850	4.34	15.850	3.62	21.85	1.45
3.867	1.57	9.867	4.34	15.867	3.62	21.87	1.45
3.883	1.57	9.883	4.34	15.883	3.62	21.88	1.45
3.900	1.57	9.900	4.34	15.900	3.62	21.90	1.45
3.917	1.57	9.917	4.34	15.917	3.62	21.92	1.45
3.933	1.57	9.933	4.34	15.933	3.62	21.93	1.45
3.950	1.57	9.950	4.34	15.950	3.62	21.95	1.45
3.967	1.57	9.967	4.34	15.967	3.62	21.97	1.45
3.983	1.57	9.983	4.34	15.983	3.62	21.98	1.45
4.000	1.57	10.000	4.34	16.000	3.62	22.00	1.45
4.017	1.93	10.017	5.55	16.017	2.18	22.02	1.45
4.033	1.93	10.033	5.55	16.033	2.17	22.03	1.45
4.050	1.93	10.050	5.55	16.050	2.17	22.05	1.45
4.067	1.93	10.067	5.55	16.067	2.17	22.07	1.45
4.083	1.93	10.083	5.55	16.083	2.17	22.08	1.45
4.100	1.93	10.100	5.55	16.100	2.17	22.10	1.45

4.117	1.93	10.117	5.55	16.117	2.17	22.12	1.45
4.133	1.93	10.133	5.55	16.133	2.17	22.13	1.45
4.150	1.93	10.150	5.55	16.150	2.17	22.15	1.45
4.167	1.93	10.167	5.55	16.167	2.17	22.17	1.45
4.183	1.93	10.183	5.55	16.183	2.17	22.18	1.45
4.200	1.93	10.200	5.55	16.200	2.17	22.20	1.45
4.217	1.93	10.217	5.55	16.217	2.17	22.22	1.45
4.233	1.93	10.233	5.55	16.233	2.17	22.23	1.45
4.250	1.93	10.250	5.55	16.250	2.17	22.25	1.45
4.267	1.93	10.267	5.55	16.267	2.17	22.27	1.45
4.283	1.93	10.283	5.55	16.283	2.17	22.28	1.45
4.300	1.93	10.300	5.55	16.300	2.17	22.30	1.45
4.317	1.93	10.317	5.55	16.317	2.17	22.32	1.45
4.333	1.93	10.333	5.55	16.333	2.17	22.33	1.45
4.350	1.93	10.350	5.55	16.350	2.17	22.35	1.45
4.367	1.93	10.367	5.55	16.367	2.17	22.37	1.45
4.383	1.93	10.383	5.55	16.383	2.17	22.38	1.45
4.400	1.93	10.400	5.55	16.400	2.17	22.40	1.45
4.417	1.93	10.417	5.55	16.417	2.17	22.42	1.45
4.433	1.93	10.433	5.55	16.433	2.17	22.43	1.45
4.450	1.93	10.450	5.55	16.450	2.17	22.45	1.45
4.467	1.93	10.467	5.55	16.467	2.17	22.47	1.45
4.483	1.93	10.483	5.55	16.483	2.17	22.48	1.45
4.500	1.93	10.500	5.55	16.500	2.17	22.50	1.45
4.517	1.93	10.517	7.48	16.517	2.17	22.52	1.45
4.533	1.93	10.533	7.48	16.533	2.17	22.53	1.45
4.550	1.93	10.550	7.48	16.550	2.17	22.55	1.45
4.567	1.93	10.567	7.48	16.567	2.17	22.57	1.45
4.583	1.93	10.583	7.48	16.583	2.17	22.58	1.45
4.600	1.93	10.600	7.48	16.600	2.17	22.60	1.45
4.617	1.93	10.617	7.48	16.617	2.17	22.62	1.45
4.633	1.93	10.633	7.48	16.633	2.17	22.63	1.45
4.650	1.93	10.650	7.48	16.650	2.17	22.65	1.45
4.667	1.93	10.667	7.48	16.667	2.17	22.67	1.45
4.683	1.93	10.683	7.48	16.683	2.17	22.68	1.45
4.700	1.93	10.700	7.48	16.700	2.17	22.70	1.45
4.717	1.93	10.717	7.48	16.717	2.17	22.72	1.45
4.733	1.93	10.733	7.48	16.733	2.17	22.73	1.45
4.750	1.93	10.750	7.48	16.750	2.17	22.75	1.45
4.767	1.93	10.767	7.48	16.767	2.17	22.77	1.45
4.783	1.93	10.783	7.48	16.783	2.17	22.78	1.45
4.800	1.93	10.800	7.48	16.800	2.17	22.80	1.45
4.817	1.93	10.817	7.48	16.817	2.17	22.82	1.45
4.833	1.93	10.833	7.48	16.833	2.17	22.83	1.45
4.850	1.93	10.850	7.48	16.850	2.17	22.85	1.45
4.867	1.93	10.867	7.48	16.867	2.17	22.87	1.45
4.883	1.93	10.883	7.48	16.883	2.17	22.88	1.45
4.900	1.93	10.900	7.48	16.900	2.17	22.90	1.45
4.917	1.93	10.917	7.48	16.917	2.17	22.92	1.45

4.933	1.93	10.933	7.48	16.933	2.17	22.93	1.45
4.950	1.93	10.950	7.48	16.950	2.17	22.95	1.45
4.967	1.93	10.967	7.48	16.967	2.17	22.97	1.45
4.983	1.93	10.983	7.48	16.983	2.17	22.98	1.45
5.000	1.93	11.000	7.48	17.000	2.17	23.00	1.45
5.017	1.93	11.017	11.58	17.017	2.17	23.02	1.45
5.033	1.93	11.033	11.58	17.033	2.17	23.03	1.45
5.050	1.93	11.050	11.58	17.050	2.17	23.05	1.45
5.067	1.93	11.067	11.58	17.067	2.17	23.07	1.45
5.083	1.93	11.083	11.58	17.083	2.17	23.08	1.45
5.100	1.93	11.100	11.58	17.100	2.17	23.10	1.45
5.117	1.93	11.117	11.58	17.117	2.17	23.12	1.45
5.133	1.93	11.133	11.58	17.133	2.17	23.13	1.45
5.150	1.93	11.150	11.58	17.150	2.17	23.15	1.45
5.167	1.93	11.167	11.58	17.167	2.17	23.17	1.45
5.183	1.93	11.183	11.58	17.183	2.17	23.18	1.45
5.200	1.93	11.200	11.58	17.200	2.17	23.20	1.45
5.217	1.93	11.217	11.58	17.217	2.17	23.22	1.45
5.233	1.93	11.233	11.58	17.233	2.17	23.23	1.45
5.250	1.93	11.250	11.58	17.250	2.17	23.25	1.45
5.267	1.93	11.267	11.58	17.267	2.17	23.27	1.45
5.283	1.93	11.283	11.58	17.283	2.17	23.28	1.45
5.300	1.93	11.300	11.58	17.300	2.17	23.30	1.45
5.317	1.93	11.317	11.58	17.317	2.17	23.32	1.45
5.333	1.93	11.333	11.58	17.333	2.17	23.33	1.45
5.350	1.93	11.350	11.58	17.350	2.17	23.35	1.45
5.367	1.93	11.367	11.58	17.367	2.17	23.37	1.45
5.383	1.93	11.383	11.58	17.383	2.17	23.38	1.45
5.400	1.93	11.400	11.58	17.400	2.17	23.40	1.45
5.417	1.93	11.417	11.58	17.417	2.17	23.42	1.45
5.433	1.93	11.433	11.58	17.433	2.17	23.43	1.45
5.450	1.93	11.450	11.58	17.450	2.17	23.45	1.45
5.467	1.93	11.467	11.58	17.467	2.17	23.47	1.45
5.483	1.93	11.483	11.58	17.483	2.17	23.48	1.45
5.500	1.93	11.500	11.58	17.500	2.17	23.50	1.45
5.517	1.93	11.517	50.16	17.517	2.17	23.52	1.45
5.533	1.93	11.533	50.17	17.533	2.17	23.53	1.45
5.550	1.93	11.550	50.17	17.550	2.17	23.55	1.45
5.567	1.93	11.567	50.17	17.567	2.17	23.57	1.45
5.583	1.93	11.583	50.17	17.583	2.17	23.58	1.45
5.600	1.93	11.600	50.17	17.600	2.17	23.60	1.45
5.617	1.93	11.617	50.17	17.617	2.17	23.62	1.45
5.633	1.93	11.633	50.17	17.633	2.17	23.63	1.45
5.650	1.93	11.650	50.17	17.650	2.17	23.65	1.45
5.667	1.93	11.667	50.17	17.667	2.17	23.67	1.45
5.683	1.93	11.683	50.17	17.683	2.17	23.68	1.45
5.700	1.93	11.700	50.17	17.700	2.17	23.70	1.45
5.717	1.93	11.717	50.17	17.717	2.17	23.72	1.45
5.733	1.93	11.733	50.17	17.733	2.17	23.73	1.45

5.750	1.93	11.750	50.17	17.750	2.17	23.75	1.45
5.767	1.93	11.767	133.10	17.767	2.17	23.77	1.45
5.783	1.93	11.783	133.14	17.783	2.17	23.78	1.45
5.800	1.93	11.800	133.14	17.800	2.17	23.80	1.45
5.817	1.93	11.817	133.14	17.817	2.17	23.82	1.45
5.833	1.93	11.833	133.14	17.833	2.17	23.83	1.45
5.850	1.93	11.850	133.14	17.850	2.17	23.85	1.45
5.867	1.93	11.867	133.14	17.867	2.17	23.87	1.45
5.883	1.93	11.883	133.14	17.883	2.17	23.88	1.45
5.900	1.93	11.900	133.14	17.900	2.17	23.90	1.45
5.917	1.93	11.917	133.14	17.917	2.17	23.92	1.45
5.933	1.93	11.933	133.14	17.933	2.17	23.93	1.45
5.950	1.93	11.950	133.14	17.950	2.17	23.95	1.45
5.967	1.93	11.967	133.14	17.967	2.17	23.97	1.45
5.983	1.93	11.983	133.14	17.983	2.17	23.98	1.45
6.000	1.93	12.000	133.14	18.000	2.17	24.00	1.45

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.088 (i)
TIME TO PEAK (hrs)= 12.200
RUNOFF VOLUME (mm)= 40.686
TOTAL RAINFALL (mm)= 120.601
RUNOFF COEFFICIENT = 0.337

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

CALIB
STANDHYD (0201)
ID= 1 DT= 1.0 min

Area (ha)= 1.03
Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.51
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	2.00	5.00
Length	(m)=	82.87	6.00
Mannings n	=	0.013	0.035
Max.Eff.Inten.(mm/hr)=		133.14	126.22
over (min)		5.00	3.00
Storage Coeff. (min)=		1.65 (ii)	2.23 (ii)
Unit Hyd. Tpeak (min)=		5.00	3.00
Unit Hyd. peak (cms)=		0.40	0.45

		TOTALS
PEAK FLOW	(cms)=	0.299 (iii)
TIME TO PEAK	(hrs)=	12.00
RUNOFF VOLUME	(mm)=	83.24

```
     TOTAL RAINFALL   (mm)=     120.60       120.60         120.60
     RUNOFF COEFFICIENT   =       0.99         0.56           0.69


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.088    12.20    40.69
      + ID2= 2 (  0201):     1.03   0.299    12.00    83.24
        ================================================
        ID = 3 (  0006):     1.98   0.357    12.00    67.38

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0190     0.0530
                         0.0120     0.0080    |   0.0200     0.0720
                         0.0150     0.0200    |   0.0220     0.0950
                         0.0170     0.0350    |   0.6940     0.1190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)    1.980      0.357     12.00      67.38
   OUTFLOW: ID= 1 (  0011)    1.980      0.020     14.33      66.85

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.59
                  TIME SHIFT OF PEAK FLOW         (min)=140.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0713

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67
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```
     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.021 (i)
     TIME TO PEAK    (hrs)=  12.633
     RUNOFF VOLUME    (mm)=  28.846
     TOTAL RAINFALL   (mm)= 120.601
     RUNOFF COEFFICIENT   =   0.239

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

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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                                  IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=          0.14          0.31
     Dep. Storage     (mm)=          1.00          5.00
     Average Slope     (%)=          2.00          2.00
     Length            (m)=         54.77         40.00
     Mannings n             =        0.013         0.035

     Max.Eff.Inten.(mm/hr)=       133.14        120.70
               over (min)           5.00          7.00
     Storage Coeff.  (min)=          1.29 (ii)     6.85 (ii)
     Unit Hyd. Tpeak (min)=          5.00          7.00
     Unit Hyd. peak  (cms)=          0.44          0.16
                                                          *TOTALS*
     PEAK FLOW       (cms)=          0.01          0.09          0.097 (iii)
     TIME TO PEAK    (hrs)=         12.00         12.02          12.02
     RUNOFF VOLUME    (mm)=       119.60         66.68          69.32
     TOTAL RAINFALL   (mm)=       120.60        120.60         120.60
     RUNOFF COEFFICIENT   =         0.99          0.55           0.57

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
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```
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35          0.24
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       2.00          5.00
     Length            (m)=      62.72          6.00
     Mannings n           =      0.013         0.035

     Max.Eff.Inten.(mm/hr)=     133.14        172.33
               over (min)        5.00          2.00
     Storage Coeff.  (min)=       1.40 (ii)     1.93 (ii)
     Unit Hyd. Tpeak (min)=       5.00          2.00
     Unit Hyd. peak  (cms)=       0.43          0.57
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.07          0.12           0.182 (iii)
     TIME TO PEAK    (hrs)=      12.00         12.00          12.00
     RUNOFF VOLUME    (mm)=     119.60         74.51          88.04
     TOTAL RAINFALL   (mm)=     120.60        120.60         120.60
     RUNOFF COEFFICIENT   =       0.99          0.62           0.73


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.097    12.02    69.32
     + ID2= 2 (  0203):     0.59   0.182    12.00    88.04
       ================================================
       ID = 3 (  0009):     1.04   0.277    12.00    79.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)    (ha.m.)   |   (cms)    (ha.m.)
                         0.0000     0.0000   |   0.0390     0.0320
                         0.0090     0.0060   |   0.0430     0.0380
```



```
                         0.0230     0.0130   |   0.0470     0.0450
                         0.0300     0.0190   |   0.0500     0.0510
                         0.0350     0.0260   |   0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040     0.277     12.00      79.94
   OUTFLOW: ID= 1 (  0012)     1.040     0.041     12.52      79.78

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.83
                  TIME SHIFT OF PEAK FLOW         (min)= 31.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0352

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--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.041    12.52    79.78
     + ID2= 2 (  0202):     0.53   0.021    12.63    28.85
       ================================================
       ID = 3 (  0013):     1.57   0.062    12.58    65.48

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      V    V   I    SSSSS  U   U    A    L
      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

       OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
      O   O    T      T    H   H   Y Y   MM MM  O   O
      O   O    T      T    H   H    Y    M   M  O   O
       OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat
```

Output filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\7080b6f9-de65-4c29-978c-91b0edcc706b\sce
Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\7080b6f9-de65-4c29-978c-91b0edcc706b\sce

DATE: 11-25-2019 TIME: 10:50:34

USER:

COMMENTS: _____

** SIMULATION : 06. 100 yr - 24 hr -SCS Type **

MASS STORM	Filename: C:\Users\iblechta\AppData\Local\Temp\c4b20de3-13ae-4582-bae8-d7364cf8a3a5\e41707b4
Ptotal=133.60 mm	Comments: SCS Type II Distribution 6 Hour Storm (1

Duration of storm = 24.00 hrs
Mass curve time step = 15.00 min

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.47	6.25	2.67	12.25	19.24	18.25	2.40
0.50	1.47	6.50	2.67	12.50	19.24	18.50	2.40
0.75	1.47	6.75	2.67	12.75	9.89	18.75	2.40
1.00	1.47	7.00	2.67	13.00	9.89	19.00	2.40
1.25	1.47	7.25	2.67	13.25	1.87	19.25	2.40
1.50	1.47	7.50	2.67	13.50	1.87	19.50	2.40
1.75	1.47	7.75	2.67	13.75	10.96	19.75	2.40
2.00	1.47	8.00	2.67	14.00	10.96	20.00	2.40
2.25	1.74	8.25	3.61	14.25	4.01	20.25	1.60
2.50	1.74	8.50	3.61	14.50	4.01	20.50	1.60
2.75	1.74	8.75	3.61	14.75	4.01	20.75	1.60
3.00	1.74	9.00	3.61	15.00	4.01	21.00	1.60
3.25	1.74	9.25	4.28	15.25	4.01	21.25	1.60
3.50	1.74	9.50	4.28	15.50	4.01	21.50	1.60

3.75	1.74	9.75	4.81	15.75	4.01	21.75	1.60
4.00	1.74	10.00	4.81	16.00	4.01	22.00	1.60
4.25	2.14	10.25	6.15	16.25	2.40	22.25	1.60
4.50	2.14	10.50	6.15	16.50	2.40	22.50	1.60
4.75	2.14	10.75	8.28	16.75	2.40	22.75	1.60
5.00	2.14	11.00	8.28	17.00	2.40	23.00	1.60
5.25	2.14	11.25	12.83	17.25	2.40	23.25	1.60
5.50	2.14	11.50	12.83	17.50	2.40	23.50	1.60
5.75	2.14	11.75	55.58	17.75	2.40	23.75	1.60
6.00	2.14	12.00	147.49	18.00	2.40	24.00	1.60

CALIB			
NASHYD (0002)	Area (ha)=	0.95	Curve Number (CN)= 64.0
ID= 1 DT= 1.0 min	Ia (mm)=	7.21	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	1.47	6.017	2.67	12.017	19.33	18.02	2.40
0.033	1.47	6.033	2.67	12.033	19.24	18.03	2.40
0.050	1.47	6.050	2.67	12.050	19.24	18.05	2.40
0.067	1.47	6.067	2.67	12.067	19.24	18.07	2.40
0.083	1.47	6.083	2.67	12.083	19.24	18.08	2.40
0.100	1.47	6.100	2.67	12.100	19.24	18.10	2.40
0.117	1.47	6.117	2.67	12.117	19.24	18.12	2.40
0.133	1.47	6.133	2.67	12.133	19.24	18.13	2.40
0.150	1.47	6.150	2.67	12.150	19.24	18.15	2.40
0.167	1.47	6.167	2.67	12.167	19.24	18.17	2.40
0.183	1.47	6.183	2.67	12.183	19.24	18.18	2.40
0.200	1.47	6.200	2.67	12.200	19.24	18.20	2.40
0.217	1.47	6.217	2.67	12.217	19.24	18.22	2.40
0.233	1.47	6.233	2.67	12.233	19.24	18.23	2.40
0.250	1.47	6.250	2.67	12.250	19.24	18.25	2.40
0.267	1.47	6.267	2.67	12.267	19.24	18.27	2.40
0.283	1.47	6.283	2.67	12.283	19.24	18.28	2.40
0.300	1.47	6.300	2.67	12.300	19.24	18.30	2.40
0.317	1.47	6.317	2.67	12.317	19.24	18.32	2.40
0.333	1.47	6.333	2.67	12.333	19.24	18.33	2.40
0.350	1.47	6.350	2.67	12.350	19.24	18.35	2.40
0.367	1.47	6.367	2.67	12.367	19.24	18.37	2.40
0.383	1.47	6.383	2.67	12.383	19.24	18.38	2.40
0.400	1.47	6.400	2.67	12.400	19.24	18.40	2.40
0.417	1.47	6.417	2.67	12.417	19.24	18.42	2.40

0.433	1.47	6.433	2.67	12.433	19.24	18.43	2.40
0.450	1.47	6.450	2.67	12.450	19.24	18.45	2.40
0.467	1.47	6.467	2.67	12.467	19.24	18.47	2.40
0.483	1.47	6.483	2.67	12.483	19.24	18.48	2.40
0.500	1.47	6.500	2.67	12.500	19.24	18.50	2.40
0.517	1.47	6.517	2.67	12.517	9.90	18.52	2.40
0.533	1.47	6.533	2.67	12.533	9.89	18.53	2.40
0.550	1.47	6.550	2.67	12.550	9.89	18.55	2.40
0.567	1.47	6.567	2.67	12.567	9.89	18.57	2.40
0.583	1.47	6.583	2.67	12.583	9.89	18.58	2.40
0.600	1.47	6.600	2.67	12.600	9.89	18.60	2.40
0.617	1.47	6.617	2.67	12.617	9.89	18.62	2.40
0.633	1.47	6.633	2.67	12.633	9.89	18.63	2.40
0.650	1.47	6.650	2.67	12.650	9.89	18.65	2.40
0.667	1.47	6.667	2.67	12.667	9.89	18.67	2.40
0.683	1.47	6.683	2.67	12.683	9.89	18.68	2.40
0.700	1.47	6.700	2.67	12.700	9.89	18.70	2.40
0.717	1.47	6.717	2.67	12.717	9.89	18.72	2.40
0.733	1.47	6.733	2.67	12.733	9.89	18.73	2.40
0.750	1.47	6.750	2.67	12.750	9.89	18.75	2.40
0.767	1.47	6.767	2.67	12.767	9.89	18.77	2.40
0.783	1.47	6.783	2.67	12.783	9.89	18.78	2.40
0.800	1.47	6.800	2.67	12.800	9.89	18.80	2.40
0.817	1.47	6.817	2.67	12.817	9.89	18.82	2.40
0.833	1.47	6.833	2.67	12.833	9.89	18.83	2.40
0.850	1.47	6.850	2.67	12.850	9.89	18.85	2.40
0.867	1.47	6.867	2.67	12.867	9.89	18.87	2.40
0.883	1.47	6.883	2.67	12.883	9.89	18.88	2.40
0.900	1.47	6.900	2.67	12.900	9.89	18.90	2.40
0.917	1.47	6.917	2.67	12.917	9.89	18.92	2.40
0.933	1.47	6.933	2.67	12.933	9.89	18.93	2.40
0.950	1.47	6.950	2.67	12.950	9.89	18.95	2.40
0.967	1.47	6.967	2.67	12.967	9.89	18.97	2.40
0.983	1.47	6.983	2.67	12.983	9.89	18.98	2.40
1.000	1.47	7.000	2.67	13.000	9.89	19.00	2.40
1.017	1.47	7.017	2.67	13.017	1.88	19.02	2.40
1.033	1.47	7.033	2.67	13.033	1.87	19.03	2.40
1.050	1.47	7.050	2.67	13.050	1.87	19.05	2.40
1.067	1.47	7.067	2.67	13.067	1.87	19.07	2.40
1.083	1.47	7.083	2.67	13.083	1.87	19.08	2.40
1.100	1.47	7.100	2.67	13.100	1.87	19.10	2.40
1.117	1.47	7.117	2.67	13.117	1.87	19.12	2.40
1.133	1.47	7.133	2.67	13.133	1.87	19.13	2.40
1.150	1.47	7.150	2.67	13.150	1.87	19.15	2.40
1.167	1.47	7.167	2.67	13.167	1.87	19.17	2.40
1.183	1.47	7.183	2.67	13.183	1.87	19.18	2.40
1.200	1.47	7.200	2.67	13.200	1.87	19.20	2.40
1.217	1.47	7.217	2.67	13.217	1.87	19.22	2.40
1.233	1.47	7.233	2.67	13.233	1.87	19.23	2.40

1.250	1.47	7.250	2.67	13.250	1.87	19.25	2.40
1.267	1.47	7.267	2.67	13.267	1.87	19.27	2.40
1.283	1.47	7.283	2.67	13.283	1.87	19.28	2.40
1.300	1.47	7.300	2.67	13.300	1.87	19.30	2.40
1.317	1.47	7.317	2.67	13.317	1.87	19.32	2.40
1.333	1.47	7.333	2.67	13.333	1.87	19.33	2.40
1.350	1.47	7.350	2.67	13.350	1.87	19.35	2.40
1.367	1.47	7.367	2.67	13.367	1.87	19.37	2.40
1.383	1.47	7.383	2.67	13.383	1.87	19.38	2.40
1.400	1.47	7.400	2.67	13.400	1.87	19.40	2.40
1.417	1.47	7.417	2.67	13.417	1.87	19.42	2.40
1.433	1.47	7.433	2.67	13.433	1.87	19.43	2.40
1.450	1.47	7.450	2.67	13.450	1.87	19.45	2.40
1.467	1.47	7.467	2.67	13.467	1.87	19.47	2.40
1.483	1.47	7.483	2.67	13.483	1.87	19.48	2.40
1.500	1.47	7.500	2.67	13.500	1.87	19.50	2.40
1.517	1.47	7.517	2.67	13.517	10.94	19.52	2.40
1.533	1.47	7.533	2.67	13.533	10.96	19.53	2.40
1.550	1.47	7.550	2.67	13.550	10.96	19.55	2.40
1.567	1.47	7.567	2.67	13.567	10.96	19.57	2.40
1.583	1.47	7.583	2.67	13.583	10.96	19.58	2.40
1.600	1.47	7.600	2.67	13.600	10.96	19.60	2.40
1.617	1.47	7.617	2.67	13.617	10.96	19.62	2.40
1.633	1.47	7.633	2.67	13.633	10.96	19.63	2.40
1.650	1.47	7.650	2.67	13.650	10.96	19.65	2.40
1.667	1.47	7.667	2.67	13.667	10.96	19.67	2.40
1.683	1.47	7.683	2.67	13.683	10.96	19.68	2.40
1.700	1.47	7.700	2.67	13.700	10.96	19.70	2.40
1.717	1.47	7.717	2.67	13.717	10.96	19.72	2.40
1.733	1.47	7.733	2.67	13.733	10.96	19.73	2.40
1.750	1.47	7.750	2.67	13.750	10.96	19.75	2.40
1.767	1.47	7.767	2.67	13.767	10.96	19.77	2.40
1.783	1.47	7.783	2.67	13.783	10.96	19.78	2.40
1.800	1.47	7.800	2.67	13.800	10.96	19.80	2.40
1.817	1.47	7.817	2.67	13.817	10.96	19.82	2.40
1.833	1.47	7.833	2.67	13.833	10.96	19.83	2.40
1.850	1.47	7.850	2.67	13.850	10.96	19.85	2.40
1.867	1.47	7.867	2.67	13.867	10.96	19.87	2.40
1.883	1.47	7.883	2.67	13.883	10.96	19.88	2.40
1.900	1.47	7.900	2.67	13.900	10.96	19.90	2.40
1.917	1.47	7.917	2.67	13.917	10.96	19.92	2.40
1.933	1.47	7.933	2.67	13.933	10.96	19.93	2.40
1.950	1.47	7.950	2.67	13.950	10.96	19.95	2.40
1.967	1.47	7.967	2.67	13.967	10.96	19.97	2.40
1.983	1.47	7.983	2.67	13.983	10.96	19.98	2.40
2.000	1.47	8.000	2.67	14.000	10.96	20.00	2.40
2.017	1.74	8.017	3.61	14.017	4.03	20.02	1.61
2.033	1.74	8.033	3.61	14.033	4.01	20.03	1.60
2.050	1.74	8.050	3.61	14.050	4.01	20.05	1.60

2.067	1.74	8.067	3.61	14.067	4.01	20.07	1.60
2.083	1.74	8.083	3.61	14.083	4.01	20.08	1.60
2.100	1.74	8.100	3.61	14.100	4.01	20.10	1.60
2.117	1.74	8.117	3.61	14.117	4.01	20.12	1.60
2.133	1.74	8.133	3.61	14.133	4.01	20.13	1.60
2.150	1.74	8.150	3.61	14.150	4.01	20.15	1.60
2.167	1.74	8.167	3.61	14.167	4.01	20.17	1.60
2.183	1.74	8.183	3.61	14.183	4.01	20.18	1.60
2.200	1.74	8.200	3.61	14.200	4.01	20.20	1.60
2.217	1.74	8.217	3.61	14.217	4.01	20.22	1.60
2.233	1.74	8.233	3.61	14.233	4.01	20.23	1.60
2.250	1.74	8.250	3.61	14.250	4.01	20.25	1.60
2.267	1.74	8.267	3.61	14.267	4.01	20.27	1.60
2.283	1.74	8.283	3.61	14.283	4.01	20.28	1.60
2.300	1.74	8.300	3.61	14.300	4.01	20.30	1.60
2.317	1.74	8.317	3.61	14.317	4.01	20.32	1.60
2.333	1.74	8.333	3.61	14.333	4.01	20.33	1.60
2.350	1.74	8.350	3.61	14.350	4.01	20.35	1.60
2.367	1.74	8.367	3.61	14.367	4.01	20.37	1.60
2.383	1.74	8.383	3.61	14.383	4.01	20.38	1.60
2.400	1.74	8.400	3.61	14.400	4.01	20.40	1.60
2.417	1.74	8.417	3.61	14.417	4.01	20.42	1.60
2.433	1.74	8.433	3.61	14.433	4.01	20.43	1.60
2.450	1.74	8.450	3.61	14.450	4.01	20.45	1.60
2.467	1.74	8.467	3.61	14.467	4.01	20.47	1.60
2.483	1.74	8.483	3.61	14.483	4.01	20.48	1.60
2.500	1.74	8.500	3.61	14.500	4.01	20.50	1.60
2.517	1.74	8.517	3.61	14.517	4.01	20.52	1.60
2.533	1.74	8.533	3.61	14.533	4.01	20.53	1.60
2.550	1.74	8.550	3.61	14.550	4.01	20.55	1.60
2.567	1.74	8.567	3.61	14.567	4.01	20.57	1.60
2.583	1.74	8.583	3.61	14.583	4.01	20.58	1.60
2.600	1.74	8.600	3.61	14.600	4.01	20.60	1.60
2.617	1.74	8.617	3.61	14.617	4.01	20.62	1.60
2.633	1.74	8.633	3.61	14.633	4.01	20.63	1.60
2.650	1.74	8.650	3.61	14.650	4.01	20.65	1.60
2.667	1.74	8.667	3.61	14.667	4.01	20.67	1.60
2.683	1.74	8.683	3.61	14.683	4.01	20.68	1.60
2.700	1.74	8.700	3.61	14.700	4.01	20.70	1.60
2.717	1.74	8.717	3.61	14.717	4.01	20.72	1.60
2.733	1.74	8.733	3.61	14.733	4.01	20.73	1.60
2.750	1.74	8.750	3.61	14.750	4.01	20.75	1.60
2.767	1.74	8.767	3.61	14.767	4.01	20.77	1.60
2.783	1.74	8.783	3.61	14.783	4.01	20.78	1.60
2.800	1.74	8.800	3.61	14.800	4.01	20.80	1.60
2.817	1.74	8.817	3.61	14.817	4.01	20.82	1.60
2.833	1.74	8.833	3.61	14.833	4.01	20.83	1.60
2.850	1.74	8.850	3.61	14.850	4.01	20.85	1.60
2.867	1.74	8.867	3.61	14.867	4.01	20.87	1.60

2.883	1.74	8.883	3.61	14.883	4.01	20.88	1.60
2.900	1.74	8.900	3.61	14.900	4.01	20.90	1.60
2.917	1.74	8.917	3.61	14.917	4.01	20.92	1.60
2.933	1.74	8.933	3.61	14.933	4.01	20.93	1.60
2.950	1.74	8.950	3.61	14.950	4.01	20.95	1.60
2.967	1.74	8.967	3.61	14.967	4.01	20.97	1.60
2.983	1.74	8.983	3.61	14.983	4.01	20.98	1.60
3.000	1.74	9.000	3.61	15.000	4.01	21.00	1.60
3.017	1.74	9.017	4.28	15.017	4.01	21.02	1.60
3.033	1.74	9.033	4.28	15.033	4.01	21.03	1.60
3.050	1.74	9.050	4.28	15.050	4.01	21.05	1.60
3.067	1.74	9.067	4.28	15.067	4.01	21.07	1.60
3.083	1.74	9.083	4.28	15.083	4.01	21.08	1.60
3.100	1.74	9.100	4.28	15.100	4.01	21.10	1.60
3.117	1.74	9.117	4.28	15.117	4.01	21.12	1.60
3.133	1.74	9.133	4.28	15.133	4.01	21.13	1.60
3.150	1.74	9.150	4.28	15.150	4.01	21.15	1.60
3.167	1.74	9.167	4.28	15.167	4.01	21.17	1.60
3.183	1.74	9.183	4.28	15.183	4.01	21.18	1.60
3.200	1.74	9.200	4.28	15.200	4.01	21.20	1.60
3.217	1.74	9.217	4.28	15.217	4.01	21.22	1.60
3.233	1.74	9.233	4.28	15.233	4.01	21.23	1.60
3.250	1.74	9.250	4.28	15.250	4.01	21.25	1.60
3.267	1.74	9.267	4.28	15.267	4.01	21.27	1.60
3.283	1.74	9.283	4.28	15.283	4.01	21.28	1.60
3.300	1.74	9.300	4.28	15.300	4.01	21.30	1.60
3.317	1.74	9.317	4.28	15.317	4.01	21.32	1.60
3.333	1.74	9.333	4.28	15.333	4.01	21.33	1.60
3.350	1.74	9.350	4.28	15.350	4.01	21.35	1.60
3.367	1.74	9.367	4.28	15.367	4.01	21.37	1.60
3.383	1.74	9.383	4.28	15.383	4.01	21.38	1.60
3.400	1.74	9.400	4.28	15.400	4.01	21.40	1.60
3.417	1.74	9.417	4.28	15.417	4.01	21.42	1.60
3.433	1.74	9.433	4.28	15.433	4.01	21.43	1.60
3.450	1.74	9.450	4.28	15.450	4.01	21.45	1.60
3.467	1.74	9.467	4.28	15.467	4.01	21.47	1.60
3.483	1.74	9.483	4.28	15.483	4.01	21.48	1.60
3.500	1.74	9.500	4.28	15.500	4.01	21.50	1.60
3.517	1.74	9.517	4.81	15.517	4.01	21.52	1.60
3.533	1.74	9.533	4.81	15.533	4.01	21.53	1.60
3.550	1.74	9.550	4.81	15.550	4.01	21.55	1.60
3.567	1.74	9.567	4.81	15.567	4.01	21.57	1.60
3.583	1.74	9.583	4.81	15.583	4.01	21.58	1.60
3.600	1.74	9.600	4.81	15.600	4.01	21.60	1.60
3.617	1.74	9.617	4.81	15.617	4.01	21.62	1.60
3.633	1.74	9.633	4.81	15.633	4.01	21.63	1.60
3.650	1.74	9.650	4.81	15.650	4.01	21.65	1.60
3.667	1.74	9.667	4.81	15.667	4.01	21.67	1.60
3.683	1.74	9.683	4.81	15.683	4.01	21.68	1.60

3.700	1.74	9.700	4.81	15.700	4.01	21.70	1.60
3.717	1.74	9.717	4.81	15.717	4.01	21.72	1.60
3.733	1.74	9.733	4.81	15.733	4.01	21.73	1.60
3.750	1.74	9.750	4.81	15.750	4.01	21.75	1.60
3.767	1.74	9.767	4.81	15.767	4.01	21.77	1.60
3.783	1.74	9.783	4.81	15.783	4.01	21.78	1.60
3.800	1.74	9.800	4.81	15.800	4.01	21.80	1.60
3.817	1.74	9.817	4.81	15.817	4.01	21.82	1.60
3.833	1.74	9.833	4.81	15.833	4.01	21.83	1.60
3.850	1.74	9.850	4.81	15.850	4.01	21.85	1.60
3.867	1.74	9.867	4.81	15.867	4.01	21.87	1.60
3.883	1.74	9.883	4.81	15.883	4.01	21.88	1.60
3.900	1.74	9.900	4.81	15.900	4.01	21.90	1.60
3.917	1.74	9.917	4.81	15.917	4.01	21.92	1.60
3.933	1.74	9.933	4.81	15.933	4.01	21.93	1.60
3.950	1.74	9.950	4.81	15.950	4.01	21.95	1.60
3.967	1.74	9.967	4.81	15.967	4.01	21.97	1.60
3.983	1.74	9.983	4.81	15.983	4.01	21.98	1.60
4.000	1.74	10.000	4.81	16.000	4.01	22.00	1.60
4.017	2.14	10.017	6.15	16.017	2.41	22.02	1.60
4.033	2.14	10.033	6.15	16.033	2.40	22.03	1.60
4.050	2.14	10.050	6.15	16.050	2.40	22.05	1.60
4.067	2.14	10.067	6.15	16.067	2.40	22.07	1.60
4.083	2.14	10.083	6.15	16.083	2.40	22.08	1.60
4.100	2.14	10.100	6.15	16.100	2.40	22.10	1.60
4.117	2.14	10.117	6.15	16.117	2.40	22.12	1.60
4.133	2.14	10.133	6.15	16.133	2.40	22.13	1.60
4.150	2.14	10.150	6.15	16.150	2.40	22.15	1.60
4.167	2.14	10.167	6.15	16.167	2.40	22.17	1.60
4.183	2.14	10.183	6.15	16.183	2.40	22.18	1.60
4.200	2.14	10.200	6.15	16.200	2.40	22.20	1.60
4.217	2.14	10.217	6.15	16.217	2.40	22.22	1.60
4.233	2.14	10.233	6.15	16.233	2.40	22.23	1.60
4.250	2.14	10.250	6.15	16.250	2.40	22.25	1.60
4.267	2.14	10.267	6.15	16.267	2.40	22.27	1.60
4.283	2.14	10.283	6.15	16.283	2.40	22.28	1.60
4.300	2.14	10.300	6.15	16.300	2.40	22.30	1.60
4.317	2.14	10.317	6.15	16.317	2.40	22.32	1.60
4.333	2.14	10.333	6.15	16.333	2.40	22.33	1.60
4.350	2.14	10.350	6.15	16.350	2.40	22.35	1.60
4.367	2.14	10.367	6.15	16.367	2.40	22.37	1.60
4.383	2.14	10.383	6.15	16.383	2.40	22.38	1.60
4.400	2.14	10.400	6.15	16.400	2.40	22.40	1.60
4.417	2.14	10.417	6.15	16.417	2.40	22.42	1.60
4.433	2.14	10.433	6.15	16.433	2.40	22.43	1.60
4.450	2.14	10.450	6.15	16.450	2.40	22.45	1.60
4.467	2.14	10.467	6.15	16.467	2.40	22.47	1.60
4.483	2.14	10.483	6.15	16.483	2.40	22.48	1.60
4.500	2.14	10.500	6.15	16.500	2.40	22.50	1.60

4.517	2.14	10.517	8.28	16.517	2.40	22.52	1.60
4.533	2.14	10.533	8.28	16.533	2.40	22.53	1.60
4.550	2.14	10.550	8.28	16.550	2.40	22.55	1.60
4.567	2.14	10.567	8.28	16.567	2.40	22.57	1.60
4.583	2.14	10.583	8.28	16.583	2.40	22.58	1.60
4.600	2.14	10.600	8.28	16.600	2.40	22.60	1.60
4.617	2.14	10.617	8.28	16.617	2.40	22.62	1.60
4.633	2.14	10.633	8.28	16.633	2.40	22.63	1.60
4.650	2.14	10.650	8.28	16.650	2.40	22.65	1.60
4.667	2.14	10.667	8.28	16.667	2.40	22.67	1.60
4.683	2.14	10.683	8.28	16.683	2.40	22.68	1.60
4.700	2.14	10.700	8.28	16.700	2.40	22.70	1.60
4.717	2.14	10.717	8.28	16.717	2.40	22.72	1.60
4.733	2.14	10.733	8.28	16.733	2.40	22.73	1.60
4.750	2.14	10.750	8.28	16.750	2.40	22.75	1.60
4.767	2.14	10.767	8.28	16.767	2.40	22.77	1.60
4.783	2.14	10.783	8.28	16.783	2.40	22.78	1.60
4.800	2.14	10.800	8.28	16.800	2.40	22.80	1.60
4.817	2.14	10.817	8.28	16.817	2.40	22.82	1.60
4.833	2.14	10.833	8.28	16.833	2.40	22.83	1.60
4.850	2.14	10.850	8.28	16.850	2.40	22.85	1.60
4.867	2.14	10.867	8.28	16.867	2.40	22.87	1.60
4.883	2.14	10.883	8.28	16.883	2.40	22.88	1.60
4.900	2.14	10.900	8.28	16.900	2.40	22.90	1.60
4.917	2.14	10.917	8.28	16.917	2.40	22.92	1.60
4.933	2.14	10.933	8.28	16.933	2.40	22.93	1.60
4.950	2.14	10.950	8.28	16.950	2.40	22.95	1.60
4.967	2.14	10.967	8.28	16.967	2.40	22.97	1.60
4.983	2.14	10.983	8.28	16.983	2.40	22.98	1.60
5.000	2.14	11.000	8.28	17.000	2.40	23.00	1.60
5.017	2.14	11.017	12.83	17.017	2.40	23.02	1.60
5.033	2.14	11.033	12.83	17.033	2.40	23.03	1.60
5.050	2.14	11.050	12.83	17.050	2.40	23.05	1.60
5.067	2.14	11.067	12.83	17.067	2.40	23.07	1.60
5.083	2.14	11.083	12.83	17.083	2.40	23.08	1.60
5.100	2.14	11.100	12.83	17.100	2.40	23.10	1.60
5.117	2.14	11.117	12.83	17.117	2.40	23.12	1.60
5.133	2.14	11.133	12.83	17.133	2.40	23.13	1.60
5.150	2.14	11.150	12.83	17.150	2.40	23.15	1.60
5.167	2.14	11.167	12.83	17.167	2.40	23.17	1.60
5.183	2.14	11.183	12.83	17.183	2.40	23.18	1.60
5.200	2.14	11.200	12.83	17.200	2.40	23.20	1.60
5.217	2.14	11.217	12.83	17.217	2.40	23.22	1.60
5.233	2.14	11.233	12.83	17.233	2.40	23.23	1.60
5.250	2.14	11.250	12.83	17.250	2.40	23.25	1.60
5.267	2.14	11.267	12.83	17.267	2.40	23.27	1.60
5.283	2.14	11.283	12.83	17.283	2.40	23.28	1.60
5.300	2.14	11.300	12.83	17.300	2.40	23.30	1.60
5.317	2.14	11.317	12.83	17.317	2.40	23.32	1.60

5.333	2.14	11.333	12.83	17.333	2.40	23.33	1.60
5.350	2.14	11.350	12.83	17.350	2.40	23.35	1.60
5.367	2.14	11.367	12.83	17.367	2.40	23.37	1.60
5.383	2.14	11.383	12.83	17.383	2.40	23.38	1.60
5.400	2.14	11.400	12.83	17.400	2.40	23.40	1.60
5.417	2.14	11.417	12.83	17.417	2.40	23.42	1.60
5.433	2.14	11.433	12.83	17.433	2.40	23.43	1.60
5.450	2.14	11.450	12.83	17.450	2.40	23.45	1.60
5.467	2.14	11.467	12.83	17.467	2.40	23.47	1.60
5.483	2.14	11.483	12.83	17.483	2.40	23.48	1.60
5.500	2.14	11.500	12.83	17.500	2.40	23.50	1.60
5.517	2.14	11.517	55.57	17.517	2.40	23.52	1.60
5.533	2.14	11.533	55.58	17.533	2.40	23.53	1.60
5.550	2.14	11.550	55.58	17.550	2.40	23.55	1.60
5.567	2.14	11.567	55.58	17.567	2.40	23.57	1.60
5.583	2.14	11.583	55.58	17.583	2.40	23.58	1.60
5.600	2.14	11.600	55.58	17.600	2.40	23.60	1.60
5.617	2.14	11.617	55.58	17.617	2.40	23.62	1.60
5.633	2.14	11.633	55.58	17.633	2.40	23.63	1.60
5.650	2.14	11.650	55.58	17.650	2.40	23.65	1.60
5.667	2.14	11.667	55.58	17.667	2.40	23.67	1.60
5.683	2.14	11.683	55.58	17.683	2.40	23.68	1.60
5.700	2.14	11.700	55.58	17.700	2.40	23.70	1.60
5.717	2.14	11.717	55.58	17.717	2.40	23.72	1.60
5.733	2.14	11.733	55.58	17.733	2.40	23.73	1.60
5.750	2.14	11.750	55.58	17.750	2.40	23.75	1.60
5.767	2.14	11.767	147.45	17.767	2.40	23.77	1.60
5.783	2.14	11.783	147.49	17.783	2.40	23.78	1.60
5.800	2.14	11.800	147.49	17.800	2.40	23.80	1.60
5.817	2.14	11.817	147.49	17.817	2.40	23.82	1.60
5.833	2.14	11.833	147.49	17.833	2.40	23.83	1.60
5.850	2.14	11.850	147.49	17.850	2.40	23.85	1.60
5.867	2.14	11.867	147.49	17.867	2.40	23.87	1.60
5.883	2.14	11.883	147.49	17.883	2.40	23.88	1.60
5.900	2.14	11.900	147.49	17.900	2.40	23.90	1.60
5.917	2.14	11.917	147.49	17.917	2.40	23.92	1.60
5.933	2.14	11.933	147.49	17.933	2.40	23.93	1.60
5.950	2.14	11.950	147.49	17.950	2.40	23.95	1.60
5.967	2.14	11.967	147.49	17.967	2.40	23.97	1.60
5.983	2.14	11.983	147.49	17.983	2.40	23.98	1.60
6.000	2.14	12.000	147.49	18.000	2.40	24.00	1.60

```
Unit Hyd Qpeak  (cms)=   0.117

PEAK FLOW       (cms)=   0.104 (i)
TIME TO PEAK    (hrs)=  12.200
RUNOFF VOLUME    (mm)=  48.347
TOTAL RAINFALL   (mm)= 133.601
RUNOFF COEFFICIENT   =   0.362
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     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0201)|   Area    (ha)=   1.03
|ID= 1 DT= 1.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  30.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.51         0.51
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      82.87         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     147.49       145.90
               over (min)          5.00         3.00
     Storage Coeff.  (min)=       1.59 (ii)    2.14 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.41         0.46
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.13         0.21          0.340 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=     132.60        78.49          94.72
     TOTAL RAINFALL   (mm)=     133.60       133.60         133.60
     RUNOFF COEFFICIENT   =       0.99         0.59           0.71


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| ADD HYD  (  0006)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0002):     0.95   0.104    12.20    48.35
      + ID2= 2 (  0201):     1.03   0.340    12.00    94.72
        ================================================
        ID = 3 (  0006):     1.98   0.409    12.00    77.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0011)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0190     0.0530
                          0.0120     0.0080   |   0.0200     0.0720
                          0.0150     0.0200   |   0.0220     0.0950
                          0.0170     0.0350   |   0.6940     0.1190

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0006)      1.980      0.409     12.00      77.74
   OUTFLOW: ID= 1 (  0011)      1.980      0.021     14.47      76.01

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.16
                  TIME SHIFT OF PEAK FLOW         (min)=148.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0847

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--------------------
| CALIB            |
| NASHYD   (  0202)|   Area    (ha)=   0.53   Curve Number   (CN)= 54.0
|ID= 1 DT= 1.0 min |   Ia      (mm)=  10.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.67

     Unit Hyd Qpeak  (cms)=   0.030

     PEAK FLOW       (cms)=   0.025 (i)
     TIME TO PEAK    (hrs)=  12.633
     RUNOFF VOLUME    (mm)=  34.865
     TOTAL RAINFALL   (mm)= 133.601
     RUNOFF COEFFICIENT   =   0.261

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

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--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035
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     Max.Eff.Inten.(mm/hr)=     147.49       139.67
               over (min)        5.00         7.00
     Storage Coeff.  (min)=       1.24 (ii)    6.57 (ii)
     Unit Hyd. Tpeak (min)=       5.00         7.00
     Unit Hyd. peak  (cms)=       0.45         0.17
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.10          0.113 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.02          12.02
     RUNOFF VOLUME    (mm)=     132.61        77.42          80.18
     TOTAL RAINFALL   (mm)=     133.60       133.60         133.60
     RUNOFF COEFFICIENT   =       0.99         0.58           0.60

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (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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--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------

                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=     147.49       197.71
               over (min)        5.00         2.00
     Storage Coeff.  (min)=       1.34 (ii)    1.85 (ii)
     Unit Hyd. Tpeak (min)=       5.00         2.00
     Unit Hyd. peak  (cms)=       0.44         0.59
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.13          0.205 (iii)
     TIME TO PEAK    (hrs)=      12.00        12.00          12.00
     RUNOFF VOLUME    (mm)=     132.60        85.88          99.89
     TOTAL RAINFALL   (mm)=     133.60       133.60         133.60
     RUNOFF COEFFICIENT   =       0.99         0.64           0.75


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
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      (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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--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.113    12.02    80.18
     + ID2= 2 (  0203):     0.59   0.205    12.00    99.89
       ================================================
       ID = 3 (  0009):     1.04   0.317    12.00    91.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390     0.0320
                         0.0090     0.0060    |   0.0430     0.0380
                         0.0230     0.0130    |   0.0470     0.0450
                         0.0300     0.0190    |   0.0500     0.0510
                         0.0350     0.0260    |   0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)     1.040      0.317     12.00      91.36
   OUTFLOW: ID= 1 (  0012)     1.040      0.045     12.52      91.20

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.07
                  TIME SHIFT OF PEAK FLOW         (min)= 31.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0409

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0012):     1.04   0.045    12.52    91.20
     + ID2= 2 (  0202):     0.53   0.025    12.63    34.87
       ================================================
       ID = 3 (  0013):     1.57   0.069    12.60    75.58
```



```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
================================================================================
========================

       V    V   I    SSSSS  U   U    A    L
       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

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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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 5.0\VO2\voin.dat

  Output  filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\ac3
38b84-2cb2-4a1e-956d-314368ca4ff5\sce
  Summary filename:
C:\Users\iblechta\AppData\Local\Civica\VH5\199e4eaf-dc92-4187-b36c-8e606175b4ef\ac3
38b84-2cb2-4a1e-956d-314368ca4ff5\sce


DATE: 11-25-2019                          TIME: 10:50:34

USER:


COMMENTS: _____

--------------------------------------------------------------------------------
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  ******************************************
  ** SIMULATION : Hazel                   **
  ******************************************
```

READ STORM	Filename: C:\Users\iblechta\AppData\Local\Temp\c4b20de3-13ae-4582-bae8-d7364cf8a3a5\60210d32
Ptotal=212.00 mm	Comments: Hazel

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN 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

CALIB NASHYD (0002) ID= 1 DT= 1.0 min	Area (ha)= 0.95	Curve Number (CN)= 64.0
	Ia (mm)= 7.21	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 1.0 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
0.017	6.00	3.017	13.00	6.017	23.00	9.02	53.00
0.033	6.00	3.033	13.00	6.033	23.00	9.03	53.00
0.050	6.00	3.050	13.00	6.050	23.00	9.05	53.00
0.067	6.00	3.067	13.00	6.067	23.00	9.07	53.00
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.100	6.00	3.100	13.00	6.100	23.00	9.10	53.00
0.117	6.00	3.117	13.00	6.117	23.00	9.12	53.00
0.133	6.00	3.133	13.00	6.133	23.00	9.13	53.00
0.150	6.00	3.150	13.00	6.150	23.00	9.15	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.183	6.00	3.183	13.00	6.183	23.00	9.18	53.00
0.200	6.00	3.200	13.00	6.200	23.00	9.20	53.00
0.217	6.00	3.217	13.00	6.217	23.00	9.22	53.00
0.233	6.00	3.233	13.00	6.233	23.00	9.23	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.267	6.00	3.267	13.00	6.267	23.00	9.27	53.00
0.283	6.00	3.283	13.00	6.283	23.00	9.28	53.00
0.300	6.00	3.300	13.00	6.300	23.00	9.30	53.00
0.317	6.00	3.317	13.00	6.317	23.00	9.32	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.350	6.00	3.350	13.00	6.350	23.00	9.35	53.00
0.367	6.00	3.367	13.00	6.367	23.00	9.37	53.00

0.383	6.00	3.383	13.00	6.383	23.00	9.38	53.00
0.400	6.00	3.400	13.00	6.400	23.00	9.40	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.433	6.00	3.433	13.00	6.433	23.00	9.43	53.00
0.450	6.00	3.450	13.00	6.450	23.00	9.45	53.00
0.467	6.00	3.467	13.00	6.467	23.00	9.47	53.00
0.483	6.00	3.483	13.00	6.483	23.00	9.48	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.517	6.00	3.517	13.00	6.517	23.00	9.52	53.00
0.533	6.00	3.533	13.00	6.533	23.00	9.53	53.00
0.550	6.00	3.550	13.00	6.550	23.00	9.55	53.00
0.567	6.00	3.567	13.00	6.567	23.00	9.57	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.600	6.00	3.600	13.00	6.600	23.00	9.60	53.00
0.617	6.00	3.617	13.00	6.617	23.00	9.62	53.00
0.633	6.00	3.633	13.00	6.633	23.00	9.63	53.00
0.650	6.00	3.650	13.00	6.650	23.00	9.65	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.683	6.00	3.683	13.00	6.683	23.00	9.68	53.00
0.700	6.00	3.700	13.00	6.700	23.00	9.70	53.00
0.717	6.00	3.717	13.00	6.717	23.00	9.72	53.00
0.733	6.00	3.733	13.00	6.733	23.00	9.73	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.767	6.00	3.767	13.00	6.767	23.00	9.77	53.00
0.783	6.00	3.783	13.00	6.783	23.00	9.78	53.00
0.800	6.00	3.800	13.00	6.800	23.00	9.80	53.00
0.817	6.00	3.817	13.00	6.817	23.00	9.82	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.850	6.00	3.850	13.00	6.850	23.00	9.85	53.00
0.867	6.00	3.867	13.00	6.867	23.00	9.87	53.00
0.883	6.00	3.883	13.00	6.883	23.00	9.88	53.00
0.900	6.00	3.900	13.00	6.900	23.00	9.90	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
0.933	6.00	3.933	13.00	6.933	23.00	9.93	53.00
0.950	6.00	3.950	13.00	6.950	23.00	9.95	53.00
0.967	6.00	3.967	13.00	6.967	23.00	9.97	53.00
0.983	6.00	3.983	13.00	6.983	23.00	9.98	53.00
1.000	6.00	4.000	13.00	7.000	22.98	10.00	52.98
1.017	4.00	4.017	17.00	7.017	13.00	10.02	38.00
1.033	4.00	4.033	17.00	7.033	13.00	10.03	38.00
1.050	4.00	4.050	17.00	7.050	13.00	10.05	38.00
1.067	4.00	4.067	17.00	7.067	13.00	10.07	38.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.100	4.00	4.100	17.00	7.100	13.00	10.10	38.00
1.117	4.00	4.117	17.00	7.117	13.00	10.12	38.00
1.133	4.00	4.133	17.00	7.133	13.00	10.13	38.00
1.150	4.00	4.150	17.00	7.150	13.00	10.15	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.183	4.00	4.183	17.00	7.183	13.00	10.18	38.00

1.200	4.00	4.200	17.00	7.200	13.00	10.20	38.00
1.217	4.00	4.217	17.00	7.217	13.00	10.22	38.00
1.233	4.00	4.233	17.00	7.233	13.00	10.23	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.267	4.00	4.267	17.00	7.267	13.00	10.27	38.00
1.283	4.00	4.283	17.00	7.283	13.00	10.28	38.00
1.300	4.00	4.300	17.00	7.300	13.00	10.30	38.00
1.317	4.00	4.317	17.00	7.317	13.00	10.32	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.350	4.00	4.350	17.00	7.350	13.00	10.35	38.00
1.367	4.00	4.367	17.00	7.367	13.00	10.37	38.00
1.383	4.00	4.383	17.00	7.383	13.00	10.38	38.00
1.400	4.00	4.400	17.00	7.400	13.00	10.40	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.433	4.00	4.433	17.00	7.433	13.00	10.43	38.00
1.450	4.00	4.450	17.00	7.450	13.00	10.45	38.00
1.467	4.00	4.467	17.00	7.467	13.00	10.47	38.00
1.483	4.00	4.483	17.00	7.483	13.00	10.48	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.517	4.00	4.517	17.00	7.517	13.00	10.52	38.00
1.533	4.00	4.533	17.00	7.533	13.00	10.53	38.00
1.550	4.00	4.550	17.00	7.550	13.00	10.55	38.00
1.567	4.00	4.567	17.00	7.567	13.00	10.57	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.600	4.00	4.600	17.00	7.600	13.00	10.60	38.00
1.617	4.00	4.617	17.00	7.617	13.00	10.62	38.00
1.633	4.00	4.633	17.00	7.633	13.00	10.63	38.00
1.650	4.00	4.650	17.00	7.650	13.00	10.65	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.683	4.00	4.683	17.00	7.683	13.00	10.68	38.00
1.700	4.00	4.700	17.00	7.700	13.00	10.70	38.00
1.717	4.00	4.717	17.00	7.717	13.00	10.72	38.00
1.733	4.00	4.733	17.00	7.733	13.00	10.73	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.767	4.00	4.767	17.00	7.767	13.00	10.77	38.00
1.783	4.00	4.783	17.00	7.783	13.00	10.78	38.00
1.800	4.00	4.800	17.00	7.800	13.00	10.80	38.00
1.817	4.00	4.817	17.00	7.817	13.00	10.82	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.850	4.00	4.850	17.00	7.850	13.00	10.85	38.00
1.867	4.00	4.867	17.00	7.867	13.00	10.87	38.00
1.883	4.00	4.883	17.00	7.883	13.00	10.88	38.00
1.900	4.00	4.900	17.00	7.900	13.00	10.90	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
1.933	4.00	4.933	17.00	7.933	13.00	10.93	38.00
1.950	4.00	4.950	17.00	7.950	13.00	10.95	38.00
1.967	4.00	4.967	17.00	7.967	13.00	10.97	38.00
1.983	4.00	4.983	17.00	7.983	13.00	10.98	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	37.99

2.017	6.00	5.017	13.00	8.017	13.00	11.02	13.00
2.033	6.00	5.033	13.00	8.033	13.00	11.03	13.00
2.050	6.00	5.050	13.00	8.050	13.00	11.05	13.00
2.067	6.00	5.067	13.00	8.067	13.00	11.07	13.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.100	6.00	5.100	13.00	8.100	13.00	11.10	13.00
2.117	6.00	5.117	13.00	8.117	13.00	11.12	13.00
2.133	6.00	5.133	13.00	8.133	13.00	11.13	13.00
2.150	6.00	5.150	13.00	8.150	13.00	11.15	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.183	6.00	5.183	13.00	8.183	13.00	11.18	13.00
2.200	6.00	5.200	13.00	8.200	13.00	11.20	13.00
2.217	6.00	5.217	13.00	8.217	13.00	11.22	13.00
2.233	6.00	5.233	13.00	8.233	13.00	11.23	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.267	6.00	5.267	13.00	8.267	13.00	11.27	13.00
2.283	6.00	5.283	13.00	8.283	13.00	11.28	13.00
2.300	6.00	5.300	13.00	8.300	13.00	11.30	13.00
2.317	6.00	5.317	13.00	8.317	13.00	11.32	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.350	6.00	5.350	13.00	8.350	13.00	11.35	13.00
2.367	6.00	5.367	13.00	8.367	13.00	11.37	13.00
2.383	6.00	5.383	13.00	8.383	13.00	11.38	13.00
2.400	6.00	5.400	13.00	8.400	13.00	11.40	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.433	6.00	5.433	13.00	8.433	13.00	11.43	13.00
2.450	6.00	5.450	13.00	8.450	13.00	11.45	13.00
2.467	6.00	5.467	13.00	8.467	13.00	11.47	13.00
2.483	6.00	5.483	13.00	8.483	13.00	11.48	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.517	6.00	5.517	13.00	8.517	13.00	11.52	13.00
2.533	6.00	5.533	13.00	8.533	13.00	11.53	13.00
2.550	6.00	5.550	13.00	8.550	13.00	11.55	13.00
2.567	6.00	5.567	13.00	8.567	13.00	11.57	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.600	6.00	5.600	13.00	8.600	13.00	11.60	13.00
2.617	6.00	5.617	13.00	8.617	13.00	11.62	13.00
2.633	6.00	5.633	13.00	8.633	13.00	11.63	13.00
2.650	6.00	5.650	13.00	8.650	13.00	11.65	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.683	6.00	5.683	13.00	8.683	13.00	11.68	13.00
2.700	6.00	5.700	13.00	8.700	13.00	11.70	13.00
2.717	6.00	5.717	13.00	8.717	13.00	11.72	13.00
2.733	6.00	5.733	13.00	8.733	13.00	11.73	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.767	6.00	5.767	13.00	8.767	13.00	11.77	13.00
2.783	6.00	5.783	13.00	8.783	13.00	11.78	13.00
2.800	6.00	5.800	13.00	8.800	13.00	11.80	13.00
2.817	6.00	5.817	13.00	8.817	13.00	11.82	13.00

2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.850	6.00	5.850	13.00	8.850	13.00	11.85	13.00
2.867	6.00	5.867	13.00	8.867	13.00	11.87	13.00
2.883	6.00	5.883	13.00	8.883	13.00	11.88	13.00
2.900	6.00	5.900	13.00	8.900	13.00	11.90	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
2.933	6.00	5.933	13.00	8.933	13.00	11.93	13.00
2.950	6.00	5.950	13.00	8.950	13.00	11.95	13.00
2.967	6.00	5.967	13.00	8.967	13.00	11.97	13.00
2.983	6.00	5.983	13.00	8.983	13.00	11.98	13.00
3.000	6.00	6.000	13.01	9.000	13.08	12.00	13.00

Unit Hyd Qpeak (cms)= 0.117

PEAK FLOW (cms)= 0.100 (i)
TIME TO PEAK (hrs)= 10.100
RUNOFF VOLUME (mm)= 120.630
TOTAL RAINFALL (mm)= 212.001
RUNOFF COEFFICIENT = 0.569

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

CALIB	
STANDHYD (0201)	Area (ha)= 1.03
ID= 1 DT= 1.0 min	Total Imp(%)= 50.00 Dir. Conn.(%)= 30.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.51	0.51	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	2.00	5.00	
Length	(m)=	82.87	6.00	
Mannings n	=	0.013	0.035	
Max.Eff.Inten.(mm/hr)=		53.00	64.68	
over (min)		5.00	4.00	
Storage Coeff. (min)=		2.39 (ii)	3.22 (ii)	
Unit Hyd. Tpeak (min)=		5.00	4.00	
Unit Hyd. peak (cms)=		0.35	0.32	
				TOTALS
PEAK FLOW	(cms)=	0.05	0.09	0.138 (iii)
TIME TO PEAK	(hrs)=	9.58	10.00	10.00
RUNOFF VOLUME	(mm)=	211.00	147.86	166.80
TOTAL RAINFALL	(mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT	=	1.00	0.70	0.79

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0006)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (0002):	0.95	0.100	10.10	120.63
	+ ID2= 2 (0201):	1.03	0.138	10.00	166.80
	ID = 3 (0006):	1.98	0.236	10.00	144.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR(0011)				
IN= 2---> OUT= 1				
DT= 1.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0190	0.0530
	0.0120	0.0080	0.0200	0.0720
	0.0150	0.0200	0.0220	0.0950
	0.0170	0.0350	0.6940	0.1190

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (0006)	1.980	0.236	10.00	144.65
OUTFLOW: ID= 1 (0011)	1.980	0.232	10.03	144.56

PEAK FLOW REDUCTION [Qout/Qin](%)= 98.25
TIME SHIFT OF PEAK FLOW (min)= 2.00
MAXIMUM STORAGE USED (ha.m.)= 0.1025

CALIB			
NASHYD (0202)	Area (ha)= 0.53	Curve Number (CN)= 54.0	
ID= 1 DT= 1.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.67		

Unit Hyd Qpeak (cms)= 0.030

PEAK FLOW (cms)= 0.040 (i)
TIME TO PEAK (hrs)= 10.983

```
     RUNOFF VOLUME    (mm)=  97.531
     TOTAL RAINFALL   (mm)= 212.001
     RUNOFF COEFFICIENT   =   0.460

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0001)|   Area    (ha)=   0.45
|ID= 1 DT= 1.0 min |   Total Imp(%)=  30.00   Dir. Conn.(%)=   5.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.14         0.31
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       2.00         2.00
     Length            (m)=      54.77        40.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      53.00        62.31
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.86 (ii)    9.90 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.39         0.11
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.05          0.057 (iii)
     TIME TO PEAK    (hrs)=       9.38        10.00          10.00
     RUNOFF VOLUME    (mm)=     211.00       146.41         149.63
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.69           0.71

***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0203)|   Area    (ha)=   0.59
|ID= 1 DT= 1.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  30.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.35         0.24
     Dep. Storage     (mm)=       1.00         5.00
```



```
     Average Slope     (%)=       2.00         5.00
     Length            (m)=      62.72         6.00
     Mannings n           =      0.013        0.035

     Max.Eff.Inten.(mm/hr)=      53.00        83.97
               over (min)        5.00         3.00
     Storage Coeff.  (min)=       2.02 (ii)    2.79 (ii)
     Unit Hyd. Tpeak (min)=       5.00         3.00
     Unit Hyd. peak  (cms)=       0.37         0.39
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.06          0.081 (iii)
     TIME TO PEAK    (hrs)=       9.48        10.00          10.00
     RUNOFF VOLUME    (mm)=     210.99       157.65         173.66
     TOTAL RAINFALL   (mm)=     212.00       212.00         212.00
     RUNOFF COEFFICIENT   =       1.00         0.74           0.82


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  68.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0009)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0001):     0.45   0.057    10.00   149.63
     + ID2= 2 (  0203):     0.59   0.081    10.00   173.66
       ================================================
       ID = 3 (  0009):     1.04   0.138    10.00   163.26

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0012)|
| IN= 2---> OUT= 1 |
| DT=  1.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                         0.0000     0.0000    |   0.0390     0.0320
                         0.0090     0.0060    |   0.0430     0.0380
                         0.0230     0.0130    |   0.0470     0.0450
                         0.0300     0.0190    |   0.0500     0.0510
                         0.0350     0.0260    |   0.0000     0.0000

                               AREA     QPEAK     TPEAK       R.V.
```

```
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0009)      1.040      0.138     10.00     163.26
   OUTFLOW: ID= 1 (  0012)      1.040      0.059     11.13     163.10

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 42.92
                  TIME SHIFT OF PEAK FLOW         (min)= 68.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0696

--------------------------------------------------------------------------------

--------------------
| ADD HYD  (  0013)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0012):     1.04   0.059    11.13   163.10
      + ID2= 2 (  0202):     0.53   0.040    10.98    97.53
        ================================================
        ID = 3 (  0013):     1.57   0.099    11.08   140.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 FINISH
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APPENDIX D

Stormwater Management Calculations

MECP Water Quality Storage Requirements
Water Balance
Volume Control Requirements
Bioretentition Facility Sizing
Phosphorus Loading calculation
Storm Sewer Design Sheet

PROJECT: 428 Little Avenue
PROJECT No: 0892-4560
FILE: MECP WQV
DATE: November 21, 2019
DESIGN: ML
CHECK:

[1]MECP Water Quality Storage Requirements based on Receiving Waters

Enhanced: 80% long-term S.S. removal

	Storage Volume (m^3/ha) for Impervious Level			
SWMP Type	35%	55%	70%	85%
Infiltration	25	30	35	40
Wetlands	80	105	120	140
Hybrid Wet Pond/V	110	150	175	195
Wet Pond	140	190	225	250

Catchment ID	Receiving Waters	Assumed Impervious Level	Required Storage Volume (m^3/ha)	Catchment Area (ha)	MECP Storage Requirements (m^3)
Whiskey Creek					
STM-1	Infiltration	50%	28.8	0.22	6.3
STM-10	Infiltration	80%	38.3	0.26	10.0
TOTAL	**Infiltration**	**54%**	**29.8**	**0.48**	**16.3**
Lovers Creek					
STM-11	Infiltration	80%	38.3	0.26	10.0
STM-12	Infiltration	85%	40.0	0.17	6.8
STM-13	Infiltration	71%	35.3	0.10	3.5
STM-14	Infiltration	35%	25.0	0.19	4.8
TOTAL	**Infiltration**	**52%**	**29.1**	**0.72**	**25.1**

Notes:
1) Calculations based on Table 3.2 of the Stormwater Management Planning and Design Manual prepared by the Ministry of Environment (March 2003).
2) Based on interpolation and extrapolation

Climate Normals 1981-2010 Station Data

Metadata including Station Name, Province, Latitude, Longitude, Elevation, Climate ID, WMO ID, TC ID

STATION_NAME	PROVINCE	LATITUDE	LONGITUD	ELEVATION	CLIMATE_I	WMO_ID	TC_ID
BARRIE WPCC	ON	44°22'33.(	79°41'23.(	221.0 m	6110557		

Legend

A = WMO "3 and 5 rule" (i.e. no more than 3 consecutive and no more than 5 total missing for either temperature or precipitation)
B = At least 25 years
C = At least 20 years
D = At least 15 years

1981 to 2010 Canadian Climate Normals station data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Temperature														
Daily Average (°C)	-7.7	-6.6	-2.1	5.6	12.3	17.9	20.8	19.7	15.3	8.7	2.7	-3.5	6.9	C
Standard Deviation	3.4	2.6	2.2	1.6	1.9	1.4	1.3	1.5	1.4	1.2	1.6	3	1.4	C
Daily Maximum (°C)	-2.9	-1.5	3.2	11	18.1	23.6	26.3	25.1	20.7	13.5	6.5	0.4	12	C
Daily Minimum (°C)	-12.4	-11.7	-7.4	0.2	6.5	12.3	15.3	14.3	10	3.9	-1	-7.3	1.9	C
Extreme Maximum (°C)	14	14	24	30.5	35	35	36	36.5	34.5	30	21.5	19.5		
Date (yyyy/dd)	1995/14	1984/23	1998/30	2002/16	2006/30	1994/17	1988/06	2006/01	2002/09	2005/05	1978/05	1982/03		
Extreme Minimum (°C)	-35	-33	-30.5	-15	-4	1	6	0	-1.5	-6.5	-19.5	-33		
Date (yyyy/dd)	1981/04	1979/18	1984/08	2003/07	2006/07	1980/09	1984/08	2004/22	1993/30	1988/31	1989/29	2004/20		
Precipitation														
Rainfall (mm)	16.6	16	29.2	56.6	82.3	84.8	77.2	89.9	94	75.2	66	22.2	709.9	C
Snowfall (cm)	65.9	45.9	29	5.7	0.1	0	0	0	0	2.3	22.8	51.4	223	C
Precipitation (mm)	82.5	61.8	58.1	62.2	82.4	84.8	77.2	89.9	94	77.5	88.9	73.6	932.9	C
Average Snow Depth (cm)	16	17	8	1	0	0	0	0	0	0	2	9	4	D
Median Snow Depth (cm)	17	17	8	0	0	0	0	0	0	0	1	8	4	D
Snow Depth at Month-end (cm	17	15	1	0	0	0	0	0	0	0	4	11	4	C
Extreme Daily Rainfall (mm)	27	35	43	40	54.4	96	75	79	80	48.8	50	28.6		
Date (yyyy/dd)	1998/05	1997/21	1990/11	1995/21	2004/23	1995/02	1980/20	1995/31	1986/11	1995/05	1999/02	1979/24		
Extreme Daily Snowfall (cm)	65	32.4	22	17	2	0	0	0	0	12	27	44		
Date (yyyy/dd)	1978/09	1984/29	1984/10	1979/04	1989/07	1978/01	1978/01	1978/01	1977/01	1997/26	2000/21	1995/10		
Extreme Daily Precipitation (m	65	35	43	40	54.4	96	75	79	80	48.8	52	44		
Date (yyyy/dd)	1978/09	1997/21	1990/11	1995/21	2004/23	1995/02	1980/20	1995/31	1986/11	1995/05	1999/02	1995/10		
Extreme Snow Depth (cm)	57	59	50	21	0	0	0	0	0	8	29	54		
Date (yyyy/dd)	1981/07	2001/09	2003/05	1987/01	1981/01	1981/01	1981/01	1981/01	1981/01	1997/27	1995/28	1995/11		
Days with Maximum Temperature														
<= 0 °C	21	16.6	10	0.92	0	0	0	0	0	0	3.5	14.6	66.6	C
> 0 °C	10	11.6	21	29.1	31	30	31	31	30	31	26.5	16.4	298.6	C
> 10 °C	0.36	0.48	3.8	14.9	28.2	29.9	31	31	29.5	21.8	6.4	1	198.2	C
> 20 °C	0	0	0.54	3.1	10.6	22.6	29.1	27.3	15.6	3.6	0.08	0	112.5	C
> 30 °C	0	0	0	0.04	0.4	2.5	4.4	2.4	0.63	0	0	0	10.4	C
> 35 °C	0	0	0	0	0	0	0.04	0.04	0	0	0	0	0.08	C
Days with Minimum Temperature														
> 0 °C	0.84	1	2.9	13.9	29	30	31	31	29.8	24.8	10.6	3	207.8	C
<= 2 °C	30.9	28.1	30.2	21.7	5.2	0.12	0	0.09	0.96	12.3	23.7	29.9	183	C
<= 0 °C	30.2	27.2	28.1	16.1	2	0	0	0.04	0.21	6.3	19.4	28	157.5	C
< -2 °C	27	24.6	22.9	7.1	0.12	0	0	0	0	0.92	10.6	22.6	115.8	C
< -10 °C	17	15.6	9.1	0.52	0	0	0	0	0	0	0.79	9.6	52.6	C
< -20 °C	6	3.9	0.96	0	0	0	0	0	0	0	0	1.3	12.2	C
< - 30 °C	0.56	0.13	0.04	0	0	0	0	0	0	0	0	0.04	0.77	C
Days with Rainfall														
>= 0.2 mm	2.8	3	5.4	11.3	12.9	11.4	11.1	11.8	13.3	15.5	11.3	4.6	114.4	C
>= 5 mm	1	1.2	2.2	3.9	5.8	4.4	4.7	5.1	5.4	5.5	4.6	1.9	45.5	C
>= 10 mm	0.64	0.58	0.88	1.6	2.7	2.9	2.5	3.4	3	1.9	2.2	0.46	22.8	C
>= 25 mm	0.04	0.08	0.04	0.27	0.36	0.73	0.62	0.81	0.73	0.15	0.28	0.04	4.2	C
Days With Snowfall														
>= 0.2 cm	12.4	10	6.8	1.5	0.04	0	0	0	0	0.54	4.5	9.6	45.5	C
>= 5 cm	5	3.4	2.2	0.35	0	0	0	0	0	0.19	1.6	3.8	16.5	C
>= 10 cm	1.8	1	0.64	0.12	0	0	0	0	0	0.04	0.46	1.6	5.7	C
>= 25 cm	0.08	0.15	0	0.04	0	0	0	0	0	0	0.08	0.08	0.43	C
Days with Precipitation														
>= 0.2 mm	14.9	12.3	11.6	12.2	12.9	11.4	11.1	11.8	13.3	15.6	15.4	13.8	156.1	C
>= 5 mm	6	4.5	4.3	4.2	5.8	4.4	4.7	5.1	5.4	5.7	6.2	5.8	62	C
>= 10 mm	2.4	1.8	1.6	1.7	2.7	2.9	2.5	3.4	3	2	2.7	2.1	28.9	C
>= 25 mm	0.12	0.23	0.04	0.31	0.36	0.73	0.62	0.81	0.73	0.19	0.44	0.13	4.7	C
Degree Days														
Above 24 °C	0	0	0	0	0.1	2.5	8.3	4.2	0.4	0	0	0	15.5	C
Above 18 °C	0	0	0	0.8	8	45.5	95.8	71.4	19.6	1	0	0	242	C
Above 15 °C	0	0	0	3.4	25.6	103.1	180.5	149.2	56.1	5.1	0	0	523	C
Above 10 °C	0	0	1.5	16.8	97.6	239.8	334.6	301.4	165.9	36.1	2.2	0.3	1196.3	C
Above 5 °C	0.4	0.5	10.1	66.1	227.7	389.2	489.6	456.3	310.6	126.9	26.1	3.9	2107.4	C
Above 0 °C	7.7	10.1	44.4	176.1	381.7	539.2	644.6	611.3	460.5	272.9	101.1	25.4	3274.9	C
Below 0 °C	245.7	194.9	110	7.9	0	0	0	0	0	0	21.7	132.5	712.8	C
Below 5 °C	393.4	326.4	230.8	47.9	1.1	0	0	0	0.1	9.1	96.6	266	1371.3	C
Below 10 °C	548	466.9	377.1	148.6	25.9	0.6	0	0	0.1	5.4	73.2	222.8	417.4	2286.2	C
Below 15 °C	703	608	530.7	285.3	108.9	14	0.9	2.8	45.6	197.2	370.6	572.1	3439.1	C
Below 18 °C	796	692.6	623.7	372.6	184.3	46.3	9.1	18	99	286.2	460.6	665.1	4253.7	C

1981 to 2010 Canadian Climate Normals station data (Frost-Free)

	Frost-Free:	Code						
Average Date of Last Spring Fr	07-May	D						
Average Date of First Fall Frost	09-Oct	D						
Average Length of Frost-Free F	153 Days	D						
Probability of last temperature	10%	25%	33%	50%	66%	75%	90%	
Date	19-May	16-May	12-May	05-May	03-May	30-Apr	27-Apr	
Probability of first temperatur	10%	25%	33%	50%	66%	75%	90%	
Date	20-Sep	02-Oct	07-Oct	10-Oct	14-Oct	18-Oct	23-Oct	
Probability of frost-free period	10%	25%	33%	50%	66%	75%	90%	
Days	126	147	154	156	159	161	169	

CROZIER
CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Climatic Water Budget - Thornthwaite Method

Project Name: 428 Little Avenue - Lovers Creek
BARRIE WPCC - Climate Normals 1981-2010 Station Data

Month	Mean Temperature (◦C)	Heat index	" a "	PET - Potential Evapotranspiration (mm)	Daily Correction Value	Adjusted PET - Potential Evapotranspiration (mm)	Total Precipitation (mm)	Surplus (mm)	Deficit (mm)
January	-7.7	0.0	0.49	0.0	0.81	0.0	82.5	82.5	0.0
February	-6.6	0.0	0.49	0.0	0.81	0.0	61.8	61.8	0.0
March	-2.1	0.0	0.49	0.0	1.02	0.0	58.1	58.1	0.0
April	5.6	1.2	0.51	25.2	1.12	28.2	62.2	34.0	0.0
May	12.3	3.9	0.56	59.0	1.27	74.9	82.4	7.5	0.0
June	17.9	6.9	0.61	88.5	1.29	114.2	84.8	0.0	29.4
July	20.8	8.7	0.64	104.1	1.30	135.3	77.2	0.0	58.1
August	19.7	8.0	0.63	98.1	1.20	117.8	89.9	0.0	27.9
September	15.3	5.4	0.59	74.7	1.04	77.7	94.0	16.3	0.0
October	8.7	2.3	0.53	40.6	0.95	38.6	77.5	38.9	0.0
November	2.7	0.4	0.50	11.5	0.80	9.2	88.9	79.7	0.0
December	-3.5	0.0	0.49	0.0	0.74	0.0	73.6	73.6	0.0
Totals		**36.8**	**1.08**			**595.8**	**932.9**	**452.4**	**115.3**

TOTAL WATER DEFICIT = 115.3 mm
TOTAL WATER SURPLUS (SURPLUS - DEFICIT) = 337.1 mm
Precipitation Adjustment Factor : none

NOTES:

1. Water budget adjusted for latitude and daylight.
2. (◦C) - Represents calculated mean of daily temperatures for the month.
3. Precipitation and Temperature data from theBARRIE WPCC (Station No.6110557) Environment Canada Station Data
4. Total Water Surplus (Thornthwaite, 1948) is calculated as total precipitation minus adjusted potential evapostranspiration.

CROZIER CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Water Budget - Pre-Development
Project Name: 428 Little Avenue - Lovers Creek

Pre-development area available for infiltration
Pre-development area not available for infiltration

Note: site land use areas consistent with Pre-Development SWM hydrologic modeling & calculations

Catchment Designation	Site - Pre-Development		
	Woodlot	Impervious	Totals
Area (m^2)	10300	0	10300
Pervious Area (m^2)	10300	0	10300
Impervious Area (m^2)	0	0	0
Infiltration Factors			
Topography Infiltration Factor	0.1	0.1	
Soil Infiltration Factor	0.2	0.2	
Land Cover Infiltration Factor	0.2	0.2	
MOE Infiltration Factor	0.5	0	
Actual Infiltration Factor	0.5	0	
Run-off Coefficient	0.25	0.95	
Runoff from Impervious Surfaces *	0	0.8	
Inputs (per Unit Area)			
Precipitation (mm/yr)	933	933	933
Run-On (mm/yr)	0	0	0
Other Inputs (mm/yr)	0	0	0
Total Inputs (mm/yr)	**933**	**933**	**933**
Outputs (per Unit Area)			
Precipitation Surplus (mm/yr)	337	746	337
Net Surplus (mm/yr)	337	746	337
Evapotranspiration (mm/yr) *	596	187	596
Infiltration (mm/yr)	169	0	169
Soakaway Infiltration (mm/yr)	0	0	0
Total Infiltration (mm/yr)	169	0	169
Runoff Pervious Areas (mm/yr)	169	0	169
Runoff Impervious Areas (mm/yr)	0	746	0
Total Runoff (mm/yr)	169	746	169
Total Outputs (mm/yr)	**933**	**933**	**933**
Difference (Inputs- Outputs)	**0**	**0**	**0**
Inputs (Volumes)			
Precipitation (m^3/yr)	9609	0	9609
Run-On (m^3/yr)	0	0	0
Other Inputs (m^3/yr)	0	0	0
Total Inputs (m^3/yr)	**9609**	**0**	**9609**
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	3472	0	3472
Net Surplus (m^3/yr)	3472	0	3472
Evapotranspiration (m^3/yr) *	6137	0	6137
Infiltration (m^3/yr)	1736	0	1736
Soakaway Infiltration (m^3/yr)	0	0	0
Total Infiltration (m^3/yr)	1736	0	1736
Runoff Pervious Areas (m^3/yr)	1736	0	1736
Runoff Impervious Areas (m^3/yr)	0	0	0
Total Runoff (m^3/yr)	1736	0	1736
Total Outputs (m^3/yr)	**9609**	**0**	**9609**
Difference (Inputs- Outputs)	**0**	**0**	

NOTES:

* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By: 0
Date: 2019.11.22

Water Budget - Post-Development *without Mitigation*
Project Name: 428 Little Avenue - Lovers Creek
Water Balance/Water Budget Assessment

Post-development area available for infiltration (landscaped/lawn area considered to infiltrate)
Post-development area not available for infiltration (total site area less landscaped area noted above)

Note: site land use areas consistent with Post-Development SWM hydrologic modeling & calculations

Catchment Designation	Site - Post-Development		
	Lawn	Impervious	Totals
Area (m^2)	4330	5970	10300
Pervious Area (m^2)	4330	0	4330
Impervious Area (m^2)	0	5970	5970
Infiltration Factors			
Topography Infiltration Factor	0.1	0.1	
Soil Infiltration Factor	0.2	0.2	
Land Cover Infiltration Factor	0.1	0.1	
MOE Infiltration Factor	0.4	0	
Actual Infiltration Factor	0.4	0	
Run-off Coefficient	0.25	0.95	
Runoff from Impervious Surfaces *	0	0.8	
Inputs (per Unit Area)			
Precipitation (mm/yr)	933	933	933
Run-On (mm/yr)	0	0	0
Other Inputs (mm/yr)	0	0	0
Total Inputs (mm/yr)	**933**	**933**	**933**
Outputs (per Unit Area)			
Precipitation Surplus (mm/yr)	337	746	574
Net Surplus (mm/yr)	337	746	574
Evapotranspiration (mm/yr) *	596	187	359
Infiltration (mm/yr)	135	0	57
Mitigation Infiltration (mm/yr)	0	0	0
Total Infiltration (mm/yr)	135	0	57
Runoff Pervious Areas (mm/yr)	202	0	85
Runoff Impervious Areas (mm/yr)	0	746	433
Total Runoff (mm/yr)	202	746	518
Total Outputs (mm/yr)	**933**	**933**	**933**
Difference (Inputs- Outputs)	**0**	**0**	**0**
Inputs (Volumes)			
Precipitation (m^3/yr)	4039	5569	9609
Run-On (m^3/yr)	0	0	0
Other Inputs (m^3/yr)	0	0	0
Total Inputs (m^3/yr)	**4039**	**5569**	**9609**
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	1460	4456	5915
Net Surplus (m^3/yr)	1460	4456	5915
Evapotranspiration (m^3/yr) *	2580	1114	3694
Infiltration (m^3/yr)	584	0	584
Soakaway Infiltration (m^3/yr)	0	0	0
Total Infiltration (m^3/yr)	584	0	584
Runoff Pervious Areas (m^3/yr)	876	0	876
Runoff Impervious Areas (m^3/yr)	0	4456	4456
Total Runoff (m^3/yr)	876	4456	5331
Total Outputs (m^3/yr)	**4039**	**5569**	**9609**
Difference (Inputs- Outputs)	**0**	**0**	**0**

Pre-Development Total Infiltration:
1736 m3/yr

NOTES:
* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Water Budget - Post-Development *with Mitigation*
Project Name: 428 Little Avenue - Lovers Creek
Water Balance/Water Budget Assessment

Post-development area available for infiltration
Post-development area not available/directed to infiltrate

Catchment Designation	Site - Post-Development		
	Lawn	Impervious	Totals
Area (m^2)	4330	5970	10300
Pervious Area (m^2)	4330	0	4330
Impervious Area (m^2)	0	5970	5970
Infiltration Factors			
Topography Infiltration Factor	0.1	0.1	
Soil Infiltration Factor	0.2	0.2	
Land Cover Infiltration Factor	0.1	0.1	
MOE Infiltration Factor	0.4	0	
Actual Infiltration Factor	0.4	0	
Run-off Coefficient	0.25	0.95	
Runoff from Impervious Surfaces *	0	0.8	
Inputs (per Unit Area)			
Precipitation (mm/yr)	933	933	933
Run-On (mm/yr)	0	0	0
Other Inputs (mm/yr)	0	0	0
Total Inputs (mm/yr)	**933**	**933**	**933**
Outputs (per Unit Area)			
Precipitation Surplus (mm/yr)	337	746	574
Net Surplus (mm/yr)	337	746	574
Evapotranspiration (mm/yr) *	596	187	359
Infiltration (mm/yr)	135	0	57
Mitigation Infiltration (mm/yr)	0	205	119
Total Infiltration (mm/yr)	135	205	176
Runoff Pervious Areas (mm/yr)	202	0	85
Runoff Impervious Areas (mm/yr)	0	541	314
Total Runoff (mm/yr)	202	541	399
Total Outputs (mm/yr)	**933**	**933**	**933**
Difference (Inputs- Outputs)	**0**	**0**	**0**
Inputs (Volumes)			
Precipitation (m^3/yr)	4039	5569	9609
Run-On (m^3/yr)	0	0	0
Other Inputs (m^3/yr)	0	0	0
Total Inputs (m^3/yr)	**4039**	**5569**	**9609**
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	1460	4456	5915
Net Surplus (m^3/yr)	1460	4456	5915
Evapotranspiration (m^3/yr) *	2580	1114	3694
Infiltration (m^3/yr)	584	0	584
Mitigation Infiltration (m^3/yr)	0	1224	1224
Total Infiltration (m^3/yr)	584	1224	1808
Runoff Pervious Areas (m^3/yr)	876	0	876
Runoff Impervious Areas (m^3/yr)	0	3232	3232
Total Runoff (m^3/yr)	876	3232	4107
Total Outputs (m^3/yr)	**4039**	**5569**	**9609**
Difference (Inputs- Outputs)	**0**	**0**	**0**

Proposed Infiltration via Mitigation

Pre-Development Total Infiltration:
169 mm/yr

Note:
568 mm
Precipitation available between Apr-Oct (non-winter months). Therefore available for infiltration into non-frozen soil

Pre-Development Total Infiltration:
1736 m3/yr

NOTES:
* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Water Budget Summary
Project Name: 428 Little Avenue - Lovers Creek
Water Balance/Water Budget Assessment

Characteristic	Site				
	Pre-Development	Post-Development	Post-Development *with Mitigation*	Change (Pre to Post)	Change (Pre to Post) *with Mititgation*
Inputs (Volumes)					
Precipitation (m^3/yr)	9609	9609	9609	0%	0%
Run-On (m^3/yr)	0	0	0	0%	0%
Other inputs (m^3/yr)	0	0	0	0%	0%
Total Inputs (m^3/yr)	**9609**	**9609**	**9609**	**0**	**0**
Outputs (Volumes)					
Precipitation Surplus (m^3/yr)	3472	5915	5915	70%	70%
Net Surplus (m^3/yr)	3472	5915	5915	70%	70%
Evapotranspiration (m^3/yr)	6137	3694	3694	-40%	-40%
Infiltration (m^3/yr)	1736	584	584	-66%	-66%
Mitigation Infiltration (m^3/yr)	0	0	1224	-	1224 m3/yr
Total Infiltration (m^3/yr)	**1736**	584	**1808**	-66%	4%
Runoff Pervious Areas (m^3/yr)	1736	876	876	-50%	-50%
Runoff Impervious Areas (m^3/yr	0	4456	3232	-	-
Total Runoff (m^3/yr)	1736	5331	4107	207%	137%
Total Outputs (m^3/yr)	**9609**	**9609**	**9609**	0%	0%

NOTES:

Months contributing to Water Balance (winter months not considered due to freezing effects) - April, May, June, July, August, September, October = 7 months

Project: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Date: 2019.11.22

Design Storm Determination
Project Name: 428 Little Avenue - Lovers Creek
Water Balance/Water Budget Assessment

Days with Precipitation (From Climate Data)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
>= 0.2 mm	12.2	12.9	11.4	11.1	11.8	13.3	15.6	88
>= 5 mm	4.2	5.8	4.4	4.7	5.1	5.4	5.7	35
>= 10 mm	1.7	2.7	2.9	2.5	3.4	3	2	18
>= 25 mm	0.31	0.36	0.73	0.62	0.81	0.73	0.19	4

Available Precipitation

Storm Event (mm)	**Total Days Per Year**	**Incremental Precipitation (mm/yr)**	**Cummulative Precipitation (mm/yr)**
0.2	88	17.7	17.7
5	35	176.5	194.2
10	18	182.0	376.2
25	4	93.8	469.9
Total	**146**	**469.9**	

Infiltration Deficit Target: 205 mm/yr

Runoff Coefficient for Impervious Area: 0.60

Design Precipitation: 342 mm/yr (Design Infiltration / Contributing RC)

Therefore Design Storm: 10 mm

CROZIER
CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Climatic Water Budget - Thornthwaite Method

Project Name: 428 Little Avenue - Whiskey Creek
BARRIE WPCC - Climate Normals 1981-2010 Station Data

Month	Mean Temperature (◦C)	Heat index	" a "	PET - Potential Evapotranspiration (mm)	Daily Correction Value	Adjusted PET - Potential Evapotranspiration (mm)	Total Precipitation (mm)	Surplus (mm)	Deficit (mm)
January	-7.7	0.0	0.49	0.0	0.81	0.0	82.5	82.5	0.0
February	-6.6	0.0	0.49	0.0	0.81	0.0	61.8	61.8	0.0
March	-2.1	0.0	0.49	0.0	1.02	0.0	58.1	58.1	0.0
April	5.6	1.2	0.51	25.2	1.12	28.2	62.2	34.0	0.0
May	12.3	3.9	0.56	59.0	1.27	74.9	82.4	7.5	0.0
June	17.9	6.9	0.61	88.5	1.29	114.2	84.8	0.0	29.4
July	20.8	8.7	0.64	104.1	1.30	135.3	77.2	0.0	58.1
August	19.7	8.0	0.63	98.1	1.20	117.8	89.9	0.0	27.9
September	15.3	5.4	0.59	74.7	1.04	77.7	94.0	16.3	0.0
October	8.7	2.3	0.53	40.6	0.95	38.6	77.5	38.9	0.0
November	2.7	0.4	0.50	11.5	0.80	9.2	88.9	79.7	0.0
December	-3.5	0.0	0.49	0.0	0.74	0.0	73.6	73.6	0.0
Totals		**36.8**	**1.08**			**595.8**	**932.9**	**452.4**	**115.3**

TOTAL WATER DEFICIT = 115.3 mm
TOTAL WATER SURPLUS (SURPLUS - DEFICIT) = 337.1 mm
Precipitation Adjustment Factor : none

NOTES:

1. Water budget adjusted for latitude and daylight.
2. (◦C) - Represents calculated mean of daily temperatures for the month.
3. Precipitation and Temperature data from theBARRIE WPCC (Station No.6110557) Environment Canada Station Data
4. Total Water Surplus (Thornthwaite, 1948) is calculated as total precipitation minus adjusted potential evapostranspiration.

CROZIER CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Water Budget - Pre-Development
Project Name: 428 Little Avenue - Whiskey Creek

Pre-development area available for infiltration
Pre-development area not available for infiltration

Note: site land use areas consistent with Pre-Development SWM hydrologic modeling & calculations

Catchment Designation	Site - Pre-Development		
	Woodlot	Impervious	Totals
Area (m^2)	5900	0	5900
Pervious Area (m^2)	5900	0	5900
Impervious Area (m^2)	0	0	0
Infiltration Factors			
Topography Infiltration Factor	0.1	0.1	
Soil Infiltration Factor	0.2	0.2	
Land Cover Infiltration Factor	0.2	0.2	
MOE Infiltration Factor	0.5	0	
Actual Infiltration Factor	0.5	0	
Run-off Coefficient	0.25	0.95	
Runoff from Impervious Surfaces *	0	0.8	
Inputs (per Unit Area)			
Precipitation (mm/yr)	933	933	933
Run-On (mm/yr)	0	0	0
Other Inputs (mm/yr)	0	0	0
Total Inputs (mm/yr)	**933**	**933**	**933**
Outputs (per Unit Area)			
Precipitation Surplus (mm/yr)	337	746	337
Net Surplus (mm/yr)	337	746	337
Evapotranspiration (mm/yr) *	596	187	596
Infiltration (mm/yr)	169	0	169
Soakaway Infiltration (mm/yr)	0	0	0
Total Infiltration (mm/yr)	169	0	169
Runoff Pervious Areas (mm/yr)	169	0	169
Runoff Impervious Areas (mm/yr)	0	746	0
Total Runoff (mm/yr)	169	746	169
Total Outputs (mm/yr)	**933**	**933**	**933**
Difference (Inputs- Outputs)	**0**	**0**	**0**
Inputs (Volumes)			
Precipitation (m^3/yr)	5504	0	5504
Run-On (m^3/yr)	0	0	0
Other Inputs (m^3/yr)	0	0	0
Total Inputs (m^3/yr)	**5504**	**0**	**5504**
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	1989	0	1989
Net Surplus (m^3/yr)	1989	0	1989
Evapotranspiration (m^3/yr) *	3515	0	3515
Infiltration (m^3/yr)	994	0	994
Soakaway Infiltration (m^3/yr)	0	0	0
Total Infiltration (m^3/yr)	994	0	994
Runoff Pervious Areas (m^3/yr)	994	0	994
Runoff Impervious Areas (m^3/yr)	0	0	0
Total Runoff (m^3/yr)	994	0	994
Total Outputs (m^3/yr)	**5504**	**0**	**5504**
Difference (Inputs- Outputs)	**0**	**0**	

NOTES:

* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Water Budget - Post-Development *without Mitigation*
Project Name: 428 Little Avenue - Whiskey Creek
Water Balance/Water Budget Assessment

Post-development area available for infiltration (landscaped/lawn area considered to infiltrate)
Post-development area not available for infiltration (total site area less landscaped area noted above)

Note: site land use areas consistent with Post-Development SWM hydrologic modeling & calculations

Catchment Designation	Site - Post-Development		
	Lawn	Impervious	Totals
Area (m^2)	2470	3430	5900
Pervious Area (m^2)	2470	0	2470
Impervious Area (m^2)	0	3430	3430
Infiltration Factors			
Topography Infiltration Factor	0.1	0.1	
Soil Infiltration Factor	0.2	0.2	
Land Cover Infiltration Factor	0.1	0.1	
MOE Infiltration Factor	0.4	0	
Actual Infiltration Factor	0.4	0	
Run-off Coefficient	0.25	0.95	
Runoff from Impervious Surfaces *	0	0.8	
Inputs (per Unit Area)			
Precipitation (mm/yr)	933	933	933
Run-On (mm/yr)	0	0	0
Other Inputs (mm/yr)	0	0	0
Total Inputs (mm/yr)	**933**	**933**	**933**
Outputs (per Unit Area)			
Precipitation Surplus (mm/yr)	337	746	575
Net Surplus (mm/yr)	337	746	575
Evapotranspiration (mm/yr) *	596	187	358
Infiltration (mm/yr)	135	0	56
Mitigation Infiltration (mm/yr)	0	0	0
Total Infiltration (mm/yr)	135	0	56
Runoff Pervious Areas (mm/yr)	202	0	85
Runoff Impervious Areas (mm/yr)	0	746	434
Total Runoff (mm/yr)	202	746	519
Total Outputs (mm/yr)	**933**	**933**	**933**
Difference (Inputs- Outputs)	**0**	**0**	**0**
Inputs (Volumes)			
Precipitation (m^3/yr)	2304	3200	5504
Run-On (m^3/yr)	0	0	0
Other Inputs (m^3/yr)	0	0	0
Total Inputs (m^3/yr)	**2304**	**3200**	**5504**
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	833	2560	3392
Net Surplus (m^3/yr)	833	2560	3392
Evapotranspiration (m^3/yr) *	1472	640	2112
Infiltration (m^3/yr)	333	0	333
Soakaway Infiltration (m^3/yr)	0	0	0
Total Infiltration (m^3/yr)	333	0	333
Runoff Pervious Areas (m^3/yr)	500	0	500
Runoff Impervious Areas (m^3/yr)	0	2560	2560
Total Runoff (m^3/yr)	500	2560	3059
Total Outputs (m^3/yr)	**2304**	**3200**	**5504**
Difference (Inputs- Outputs)	**0**	**0**	**0**

Pre-Development Total Infiltration:
994 m3/yr

NOTES:
* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project Name: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Water Budget - Post-Development *with Mitigation*
Project Name: 428 Little Avenue - Whiskey Creek
Water Balance/Water Budget Assessment

Post-development area available for infiltration
Post-development area not available/directed to infiltrate

Catchment Designation	Site - Post-Development		
	Lawn	Impervious	Totals
Area (m^2)	2470	3430	5900
Pervious Area (m^2)	2470	0	2470
Impervious Area (m^2)	0	3430	3430
Infiltration Factors			
Topography Infiltration Factor	0.1	0.1	
Soil Infiltration Factor	0.2	0.2	
Land Cover Infiltration Factor	0.1	0.1	
MOE Infiltration Factor	0.4	0	
Actual Infiltration Factor	0.4	0	
Run-off Coefficient	0.25	0.95	
Runoff from Impervious Surfaces *	0	0.8	
Inputs (per Unit Area)			
Precipitation (mm/yr)	933	933	933
Run-On (mm/yr)	0	0	0
Other Inputs (mm/yr)	0	0	0
Total Inputs (mm/yr)	**933**	**933**	**933**
Outputs (per Unit Area)			
Precipitation Surplus (mm/yr)	337	746	575
Net Surplus (mm/yr)	337	746	575
Evapotranspiration (mm/yr) *	596	187	358
Infiltration (mm/yr)	135	0	56
Mitigation Infiltration (mm/yr)	0	205	119
Total Infiltration (mm/yr)	135	205	176
Runoff Pervious Areas (mm/yr)	202	0	85
Runoff Impervious Areas (mm/yr)	0	541	315
Total Runoff (mm/yr)	202	541	399
Total Outputs (mm/yr)	**933**	**933**	**933**
Difference (Inputs- Outputs)	**0**	**0**	**0**
Inputs (Volumes)			
Precipitation (m^3/yr)	2304	3200	5504
Run-On (m^3/yr)	0	0	0
Other Inputs (m^3/yr)	0	0	0
Total Inputs (m^3/yr)	**2304**	**3200**	**5504**
Outputs (Volumes)			
Precipitation Surplus (m^3/yr)	833	2560	3392
Net Surplus (m^3/yr)	833	2560	3392
Evapotranspiration (m^3/yr) *	1472	640	2112
Infiltration (m^3/yr)	333	0	333
Mitigation Infiltration (m^3/yr)	0	703	703
Total Infiltration (m^3/yr)	333	703	1036
Runoff Pervious Areas (m^3/yr)	500	0	500
Runoff Impervious Areas (m^3/yr)	0	1857	1857
Total Runoff (m^3/yr)	500	1857	2356
Total Outputs (m^3/yr)	**2304**	**3200**	**5504**
Difference (Inputs- Outputs)	**0**	**0**	**0**

Proposed Infiltration via Mitigation

Pre-Development Total Infiltration:
169 mm/yr

Note:
568 mm
Precipitation available between Apr-Oct (non-winter months). Therefore available for infiltration into non-frozen soil

Pre-Development Total Infiltration:
994 m3/yr

NOTES:
* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Checked By:
Date: 2019.11.22

Water Budget Summary
Project Name: 428 Little Avenue - Whiskey Creek
Water Balance/Water Budget Assessment

Characteristic	Site				
	Pre-Development	Post-Development	Post-Development *with Mitigation*	Change (Pre to Post)	Change (Pre to Post) *with Mititgation*
Inputs (Volumes)					
Precipitation (m^3/yr)	5504	5504	5504	0%	0%
Run-On (m^3/yr)	0	0	0	0%	0%
Other inputs (m^3/yr)	0	0	0	0%	0%
Total Inputs (m^3/yr)	**5504**	**5504**	**5504**	**0**	**0**
Outputs (Volumes)					
Precipitation Surplus (m^3/yr)	1989	3392	3392	71%	71%
Net Surplus (m^3/yr)	1989	3392	3392	71%	71%
Evapotranspiration (m^3/yr)	3515	2112	2112	-40%	-40%
Infiltration (m^3/yr)	994	333	333	-67%	-67%
Mitigation Infiltration (m^3/yr)	0	0	703	-	703 m3/yr
Total Infiltration (m^3/yr)	**994**	333	**1036**	-67%	4%
Runoff Pervious Areas (m^3/yr)	994	500	500	-50%	-50%
Runoff Impervious Areas (m^3/yr	0	2560	1857	-	-
Total Runoff (m^3/yr)	994	3059	2356	208%	137%
Total Outputs (m^3/yr)	**5504**	**5504**	**5504**	0%	0%

NOTES:

Months contributing to Water Balance (winter months not considered due to freezing effects) - April, May, June, July, August, September, October = 7 months

Project: 428 Little Avenue
Project No: 892-4560
Modelled By: ML
Date: 2019.11.22

Design Storm Determination
Project Name: 428 Little Avenue - Whiskey Creek
Water Balance/Water Budget Assessment

Days with Precipitation (From Climate Data)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
>= 0.2 mm	12.2	12.9	11.4	11.1	11.8	13.3	15.6	88
>= 5 mm	4.2	5.8	4.4	4.7	5.1	5.4	5.7	35
>= 10 mm	1.7	2.7	2.9	2.5	3.4	3	2	18
>= 25 mm	0.31	0.36	0.73	0.62	0.81	0.73	0.19	4

Available Precipitation

Storm Event (mm)	**Total Days Per Year**	**Incremental Precipitation (mm/yr)**	**Cummulative Precipitation (mm/yr)**
0.2	88	17.7	17.7
5	35	176.5	194.2
10	18	182.0	376.2
25	4	93.8	469.9
Total	**146**	**469.9**	

Infiltration Deficit Target: 205 mm/yr

Runoff Coefficient for Impervious Area: 0.61

Design Precipitation: 336 mm/yr (Design Infiltration / Contributing RC)

Therefore Design Storm: 10 mm

CROZIER CONSULTING ENGINEERS

PROJECT: 428 Little Avenue
PROJECT No.: 0892-4560
DATE: November 22, 2019
DESIGN: ML
CHECK:

Post-DevelopmentVolume Control

Catchment Area: Whiskey Creek								
Rainfall =	25	mm	Impervious Area =	3430	m^2	**Controlled Runoff Volume =**	**86**	**m^3**
Bioretention 1	Catchment Areas: STM-1 & STM-2							
Rainfall =	25	mm	Impervious Area =	1320	m^2	**Controlled Runoff Volume =**	**33**	**m^3**
Bioretention 2	Catchment Areas: STM-3 & STM-10							
Rainfall =	25	mm	Impervious Area =	2110	m^2	**Controlled Runoff Volume =**	**53**	**m^3**

Catchment Area: Lovers Creek								
Rainfall =	25	mm	Impervious Area =	5970	m^2	**Controlled Runoff Volume =**	**149**	**m^3**
Bioretention 3	Catchment Areas: STM-4, STM-5 & STM-11							
Rainfall =	25	mm	Impervious Area =	2470	m^2	**Controlled Runoff Volume =**	**62**	**m^3**
Bioretention 4	Catchment Areas: STM-6 & STM-12							
Rainfall =	25	mm	Impervious Area =	1760	m^2	**Controlled Runoff Volume =**	**44**	**m^3**
Bioretention 5	Catchment Areas: STM-7 & STM-13							
Rainfall =	25	mm	Impervious Area =	1020	m^2	**Controlled Runoff Volume =**	**26**	**m^3**
Bioretention 6	Catchment Areas: STM-8, STM-9 & STM-14							
Rainfall =	25	mm	Impervious Area =	720	m^2	**Controlled Runoff Volume =**	**18**	**m^3**

CROZIER CONSULTING ENGINEERS

PROJ. NO: 0892-4560
PROJECT: 428 Little Avenue
DESIGN: VH
CHECK: ML
FILE: Bioretention Sizing
DATE: November 22, 2019
REVISED:

Whiskey Creek Creek Catchment - Bioretention Sizing Calculation 1

Target Volumes

Required Quality Volume (Erosion Volume per LSRCA Technical Guidelines for SWM 2016)

WQV = Water Quality Volume **33** m^3

Maximum Reservoir Depth

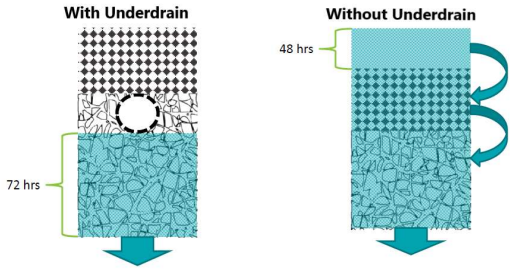
*Native Soil Infiltration Rate 20 mm/hr (from Geotechnical Report or MECP Soil Percolation Rates)
Required Drawdown Time 48 hrs (per local regulations)

$$d_{s,max} = f^* t / V_r$$

Where:
$d_{s,max}$ = Maximum reservoir depth (mm)
f^* = Design infiltration rate (mm/hr)
t = Drainage time (hrs)
V_r = Void space ratio for aggregrate used (assume 0.4)

*Infiltartion rate is preliminary based on the Geotechnical Investigation prepared by WSP. In-situ permeameter testing will be completed as detailed design progresses.

$d_{s,max}$ = Maximum Reservoir Depth **2.40 m**



Note: Proposed bioretention facilities do not include underdrain.

Properties of Layers

Layer	Typical Depth (mm)	Depth (mm)	Porosity
Ponding	150	150	1.00
Wood based Mulch	50-100	75	0.70
Filter Media	*	1000	0.35
Choker Layer	100	0	0.40
Pipe Diameter Layer	200	0	0.40
Storage Reservoir		1200	0.40

* Plant Type	Recommended Min. Media Depth
Trees and large shrubs	1.0 m
Smaller shrubs and perennials	0.6 m
Mown turf grass (roof runoff only)	0.3 m

Total System Depth 2.43 m
Equivalent Storage Depth 1.03 m

System Elevation 245.31 m
*Ground Water Elevation 239.00 m (from Geotechnical Report)
Separation from Ground Water **3.88 m** Note: 1.0m speparation is recommended

*Ground water was not encounter during the field testing. Monthly groundwater measrements were to be completed by WSP. Upon completion of the monitoring program the Seasonally High Groundwater Elevation will be confirmed.

Required System Footprints

Minimum Cell Footprint

$$A_f = WQV / (d_c * V_r)$$

Where:
A_f = Footprint surface area (m^2)
WQV = Water quality volume (m^3)
d_c = Soakaway pit cell depth (m)
V_r = Void space ratio for aggregrate used (assume

WQV	33	m^3
d_c	1.20	m
V_r	0.40	m
A_f	**68.75**	m^2

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PROJ. NO: 0892-4560
PROJECT: 428 Little Avenue
DESIGN: VH
CHECK: ML
FILE: Bioretention Sizing
DATE: November 22, 2019
REVISED:

Whiskey Creek Creek Catchment - Bioretention Sizing Calculation 2

Target Volumes

Required Quality Volume (Erosion Volume per LSRCA Technical Guidelines for SWM 2016)

WQV = Water Quality Volume **53** m^3

Maximum Reservoir Depth

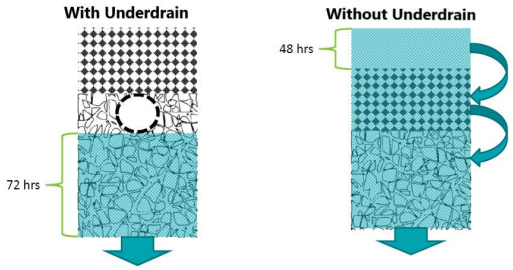
*Native Soil Infiltration Rate 20 mm/hr (from Geotechnical Report or MECP Soil Percolation Rates)
Required Drawdown Time 48 hrs (per local regulations)

$$d_{s,max} = f^* t / V_r$$

Where:
$d_{s,max}$ = Maximum reservoir depth (mm)
f^* = Design infiltration rate (mm/hr)
t = Drainage time (hrs)
V_r = Void space ratio for aggregrate used (assume 0.4)

*Infiltartion rate is preliminary based on the Geotechnical Investigation prepared by WSP. In-situ permeameter testing will be completed as detailed design progresses.

$d_{s,max}$ = Maximum Reservoir Depth **2.40 m**



Note: Proposed bioretention facilities do not include underdrain.

Properties of Layers

Layer	Typical Depth (mm)	Depth (mm)	Porosity
Ponding	150	150	1.00
Wood based Mulch	50-100	75	0.70
Filter Media	*	1000	0.35
Choker Layer	100	0	0.40
Pipe Diameter Layer	200	0	0.40
Storage Reservoir		1200	0.40

* Plant Type	Recommended Min. Media Depth
Trees and large shrubs	1.0 m
Smaller shrubs and perennials	0.6 m
Mown turf grass (roof runoff only)	0.3 m

Total System Depth 2.43 m
Equivalent Storage Depth 1.03 m

System Elevation 245.82 m
*Ground Water Elevation 239.00 m (from Geotechnical Report)
Separation from Ground Water **4.39 m** Note: 1.0m speparation is recommended

*Ground water was not encounter during the field testing. Monthly groundwater measrements were to be completed by WSP. Upon completion of the monitoring program the Seasonally High Groundwater Elevation will be confirmed.

Required System Footprints

Minimum Cell Footprint

$$A_f = WQV / (d_c * V_r)$$

WQV	53	m^3
d_c	1.20	m
V_r	0.40	m
A_f	**110.42**	m^2

Where:
A_f = Footprint surface area (m^2)
WQV = Water quality volume (m^3)
d_c = Soakaway pit cell depth (m)
V_r = Void space ratio for aggregrate used (assume

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PROJ. NO: 0892-4560
PROJECT: 428 Little Avenue
DESIGN: VH
CHECK: ML
FILE: Bioretention Sizing
DATE: November 22, 2019
REVISED:

Lovers Creek Creek Catchment - Bioretention Sizing Calculation 3

Target Volumes

Required Quality Volume (Erosion Volume per LSRCA Technical Guidelines for SWM 2016)

WQV = Water Quality Volume **62** m^3

Maximum Reservoir Depth

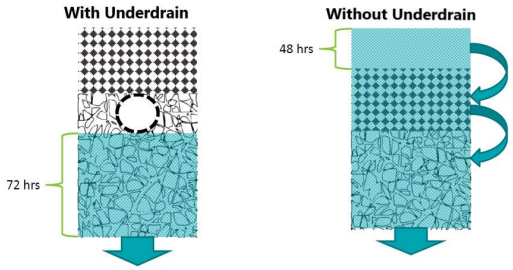
*Native Soil Infiltration Rate 20 mm/hr (from Geotechnical Report or MECP Soil Percolation Rates)
Required Drawdown Time 48 hrs (per local regulations)

$$d_{s,max} = f^* t / V_r$$

Where:
$d_{s,max}$ = Maximum reservoir depth (mm)
f^* = Design infiltration rate (mm/hr)
t = Drainage time (hrs)
V_r = Void space ratio for aggregrate used (assume 0.4)

*Infiltartion rate is preliminary based on the Geotechnical Investigation prepared by WSP. In-situ permeameter testing will be completed as detailed design progresses.

$d_{s,max}$ = Maximum Reservoir Depth **2.40 m**



Note: Proposed bioretention facilities do not include underdrain.

Properties of Layers

Layer	Typical Depth (mm)	Depth (mm)	Porosity
Ponding	150	150	1.00
Wood based Mulch	50-100	75	0.70
Filter Media	*	1000	0.35
Choker Layer	100	0	0.40
Pipe Diameter Layer	200	0	0.40
Storage Reservoir		1200	0.40

* Plant Type	Recommended Min. Media Depth
Trees and large shrubs	1.0 m
Smaller shrubs and perennials	0.6 m
Mown turf grass (roof runoff only)	0.3 m

Total System Depth 2.43 m
Equivalent Storage Depth 1.03 m

System Elevation 245.19 m
*Ground Water Elevation 239.00 m (from Geotechnical Report)
Separation from Ground Water **3.76 m** Note: 1.0m speparation is recommended

*Ground water was not encounter during the field testing. Monthly groundwater measrements were to be completed by WSP. Upon completion of the monitoring program the Seasonally High Groundwater Elevation will be confirmed.

Required System Footprints

Minimum Cell Footprint

$$A_f = WQV / (d_c * V_r)$$

WQV 62 m^3
d_c 1.20 m
V_r 0.40 m
A_f **129.17 m^2**

Where:
A_f = Footprint surface area (m^2)
WQV = Water quality volume (m^3)
d_c = Soakaway pit cell depth (m)
V_r = Void space ratio for aggregrate used (assume

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PROJ. NO: 0892-4560
PROJECT: 428 Little Avenue
DESIGN: VH
CHECK: ML
FILE: Bioretention Sizing
DATE: November 22, 2019
REVISED:

Lovers Creek Catchment - Bioretention Sizing Calculation 4

Target Volumes

Required Quality Volume (Erosion Volume per LSRCA Technical Guidelines for SWM 2016)

WQV = Water Quality Volume **44** m^3

Maximum Reservoir Depth

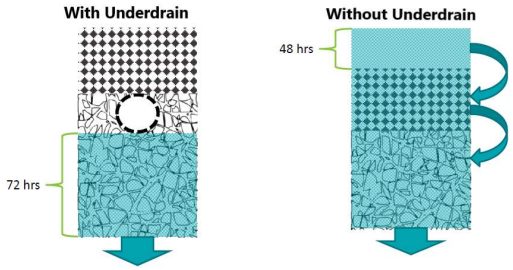
*Native Soil Infiltration Rate 20 mm/hr (from Geotechnical Report or MECP Soil Percolation Rates)
Required Drawdown Time 48 hrs (per local regulations)

$$d_{s,max} = f^* t / V_r$$

Where:
$d_{s,max}$ = Maximum reservoir depth (mm)
f^* = Design infiltration rate (mm/hr)
t = Drainage time (hrs)
V_r = Void space ratio for aggregrate used (assume 0.4)

*Infiltartion rate is preliminary based on the Geotechnical Investigation prepared by WSP. In-situ permeameter testing will be completed as detailed design progresses.

$d_{s,max}$ = Maximum Reservoir Depth **2.40 m**



Note: Proposed bioretention facilities do not include underdrain.

Properties of Layers

Layer	Typical Depth (mm)	Depth (mm)	Porosity
Ponding	150	150	1.00
Wood based Mulch	50-100	75	0.70
Filter Media	*	1000	0.35
Choker Layer	100	0	0.40
Pipe Diameter Layer	200	0	0.40
Storage Reservoir		1200	0.40

* Plant Type	Recommended Min. Media Depth
Trees and large shrubs	1.0 m
Smaller shrubs and perennials	0.6 m
Mown turf grass (roof runoff only)	0.3 m

Total System Depth 2.43 m
Equivalent Storage Depth 1.03 m

System Elevation 243.84 m
*Ground Water Elevation 239.00 m (from Geotechnical Report)
Separation from Ground Water **2.41 m** Note: 1.0m speparation is recommended

*Ground water was not encounter during the field testing. Monthly groundwater measrements were to be completed by WSP. Upon completion of the monitoring program the Seasonally High Groundwater Elevation will be confirmed.

Required System Footprints

Minimum Cell Footprint

$$A_f = WQV / (d_c * V_r)$$

Where:
A_f = Footprint surface area (m^2)
WQV = Water quality volume (m^3)
d_c = Soakaway pit cell depth (m)
V_r = Void space ratio for aggregrate used (assume

WQV	44	m^3
d_c	1.20	m
V_r	0.40	m
A_f	**91.67**	m^2

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PROJ. NO: 0892-4560
PROJECT: 428 Little Avenue
DESIGN: VH
CHECK: ML
FILE: Bioretention Sizing
DATE: November 22, 2019
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Lovers Creek Catchment - Bioretention Sizing Calculation 5

Target Volumes

Required Quality Volume (Erosion Volume per LSRCA Technical Guidelines for SWM 2016)

WQV = Water Quality Volume **26** m^3

Maximum Reservoir Depth

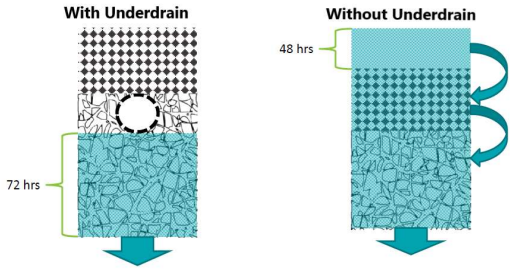
*Native Soil Infiltration Rate 20 mm/hr (from Geotechnical Report or MECP Soil Percolation Rates)
Required Drawdown Time 48 hrs (per local regulations)

$$d_{s,max} = f^* t / V_r$$

Where:
$d_{s,max}$ = Maximum reservoir depth (mm)
f^* = Design infiltration rate (mm/hr)
t = Drainage time (hrs)
V_r = Void space ratio for aggregrate used (assume 0.4)

*Infiltartion rate is preliminary based on the Geotechnical Investigation prepared by WSP. In-situ permeameter testing will be completed as detailed design progresses.

$d_{s,max}$ = Maximum Reservoir Depth **2.40 m**



Note: Proposed bioretention facilities do not include underdrain.

Properties of Layers

Layer	Typical Depth (mm)	Depth (mm)	Porosity
Ponding	150	150	1.00
Wood based Mulch	50-100	75	0.70
Filter Media	*	1000	0.35
Choker Layer	100	100	0.40
Pipe Diameter Layer	200	0	0.40
Storage Reservoir		1200	0.40

* Plant Type	Recommended Min. Media Depth
Trees and large shrubs	1.0 m
Smaller shrubs and perennials	0.6 m
Mown turf grass (roof runoff only)	0.3 m

Total System Depth 2.53 m
Equivalent Storage Depth 1.07 m

System Elevation 243.01 m
*Ground Water Elevation 239.00 m (from Geotechnical Report)
Separation from Ground Water **1.48 m** Note: 1.0m speparation is recommended

*Ground water was not encounter during the field testing. Monthly groundwater measrements were to be completed by WSP. Upon completion of the monitoring program the Seasonally High Groundwater Elevation will be confirmed.

Required System Footprints

Minimum Cell Footprint

$$A_f = WQV / (d_c * V_r)$$

WQV 26 m^3
d_c 1.20 m
V_r 0.40 m
A_f **54.17 m^2**

Where:
A_f = Footprint surface area (m^2)
WQV = Water quality volume (m^3)
d_c = Soakaway pit cell depth (m)
V_r = Void space ratio for aggregrate used (assume

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PROJ. NO: 0892-4560
PROJECT: 428 Little Avenue
DESIGN: VH
CHECK: ML
FILE: Bioretention Sizing
DATE: November 22, 2019
REVISED:

Lovers Creek Catchment - Bioretention Sizing Calculation 6

Target Volumes

Required Quality Volume (Erosion Volume per LSRCA Technical Guidelines for SWM 2016)

WQV = Water Quality Volume	**18**	**m³**

Maximum Reservoir Depth

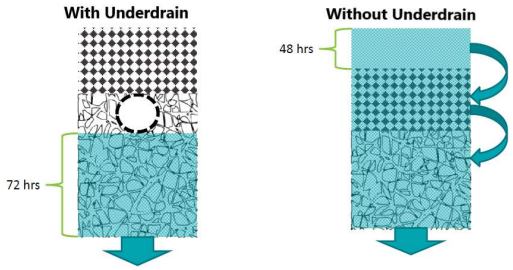
*Native Soil Infiltration Rate	20	mm/hr	(from Geotechnical Report or MECP Soil Percolation Rates)
Required Drawdown Time	48	hrs	(per local regulations)

$$d_{s,max} = f^* t / V_r$$

Where:
$d_{s,max}$ = Maximum reservoir depth (mm)
f^* = Design infiltration rate (mm/hr)
t = Drainage time (hrs)
V_r = Void space ratio for aggregrate used (assume 0.4)

*Infiltartion rate is preliminary based on the Geotechnical Investigation prepared by WSP. In-situ permeameter testing will be completed as detailed design progresses.

$d_{s,max}$ = Maximum Reservoir Depth **2.40 m**



Note: Proposed bioretention facilities do not include underdrain.

Properties of Layers

Layer	Typical Depth (mm)	Depth (mm)	Porosity
*Ponding	150	250	0.40
Wood based Mulch	50-100	0	0.70
Filter Media	*	500	0.35
Choker Layer	100	0	0.40
Pipe Diameter Layer	200	0	0.40
Storage Reservoir		500	0.40

*Ponding to occur in Rip Rap layer

* Plant Type	Recommended Min. Media Depth
Trees and large shrubs	1.0 m
Smaller shrubs and perennials	0.6 m
Mown turf grass (roof runoff only)	0.3 m

Total System Depth	1.25	m
Equivalent Storage Depth	0.48	m
System Elevation	241.25	m
*Ground Water Elevation	239.00	m
Separation from Ground Water	**1.00**	**m**

*Ground water was not encounter during the field testing. Monthly groundwater measrements were to be completed by WSP. Upon completion of the monitoring program the Seasonally High Groundwater Elevation will be confirmed.

(from Geotechnical Report)
Note: 1.0m speparation is recommended

Required System Footprints

Minimum Cell Footprint

WQV	18	m^3
d_c	0.50	m
V_r	0.40	m
A_f	**90.00**	**m^2**

$$A_f = WQV / (d_c * V_r)$$

Where:
A_f = Footprint surface area (m^2)
WQV = Water quality volume (m^3)
d_c = Soakaway pit cell depth (m)
V_r = Void space ratio for aggregrate used (assume

Project: 428 Little Avenue
Project No.: 0892-4560
Design By: VH
Checked By: ML
Date: 2019-11-22

Post-Development Phosphorus Loading with Mitigation

Post - Development Conditions							
Creek	**Land Use**	**Area** (ha)	**P coeff (kg/ha)**	**P Load (kg/yr)**	**Mitigation Applied**	**Reduction Factor**	**P Load Total (kg/yr)**
Whiskey	High Intensity Residential	0.59	1.32	0.779	Infiltration Trenches Underground Storage	0.70	0.234
Lover	High Intensity Residential	1.03	1.32	1.360	Infiltration Trenches Dry Detention Pond	0.64	0.490
Total -Developed Site		**1.62**		**2.139**			**0.724**

Note:
Phosphorus Coefficient for all land uses identified in LSRCA Phosphorus Loading Tool for Barrie Creeks Subwatershed.
Whiskey Creek is a subsidiary of Barrie Creeks Subwatershed.

428 Little Avenue

0892-4560

LITTLE AVENUE - STORM SEWER DESIGN SHEET

CROZIER CONSULTING ENGINEERS

FREQUENCY - 5 YEARS - BARRIE WPCC IDF (ADJUSTED FOR CLIMATE CHANGE)					
Coef. A=	853.608	Coef. B=	4.699	Coef. C=	0.766
FREQUENCY - 100 YEARS - BARRIE WPCC IDF (ADJUSTED FOR CLIMATE CHANGE)					
Coef. A=	1426.408	Coef. B=	5.273	Coef. C=	0.759

MATERIAL	MANNINGS "n"
PVC & Conc.	0.013
CSP	0.024

DESIGNED BY: ML/JC
CHECKED BY: JK
DATE: 26-Nov-19
REVISION NO.: 0
REVISED BY:
DATE:

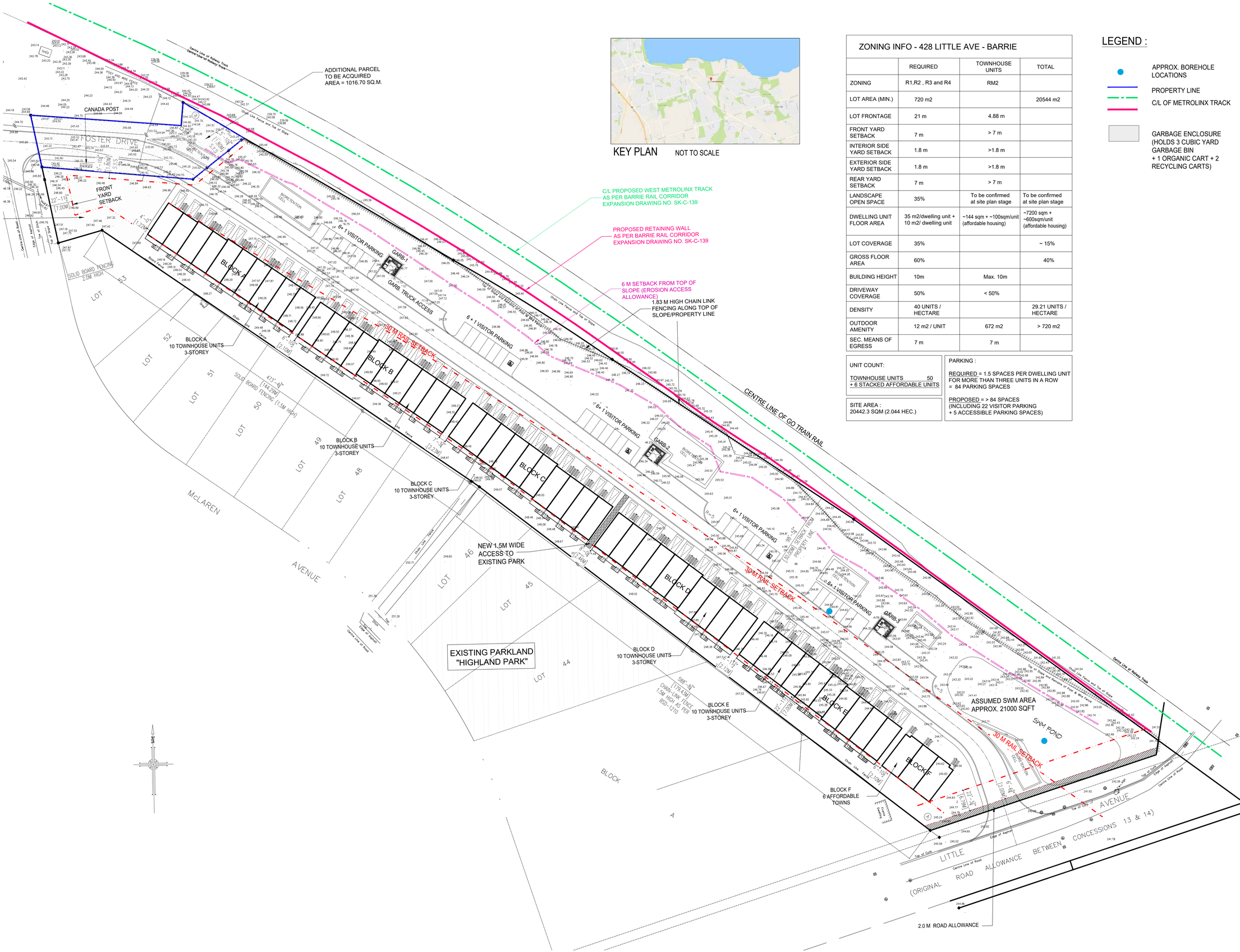
INITIAL TIME OF CONCENTRATION (minutes) = 10.00

CATCHMENT I.D.	LOCATION	FR MH NO	TO MH NO	AREA (A) (Ha)	5 YEAR RUN-OFF COEFF (C_5)	100 YEAR RUN-OFF COEFF (C_{100})	DESIGN STORM	A x C	5 YEAR CUMMUL. A x C	100 YEAR CUMMUL. A x C	TIME OF CONC. (min.)	5 YEAR I (mm/hr)	100 YEAR I (mm/hr)	CONTROLLED FLOW (l/sec)	Q (RUNOFF) (l/sec)	DESIGN FLOW (l/sec)	PIPE SLOPE (%)	PIPE DIA. (mm)	MANNING'S "n"	VEL. (m/sec)	LENGTH (m)	TIME OF FLOW (min)	PIPE CAPACITY (l/sec)	PIPE CAPACITY (%)	PIPE INV ELEV. UPPER END	PIPE INV ELEV. LOWER END	PIPE OBV ELEV. UPPER END	PIPE OBV ELEV. LOWER END	GROUND ELEV. UPPER END	GROUND ELEV. LOWER END	COVER UPPER END	COVER LOWER END
EXT-3 & STM-3		STM CB#1	STM CBMH#1	0.25	0.36	0.5	100 year	0.11	0.00	0.11	10.00	108.92	180.15	**0.00**	**56.87**	**56.87**	2.0%	300	0.013	1.9	59.1	0.51	**136.64**	**42%**	246.83	245.65	247.13	245.95	248.62	247.72	1.49	1.77
EXT-2 & STM-2		STM CBMH#1	STORM CHAMBER 1	0.32	0.34	0.4	100 year	0.14	0.00	0.25	10.51	106.12	175.72	**0.00**	**122.44**	**122.44**	1.6%	450	0.013	2.3	6.6	0.05	**360.63**	**34%**	244.85	244.74	245.30	245.19	247.72	-	2.42	-
	Whiskey Creek Catchment	STORM CHAMBER 1	STM CBMH#4	0.00	0.00	0.0	100 year	0.00	0.00	0.25	10.56	105.86	175.31	**70.00**	**0.00**	**70.00**	0.5%	375	0.013	1.1	21.7	0.32	**124.83**	**56%**	244.59	244.48	244.97	244.86	-	245.41	-	0.56
STM-10		STM CBMH#6	STM CBMH#4	0.22	0.80	1.0	100 year	0.22	0.00	0.22	10.00	108.92	180.15	**0.00**	**110.18**	**110.18**	0.3%	450	0.013	1.0	29.5	0.50	**157.48**	**70%**	244.49	244.40	244.94	244.85	245.92	245.41	0.98	0.56
EXT-1 & STM-1		STM CBMH#4	LEVEL SPREADER	0.00	0.00	0.0	100 year	0.00	0.00	0.47	10.88	104.19	172.67	**70.00**	**0.00**	**70.00**	0.5%	525	0.013	1.4	8.0	0.09	**304.10**	**23%**	244.32	244.28	244.85	244.81	245.41	-	0.56	-
EXT-4 & STM-4		STM DDICB#1	STM CBMH#5	0.07	0.33	0.4	100 year	0.03	0.00	0.03	10.00	108.92	180.15	**0.00**	**14.46**	**14.46**	1.0%	300	0.013	1.4	35.0	0.43	**96.70**	**15%**	246.26	245.90	246.56	246.20	248.62	247.92	2.06	1.72
EXT-5 & STM-5		STM CBMH#5	STMH#2	0.22	0.27	0.3	100 year	0.07	0.00	0.10	10.43	106.56	176.43	**0.00**	**50.58**	**50.58**	1.6%	300	0.013	1.7	4.3	0.04	**122.32**	**41%**	245.82	245.75	246.12	246.05	247.92	248.43	1.80	2.38
		STMH#2	STMH#3	0.00	0.00	0.0	100 year	0.00	0.00	0.10	10.47	106.34	176.08	**0.00**	**50.48**	**50.48**	1.0%	300	0.013	1.4	27.3	0.33	**96.70**	**52%**	243.96	243.68	244.26	243.98	248.43	246.33	4.17	2.35
		STMH#3	STMH#9	0.00	0.00	0.0	100 year	0.00	0.00	0.10	10.80	104.59	173.30	**0.00**	**49.68**	**49.68**	1.0%	375	0.013	1.6	9.7	0.10	**175.33**	**28%**	243.53	243.44	243.91	243.82	246.33	246.14	2.43	2.32
STM-11		STM CB#5	STMH#9	0.26	0.80	1.0	100 year	0.26	0.00	0.26	10.00	108.92	180.15	**0.00**	**131.49**	**131.49**	1.0%	375	0.013	1.6	13.4	0.14	**175.33**	**75%**	243.69	243.56	244.07	243.93	245.29	246.14	1.22	2.21
		STMH#9	STMH#4	0.00	0.00	0.0	100 year	0.00	0.00	0.37	10.90	104.06	172.47	**0.00**	**175.33**	**175.33**	1.5%	375	0.013	1.9	62.7	0.54	**214.73**	**82%**	243.41	242.47	243.79	242.85	246.14	244.92	2.35	2.07
STM-12		STM CB#6	STMH#4	0.17	0.80	1.0	100 year	0.17	0.00	0.17	10.00	108.92	180.15	**0.00**	**85.84**	**85.84**	1.0%	300	0.013	1.4	12.3	0.15	**96.70**	**89%**	242.56	242.44	242.86	242.74	243.94	244.92	1.08	2.18
		STMH#4	STMH#10	0.00	0.00	0.0	100 year	0.00	0.00	0.54	11.44	101.40	168.25	**0.00**	**251.21**	**251.21**	1.5%	450	0.013	2.2	29.3	0.22	**349.18**	**72%**	242.29	241.85	242.74	242.30	244.92	244.35	2.18	2.05
STM-13	LOVERS CREEK CATCHMENT	STM CB#7	STMH#10	0.10	0.72	0.9	100 year	0.09	0.00	0.09	10.00	108.92	180.15	**0.00**	**45.83**	**45.83**	1.0%	300	0.013	1.4	15.4	0.19	**96.70**	**47%**	242.12	241.97	242.42	242.27	243.11	244.35	0.69	2.08
		STMH#10	STMH#5	0.00	0.00	0.0	100 year	0.00	0.00	0.63	11.66	100.34	166.57	**0.00**	**291.07**	**291.07**	1.5%	450	0.013	2.2	23.1	0.18	**349.18**	**83%**	241.82	241.47	242.27	241.92	244.35	243.90	2.08	1.98
EXT-6 & STM-6		STM CB#4	STM CBMH#3	0.36	0.27	0.3	100 year	0.12	0.00	0.12	10.00	108.92	180.15	**0.00**	**60.34**	**60.34**	2.0%	300	0.013	1.9	57.3	0.49	**136.99**	**44%**	243.91	242.76	244.21	243.06	247.08	247.04	2.87	3.98
EXT-7 & STM-7		STM CBMH#3	STM CBMH#2	0.52	0.24	0.3	100 year	0.16	0.00	0.28	10.49	106.21	175.86	**0.00**	**135.31**	**135.31**	2.1%	375	0.013	2.3	22.7	0.16	**254.08**	**53%**	242.68	242.20	243.06	242.58	247.04	244.84	3.98	2.27
STM-9		STM CB#10	STM CBMH#2	0.03	0.50	0.6	100 year	0.02	0.00	0.02	10.00	108.92	180.15	**0.00**	**9.39**	**9.39**	1.0%	250	0.013	1.2	9.5	0.13	**59.47**	**16%**	242.53	242.44	242.78	242.69	243.86	-	1.08	-
STM-8		STM CBMH#2	STMH#6	0.02	0.20	0.3	100 year	0.01	0.00	0.30	10.66	105.33	174.48	**0.00**	**145.77**	**145.77**	1.0%	375	0.013	1.6	29.2	0.31	**175.33**	**83%**	242.05	241.73	242.43	242.11	244.84	243.68	2.41	1.58
		STMH#6	STMH#5	0.00	0.00	0.0	100 year	0.00	0.00	0.30	10.96	103.75	171.98	**0.00**	**143.67**	**143.67**	1.0%	375	0.013	1.6	11.0	0.12	**175.33**	**82%**	241.58	241.47	241.96	241.85	243.68	243.90	1.72	2.06
		STMH#5	STM HW#3	0.00	0.00	0.0	100 year	0.00	0.00	0.93	11.84	99.52	165.27	**0.00**	**426.88**	**426.88**	1.2%	525	0.013	2.2	5.8	0.04	**471.11**	**91%**	241.32	241.25	241.85	241.78	243.90	-	2.06	-
		DITCH INLET	STMH#8	0.00	0.00	0.0	100 year	0.00	0.00	0.00	10.00	108.92	180.15	**21.00**	**0.00**	**21.00**	0.9%	300	0.013	1.3	23.6	0.30	**91.74**	**23%**	240.88	240.66	241.18	240.96	-	242.38	-	1.42
		Catchment 12	EX. MH#41	3.87	0.40	0.5	5 year	1.55	1.55	0.00	10.00	108.92	180.15	**0.00**	**468.74**	**468.74**	-	-	-	-	-	-	**-**	**-**	-	-	-	-	-	-	-	-
	LITTLE AVENUE	EX. MH#41	EX. MH#46	0.30	0.40	0.5	5 year	0.12	1.67	0.00	10.00	108.92	180.15	**0.00**	**505.08**	**505.08**	4.5%	450	0.013	3.8	112.0	0.49	**601.79**	**84%**	249.09	244.10	249.54	244.55	250.69	245.87	1.15	1.32
		EX. MH#46	STMH#8	0.30	0.40	0.5	5 year	0.12	1.79	0.00	10.49	106.20	175.86	**0.00**	**527.89**	**527.89**	5.2%	450	0.013	4.1	60.0	0.25	**647.01**	**82%**	243.50	240.41	243.95	240.86	245.96	242.38	2.01	1.52
		STMH#8	STM HW#2	0.28	0.40	0.5	5 year	0.11	1.90	0.00	10.74	104.90	173.81	**21.00**	**554.11**	**575.11**	2.0%	600	0.013	3.1	56.4	0.31	**869.11**	**66%**	240.04	238.91	240.64	239.51	242.38	239.97	1.74	0.46

LIST OF FIGURES

Note: All drawings have been prepared at half scale

Figure 1: Site Plan
Figure 2: Pre-Development Drainage Plan
Figure 3: Post-Development Drainage Plan
DWG 101A: General Site Servicing Plan 1
DWG 101B: General Site Servicing Plan 2
DWG 102A: Site Grading Plan 1
DWG 102B: Site Grading Plan 2
DWG 103A: Sanitary Drainage Plan
DWG 103B: Storm Drainage Plan
DWG 104: Removals, Erosion and Sediment Control Plan



KEY PLAN NOT TO SCALE

ZONING INFO - 428 LITTLE AVE - BARRIE

	REQUIRED	TOWNHOUSE UNITS	TOTAL
ZONING	R1,R2 , R3 and R4	RM2	
LOT AREA (MIN.)	720 m2		20544 m2
LOT FRONTAGE	21 m	4.88 m	
FRONT YARD SETBACK	7 m	> 7 m	
INTERIOR SIDE YARD SETBACK	1.8 m	>1.8 m	
EXTERIOR SIDE YARD SETBACK	1.8 m	>1.8 m	
REAR YARD SETBACK	7 m	> 7 m	
LANDSCAPE OPEN SPACE	35%	To be confirmed at site plan stage	To be confirmed at site plan stage
DWELLING UNIT FLOOR AREA	35 m2/dwelling unit + 10 m2/ dwelling unit	~144 sqm + ~100sqm/unit (affordable housing)	~7200 sqm + ~600sqm/unit (affordable housing)
LOT COVERAGE	35%		~ 15%
GROSS FLOOR AREA	60%		40%
BUILDING HEIGHT	10m	Max. 10m	
DRIVEWAY COVERAGE	50%	< 50%	
DENSITY	40 UNITS / HECTARE		29.21 UNITS / HECTARE
OUTDOOR AMENITY	12 m2 / UNIT	672 m2	> 720 m2
SEC. MEANS OF EGRESS	7 m	7 m	

UNIT COUNT:

TOWNHOUSE UNITS 50
+ 6 STACKED AFFORDABLE UNITS

SITE AREA :
20442.3 SQM (2.044 HEC.)

PARKING :

REQUIRED = 1.5 SPACES PER DWELLING UNIT FOR MORE THAN THREE UNITS IN A ROW
= 84 PARKING SPACES

PROPOSED = > 84 SPACES
(INCLUDING 22 VISITOR PARKING
+ 5 ACCESSIBLE PARKING SPACES)

LEGEND :

- APPROX. BOREHOLE LOCATIONS
- PROPERTY LINE
- C/L OF METROLINX TRACK
- GARBAGE ENCLOSURE (HOLDS 3 CUBIC YARD GARBAGE BIN + 1 ORGANIC CART + 2 RECYCLING CARTS)

BUILDERS SHALL VERIFY ALL DIMENSIONS AND ALL JOB SITE CONDITIONS PRIOR TO PROCEEDING WITH CONSTRUCTION AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT.

ONLY THE LATEST APPROVED DRAWINGS ARE TO BE USED FOR CONSTRUCTION.

IT IS THE BUILDER'S DUTY TO ENSURE THAT THEY HAVE THE LATEST APPROVED DRAWINGS IN HAND.

PROJECT NORTH

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SEE DRAWING A-1 FOR
GENERAL AND CONSTRUCTION NOTES

NO.	DATE	DESCRIPTION
12	JUNE 27,19	REVISE SITE PLAN
11	APR 22 2019	REVISE SITE PLAN
10	MAR 18 2019	REVISE BLOCK C
9	MAR 15 2019	REVISED FOR CLIENT REVIEW
8	FEB 27 2019	REVISED FOR CLIENT REVIEW
7	JAN 23 2019	REVISED FOSTER DR - FOR CLIENT REVIEW
6	JAN 11 2019	REVISED FOR CLIENT REVIEW
5	MAR 22 2018	REVISED FOR CLIENT REVIEW
4	MAR 5 2018	REVISED FOR CLIENT REVIEW
3	JAN 25 2018	REVISED FOR CLIENT REVIEW
2	JAN 3 2018	REVISED FOR CLIENT REVIEW
1	MAY 4 2017	ISSUED FOR PRE-CONSULTATION REVIEW

REVISIONS / ISSUE DATES

HIGGINS
PETER HIGGINS
ARCHITECT INC.
124 MERTON STREET, SUITE 204
TORONTO, ONTARIO, M4S 2Z2
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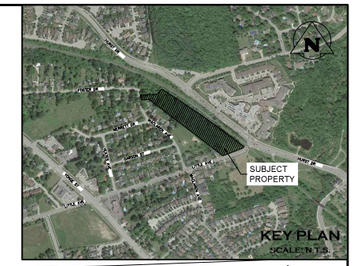
PROJECT: 00MMYY-XXXX

PROJECT TYPE
237 FOSTER DR - 428 LITTLE AVE
BARRIE, ONTARIO

DRAWN BY: L.B.M.	DATE: MAY 2017	ONTARIO ASSOCIATION of ARCHITECTS PETER JAMES HIGGINS LICENCE 4208
CHECKED BY: PJH.		
SCALE: 1 : 500	BCIN 4208 3486	
PROJECT NO: 17-023	DRAWING TITLE: PRELIMINARY SITE PLAN	DRAWING NO: A-01

NOTE: PRE-DEVELOPMENT SUBWATERSHED BOUNDARIES DELINEATED PER HISTORIC CONDITIONS AS OUTLINED IN THE PRE DEVELOPMENT DRAINAGE ANALYSIS TECHNICAL MEMO PREPARED BY CROZIER (SEPTEMBER 2018)



N

TO WHISKEY CREEK

SUBWATERSHED BOUNDARY

TO LOVERS CREEK

Ex. Centre Line of Railway Track

Ex. Chain Link Fence and Toe of Slope

Top of Slope and Remains of Post & Wire Fence

Ex. Chain Link Fence and Toe of Slope

Top of Slope and Remains of Post & Wire Fence

246.50

247

247.50

248

248.50

249

244.50

245

245.50

246

246.50

247

247.50

248.50

101
1.49 | 54R

102
0.66 | 54R

FOSTER DRIVE

Ex. Board Fence

Ex. Chain Link Fence

EX. SINGLE DETACHED LOTS

EXT-1
0.45 | 30U

LOT 53

LOT 52

LOT 51

LOT 48

LOT 47

LOT 46

LOT 45

LOT 44

Ex. Chain Link Fence

Ex. Chain Link Fence

Ex. Chain Link Fence

EXT-2
0.95 | 64R

BLOCK A

EX. PARK

McLAREN AVENUE

Top

Ditch

Top

Edge of Asphalt

Centre Line of Road

Ex. Chain Link Fence

Ex. Chain Link Fence

Ex. Chain Link Fence

TO WHISKEY CREEK

N

202
0.53 | 54R

UNCONTROLLED AREA TO WHISKEY CREEK

CENTRE LINE OF GO TRAIN RAIL

Ex. Chain Link Fence and Toe of Slope

Centre Line of Railway Track

Ex. Chain Link Fence and Toe of Slope

POST AND WIRE FENCE

BIORETENTION CELL 1 AREA=??m²

BIORETENTION CELL 2 AREA=123.26m²

BIORETENTION CELL 3 AREA=76.50m²

BIORETENTION CELL 4 AREA=95.23m²

BIORETENTION CELL 5 AREA=103.90m²

R=5

R=5

LOVERS CREEK

203
0.59 | 50U

201
1.03 | 50U

Ex. Chain Link Fence

Ex. Board Fence

Shed

Ex. Chain Link Fence

EXT-1
0.45 | 30U

Ex. Chain Link Fence

Top

Ditch

Top

Edge of Asphalt

Centre Line of Road

EX. PARK

EXT-2
0.95 | 64R

Ex. Chain Link Fence and Toe of Slope

Ex. Top of Bank

Ex. Centre Line of Road

Ex. 450mmø SAN

Ex. 450mmø STM

Ex. 600mmø STM

Ex. Top of Bank

TOP=242.45
INV=240.85
INV=241.05

TOP=242.45
INV=240.85
INV=241.05

TOP=242.45
INV=240.85
INV=241.05

TOP=242.45
INV=240.85
INV=241.05

TOP=242.45
INV=240.85
INV=241.05

KEY PLAN
SCALE: N.T.S.
SUBJECT PROPERTY

LEGEND

- LOVERS CREEK CATCHMENT
- WHISKEY CREEK CATCHMENT
- SUBWATERSHED BOUNDARY
- OVERLAND FLOW DIRECTION
- 205 / 0.82 | 79R — CATCHMENT BOUNDARY ID; R= MODIFIED CURVE # (NASHYD); U= % TOTAL IMPERVIOUS (STANHYD); STORM CATCHMENT AREA (ha)

10 0m 10 20 30 40
SCALE: 1:500

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TEMPORARY BENCHMARKS

TBM#1– ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE TOPNUT OF FIRE HYDRANT ON LITTLE AVENUE HAVING AN ELEVATION OF 242.26 METRES

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR 1st SUBMISSION	11/29/2019

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

Project

428 LITTLE AVE.
CITY OF BARRIE

Drawing

POST–DEVELOPMENT STORM DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446 3510 T
705 446 3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	S.C.	Design By	M.L.	Project	892–4560
Check By	M.L.	Check By	J.G.K.	Scale 1:500	Drawing FIG.3

KEY PLAN
SCALE 1:5000

FUTURE TRAIN TRACKS (BY METROLINX)

PR RETAINING WALL BY OTHERS

Ex. Centre Line of Railway Track

Ex. Chain Link Fence and Toe of Slope

Top of Slope and Remains of Post & Wire Fence

REFER TO 'TYPICAL BIORETENTION CROSS SECTION' DETAIL ON DWG 105

5m(L) X 0.5m(W) X 0.3m(H) LEVEL SPREADER TOP 244.28

INV. 244.28

8.0m–525mmø STM @ 0.5%

STM CBMH#4
SW INV 244.48
NE INV 244.32
SE INV 244.40

ORIFICE PLATE @ NE OUTLET. SEE DETAILS 'A' & 'B' ON DWG 105.

BIORETENTION CELL 1
AREA=76.35m²

29.5m–450mmø STM @ 0.3%

BIORETENTION CELL 2
AREA=123.26m²

12.0m–450mmø STM @ 0.5%

UNDERGROUND STORAGE CHAMBER

INV. 244.59

CHAMBER BOTTOM=244.59
AREA= 323.00m²

PR. GARBAGE ENCLOSURE (BY OTHERS)

6m TOP OF SLOPE SETBACK

PR. GARBAGE ENCLOSURE (BY OTHERS)

BIORETE
AREA=

EX OVERHEAD HYDRO TO BE MAINTAINED

EX HYDRO POLE AND GUY WIRE TO BE MAINTAINED

SHED

SANMH#6
T/G 246.14
SE INV 243.67

SANMH#5
T/G 246.05
NW INV 243.40
SE INV 243.37

STM CBMH#6
NW INV 244.49
SE INV 244.53

27.3m–200mmø SAN @ 1.0%

107.8m–200mmø SAN @ 0.5%

150mmø WM

65.9m–200mmø SAN @ 0.5%

SANMH#4
T/G 247.18
NW INV 242.83
SE INV 242.80

STMH#3
T/G 246.33
SE INV 243.53
SW INV 243.68

9.7m–375mmø STM @ 1.0%

65.9m–200mmø SAN @

27.3m
STM @

FOSTER DRIVE

21.7m–375mmø STM @ 1.0%

CONNECT TO EX. 150mmø STUB

150mmø WM

INV. 244.59

INV. 244.74

UNDERGROUND STORAGE CHAMBER
CHAMBER BOTTOM=244.59
AREA= 315.96m²

6.6m–450mmø STM @ 1.6%

59.1m–300mmø STM @ 2.0%

35.0m–300mmø STM @ 1.0%

Ex. Board Fence

Ex. Chain LinK Fence

Ex. Chain Link Fence

STM CBMH#1
T/G 247.72
SE INV 245.65
N INV 244.85

STM CB#1
T/G 248.62
NW INV 246.83

DDICB#1
T/G 248.62
SE INV 246.26

STM CBMH#5
T/G 247.92
NE INV 245.82
NW INV 245.90

LSTMH#2
T/G 248.43
NE INV 243
SW INV 245

4.3m–
STM @

DRO
@ ST

EX HYDRO POLE TO REMAIN

EX SHED TO REMAIN

EX CHAIN LINK FENCE TO REMAIN

EX HYDRO POLE TO REMAIN

EX CHAIN LINK FENCE TO REMAIN

EX HYDRO POLE AND GUY WIRE TO REMAIN

EX HYDRO POLE TO REMAIN

AREA OF FOSTER DRIVE DISTURBANCE (TYP.). RESTORE ROAD TO MATCH EXISTING CONDITIONS. EXCAVATION TO BE COMPLETED USING TRENCH BOX. CONTRACTOR TO OBTAIN ROAD OCCUPANCY PERMITS AS NECESSARY FROM THE CITY. RE-INSTATE ALL DISTURBED AREAS TO EXISTING CONDITIONS OR BETTER.

LOT 53 · LOT 51 · LOT 50 · LOT 49 · LOT 48 · LOT 46

LEGEND

- PROPERTY LINE
- EXISTING WATERMAIN & GATE VALVE
- EXISTING STORM SEWER
- EXISTING STORM CATCHBASIN
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- PROPOSED FIRE HYDRANT & GATE VALVE
- DETECTOR CHECK VALVE
- PROPOSED STORM MANHOLE
- DDICB — PROPOSED STORM DOUBLE DITCH INLET CATCH BASIN
- CB — PROPOSED CATCH BASIN
- CBMH — PROPOSED CATCH BASIN MANHOLE
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN & GATE VALVE
- PROPOSED SANITARY SEWER & SANITARY MANHOLE

10 0m 10 20
SCALE: 1:300

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4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

TEMPORARY BENCHMARKS

TBM#1– ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE TOPNUT OF FIRE HYDRANT ON LITTLE AVENUE HAVING AN ELEVATION OF 242.26 METRES

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR COORDINATION	05/29/2019
1	ISSUED FOR SPA APPROVAL	09/04/2019
2	ISSUED FOR 1ST SUBMISSION	11/29/2019

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

Project

428 LITTLE AVENUE
CITY OF BARRIE

Drawing

GENERAL SERVICING PLAN 1

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ONL9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
S.C./J.P.	M.L./J.V.	892–4560
Check By	Check By	Scale / Drawing
M.L.	J.G.K.	1:300 / 101A

J:\800\892 – Plaza Corp\4560-428 Little Ave\CAD\Civil\Sheets\4560_C101.dwg, 101A, 2019-11-29 3:28:14 PM, jpereira

KEY PLAN
SCALE 1:5000

PROPOSED TRAIN TRACKS (BY OTHERS)
PR RETAINING WALL (BY OTHERS)
Ex.Centre Line of Railway Track
Ex.Chain Link Fence and Toe of Slope
Top of Slope and Remains of Post & Wire Fence
REFER TO 'TYPICAL BIORETENTION CROSS SECTION' DETAIL ON DWG 105
PR. GARBAGE ENCLOSURE (BY OTHERS)
6m TOP OF SLOPE SETBACK
REMOVE EX. HEADWALL & REPLACE W/ 600mmø CONC. HW C/W GRATING. SEE OPSD 804.030 & 804.050 ON DWG C106
EX. T/G 239.90
EX. INV 238.92
HW#2
T/G 240.01
W INV 238.91
T/G 239.97
600mmx600mm DICB w/ GRATE @ 3:1 SLOPE. SEE DETAIL 'C' & 'D' ON DWG C105. 85mmø ORIFICE PLATE @ S. OUTLET
S. INV. 240.88
N. INV. 240.91
200mmø HICKENBOTTOM INV. 240.94
TOP 242.40
SEE DETAIL ON DWG 105
SWM POND
BH # 18-7*
HW#3
T/G 242.51
SW INV 241.25
OPSD 804.030
3.6m-300mmø STM @ 0.8%
23.6m-300mmø STM @ 0.8%
DITCH INLET#1
EX. 54m-450mmø STM @ 1.7%
56.4m-600mmø STM @ 2.0%
REMOVE & REPLACE EX. 54m 450mmø STM @ 1.7% W/ 600mmø
REMOVE EX STMH & REPLACE W/ STMH#8
T/G 242.38
N INV 240.66
E INV 240.04
W INV 240.41
AREA OF LITTLE AVE DISTURBANCE (TYP.). RESTORE ROAD TO MATCH EXISTING CONDITIONS. EXCAVATION TO BE COMPLETED USING TRENCH BOX. CONTRACTOR TO OBTAIN ROAD OCCUPANCY PERMITS AS NECESSARY FROM THE CITY. RE-INSTATE ALL DISTURBED AREAS TO EXISTING CONDITIONS OR BETTER.
BIORETENTION CELL 3 AREA=170m²
STM CB#5
T/G 245.29
SW INV 243.69
13.4m-375mmø STM @ 1.0%
STMH#3
T/G 246.33
SE INV 243.53
SW INV 243.68
9.7m-375mmø STM @ 1.0%
STMH#9
T/G 246.14
NW INV 243.44
SE INV 243.41
NE INV 243.56
BIORETENTION CELL 4 AREA=95.23m²
STM CB#6
T/G 243.94
SW INV 242.56
12.3m-300mmø STM @ 1.0%
STMH#4
T/G 244.92
NW INV 242.47
SE INV 242.29
NE INV 242.44
BH # 18-5*
PR. GARBAGE ENCLOSURE (BY OTHERS)
BIORETENTION CELL 5 AREA=57.92m²
STM CB#7
T/G 243.11
SW INV 242.12
15.4m-300mmø STM @ 1.0%
STMH#10
T/G 244.35
NW INV 241.85
SE INV 241.82
NE INV 241.97
BIORETENTION CELL 6 AREA=102.90m²
5.8m-525mmø STM @ 1.2%
STMH#5
T/G 243.90
NW INV 241.47
SE INV 241.47
NE INV 241.32
11.0m-375mmø STM @ 1.0%
STMH#6
T/G 243.68
NW INV 241.58
SW INV 241.73
62.7m-375mmø STM @ 1.5%
29.3m-450mmø STM @ 1.5%
23.1m-450mmø STM @ 1.5%
65.9m-200mmø SAN @ 0.5%
105.3m-200mmø SAN @ 1.0%
150mmø WM
SANMH#3
T/G 245.89
NW INV 242.47
SE INV 242.24
SANMH#2
T/G 243.84
NW INV 241.19
SE INV 241.16
SANMH#1
T/G 243.70
NW INV 241.08
S INV 241.05
31.6m-200mmø SAN @ 1.0%
8.3m-200mmø SAN @ 1.0%
27.3m-300mmø STM @ 1.0%
STM CB#10
T/G 243.86
NW INV 242.53
29.2m-375mmø STM @ 1.1%
9.5m-250mmø STM @ 1.0%
SAN DMH1 (DOG HOUSE)
N INV 240.73
T/G 243.63
EX. E INV 240.02
EX. W INV 240.07
STM CB#4
T/G 247.08
SE INV 243.91
STM CBMH#3
T/G 247.04
SE INV 242.68
NW INV 242.76
57.3m-300mmø STM @ 2.0%
22.7m-375mmø STM @ 2.1%
STM CBMH#2
T/G 244.84
NW INV 242.20
NE INV 242.05
150mmx150mm TEE CONNECT INTO EX. 150mmø WM
STMH#2
T/G 248.43
NE INV 243.96
SW INV 245.75
DROP STRUCTURE @ SW INLET
STM CBMH#5
T/G 247.92
NE INV 245.82
NW INV 245.90
4.3m-300mmø STM @ 1.6%
EX HYDRO POLE TO REMAIN
EX HYDRO POLE TO REMAIN
EX HYDRO POLE TO REMAIN
AREA OF FOSTER DRIVE DISTURBANCE (TYP.). RESTORE ROAD TO MATCH EXISTING CONDITIONS. EXCAVATION TO BE COMPLETED USING TRENCH BOX. CONTRACTOR TO OBTAIN ROAD OCCUPANCY PERMITS AS NECESSARY FROM THE CITY. RE-INSTATE ALL DISTURBED AREAS TO EXISTING CONDITIONS OR BETTER.
EX. SAN MH#45
T/G 245.43
E INV 241.62
W INV 241.69
EX. STM MH#46
T/G 245.96
NW INV 243.10
SW INV 243.04
N INV 244.06
E INV 243.50
*SEE WSP GEOTECHNICAL REPORT DATED MAY 208
LOT 45
LOT 44
LITTLE AVENUE (ORIGINAL ROAD ALLOWANCE BETWEEN LOTS 13 & 14)
Ex. Top of Curb
Ex. Edge of Asphalt
Centre Line of Road
Ex. 150mmø WM
Ex. 60mmø SAN
Ex. 250mmø STM
Frame Dwelling
10 0m 10 20
SCALE: 1:300

LEGEND
- BOREHOLE LOCATION
- PROPERTY LINE
- EXISTING WATERMAIN & GATE VALVE
- EXISTING STORM SEWER
- EXISTING STORM CATCHBASIN
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- PROPOSED FIRE HYDRANT & GATE VALVE
- DETECTOR CHECK VALVE
- PROPOSED STORM MANHOLE
- DDI PROPOSED STORM DOUBLE DITCH INLET
- CB PROPOSED CATCH BASIN
- CBMH PROPOSED CATCH BASIN MANHOLE
- PROPOSED STORM SEWER
- PROPOSED WATERMAIN & GATE VALVE
- PROPOSED SANITARY SEWER & SANITARY MANHOLE

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TEMPORARY BENCHMARKS

TBM#1– ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE TOPNUT OF FIRE HYDRANT ON LITTLE AVENUE HAVING AN ELEVATION OF 242.26 METRES

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR COORDINATION	05/29/2019
1	ISSUED FOR SPA APPROVAL	09/04/2019
2	ISSUED FOR 1ST SUBMISSION	11/29/2019

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

Project
428 LITTLE AVENUE
CITY OF BARRIE

Drawing
GENERAL SERVICING PLAN 2

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project
S.C./J.P.	M.L./J.V.	892-4560
Check By	Check By	Scale / Drawing
M.L.	J.G.K.	1:300 / 101B

J:\800\892 - Plaza Corp\4560-428 Little Ave\CAD\Civil\Sheets\4560_C101.dwg, 101B, 2019-11-29 3:28:18 PM, jpereira

C/L PROPOSED WEST METROLINX TRACK PER BARRIE RAIL CORRIDOR EXPANSION DRAWING NO. SK-C-139

PROPOSED RETAINING WALL PER BARRIE RAIL CORRIDOR EXPANSION DRAWING NO. SK-C-139

ASPHALT OUTLET (TYP. II OPSD 604.020) C/W ASPHALT SPILLWAYS (TYP. OPSD 605.040) TO BOTTOM OF BIORETENTION CELL.

5m(L) X 0.5m(W) X 0.3m(H) LEVEL SPREADER TOP 244.28

BARRIER CURB & GUTTER (OPSD 601.040)

6m SETBACK FROM TOP OF SLOPE (EROSION ACCESS ALLOWANCE)

BARRIER CURB (OPSD 600.110)

DEPRESSED CURB ALONG FRONT OF ENCLOSURE

ASPHALT CURB & GUTTER (OPSD 601.040 TYP.)

BARRIER CURB (OPSD 600.110

BARRIER CURB & GUTTER (OPSD 601.040)

NOTE: ALL ELEVATIONS AT CURBS ARE BOTTOM OF CURB ELEVATIONS UNLESS OTHERWISE SPECIFIED.

KEY PLAN
SCALE 1:5000

BIORETENTION CELL 1
AREA=76.35m²

BIORETENTION CELL 2
AREA=123.26m²

30m SWALE @ 1.5%

MAX. 3:1 SLOPE

UNDERGROUND STORAGE CHAMBER

CANADA POST MAILBOX

FF 249.75
TF 249.45
BF 246.81
USF 245.49

FF 249.70
TF 249.40
BF 246.76
USF 245.44

FF 249.82
TF 249.52
BF 246.88
USF 245.56

FF 250.04
TF 249.74
BF 247.10
USF 245.78

FF 250.81
TF 250.51
BF 247.87
USF 246.55

FF 250.53
TF 250.23
BF 247.59
USF 246.27

FF 250.74
TF 250.44
BF 247.80
USF 246.48

FF 250.92
TF 250.62
BF 247.98
USF 246.66

FF 251.12
TF 250.82
BF 248.18
USF 246.86

FF 251.21
TF 250.91
BF 248.27
USF 246.95

FF 251.02
TF 250.72
BF 248.08
USF 246.76

FF 250.78
TF 250.48
BF 247.84
USF 246.52

FF 250.55
TF 250.25
BF 247.61
USF 246.29

13m RETAINING WALL TW 249.36

9m RETAINING WALL TW 249.57

25m RETAINING WALL TW 249.60

Ex. Chain Link Fence and Toe

Top of Slope and Remains of Post & Wire Fence

Ex. Chain Link Fence and Toe of Slope

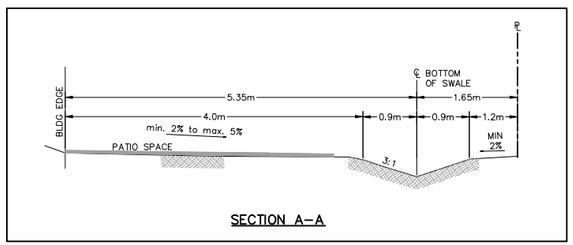
Ex. Wood Fence

Ex. Chain Link Fence

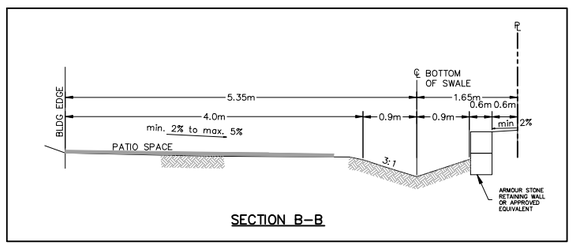
Ex. Main Line

Shed

SECTION A-A



SECTION B-B



SCALE: 1:250

LEGEND

- PROPERTY LINE
- EXISTING WATERMAIN & GATE VALVE
- EXISTING STORM SEWER
- EXISTING STORM CATCHBASIN
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- PROPOSED FIRE HYDRANT & GATE VALVE
- PROPOSED STORM MANHOLE
- PROPOSED STORM DOUBLE CATCHBASIN
- PROPOSED CATCH BASIN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER & SANITARY MANHOLE
- HP PROPOSED HIGH POINT
- LP PROPOSED LOW POINT
- 215.00 EXISTING GRADE
- 215.00 PROPOSED GRADE
- 215.00 PROPOSED GRADE (TO MATCH EXISTING)
- 2.0% PROPOSED GRASSED SWALE
- PROPOSED RETAINING WALL

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TEMPORARY BENCHMARKS

TBM#1- ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE TOPNUT OF FIRE HYDRANT ON LITTLE AVENUE HAVING AN ELEVATION OF 242.26 METRES

Town

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Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

Project

428 LITTLE AVENUE
CITY OF BARRIE

Drawing

SITE GRADING PLAN 1

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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Drawn By	Design By	Project	
S.C./J.P.	M.L./J.V.		892-4560
Check By	Check By	Scale	Drawing
M.L.	J.G.K.	1:250	102A

J:\800\892 - Plaza Corp\4560-428 Little Ave\CAD\Civil\Sheets\4560_C102.dwg, 102A, 2019-11-29 3:28:30 PM, jpereira

NOTE: ALL ELEVATIONS AT CURBS ARE BOTTOM OF CURB ELEVATIONS UNLESS OTHERWISE SPECIFIED.

C/L PROPOSED WEST METROLINX TRACK PER BARRIE RAIL CORRIDOR EXPANSION DRAWING NO. SK-C-139

PROPOSED RETAINING WALL AS PER BARRIE RAIL CORRIDOR EXPANSION DRAWING NO. SK-C-139

6m SETBACK FROM TOP OF SLOPE (EROSION ACCESS ALLOWANCE)

ASPHALT OUTLET (TYP. II OPSD 604.020) C/W ASPHALT SPILLWAYS (TYP. OPSD 605.040) TO BOTTOM OF BIORETENTION CELL.

KEY PLAN
SCALE: N.T.S.

BIORETENTION CELL 3
AREA=170m²
+245.19

BIORETENTION CELL 4
AREA=95.23m²
+243.84

BIORETENTION CELL 5
AREA=57.92m²
+243.01

BIORETENTION CELL 6
AREA=102.90m²

SWM POND
BOTTOM ELEV = 241.25

BH # 18-5*

BH # 18-7*

ASPHALT OUTLET (TYP. II OPSD 604.020) C/W ASPHALT SPILLWAYS (TYP. OPSD 605.040) TO BOTTOM OF BIORETENTION CELL.

EMERGENCY SPILLWAY, REFER TO DETAIL ON DWG 105

ASPHALT OUTLET (TYP. II OPSD 604.020) C/W ASPHALT SPILLWAYS (TYP. OPSD 605.040) TO BOTTOM OF BIORETENTION CELL.

Top of Slope and Remains of Post & Wire

Ex.Chain Link Fence and Top of Slope

BARRIER CURB (OPSD 600.110)

DEPRESSED BARRIER CURB (OPSD 600.110) TO MATCH EXISTING SIDEWALK.

Ex. Edge of Asphalt

Ex. Toe of Curb

Ex. Chain Link

Frame Dwelling

FF 250.35 TF 250.05 BF 247.41 USF 246.09	
FF 250.12 TF 249.82 BF 247.18 USF 245.86	
FF 249.91 TF 249.61 BF 246.97 USF 245.65	
FF 249.66 TF 249.36 BF 246.72 USF 245.40	
FF 249.44 TF 249.14 BF 246.50 USF 245.18	
FF 249.27 TF 248.97 BF 246.33 USF 245.01	
FF 249.04 TF 248.74 BF 246.10 USF 244.78	
FF 248.77 TF 248.47 BF 245.83 USF 244.51	
FF 248.52 TF 248.22 BF 245.58 USF 244.26	
FF 248.30 TF 248.00 BF 245.40 USF 244.04	
FF 248.12 TF 247.82 BF 245.18 USF 243.86	
FF 247.90 TF 247.60 BF 244.96 USF 243.64	
FF 247.55 TF 247.25 BF 244.61 USF 243.29	

29m RETAINING WALL
TW 248.15

*SEE WSP GEOTECHNICAL REPORT DATED MAY 208

STORM EVENT	ELEVATION
2-YEAR	241.69
5-YEAR	241.94
10-YEAR	242.10
25-YEAR	242.32
50-YEAR	242.49
100-YEAR	242.64
REGIONAL	242.83

SCALE: 1:250

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TEMPORARY BENCHMARKS

TBM#1- ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE TOPNUT OF FIRE HYDRANT ON LITTLE AVENUE HAVING AN ELEVATION OF 242.26 METRES

Town

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Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

Project: 428 LITTLE AVENUE
CITY OF BARRIE

Drawing: SITE GRADING PLAN 2

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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Drawn By	Design By	Project	
S.C./J.P.	M.L./J.V.		892-4560
Check By	Check By	Scale	Drawing
M.L.	J.G.K.	1:250	102B

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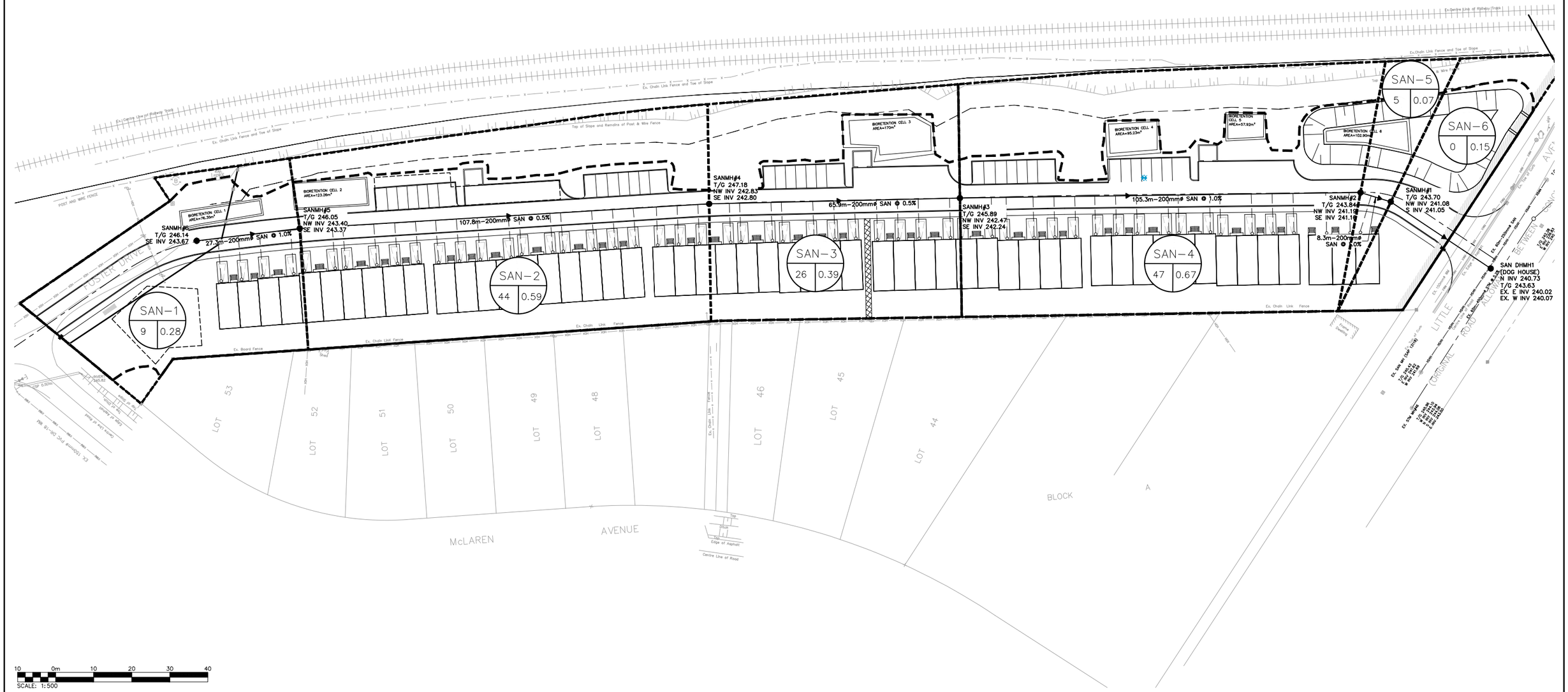
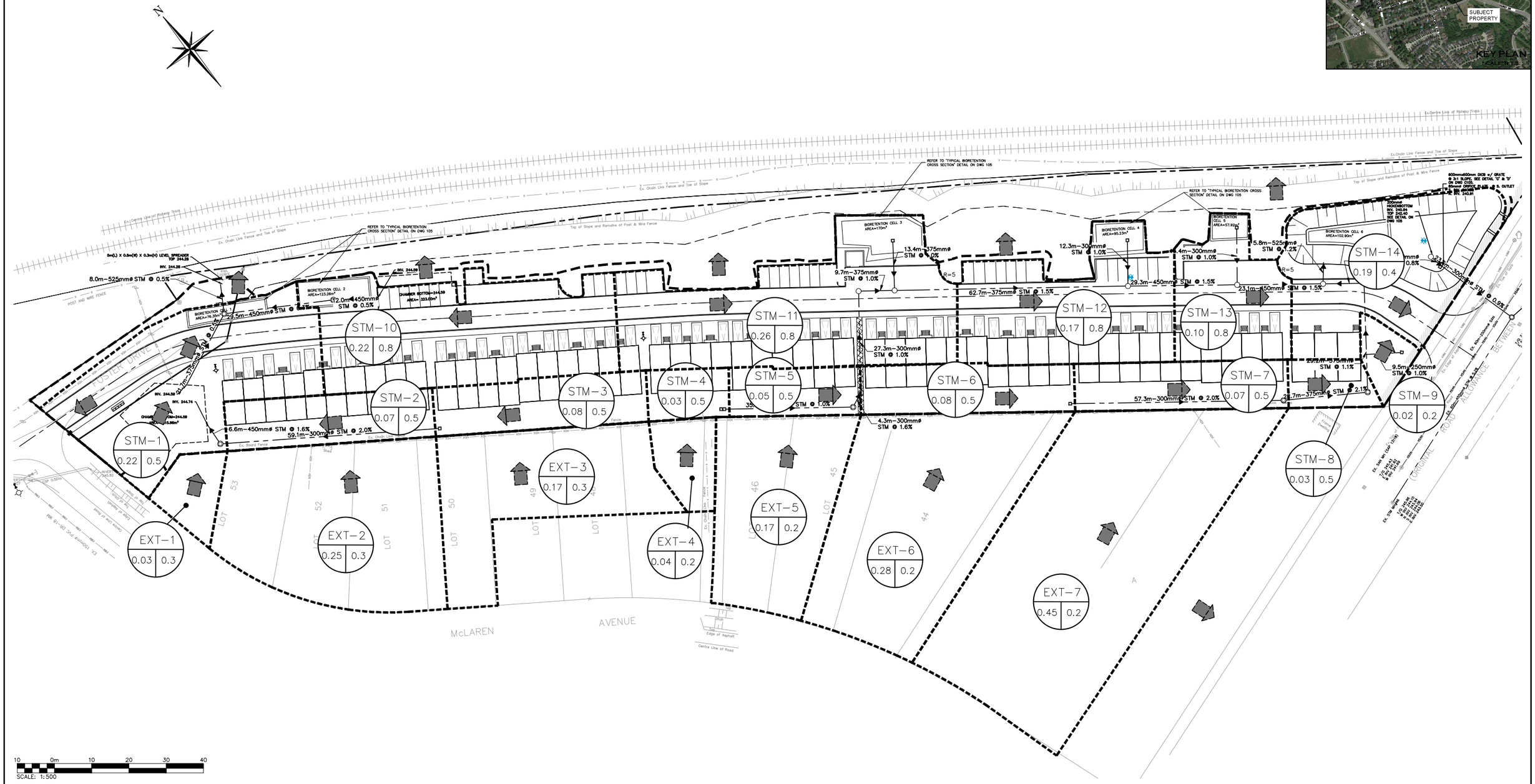
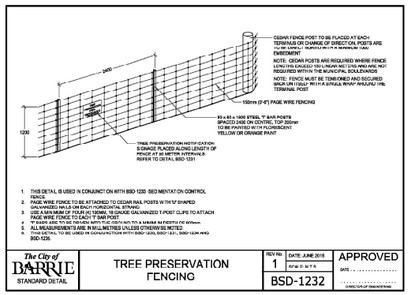
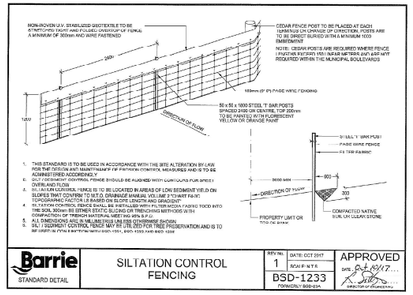
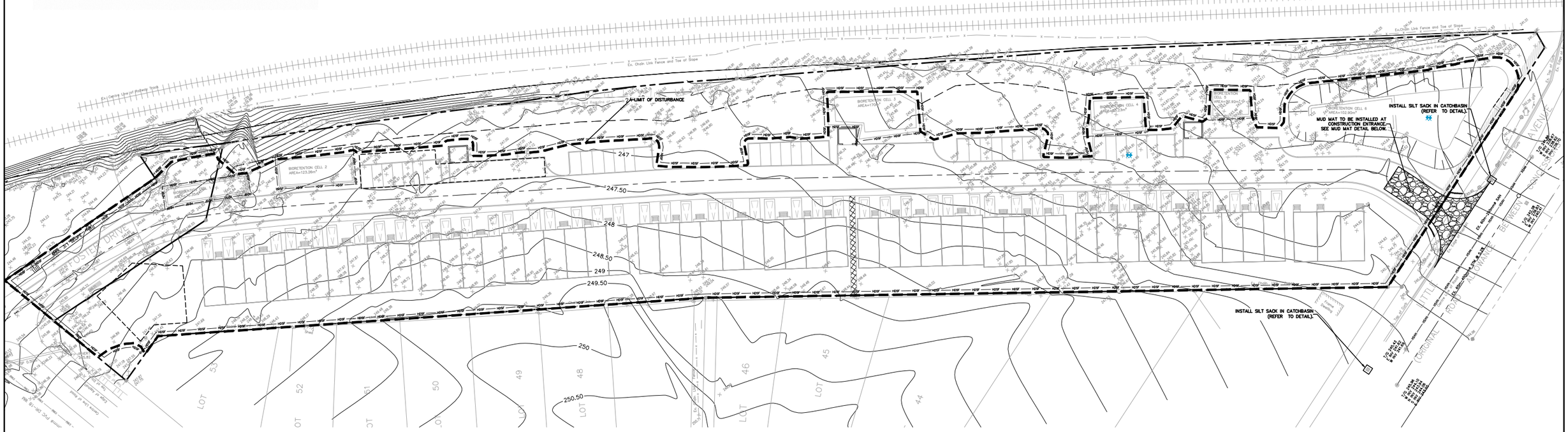

SAN-1
9 0.28
SAN-2
44 0.59
SAN-3
26 0.39
SAN-4
47 0.67
SAN-5
5 0.07
SAN-6
0 0.15
SANMH#6
T/G 246.14
SE INV 243.67
27.3m-200mmø SAN @ 1.0%
SANMH#5
T/G 246.05
NW INV 243.40
SE INV 243.37
107.8m-200mmø SAN @ 0.5%
SANMH#4
T/G 247.18
NW INV 242.83
SE INV 242.80
65.9m-200mmø SAN @ 0.5%
SANMH#3
T/G 245.89
NW INV 242.47
SE INV 242.24
105.3m-200mmø SAN @ 1.0%
SANMH#2
T/G 243.84
NW INV 241.18
SE INV 241.18
8.3m-200mmø SAN @ 1.0%
SANMH#1
T/G 243.70
NW INV 241.08
S INV 241.05
SAN DHMH1
(DOG HOUSE)
N INV 240.73
T/G 243.63
EX. E INV 240.02
EX. W INV 240.07
BIORETENTION CELL 1
AREA=76.30m²
BIORETENTION CELL 2
AREA=123.26m²
BIORETENTION CELL 3
AREA=170m²
BIORETENTION CELL 4
AREA=85.23m²
BIORETENTION CELL 5
AREA=57.92m²
BIORETENTION CELL 6
AREA=102.90m²
Ex. Chain Link Fence and Toe of Slope
Top of Slope and Remains of Post & Wire Fence
Ex. Centre Line of Railway Tracks
POST AND WIRE FENCE
Ex. Chain Link Fence
Ex. Board Fence
Ex. Shed
Ex. Garage
Ex. Dwelling
Ex. Deck
Ex. Pool
Ex. Gazebo
Ex. Concrete Patio
Ex. Asphalt Driveway
Ex. Concrete Walk
Ex. Interlock Walk
Ex. Gravel Driveway
Ex. Grass Swale
Ex. Rock Swale
Ex. Concrete Curb
Ex. Asphalt
Ex. Edge of Asphalt
Ex. Centre Line of Road
Ex. 150mmø PVC SAN
Ex. 200mmø PVC SAN
Ex. 250mmø PVC SAN
Ex. 300mmø PVC SAN
Ex. 375mmø PVC SAN
Ex. 450mmø PVC SAN
Ex. 525mmø PVC SAN
Ex. 600mmø PVC SAN
Ex. 750mmø PVC SAN
Ex. 900mmø PVC SAN
Ex. 1050mmø PVC SAN
Ex. 1200mmø PVC SAN
Ex. 1350mmø PVC SAN
Ex. 1500mmø PVC SAN
Ex. 1650mmø PVC SAN
Ex. 1800mmø PVC SAN
Ex. 2100mmø PVC SAN
Ex. 2400mmø PVC SAN
Ex. 2700mmø PVC SAN
Ex. 3000mmø PVC SAN
Ex. 3300mmø PVC SAN
Ex. 3600mmø PVC SAN
Ex. 3900mmø PVC SAN
Ex. 4200mmø PVC SAN
Ex. 4500mmø PVC SAN
Ex.


N
SUBJECT PROPERTY
KEY PLAN
SCALE: N.T.S.
Ex. Centre Line of Railway Track
Ex. Chain Link Fence and Toe of Slope
Top of Slope and Remains of Post & Wire Fence
REFER TO "TYPICAL BIORETENTION CROSS SECTION" DETAIL ON DWG 105
8m(L) X 0.8m(W) X 0.3m(H) LEVEL SPREADER TOP 244.28
INV. 244.28
8.0m–525mmø STM @ 0.5%
BIORETENTION CELL 1 AREA=76.30m²
BIORETENTION CELL 2 AREA=123.26m²
INV. 244.09
CHAMBER BOTTOM=244.09 AREA= 133.00m²
12.0m–450mmø STM @ 0.5%
29.5m–450mmø STM @ 0.5%
BIORETENTION CELL 3 AREA=10m²
9.7m–375mmø STM @ 1.0%
13.4m–375mmø STM @ 1.0%
62.7m–375mmø STM @ 1.5%
BIORETENTION CELL 4 AREA=95.23m²
12.3m–300mmø STM @ 1.0%
BIORETENTION CELL 5 AREA=57.92m²
4m–300mmø STM @ 1.5%
29.3m–450mmø STM @ 1.5%
5.8m–525mmø STM @ 1.2%
BIORETENTION CELL 6 AREA=102.90m²
23.1m–450mmø STM @ 1.5%
800mmø/600mmø DICB w/ GRATE @ 3:1 SLOPE, SEE DETAIL "C" & "D" ON DWG C105. 250mmø ORIFICE @ 0.5m ABOVE INV. 240.81
INV. 240.81
600mmø CONCRETE MH(1) INV.= 240.50 TOP= 242.50 SEE DETAIL ON DWG 105
0.8%
2.3m–300mmø STM @ 0.8%
9.5m–250mmø STM @ 1.0%
25.7m–375mmø STM @ 1.1%
28.7m–375mmø STM @ 2.1%
57.3m–300mmø STM @ 2.0%
27.3m–300mmø STM @ 1.0%
4.3m–300mmø STM @ 1.6%
6.6m–450mmø STM @ 1.6%
59.1m–300mmø STM @ 2.0%
STM–1 0.22 0.5
STM–2 0.07 0.5
STM–3 0.08 0.5
STM–4 0.03 0.5
STM–5 0.05 0.5
STM–6 0.08 0.5
STM–7 0.07 0.5
STM–8 0.03 0.5
STM–9 0.02 0.2
STM–10 0.22 0.8
STM–11 0.26 0.8
STM–12 0.17 0.8
STM–13 0.10 0.8
STM–14 0.19 0.4
EXT–1 0.03 0.3
EXT–2 0.25 0.3
EXT–3 0.17 0.3
EXT–4 0.04 0.2
EXT–5 0.17 0.2
EXT–6 0.28 0.2
EXT–7 0.45 0.2
FOSTER DRIVE
McLAREN AVENUE
CENTRAL ROAD ALLOWANCE BETWEEN
LOT 53
LOT 52
LOT 51
LOT 50
LOT 49
LOT 48
LOT 47
LOT 46
LOT 45
LOT 44
Ex. Board Fence
Ex. Shed
Ex. Garage
Ex. Deck
Ex. Gazebo
Ex. Concrete Pad
Ex. Asphalt Driveway
Ex. Concrete Walkway
Ex. Retaining Wall
Ex. Stone Patio
Ex. Interlock Patio
Ex. Hydro Pole
Ex. Guy Wire
Ex. Light Standard
Ex. Utility Pole
Ex. Catch Basin
Ex. Manhole
Ex. Hydro Vault
Ex. Hydro Transformer
Ex. Bell Pedestal
Ex. Bell Maintenance Hole
Ex. Gas Valve
Ex. Gas Meter
Ex. Water Valve
Ex. Water Meter
Ex. Curb Stop
Ex. Fire Hydrant
Ex. Sanitary Maintenance Hole
Ex. Sanitary Cleanout
Ex. Storm Maintenance Hole
Ex. Storm Cleanout
Ex. Culvert
Ex. Deciduous Tree
Ex. Coniferous Tree
Ex. Shrub
Ex. Sign
Ex. Mailbox
Ex. Flood Light
Ex. Air Conditioning Unit
Ex. Rock Outcrop
Ex. Rock Wall
Ex. Boulder
Ex. Gravel
Ex. Grass
Ex. Hedge
Ex. Tree Line
Ex. Ditch
Ex. Swale
Ex. Depression
Ex. Contour
Ex. Spot Elevation
Ex. Top of Bank
Ex. Toe of Bank
Ex. Edge of Asphalt
Ex. Centre Line of Road
Ex. 450mmø RCP (SAM 1978)
Ex. 300mmø RCP (SAM 1978)
Ex. 600mmø RCP (SAM 1978)
Ex. 1050mmø RCP (SAM 1978)
Ex. 1500mmø RCP (SAM 1978)
Ex. 1800mmø RCP (SAM 1978)
Ex. 2400mmø RCP (SAM 1978)
Ex. 2700mmø RCP (SAM 1978)
Ex. 3000mmø RCP (SAM 1978)
Ex. 3300mmø RCP (SAM 1978)
Ex. 3600mmø RCP (SAM 1978)
Ex. 3900mmø RCP (SAM 1978)
Ex. 4200mmø RCP (SAM 1978)
Ex. 4500mmø RCP (SAM 1978)
Ex.

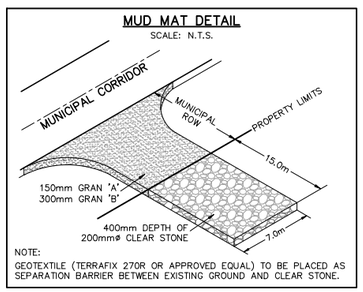






MUD MAT DETAIL

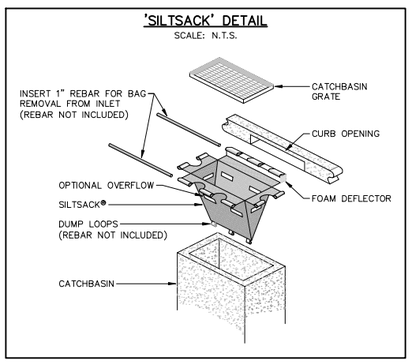
SCALE: N.T.S.



NOTE:
GEOTEXTILE (TERRAFIX 270R OR APPROVED EQUAL) TO BE PLACED AS SEPARATION BARRIER BETWEEN EXISTING GROUND AND CLEAR STONE.

'SILTSACK' DETAIL

SCALE: N.T.S.



10 0m 10 20 30 40
SCALE: 1:500

GENERAL NOTES:

1. ALL CONSTRUCTION EQUIPMENT TO USE MAIN ACCESS POINT, LOCATED AT LITTLE AVENUE, AS INDICATED ON THIS DRAWING. MUD MAT TO BE CONSTRUCTED AT ACCESS POINT.
2. ALL SEDIMENT AND EROSION CONTROL FACILITIES AND WORKS ARE TO BE CONSTRUCTED AND IN PLACE TO THE APPROVAL OF THE SITE ENGINEER PRIOR TO ANY GRADING OPERATIONS COMMENCING. TYPICAL WORKS INCLUDE SILT FENCES, INTERCEPTOR SWALES, STRAW BALE CHECK DAMS AND SEDIMENT TRAPS.
3. ALL TEMPORARY TOPSOIL STOCKPILES ARE TO BE PROVIDED WITH THE NECESSARY SEDIMENT AND EROSION CONTROL FEATURES.
4. ALL INTERCEPTOR SWALES ARE TO BE SEEDED TO STABILIZE THEIR BANKS IMMEDIATELY FOLLOWING CONSTRUCTION.
5. NO TREE CLEARING OR DISTURBANCE OF LANDS WILL OCCUR WITHIN SPECIFIED BUFFERS ALONG PROPERTY LINES AND INTERNAL TO SITE.
6. DURING EARTHWORK ACTIVITIES THE CONTRACTOR WILL ENSURE THE MEASURES FOR DUST SUPPRESSION ARE PROVIDED AS REQUIRED, SUCH AS THE APPLICATION OF WATER OR LIME.
7. NO RE-FEUILLING, MAINTENANCE OR REPAIR WORK ON CONSTRUCTION EQUIPMENT IS ALLOWED WITHIN 30m OF AN EXISTING WATERCOURSE OR DITCH EXCEPT AS NOTED.
8. CONTRACTOR IS RESPONSIBLE TO CLEAN UP ANY SEDIMENT THAT LEAVES THE SITE INCLUDING, BUT NOT LIMITED TO STREET SWEEPING OF ACCESS ROUTES AS REQUIRED OR AS DIRECTED BY THE CITY OR ENGINEER.

MAINTENANCE & OPERATIONS OF SEDIMENT CONTROLS

SILT FENCE

1. SILT FENCE MUST BE INSPECTED WEEKLY FOR RIPS OR TEARS, BROKEN STAKES, BLOW-OUTS AND ACCUMULATION OF SEDIMENT.
2. SILT FENCE MUST BE INSPECTED FOLLOWING ALL 15MM OR GREATER RAIN STORM EVENT OR AS DIRECTED BY SITE ENGINEER.
3. SEDIMENT MUST BE REMOVED FROM SILT FENCE WHEN ACCUMULATION REACHES 50% OF THE HEIGHT OF THE FENCE.
4. ALL SILT FENCES MUST BE REMOVED ONLY WHEN THE ENTIRE SITE IS STABILIZED AND AS DIRECTED BY THE SITE ENGINEER.

MUD MAT MAINTENANCE

1. INSPECT MUD MAT WEEKLY TO ASSESS CONDITION AND ENSURE OPERATION EFFICIENCY.
2. SUPPLY AND PLACE ADDITIONAL CLEAR STONE AS DIRECTED BY SITE ENGINEER.
3. MAT TO REMAIN IN PLACE UNTIL SITE IS STABILIZED OR AS DIRECTED BY SITE ENGINEER.

BIORETENTION FACILITY

1. SILT FENCE TO BE INSTALLED ALONG PERIMETER OF THE FACILITY.
2. BIORETENTION LOCATIONS SHOULD BE BLOCKED FROM CONSTRUCTION TRAFFIC AND SHOULD NOT BE USED FOR EROSION AND SEDIMENT CONTROL.
3. DRAINAGE AREA SHOULD BE STABILIZED PRIOR TO DIRECTING WATER TO THE BIORETENTION.
4. BIORETENTION AREA SHALL NOT BE USED AS TEMPORARY SEDIMENTATION BASIN.
5. NO STAGING OR STOCKPILING SHOULD BE PERMITTED OVER THE BIORETENTION AREA
6. SILT FENCE SHOULD REMAIN INSTALLED ALONG THE PERIMETER OF THE INFILTRATION PRACTICE UNTIL EVERY OTHER COMPONENT OF THE CONSTRUCTION IS COMPLETE AND THE LANDSCAPE STABILIZED.

DECOMMISSIONING

1. FOLLOWING COMPLETION OF CONSTRUCTION AND AS DIRECTED BY SITE ENGINEER, ALL EROSION AND SEDIMENT CONTROL WORKS ARE TO BE REMOVED INCLUDING ANY ACCUMULATED SEDIMENT.
2. ALL WORKS LOCATED ON LANDS OUTSIDE THE PROPOSED DEVELOPMENT AREA ARE TO BE GRADED TO MATCH EXISTING SURROUNDING GROUND COMPLETE WITH 200mm TOPSOIL AND SOD.

NOTE: THIS PLAN TO BE READ IN CONJUNCTION WITH THE TREE PRESERVATION PLAN PREPARED BY SLR

1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

TEMPORARY BENCHMARKS

TBM#1– ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE TOPNUT OF FIRE HYDRANT ON LITTLE AVENUE HAVING AN ELEVATION OF 242.26 METRES

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR COORDINATION	05/29/2019
1	ISSUED FOR SPA APPROVAL	09/04/2019
2	ISSUED FOR 1ST SUBMISSION	11/29/2019

Engineer

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Engineer

PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

Project
428 LITTLE AVENUE
CITY OF BARRIE

Drawing
EROSION AND SEDIMENT CONTROL PLAN

CROZIER CONSULTING ENGINEERS
THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	
S.C./J.P.	M.L./J.V.		892-4560
Check By	Check By	Scale	Drawing
M.L.	J.G.K.	1:500	104

J:\800\892 - Plaza Corp\4560-428 Little Ave\CAD\Civil\Sheets\4560_C104.dwg, 104, 2019-11-29 3:29:02 PM, jpereira