

**APPENDIX H**

**Drainage and Stormwater  
Management Report**

Prepared for Dufferin County

# Dufferin County Road 109 / 2nd Line Amaranth Road Realignment Schedule C Municipal Class Environmental Assessment Drainage and Stormwater Management Report

March 04, 2024

Final





# Dufferin County Road 109 / 2nd Line Amaranth Road Realignment Schedule C Municipal Class Environmental Assessment

## Drainage and Stormwater Management Report

Prepared for Dufferin County

Final

Project No.: 221-08590-00

Date: March 04, 2024

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March 04, 2024

Final

Prepared for Dufferin County  
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**Attention: Scott Burns, Director of Public Works and County Engineer**

Dear Mr Burns:

**Subject: Dufferin County Road 109 / 2nd Line Amaranth Realignment EA -  
Drainage and Stormwater Management Report**

We are pleased to submit one electronic copy of the FINAL Drainage and Stormwater Management Report for the Dufferin County Road 109 / 2nd Line Amaranth Realignment EA. This report documents the design guidelines, hydrologic assessments, hydraulic analysis, and the preliminary design of the SWM works.

We trust the submission of this documents meets your requirements. Should you have any comments we look forward to your response.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Bryan Orendorff'.

Bryan Orendorff, M.A.Sc., P.Eng.  
Manager, Water Resources

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# Revision History

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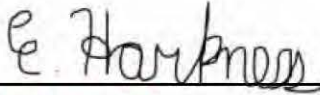
## FINAL

March 04, 2024	Final Report	
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# Signatures

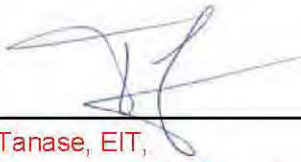
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March 4, 2024

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# 1 INTRODUCTION

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## 1.1 Project Description and Purpose

WSP Canada Inc. (WSP) was retained by Dufferin County complete a Schedule C Municipal Class Environmental Assessment Study (EA) in support of the realignment of Dufferin County Road 109 and 2nd Line Amaranth, in Dufferin County, Ontario.

As part of a proposed development located near Dufferin County Road 109 and 2nd Line Amaranth, 2nd Line will be realigned to form the fourth leg of the Dufferin County Road 109 and Dufferin County Road 3 intersection. This realignment impacts other intersections, namely Dufferin County Road 3 and Dufferin County Road 23, which is less than 100m south of the Dufferin County Road 109 and Dufferin County Road 3 intersection. The EA is being conducted to determine the potential impacts of Dufferin County Road 109 and 2nd Line Amaranth realignment.

Under existing conditions, Dufferin County Road 109 is considered a Rural Arterial Road. On the west side of the study limits Dufferin County Road 109 goes from two lanes heading west and a single lane heading east until the Dufferin County Road 3 intersection. East of that intersection, Dufferin Country Road 109 consists of one lane heading in each direction with a center turning lane.

Dufferin County Road 3, 2<sup>nd</sup> Line Amaranth and Dufferin Country Road 23 are classified as single lane Rural Collector Roads.

This report outlines the existing drainage components that will be affected and a preliminary drainage and stormwater management (SWM) design for the preferred alternative.

The study area is shown in **Exhibit 1**. All exhibits are included at the end of the report.

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## 1.2 Study Purpose – Drainage and Stormwater Management

The purposed of the Drainage and SWM Report is to provide a clear and traceable decision making process with respect to the proposed culvert crossing design and stormwater management design concept to support seeking ‘approval in principle’ for various aspects of the design from the relevant regulatory agencies such as Credit Valley Conservation Authority (CVC) and the Grand River Conservation Authority

(GRCA), for the crossing structures and stormwater management associated with the preliminary design.

This Drainage and SWM Report documents the hydrologic and hydraulic analysis of the existing drainage features, determines acceptable opening sizes for culvert crossings and proposes a feasible preliminary stormwater management strategy for the proposed roadways.

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## 1.3 Scope of Work

The scope of work entails the following:

- Complete field inspection and become familiar with the project area and existing drainage patterns, drainage issues and erosion sites as well as carry out a visual inspection of the crossing culverts.
  - Hydrologic assessment of the study area under existing and proposed conditions to determine the peak flows for the 2-year, 5-year, 10-year, 25-year, 50-year, 100-year, and Regional Storm events.
  - Hydraulic analysis of the culvert crossings under existing and proposed conditions.
  - Design stormwater quality treatment facilities to achieve an enhanced level of water quality treatment for the roadway runoff.
  - Design quantity control measures, if necessary to control the post-development flows to existing condition flows as required.
- 

## 1.4 Background Information

WSP reviewed the following background documents which were used in the assessments and analysis for this study:

- Engineering & Title Records
- Road survey completed by Geoverra in 2022
- Digital based mapping
- Aerial photographs
- Information obtained from the site reconnaissance
- Background Reports
  - Interim Watershed Characterization Report for the Credit Valley Watershed, completed by Credit Valley Conservation (February 2017)
- Credit Valley Source Protection Area Assessment Report (December 2019)

- Grand River Source Protection Area Approved Assessment Report (February 2022)

The project area falls between the Credit Valley Conservation Authority (CVC) and the Grand River Conservation Authority (GRCA).

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## 1.5 Site Investigation

A field investigation of the study area and existing drainage features was conducted by WSP on May 31, 2023. Prior to the field investigation, in May 2023, WSP contacted Dufferin County to enquire whether there are any drainage concerns in the project area. Dufferin County confirmed that there are no drainage concerns in the area.

The purpose of field investigation was to review the existing drainage conditions, confirm the drainage patterns, confirm, and document the physical conditions and characteristics of the existing culverts along Dufferin County Road 109, Dufferin County Road 3, Dufferin County Road 23, and 2<sup>nd</sup> Line Amaranth, check erosion sites and provide recommendations for rehabilitation or replacement of drainage features.

The following office and field tasks were completed for the site investigation:

- Reviewed existing background information
- Conducted a physical inspection of the road culverts within the study limits
- Verified the location, type, size, condition, cover depth, flow direction and culvert material for all existing road culverts
- Prepared a photographic inventory of all existing culverts in the study limits
- Confirmed location of drainage boundaries along the inspected roads which were needed to confirm the drainage mosaic

A photographic inventory of the site investigation is provided in **Appendix A**. There are four crossing culverts and 10 entrance culverts within the study area that convey external drainage areas as well as roadway runoff.

**Table 1-1** provides a summary of the existing culvert characteristics as well as the analyzed condition from the field investigation. A review of relevant background information was conducted before proceeding with the hydraulic analysis.

**Table 1-1: Existing Culvert Characteristics**

Culvert ID	Location	Measured Size (mm)	Type	Length (m)	Spill Point Elev. (m)	Condition
C1	2 <sup>nd</sup> Line Amaranth	600	CSP	16.67	493.07	Fair
C3	Dufferin County Road 109	850	CSP	36.10	491.17	Good
C4	Dufferin County Road 23	900	CSP	24.20	491.54	Fair
E20	Dufferin County Road 3	800	CSP	21.54	492.64	Poor
E6	Dufferin County Road 109	500	CSP	12.12	502.05	Fair
E7	Dufferin County Road 109	450	CSP	10.35	497.98	Poor
E22	Dufferin County Road 3	450	CSP	10.73	497.29	Poor
E21	Dufferin County Road 3	375	CSP	20.57	495.39	Poor
E13	Dufferin County Road 23	450	HDPE	12.49	501.28	Good
E14	Dufferin County Road 23	450	HDPE	24.49	499.62	Good
E12	Dufferin County Road 23	375	CSP	6.14	492.52	Poor
E8	Dufferin County Road 109	500	CSP	8.80	478.92	Fair

<b>Culvert ID</b>	<b>Location</b>	<b>Measured Size (mm)</b>	<b>Type</b>	<b>Length (m)</b>	<b>Spill Point Elev. (m)</b>	<b>Condition</b>
E9	Dufferin County Road 109	500	CSP	6.82	478.29	Good
E10	Dufferin County Road 109	600	CSP	9.93	477.91	Fair

## 2 DESIGN CRITERIA AND STANDARD

The following criteria were considered in the assessment of the drainage and SWM strategy. These criteria were based on the following guidelines:

- MTO Highway Drainage Design Standards (Feb. 2008)
- MTO Drainage Management Manual (1997)
- MOE (now MECP) Stormwater Management Planning and Design Manual (March 2003)
- MTO PEM-DCSO #2016-14 Ministry's Climate Change Consideration in the Design of Highway Drainage Infrastructure
- MTO Gravity Pipe Design Guidelines (April 2014)
- GRCA Erosion & Sediment Control Guideline for Urban Construction (December 2006)
- CVC Stormwater Management Guideline (July 2022)
- Erosion and Sediment Control Guide for Urban Construction, collaboration of Lake Simcoe Region Conservation Authority, Credit Valley Conservation and Toronto and Region Conservation Authority (2019).

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### 2.1 Design Criteria - Culverts

The design and hydraulic performance criteria adopted in this study that relates to culvert design includes: design flows, minimum freeboard and flood depth at culvert inverts. Dufferin County Road 109 and the other relevant roadways within the study limits are classified as either Rural Arterial or Rural Collector.

**Table 2-1** provides a summary of the MTO Drainage Design Standards (2008) applied to this assessment.



**Table 2-1: MTO Drainage Design Standards for Culverts**

Design Standard	Description	Standard	Section
Design Flows (Bridges and Culverts)	Crossing Culverts: 25-year (for spans ≤ 6m) Entrance Culverts: 10-year (for spans ≤ 6m)	WC-1	1.1.1
	Crossing Culverts: 50-year (for spans ≥ 6 m) Entrance Culverts: 25-year (for spans ≥ 6 m)		
Culvert Crossing on a Watercourse	Crossing Culverts: Freeboard (min) > 1.0 m (Top of road elevation at low point – Design flow water surface elevation) Entrance Culverts: Freeboard (min) > 0.3 m (Top of road elevation at low point – Design flow water surface elevation)	WC-7	3.1.2
	Crossing Culverts: Freeboard (desired) > 1.0 m (Top of Road Elevation at Low Point - Design Flow Energy Grade Line Elevation) Entrance Culverts: Freeboard (desired) > 0.3 m (Top of Road Elevation at Low Point - Design Flow Energy Grade Line Elevation)		3.1.1
	HW / D ≤ 1.5		3.5
Minimum Culvert Size	<p>Minimum Culvert Size for Rural Arterial and Collector Road Culverts:</p> <ul style="list-style-type: none"> <li>- 600 mm minimum diameter for circular culverts</li> <li>- 600 mm minimum rise for elliptical or arch culverts</li> <li>- 900 mm rise for box culverts</li> </ul> <p>Minimum Culvert Size for Local Roads and Private Entrances:</p> <ul style="list-style-type: none"> <li>- 500 mm minimum diameter or culvert rise if length &gt; 10 m</li> <li>- 400 mm minimum diameter or culvert rise if length ≤ 10 m</li> </ul>	WC-8	3.1
Culvert Extensions	The slope of the Culvert Extension is not less than the slope of the original structure. Culvert Extensions be of the same material as the original structure alignment and shape of the original structure be maintained.	WC-10	3.0

- **WC-1 Design Flows (Bridges and Culverts):** This standard identifies the minimum design flows for the sizing of structures for flow conveyance on regulated and non-regulated watercourses.
  - On a Rural Arterial and Rural Collector Road, a watercourse crossing with a span less than or equal to 6.0 m should be designed to convey the flow generated during a 25-year design storm. For culverts with spans greater than 6.0 m a 50-year flow shall be used.
  - On Local Roads or Private Entrances, the design storm for crossing culverts with a span of 6.0 m should be designed to convey the flow generated by the 10-year storm. For culverts with spans greater than 6.0 m a 25-year flow shall be used.
  - Where there is potential risk to public safety, or where there is potential damage to adjacent properties a Regulatory Flow (Regional Flow) shall be calculated. For this study area, the Regulatory Flows are determined with the Hurricane Hazel storm event.
- **WC-7 Culvert Crossing on a Watercourse:** This standard identifies the minimum freeboard, minimum clearance and the maximum flood depth at culvert crossings.
  - For a roadway the freeboard for the design flow should be 1.0 m or higher for an arterial or collector road, while the freeboard for the design flow for a Local Road or Private Entrance should be 0.3 m or higher.
    - A Desirable Freeboard is measured vertically from the Energy Grade Line (EGL) elevation for the design flow to the edge of the travel lane at the low point. This freeboard is the recommended value although it is recognized that, due to site specific considerations, it is not always feasible to provide this amount.
    - A Minimum Freeboard is measured vertically from the high-water level for the design flow to the edge of the travelled lane at the low point.
  - *Overtopping criterion:* There should be no overtopping of the road during the 100-year storm event at the lowest point on the road profile of all culvert crossings. If possible, the overtopping in the Regional Storm Event will also be avoided.
  - *Flood Depth at Culverts:* The standard recommends a maximum flood depth (or head water elevation) at the upstream face of the culvert of 1.5 times the diameter or rise of the culvert (HW/D) for a culvert with a diameter or rise less than 3 metres. For a culvert with a rise between 3.0 metres and 4.5 metres, the flood depth at the upstream face must be equal to or less than 4.5 times the

diameter or rise of the culvert. This standard applies to closed-footing culverts and open-footing culverts with non-erodible bottoms.

- **WC-8 Minimum Culvert Size:** This standard identifies minimum culvert sizes for various road types based on maintenance considerations.
  - The standards for Minimum Culvert Sizes are dictated by maintenance considerations, which require a sufficient height to access the barrel for cleaning and repairs.
  - Culverts shall be designed to satisfy the following requirements:
    - To convey the Design Flow
    - To account for increased sedimentation inside the barrel and ice built up
    - To allow fish passage (if required)
    - To account for fluvial geomorphology characteristics (if required)
    - To account for other factors such as wildlife passage, navigation, and trail access
- **WC-10 Culvert Extensions:** This standard identifies the desirable slope, material, and alignment from designing culvert extensions.
  - Extensions to existing culverts shall be designed to prevent internal blockages caused by changes in direction, change in the shape of the cross-section or changes in the number of openings or cells.
  - It is desirable that; the slope of the Culvert Extension is not less than the slope of the original structure, Culvert Extensions be of the same material as the original structure, and the alignment and shape of the original structure be maintained.

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## 2.2 Design Criteria - Stormwater Management (SWM)

Based on the criteria and standards provided by the Regulatory agencies, general stormwater management objectives and practices have been identified to minimize the impacts of the preferred alternative. The identified objectives are as follows:

- Where feasible maintain the existing drainage pattern
- Minimize risk to public safety
- Minimize peak flow increases and potential roadway overtopping
- Provide quantity and quality control of runoff for all new pavement areas, as needed
- Minimize future maintenance requirements

The MTO Drainage Management Manual (1997), CVC Stormwater Management Guideline (2022) and the Ministry of the Environment (MOE) Stormwater Management Planning and Design Manual (2003). The MOE is now the Ministry of the Environment, Conservation and Parks (MECP) and their manual provides the guidelines and policies for the selection and design of the stormwater management measures required to mitigate the impacts of the proposed works.

The following stormwater management criteria were considered in the preliminary design:

- **Water Quality Control Criterion:** Ideally, a target of a long-term removal of 80% of total suspended solids (TSS) will be implemented as roadways are major contributors of water quality contaminants.
- **Water Quantity Control Criterion:** Any localized increase in flows due to the proposed project should be controlled.

# 3 HYDROLOGICAL ANALYSIS

This section discusses the existing soil, land use, drainage, and hydrological assessments for both existing and proposed conditions.

A Visual OTTHYMO 6.2 hydrologic model was built to estimate localized runoff generated from the roadway and external catchment areas. It was also used to calculate whether storage is required to control flows stemming from the proposed realignment to existing conditions. The calculated storage requirements will be further discussed in **Section 5**. This is to ensure that there will be no impact to the overall watershed hydrology.

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## 3.1 Existing Drainage Condition

The existing conditions drainage mosaic, shown on **Exhibits 2 to 5** illustrates the existing drainage features within the study area, the location of the roadway culvert crossings, and the drainage area associated with each culvert.

These drainage catchments were delineated based on contours and the initial road survey that was completed by Geoverra.

Roadway drainage is achieved through a combination of roadside ditches, transverse culverts, catch basins and ditch inlets.

Under existing conditions, runoff from 2<sup>nd</sup> Line Amaranth, Dufferin County Road 3, and most of Dufferin County Road 23 is conveyed through ditches and culverts. Within the study limits, Dufferin County Road 3 and 23 drains north through the ditches towards Dufferin County Road 109. The runoff is then collected by ditch inlets at the Dufferin County Road 109 and Dufferin County Road 3 intersection. These ditch inlets are connected to the existing storm sewer.

The runoff from 2<sup>nd</sup> Line Amaranth is either conveyed south through ditching towards Dufferin County Road 109 or sheet flows into the field east of 2<sup>nd</sup> Line Amaranth.

Runoff from Dufferin County Road 109 is draining east towards the Dufferin County Road 109 and Dufferin County Road 16 intersection. On the west side of the study limits drainage is captured and conveyed through ditches and culverts until it reaches one of the two ditch inlets connected to the existing storm sewer. One of the ditch inlets is located on the south side of the road at the Dufferin County Road 3 intersection and the other is located on the north side of Dufferin County Road 109 approximately 438 m

from 2<sup>nd</sup> Line Amaranth. Any runoff east of the Dufferin County Road 3 intersection will be captured by catch basins and be conveyed through the storm sewer.

The majority of the external catchments south of Dufferin County Road 109 are draining north, except for catchments 160 and 170 which are draining south. Most of the catchments north of Dufferin County Road 109 and west of 2<sup>nd</sup> Line Amaranth are draining towards the east except for catchment 111 which is draining south.

The sewers outlet to a stream located south of Dufferin County Road 16 and east of the Dufferin County Road 16 and Dufferin County Road 109 intersection. There are four crossing culverts and 10 entrance culverts within the study area.

### **3.1.1 Surface Soil and Land Use**

Land use within the total catchment consists mainly of agricultural lands and pastures. There is also a small section of commercial area located along Dufferin County Road 3 as well as an impervious area which mainly includes Dufferin County Road 109, Dufferin County Road 3, Dufferin County Road 23 and 2<sup>nd</sup> Line Amaranth.

Based on the Ontario GIS Soil Survey Complex gathered from the Ontario Geohub, the predominant soils within the study area were classified as hydrologic soil groups (HGS) “A” and “B”, which represents soils with low to moderately low runoff potential like sandy and silty loam.

### **3.1.2 Existing Conditions Hydrologic Modelling**

Hydrologic modelling is used to simulate the hydrologic response of the drainage area during the design storms.

The methodology used to develop the hydrologic model can be summarized as follows:

- Hydrologic parameters were estimated for each drainage area based on the sub-catchment area, land use distribution (confirmed with a topographic mapping, survey, and aerial photograph(s)), soil distribution and slope of the overland and channel portions of the sub-catchment.
- The hydrologic response of the drainage areas with a directly connected impervious land use greater than 20 percent was obtained using STANDHYD instantaneous hydrograph.
- The hydrologic response of the drainage areas with a directly connected impervious land use less than 20 percent was obtained using NASH instantaneous hydrograph (NASHYD).

A Visual OTTHYMO hydrologic model was developed for the 2-year to 100-year design storms in the study area to determine peak flow runoff rates that would occur during flood events. Design storms were generated for both the 3-hour Chicago distribution and the 12-hour SCS Type II distribution.

Visual OTTHYMO version 6.2 (VO6) is a single event hydrologic model used to simulate hydrographs by modelling rainfall, infiltration, runoff, and routing through a watershed. This model uses the Soil Conservation Service Curve Number (CN) Method of estimating runoff characteristics in combination with instantaneous unit hydrograph routines to produce storm hydrographs.

### 3.1.3 Design Storm

The rainfall Intensity-Duration-Frequency (IDF) parameters and storm distributions used for the hydrologic analysis are summarized below.

#### 3.1.3.1 Rainfall IDF Parameters

For best practices, the MTO's Provincial Engineering Memorandum "Design Contact Standards Office # 2016, dated October 28, 2016" regarding the implementation of the Ministry's climate change consideration in the design of highway drainage infrastructure was used. This memorandum states that the design shall meet all performance standards throughout the design life of the structure at the present and future conditions.

The climate change projection is based on the roadway classification and the design service life outlined in Table 7.0 in the MTO Gravity Pipe Design Guidelines. This resulted in WSP's Water Resources staff utilizing the MTO's online IDF Curve Lookup tool to obtain the 2023 and the projected 2073 IDF curves using a coordinate within the project study limits. The selected rainfall station was found at 43°54'15" N, 80°8'45" W (43.904167, -80.145833). The IDF Curves can be found in **Appendix B**.

#### 3.1.3.2 Storm Distribution

Hyetographs for the 12-hour SCS and 3-hour Chicago storm distributions duration storms have been generated for each return period rainfall event using the 2073 IDF curve.

The 12-hour SCS storm distribution provided the highest peak flows and runoff volumes; therefore, these flows were carried over to the drainage analysis.

**Table 3-1** shows a comparison of the resultant peak flows from each rainfall distribution for the design flow (25-year storm) and the 100-year storm check flow at each culvert

location. The 12-hour SCS Type II distribution (highlighted) was carried forward in the analysis as it generated generally more conservative estimates of peak flows.

**Table 3-1: Flow Comparison**

Culvert ID	Chicago 3-hour		SCS 12-hour	
	25-year (m <sup>3</sup> /s)	100-year (m <sup>3</sup> /s)	25-year (m <sup>3</sup> /s)	100-year (m <sup>3</sup> /s)
C1	0.476	0.715	0.828	1.178
C3	1.657	2.162	1.763	2.344
C4	1.011	1.309	1.451	1.956
E20	0.891	1.097	0.657	0.835
E13	0.019	0.023	0.013	0.016

**Table 3-2** gives a summary of the hydrologic parameters used in the modelling including the Curve Number (CN), Initial Abstraction ( $I_a$ ), and the Time to Peak ( $T_p$ ). The SCS Upland Method, SCS Curve Number Method and the Airport Method were used to calculate the average time to peak for each rural sub-catchment. For each sub-catchment, modelling parameters were selected based on soil type, land use and topography. The Visual OTTHYMO output results for existing conditions are included in **Appendix B**.

**Table 3-2: Hydrologic Input Parameters Summary**

Sub-catchment ID	Hydrograph Type	Area (ha)	CN	$I_a$ (mm)	$T_p$ (hours)	Total Impervious (%)
100	Nash	27.26	67	12.8	0.91	3.0
110	Standard	0.65	55	5.0	n/a	44.0
111	Nash	1.32	73	9.9	0.13	6.0
120	Standard	0.92	55	5.0	n/a	37.0
130	Standard	18.61	59	4.8	n/a	20.6
140	Standard	4.69	58	4.9	n/a	43.0
150	Nash	15.54	73	9.5	0.38	5.0
160	Standard	0.08	69	5.0	n/a	59.0
190	Standard	0.35	55	5.0	n/a	39.0
200	Standard	0.38	55	5.0	n/a	47.0



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## 3.2 Proposed Drainage Condition

Under the proposed preferred plan, existing roadways 2<sup>nd</sup> Line Amaranth, Dufferin County Road 3 and Dufferin County Road 23 are being slightly re-aligned while Paula Court is being slightly extended.

In this preliminary plan, the new 2<sup>nd</sup> Line Amaranth will be realigned to form the fourth leg of the Dufferin County Road 109 and Dufferin County Road 3 intersection. The existing Dufferin County Road 3 will be realigned to remove the channelized northbound right turn lane and to improve the intersection geometry. Dufferin County Road 3 will be realigned further south of the existing Dufferin County Road 3 to ensure the intersection of Dufferin County Road 3 and Dufferin County Road 23 does not conflict with the proposed four-legged intersection. In addition, realignment of County Road 23 provides adequate left turn storage and taper for vehicles turning left from Dufferin County Road 3 onto Dufferin County Road 23. As a result of realigning Dufferin County Road 23 to the south, the existing Paula Court will be extended further south to maintain a T-intersection with Dufferin County Road 23. All proposed alignments ensure all roadways connect at a 90-degree angle.

The realigned 2<sup>nd</sup> Line Amaranth has two lanes in either direction and widens to a four-lane roadway at the intersection of Dufferin County Road 109 and realigned 2<sup>nd</sup> Line Amaranth. Existing Dufferin County Road 109 is widened to four lanes (two in each direction) with right- and left-turn lanes eastbound and westbound. Existing Dufferin County Road 3 is widened at the realigned Dufferin County Road 23 T-intersection from a two lane roadway to a three lane roadway. At the four-legged intersection, Dufferin County Road 3 is further widened to a four lane road. Realigned Dufferin County Road 23 has two lanes in either direction and widens to a three lane roadway at the intersection of Dufferin County Road 3 and Realigned Dufferin County Road 23. Extended Paula Court maintains the existing two lane configuration.

The majority of the existing drainage pattern will be maintained under the proposed preliminary plan. The drainage pattern changes slightly for the realignment of 2<sup>nd</sup> Line Amaranth. Under existing conditions, runoff from 2<sup>nd</sup> Line Amaranth ultimately sheet flows through the field to the east of 2<sup>nd</sup> Line Amaranth. Under proposed conditions runoff from the realigned 2<sup>nd</sup> line Amaranth will be conveyed through road ditches towards Dufferin County Road 109.

This results in three new culverts (C6, C7 and E13A) being proposed and one existing culverts (C1) is recommended to be either extended or replaced. Two culverts C4 and E12 are being recommended to be abandoned due to the removal of a section of

existing road on Dufferin County Road 23. Culvert E13 is recommended to be removed and placed in a different alignment due to the proposed Dufferin County Road 23 realignment. E13 will also need to be increased in size to meet the minimum culvert size design criteria for a collector road. The new culverts are proposed at the following approximate locations:

- Culvert C6 – underneath the realigned Dufferin County Road 23 at the Dufferin County Road 3 intersection at approximately Station 2+013
- Culvert C7 – underneath the realigned 2<sup>nd</sup> Line Amaranth at the Dufferin County Road 109 intersection at approximately Station 1+352
- Culvert E13 – underneath the realigned Dufferin County Road 23 at approximately Station 2+270
- Culvert E13A – underneath the extended Paula Court at approximately Station 3+086

The placements for all the new culverts listed above, will need to be finalized during the detailed design stage when more surveys are completed and ditch elevations are provided.

**Exhibits 6 to 10** illustrates the proposed conditions drainage mosaics within the study limits.

### **3.2.1 Proposed Conditions Hydrologic Modelling**

As noted in the beginning of **Section 3**, the hydrologic assessments of the roadway corridor and the external catchments were completed by using the 12-hour SCS storm distributions.

For the proposed preliminary design study of the project area, a Visual OTTHYMO hydrologic model was developed to estimate the runoff generated from the roadway and external catchment areas that contribute to the culverts.

**Table 3-3** summarizes the hydrologic input parameters for each catchment while **Table 3-4** summarizes 12-hour SCS storm distribution peak flows being conveyed through each culvert. The proposed Visual OTTHYMO output results are included in **Appendix B**.

#### **Table 3-3: Hydrologic Input Parameters- Proposed Conditions**

Sub-catchment ID	Hydrograph Type	Area (ha)	CN	I <sub>a</sub> (mm)	T <sub>p</sub> (hours)	Total Impervious (%)
100	Nash	27.26	67	12.8	0.91	3.0
101	Nash	2.94	72	10.9	0.31	15.0
110	Standard	0.65	55	5.0	n/a	44.0
111	Nash	1.32	73	9.9	0.13	6.0
120	Standard	0.92	55	5.0	n/a	37.0
130	Standard	18.61	59	4.8	n/a	20.6
140	Standard	4.69	58	4.9	n/a	43.0
150	Nash	13.27	72	10.0	0.32	5.0
160	Standard	0.44	69	4.6	n/a	21.0
160-1	Standard	0.14	69	5.0	n/a	25.0
190	Standard	0.35	55	5.0	n/a	39.0
200	Standard	0.38	55	5.0	n/a	47.0

**Table 3-4: Culvert Peak Flows - Proposed Conditions**

Culvert ID	Area (ha)	Peak Flows (m <sup>3</sup> /s)						
		2-year	5-year	10-year	25-year	50-year	100-year	Regional
C1	27.91	0.248	0.466	0.610	0.828	0.999	1.178	2.379
C3	20.85	0.719	1.104	1.334	1.763	2.046	2.344	2.219
C6	13.27	0.310	0.556	0.715	0.949	1.130	1.317	1.541
C7	23.79	0.771	1.203	1.465	1.941	2.261	2.597	2.560
E13	0.14	0.006	0.010	0.012	0.016	0.019	0.021	0.017
E13A	0.44	0.018	0.029	0.036	0.048	0.056	0.064	0.054
E20	5.42	0.325	0.455	0.532	0.657	0.743	0.835	0.632

# 4 HYDRAULIC ANALYSIS

As noted in previous sections, runoff from roadways and external catchments within the study area are conveyed through the roadside ditches and culverts ultimately ending up in the sewer system on Dufferin County Road 109.

This section will discuss the hydraulic analysis of the culverts under existing and proposed conditions.

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## 4.1 Hydraulic Performance Standards

The design standards for the hydraulic assessment of culverts are based on the MTO HDDS, as discussed in **Section 2.1**.

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## 4.2 Culvert Hydraulic Analysis – Existing Conditions

The CulvertMaster hydraulic modelling tool was used to estimate the headwater depth and to assess the hydraulic capacity of existing culverts within the study area. The CulvertMaster modelling software was selected because it has the following capabilities:

- Evaluates inlet and outlet controlled headwater depths
- Simulates the hydraulic performance of culverts based on user-specified flows
- Considers variable tailwater depths based on either outlet channel geometry or user specified depth discharge rating curves
- Incorporates an extensive database of standard culvert sizes, shapes and materials, and allows for the addition of custom culvert types and sizes

CulvertMaster requires the peak design flow, culvert shape and material (Manning’s “n”), the upstream and downstream culvert invert elevations, the inlet conditions (e.g., headwall, projecting), and tailwater conditions. When this input is provided, CulvertMaster generates the water elevation at the inlet of the culvert (i.e., headwater). This approach was used for both existing and proposed condition hydraulic analyses.

The CulvertMaster hydraulic model was used to perform the hydraulic analysis of the existing crossing culverts to assess their capacities. The calculated 25-year and 100-year peak flows based on the 12-hrs SCS Type II rainfall distribution, along with the physical characteristics (e.g., invert elevations, sizes, and lengths) were input into the CulvertMaster model to estimate the upstream water elevations (headwater) and

velocity heads for each culvert. The Energy Grade Line (EGL) was then computed by summing the headwater elevation and velocity head.

To estimate tailwater conditions at each culvert, the downstream channel geometry was input into the hydraulic model, where available. If downstream channel geometry was not available, the tailwater elevations were assumed to be 60% of the height of the culvert which was deemed reasonable and conservative. In addition, it is believed that the 60% assumption accounts for any downstream flow obstructions such as the hydraulic resistance of the downstream channel.

All four crossing culverts were hydraulically analyzed as well as one entrance culvert E13 due to it being affected by the proposed realignment of Dufferin County Road 23. The remaining existing entrance culverts are recommended to be replaced like for like due to no drainage concerns in the area. One entrance culvert E12, will no longer be required due to the proposed removal of an existing road section.

In accordance with MTO Standard WC-1, the 25-year storm was used as a design storm and the 100-year storm was used as an additional check storm for all culverts with the exception of Culvert E13, due to it being under a local or private entrance. The 10-year design and 100-year check was used instead for E13.

The hydraulic analysis involved comparing the headwater elevation to the elevation of which water will spill onto the highway to determine if the existing culvert meets the applicable freeboard and flood depth criterion.

Culvert E20 in the survey was located underneath a private entrance however during the site investigation there was no culvert underneath the private entrance, instead the culvert was crossing Dufferin County Road 3. The closest ditch elevations and EOP elevations were used for the analysis.

The existing culvert characteristics are summarized in **Table 4-1**.

**Table 4-1: Existing Culverts Characteristics**

Culvert ID	Size (mm) / Material	Upstream Invert Elev. (m)	Downstream Invert Elev. (m)	Length (m)	Slope %
C1	600	491.33	491.33	16.67	0.0*
C3	750	489.50	488.73	36.10	2.1
C4	900	490.26	490.05	24.20	0.9
E20	800	491.45	490.97	21.54	2.2
E13	450	500.52	500.29	12.49	1.84

\*Due to missing upstream invert elevation in the survey, the existing culvert was set to a flat slope. This will provide a conservative approach in terms of hydraulic performance of the culverts.

The hydraulic results are summarized in **Table 4-2**. The CulvertMaster output and analysis can be found in **Appendix C**.

**Table 4-2: Hydraulic Analysis Results – Existing Conditions**

Culvert ID	Size (mm)	Edge of Pavement Elev. (m)	25-Year		100-Year Storm		HW/D Ratio
			Headwater Elev. (m)	Freeboard (m)	Headwater Elev. (m)	Freeboard (m)	
C1	600	493.07	493.10	-0.03	493.14	-0.07	2.95
C3	750	491.17	491.26	-0.09	491.30	-0.13	2.35
C4	900	491.54	491.58	-0.04	491.63	-0.09	1.47
E20	800	492.64	492.32	0.32	492.46	0.18	1.09
E13*	450	501.28	500.64	0.64	500.66	0.62	0.27

\*For Culvert E13, a 10-year design storm was used.

The results of the existing condition analysis are as follows:

- Culvert C1 does not meet any of the design criteria. This culvert will need to be replaced rather than extended under proposed conditions.
- Culvert C3 also does not meet any of the design criteria. This culvert will need to be increased in size under proposed conditions.
- Culvert C4 meets the HW/D ratio but not the freeboard or overtopping criteria.
- Culvert E20 meets the HW/D ratio criteria, and it does not overtop the road during the 100-year storm, however it does not meet the 1 m freeboard during the design storm. This culvert will also need to be increased in size under proposed conditions.
- Entrance Culvert E13 meets all local road design criteria.

### 4.3 Culvert Hydraulic Analysis – Proposed Conditions

As discussed in previous sections, due to the preferred realignment three new culverts (C6, C7 and E13) are proposed, one culvert (C1) will either be extended or replaced and two culverts are proposed to be abandoned (C4 and E12), while E13 is to be removed and placed in a different alignment.

Under proposed conditions, due to a lack of available information, culverts C6, C7, E13 and E13A were set to a flat slope and a 0.6 m minimum cover has been considered.

This represents a conservative approach to the hydraulic analysis in the absence of reliable data.

**Table 4-3** summarizes the hydraulic parameters of the culverts under proposed conditions. The proposed hydraulic analysis results are summarized in **Table 4-4**. The CulvertMaster Output and analysis can be found in **Appendix C**.

**Table 4-3: Proposed Culverts Characteristics**

Culvert ID	Station	Size (mm) / Material	Upstream Invert Elev. (m)	Downstream Invert Elev. (m)	Length (m)	Slope %
C1	1 + 670	825 / CSP	491.33	491.33	22.0	0.0*
C3	0 + 413	1350 / Twin CSP	489.50	488.73	36.1	2.1
C6	2+ 013	1200 / Twin CSP	495.96	495.96	34.3	0.0*
C7	1 + 352	1350 / Twin CSP	486.85	486.85	38.3	0.0*
E13	2 + 270	600 / CSP	499.80	499.80	19.1	0.0*
E13A	3 + 086	600 / CSP	497.80	497.80	16.0	0.0*
E20	1 + 213	825 / Twin CSP	491.45	490.97	21.5	2.2

\*Culverts were set to a flat slope and length measured from the base map due to lack of available information. This will provide a conservative approach to the hydraulic analysis in absence of reliable data.

**Table 4-4: Hydraulic Analysis Results – Proposed Conditions**

Culvert ID	Size (mm)	Edge of Pavement Elev. (m)	25-Year Storm		100-Year Storm		HW/D Ratio
			Headwater Elev. (m)	Freeboard (m)	Headwater Elev. (m)	Freeboard (m)	
C1	825	494.50	492.45	2.05	492.98	1.52	1.36
C3	1350 Twin	491.17	490.33	0.84	490.47	0.70	0.61
C6	1200 Twin	497.76	496.75	1.01	496.82	0.94	0.66
C7	1350 Twin	488.80	487.84	0.96	487.95	0.85	0.73
E13	600	501.00	500.16	0.84	500.16	0.84	0.60
E13A	600	499.00	498.17	0.83	498.18	0.82	0.62

Culvert ID	Size (mm)	Edge of Pavement Elev. (m)	25-Year Storm		100-Year Storm		HW/D Ratio
			Headwater Elev. (m)	Freeboard (m)	Headwater Elev. (m)	Freeboard (m)	
E20	825 Twin	492.64	492.03	0.61	492.11	0.53	0.70

Based on these results:

- Culvert C1 meets all criteria with an 825 mm CSP.
- Culvert C3 does not meet the freeboard criteria with a twin 1350 mm CSP, but it is not overtopping the road. Further discussions will need to be had during the detailed design phase with Dufferin County to confirm the recommended size that meets criteria.
- Culvert C6 meets all criteria with a twin 1200 CSP.
- Culvert C7 does not meet the freeboard criteria with a twin 1350 mm CSP, but it is not overtopping the road. This culvert will need to be further discussed more during the detailed design once the ditches have been designed.
- Culvert E13 does not meet the freeboard criteria with a 600 mm CSP, but it is not overtopping the road. Although the proposed minimum size of 600 mm CSP does not meet the freeboard criteria, based on the low peak flow going through the culvert and the HW/D of 0.6, we believe that the culvert is adequately sized. This assumption will need to be further explored at the detailed design.
- Culvert E13A does not meet the freeboard criteria with a 600 mm CSP, but it is not overtopping the road. Similar to E13, the calculated flows going through the culvert are low and combined with a calculated HW/D of 0.64 will deem the culvert adequately sized. This will need to be confirmed at the detailed design.
- Culvert E20 does not meet the freeboard criteria with a twin 825 mm CSP but it is not overtopping the road. Due to the low cover based on the existing ditch survey information, this culvert can not be increased further in size, without a significant increase in alignment.

All recommended proposed culvert sizing will need to be confirmed during the detailed design stage, when the ditch design is completed and further discussions with Dufferin County can be conducted.



# 5 STORMWATER MANAGEMENT

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## 5.1 Overview

Under existing conditions, no stormwater management measure currently exists to address the runoff quality and quantity control from the existing roadway. However, vegetative embankments and grassed ditches exist along the roadways within the study limits that provide some sort of quality treatment. Roadway runoff is generally conveyed through ditches to the culverts and ultimately outlets to the existing storm sewer system along Dufferin County Road 109 via ditch inlets.

A Visual OTTHYMO model was also used to determine the pre-to-post runoff comparison of the roadways. The 2023 IDF curve found from the MTO IDF Curve Lookup tool was used to calculate the flows during pre to post conditions. During the analysis three outlets were determined to assist in determining if stormwater management facilities would be required and if needed, what the sizing requirements for these facilities will be. These outlets are illustrated in the existing and proposed **Exhibits 11 to 18**. They are located as follows:

- Outlet A – south of Dufferin County Road 109 and west of Dufferin County Road 3, slightly north of existing crossing culvert C4
- Outlet B – ditch south of Dufferin County Road 109 and north of the existing stormwater management pond
- Outlet C – ditch north of Dufferin County Road 109 and slightly east of existing entrance culvert E10

Under existing and proposed conditions right-of-way (ROW) catchments R-6 and R-4 are contributing to outlets A and C, respectively.

For outlet B under existing conditions ROW catchments R-3, R-4 as well as outlet A contribute to the flows at this outlet. The remaining ROW catchments, R-1 and R-2 under existing conditions is assumed to sheet flow into the field east of C1. Catchment R-2 will be conveyed to the field through C1.

Under proposed conditions outlet B will have an additional contributing ROW catchment, R-1 due a slight change in drainage pattern from the realignment of 2<sup>nd</sup> Line Amaranth. Similar as existing conditions catchment R-2, is assumed to sheet flow east into the field through C1 under proposed conditions.

The overall objective of the stormwater management plan is to implement measures to enhance the quality of runoff, satisfy the quantity control targets and to reduce erosion potential.

## 5.2 Impact of the Preferred Alternative

The proposed realignment design will result in a slight increase in impervious area compared to the existing land use. Increased pavement areas as a result of the preferred alignment are proposed to be addressed by stormwater quality treatment and quantity control measures designed according to the requirements.

**Table 5-1** summarizes the existing and proposed flows at each ROW outlet. The difference in flows is shown in **Table 5-2**. The Visual OTTHYMO results for each outlet are included in **Appendices D-1** and **D-2**.

**Table 5-1: Pre to Post Flow Comparison**

ROW Outlets	Flows (m <sup>3</sup> /s)					
	2-year	5-year	10-year	25-year	50-year	100-year
Existing Conditions						
A	0.102	0.152	0.189	0.236	0.284	0.324
B	0.270	0.390	0.475	0.594	0.692	0.783
C	0.010	0.014	0.017	0.021	0.023	0.027
Proposed Conditions						
A	0.140	0.193	0.234	0.283	0.320	0.357
B	0.470	0.646	0.772	0.939	1.060	1.183
C	0.010	0.014	0.017	0.021	0.024	0.028

**Table 5-2: Summary of Flow Difference**

ROW Outlets	Difference (%)					
	2-year	5-year	10-year	25-year	50-year	100-year
A	37.3	27.0	23.8	19.9	12.7	10.2
B	74.1	65.6	62.5	58.1	53.2	51.1
C	0.0	0.0	0.0	0.0	4.3	3.7

As shown in **Table 5-2**, two out of the three ROW outlets (A and B), have a significant increase in flow from existing conditions to proposed conditions. For ROW outlet C, the slight increase in flows for the 50-year and 100-year are negligible and storage will not be required.

ROW outlets A and B will need quantity control measures to minimize the increase in flows at these outlets.

## 5.3 Quantity Control

The following section discusses the storage requirements of the quantity control facilities. **Table 5-3** summarizes the comparison of flows between existing and proposed conditions including the SWM facilities. The Visual OTTHYMO results can be found in **Appendix D-3**.

**Table 5-3: Comparison of Pre-Post Development Flows with Control for the Roadway**

Description	ROW Outlet	Storm Flows (m <sup>3</sup> /s)					
		2-year	5-year	10-year	25-year	50-year	100-year
Existing	A	0.102	0.152	0.189	0.236	0.284	0.324
Proposed with Control	A	0.079	0.116	0.149	0.188	0.215	0.244
Difference (Pr-Ex)		-0.023	-0.036	-0.040	-0.048	-0.069	-0.080
% Difference		-22.5	-23.7	-21.2	-20.3	-24.3	-24.7
Existing	B	0.270	0.390	0.475	0.594	0.692	0.783
Proposed with Control	B	0.102	0.156	0.200	0.256	0.298	0.340
Difference (Pr-Ex)		-0.168	-0.234	-0.275	-0.338	-0.394	-0.443
% Difference		-62.2	-60.0	-57.9	-56.9	-56.9	-56.6

Results from **Table 5-3** shows that the post development flows are less than the predevelopment flows with the proposed SWM facilities.

The characteristics for each SWM storage facility are summarized in **Table 5-4**.

**Table 5-4: Characteristics Summary**

SWM Facility ID	Catchment Area (ha)	Required Volume for 100-year Event (m <sup>3</sup> )	100-year Event	
			Peak Inflow (m <sup>3</sup> /s)	Peak Outflow (m <sup>3</sup> /s)
A	2.11	390	0.357	0.244

SWM Facility ID	Catchment Area (ha)	Required Volume for 100-year Event (m <sup>3</sup> )	100-year Event	
			Peak Inflow (m <sup>3</sup> /s)	Peak Outflow (m <sup>3</sup> /s)
B	7.04	2228	1.061	0.340

## 5.4 Quality Control

Roadside grass swales will be utilized as quality control measures along with Oil / Grit Separator (OGS) units to achieve the 80% Total Suspended Solids (TSS) removal in terms of water quality treatment.

## 6 SEDIMENT AND EROSION CONTROL

Sediment and erosion control measures will be implemented during all phases of construction, clean-up, and restoration to prevent sediment laden runoff from entering any of the watercourses directly from the construction zone.

Uncontrolled erosion and sedimentation occurring during construction can result in loss in topsoil, a disruption of nearby watercourses and a degradation of downstream water quality. During construction, erosion and sedimentation control measures should be implemented to prevent the migration of soils from site. The following recommended erosion and sedimentation control measures should be considered:

### **Vegetative:**

- All areas not subject to active construction 30 days after area grading should be top soiled and seeded immediately after completion of such grading.
- Immediately following seed application, a straw erosion control blanket should be installed on any exposed slopes adjacent to sensitive features.

### **Structural:**

- As construction proceeds, diversion swales should be graded where needed along the right-of-way boundaries to intercept drainage from external areas and direct it away from exposed surfaces.
- Temporary silt fencing and sedimentation traps should be placed around inlets and outlets from existing culverts in the drainage system.
- All culvert work should be conducted “in the dry”.
- Temporary silt fencing should be installed around sensitive vegetative features.
- Flow check should be provided in roadside ditches.
- Additional erosion control works may be required during the course of construction. These may consist of silt fences, swales, and/or diversion berms. The location and need for these works will be established in the field.

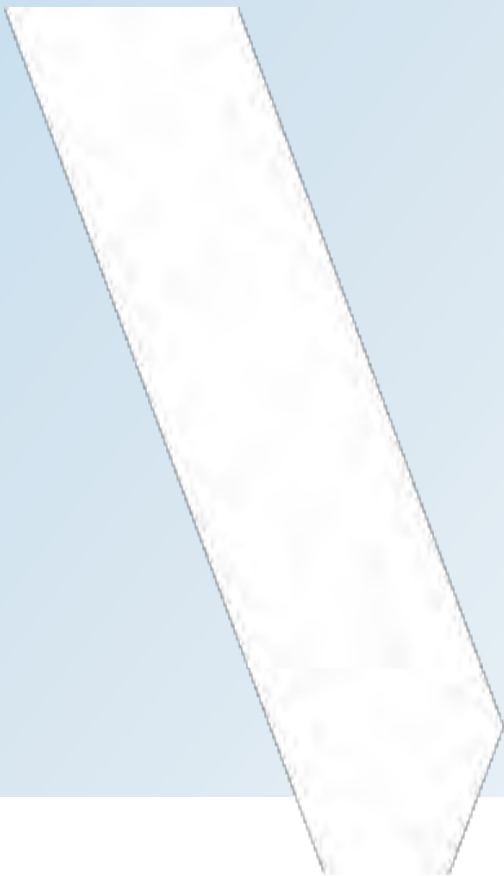
The integration of these measures will minimize the impacts of erosion and sedimentation during construction.

# 7 CONCLUSIONS AND RECOMMENDATIONS

Based on the preceding assessments the finding for the preferred road alignment within the study limits, the following conclusions and recommendations can be made:

- 1 The proposed design includes the realignment of 2<sup>nd</sup> Line Amaranth and Dufferin County Road 23 as well as a slight realignment of Dufferin County Road 3 at the Dufferin Country Road 109 intersection. Paula Court is proposed to be extended.
- 2 Hydrological analysis of the external catchments as well as the roadway corridor was carried out using the Visual OTTHYMO hydrological model.
- 3 Hydraulic performance of existing crossing culverts and one entrance culvert was performed using the CulvertMaster model.
  - a All four existing crossing culverts (C1, C3, C4 and E20) do not meet the hydraulic design criteria.
  - b Entrance Culvert E13 met all design criteria under existing conditions.
  - c All other existing entrance culverts in the study area are recommended to be replaced like for like due to no drainage concerns in the area.
- 4 Under proposed conditions:
  - a Three new culverts (C6, C7 and E13A) are recommended to be added into the drainage system due to the proposed design. Culvert E13 is being removed and slightly relocated.
  - b Culvert C4 and E12 are recommended to be abandoned.
  - c Proposed culverts were sized based on the available data and they should be further confirmed during the detailed design.
- 5 Under proposed conditions, two storage facilities are being proposed for quantity control. Storage facility A requires a volume of 390 m<sup>3</sup> and storage facility B requires a volume of 2228 m<sup>3</sup> to store events up to the 100-year event.
- 6 Under proposed conditions, grass swales and OGS units will be utilized for quality control.

# Exhibits









STUDY AREA

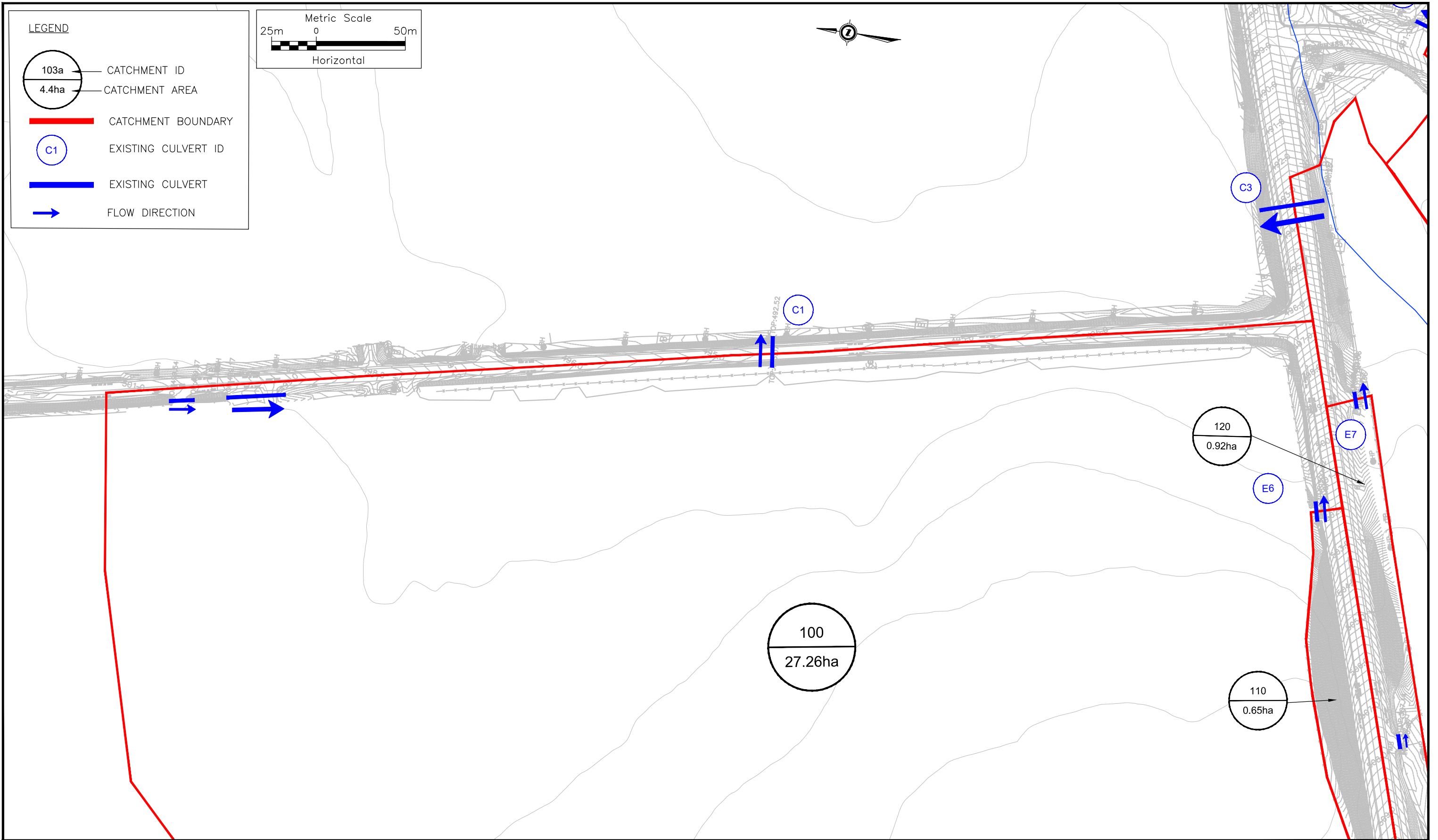
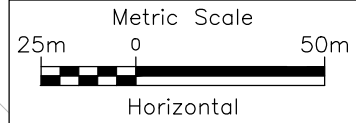
DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

EXHIBIT

1

LEGEND

- 103a CATCHMENT ID
- 4.4ha CATCHMENT AREA
- CATCHMENT BOUNDARY
- C1 EXISTING CULVERT ID
- EXISTING CULVERT
- FLOW DIRECTION



EXISTING CONDITIONS DRAINAGE MOSAIC

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

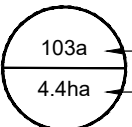




EXHIBIT

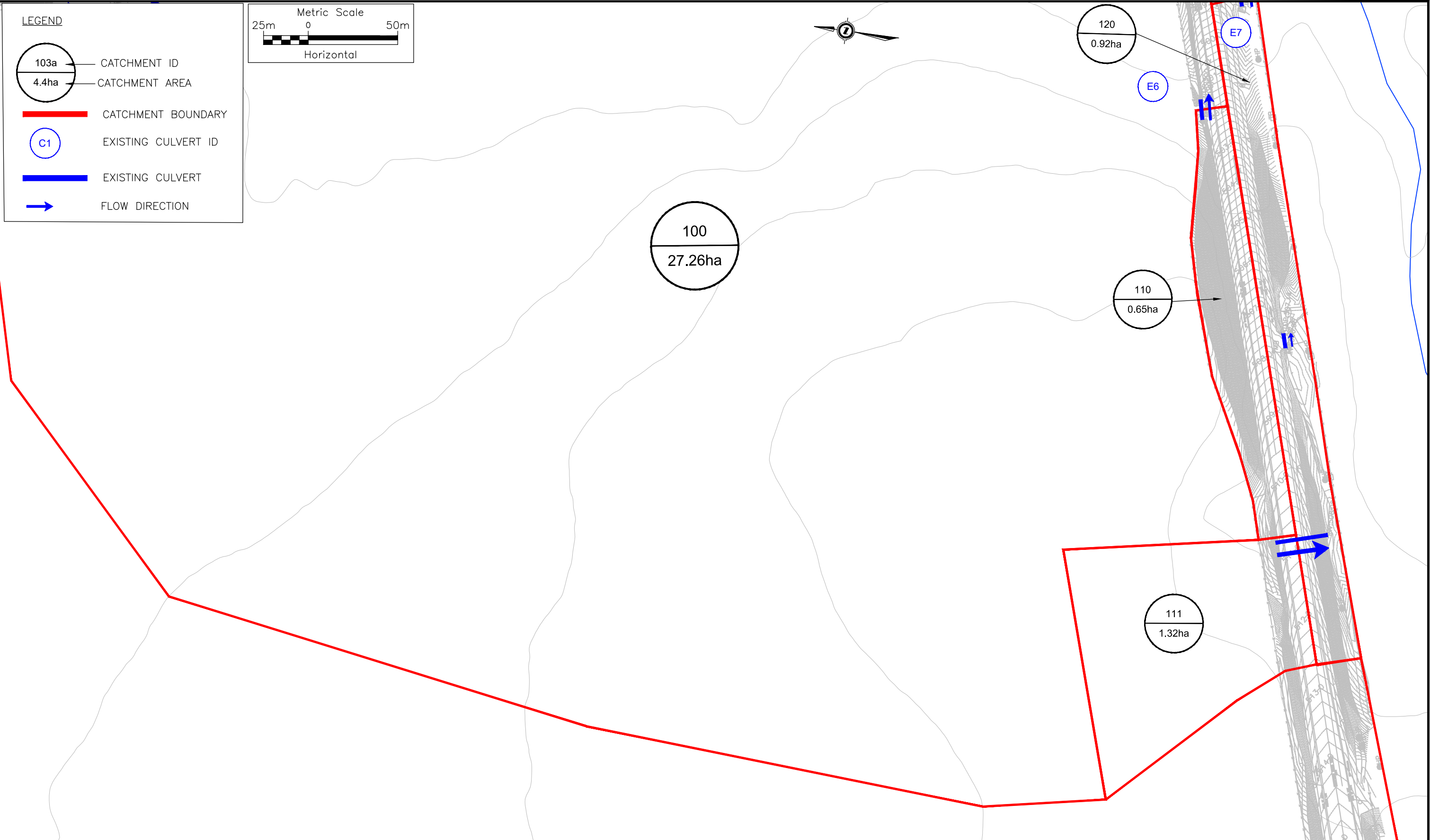
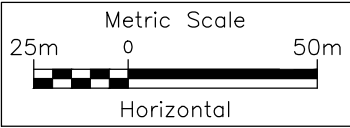
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MODIFIED: Dec. 13, 2023 2:45 PM

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2022\221-06590-00 DUFFERIN COUNTY RD 109\CAD\DUFFERIN COUNTY EXISTING MOSAIC.DWG

LEGEND

-  CATCHMENT ID  
CATCHMENT AREA
-  CATCHMENT BOUNDARY
-  EXISTING CULVERT ID
-  EXISTING CULVERT
-  FLOW DIRECTION

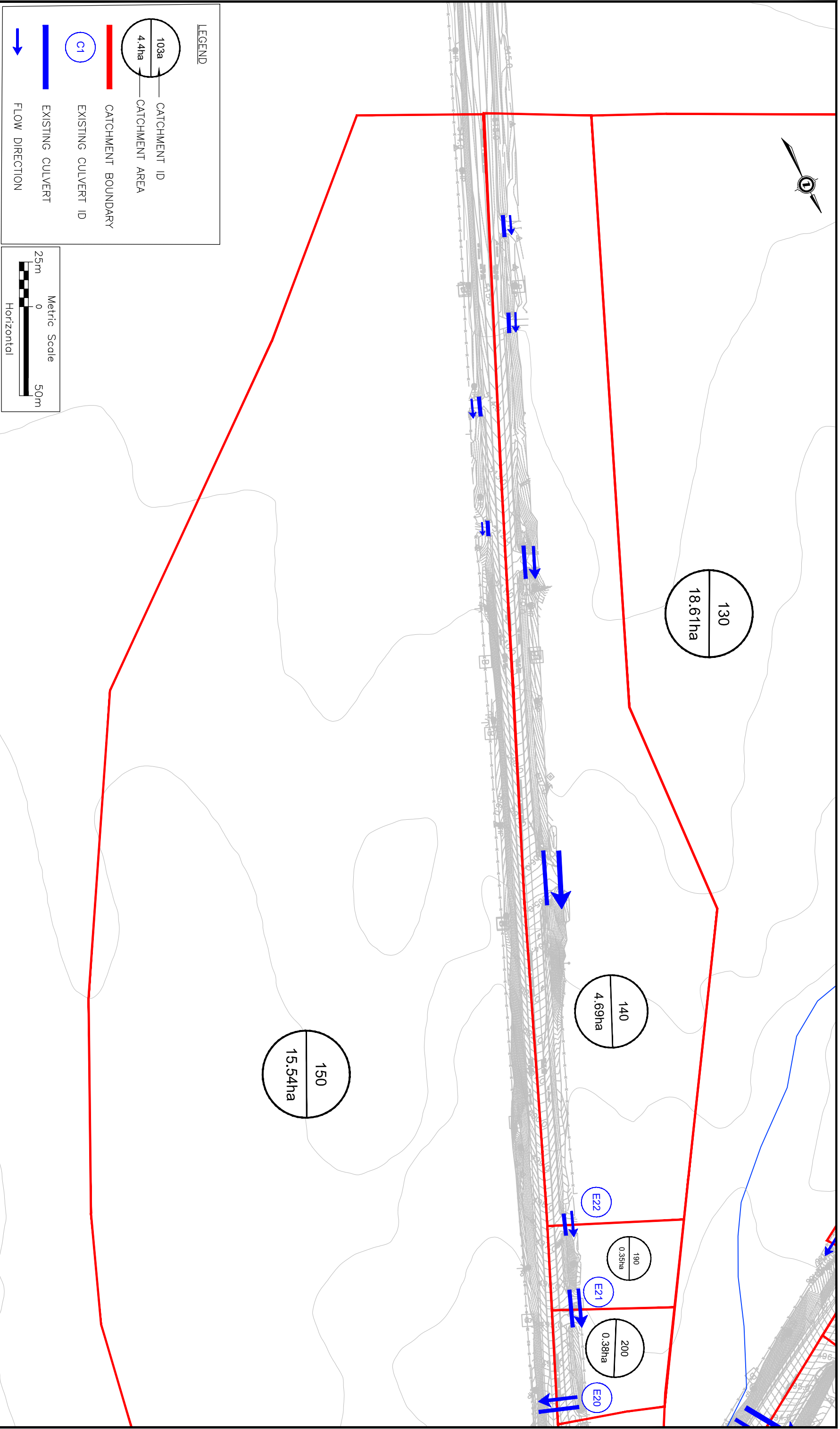


EXISTING CONDITIONS DRAINAGE MOSAIC

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

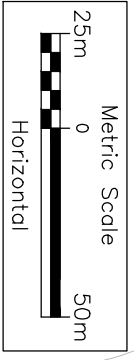
EXHIBIT


3



**LEGEND**

- 103a CATCHMENT ID
- 4.4ha CATCHMENT AREA
- CATCHMENT BOUNDARY
- C1 EXISTING CULVERT ID
- EXISTING CULVERT
- FLOW DIRECTION



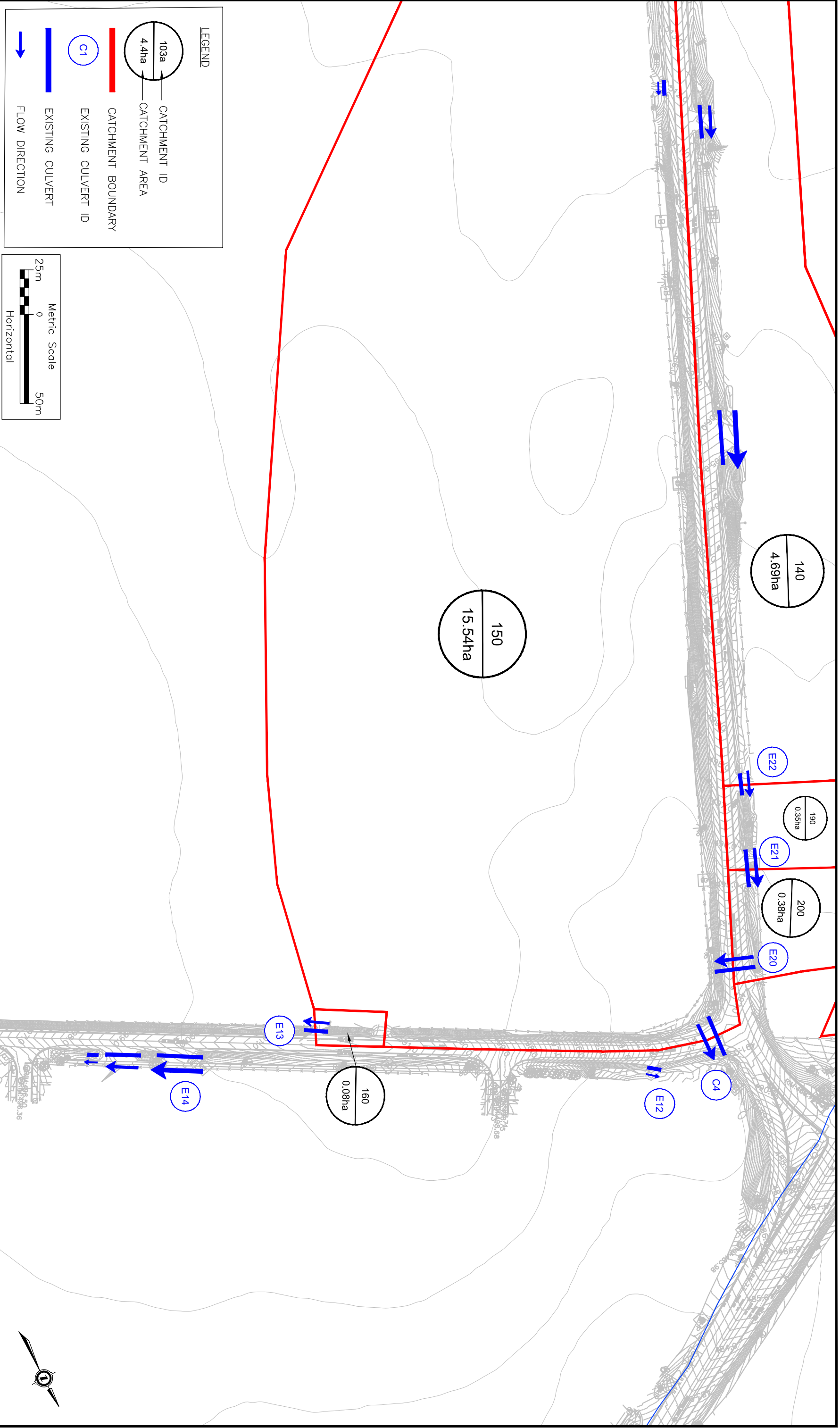


EXISTING CONDITIONS DRAINAGE MOSAIC

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

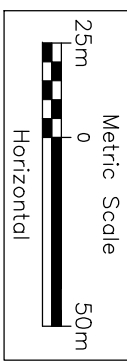
EXHIBIT

**4**



**LEGEND**

- CATCHMENT ID  
CATCHMENT AREA
- CATCHMENT BOUNDARY
- EXISTING CULVERT ID
- FLOW DIRECTION



EXISTING CONDITIONS DRAINAGE MOSAIC

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

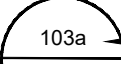
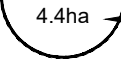









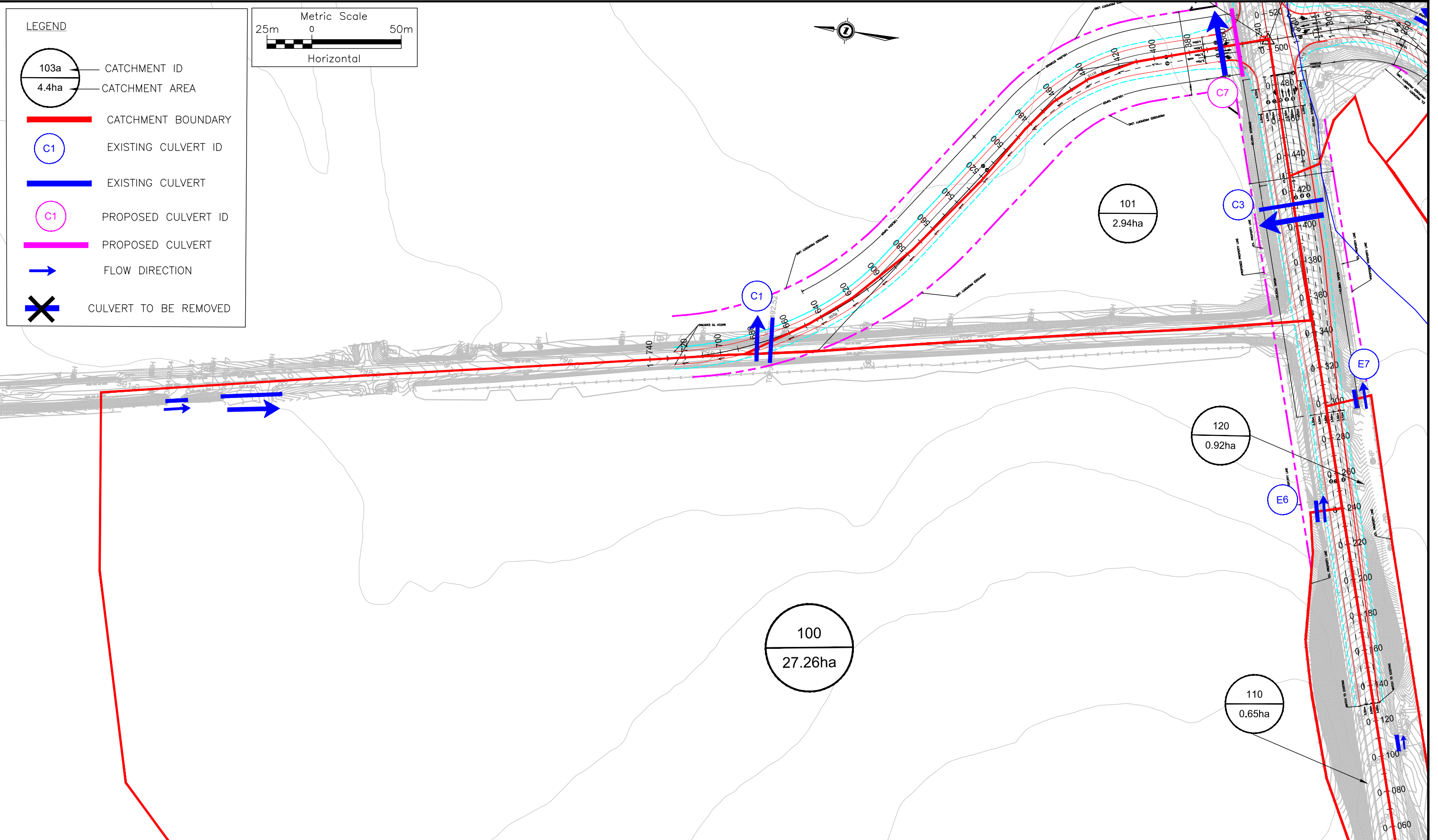
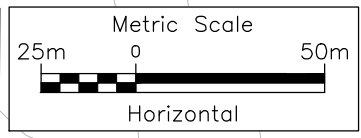
- LEGEND**
- 103a — CATCHMENT ID
  - 4.4ha — CATCHMENT AREA
  - CATCHMENT BOUNDARY
  - C1 — EXISTING CULVERT ID
  - EXISTING CULVERT
  - C1 — PROPOSED CULVERT ID
  - PROPOSED CULVERT
  - FLOW DIRECTION
  - ✕ CULVERT TO BE REMOVED



**PROPOSED CONDITIONS DRAINAGE MOSAIC - LARGE SCALE**  
**DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA**

**LEGEND**

-  CATCHMENT ID
-  CATCHMENT AREA
-  CATCHMENT BOUNDARY
-  EXISTING CULVERT ID
-  EXISTING CULVERT
-  PROPOSED CULVERT ID
-  PROPOSED CULVERT
-  FLOW DIRECTION
-  CULVERT TO BE REMOVED



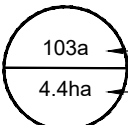







PROPOSED CONDITIONS DRAINAGE MOSAIC

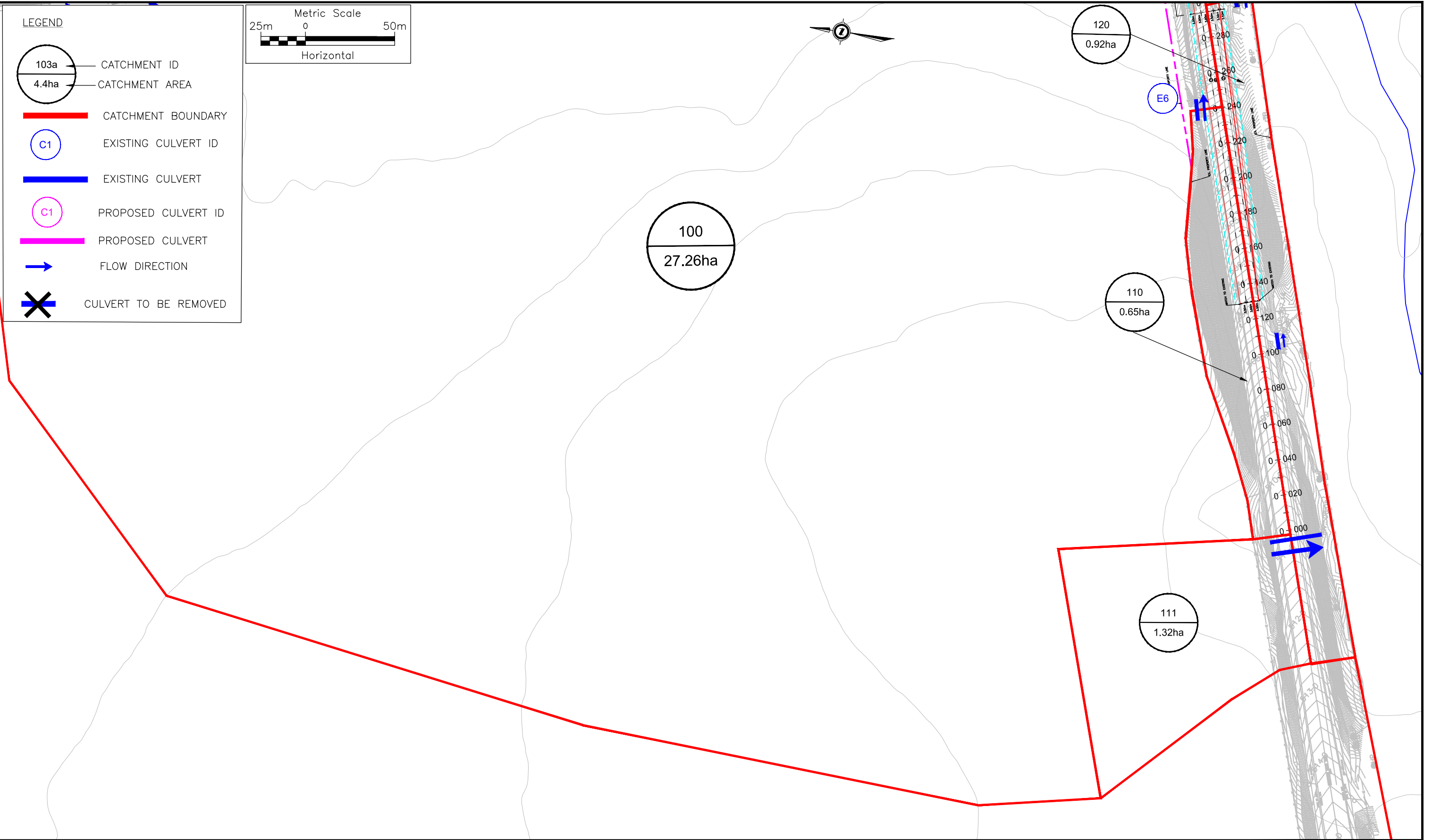
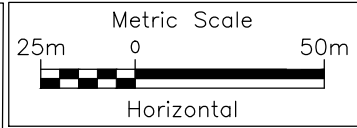
DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

MODIFIED: Dec. 13, 2023 2:45 PM

DRAWING NAME: \\CORP.PBWAN.NET\CA\CATHL100\ENGCAD\DIV38\2022\221-06590-00 DUFFERIN COUNTY RD 109\CAD\DUFFERIN COUNTY PROPOSED MOSAIC.DWG

LEGEND

-  CATCHMENT ID  
CATCHMENT AREA
-  CATCHMENT BOUNDARY
-  EXISTING CULVERT ID
-  EXISTING CULVERT
-  PROPOSED CULVERT ID
-  PROPOSED CULVERT
-  FLOW DIRECTION
-  CULVERT TO BE REMOVED



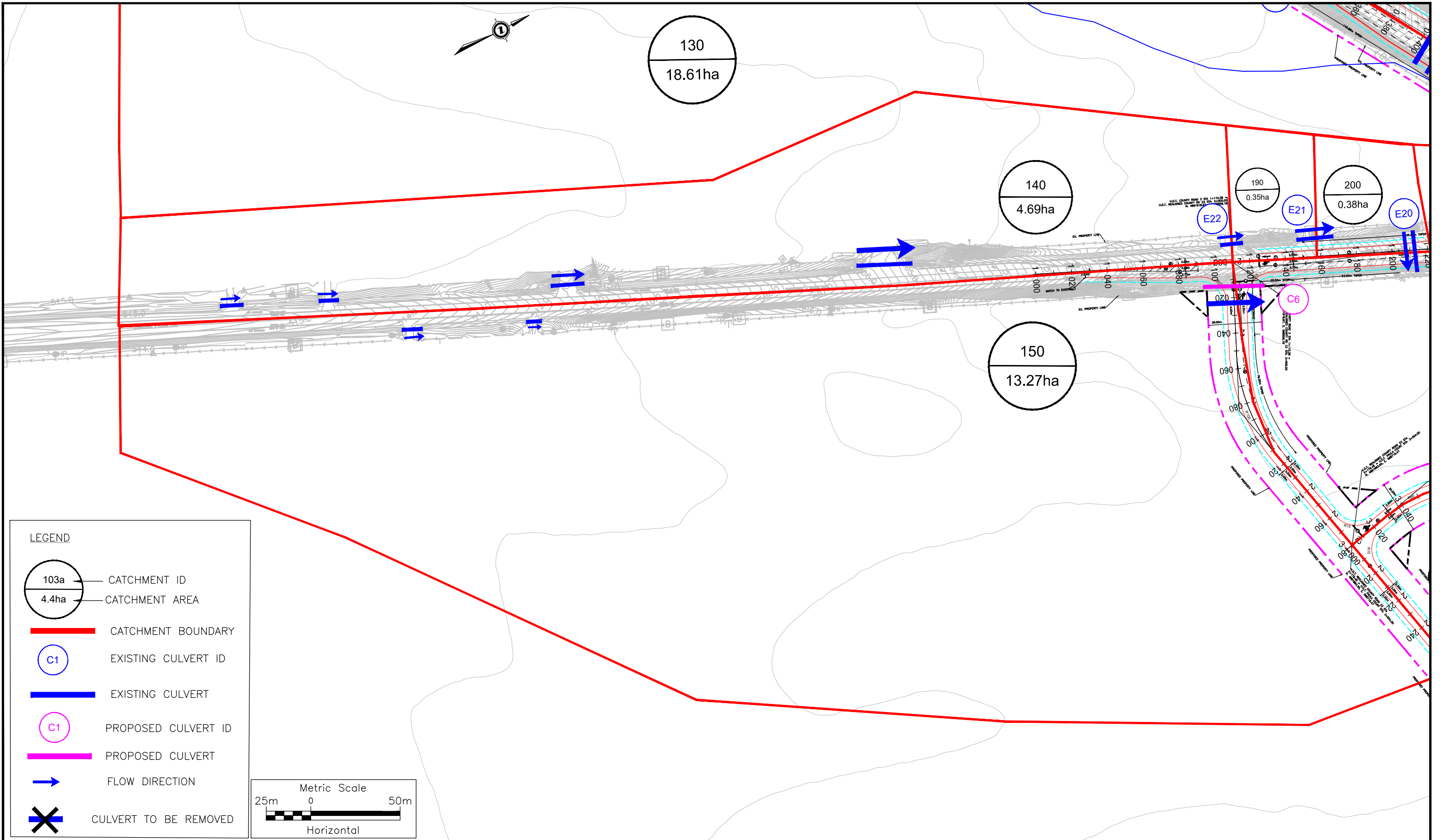
PROPOSED CONDITIONS DRAINAGE MOSAIC

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

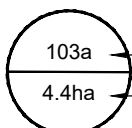







EXHIBIT

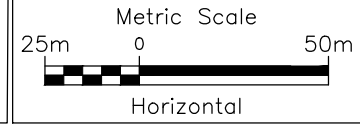
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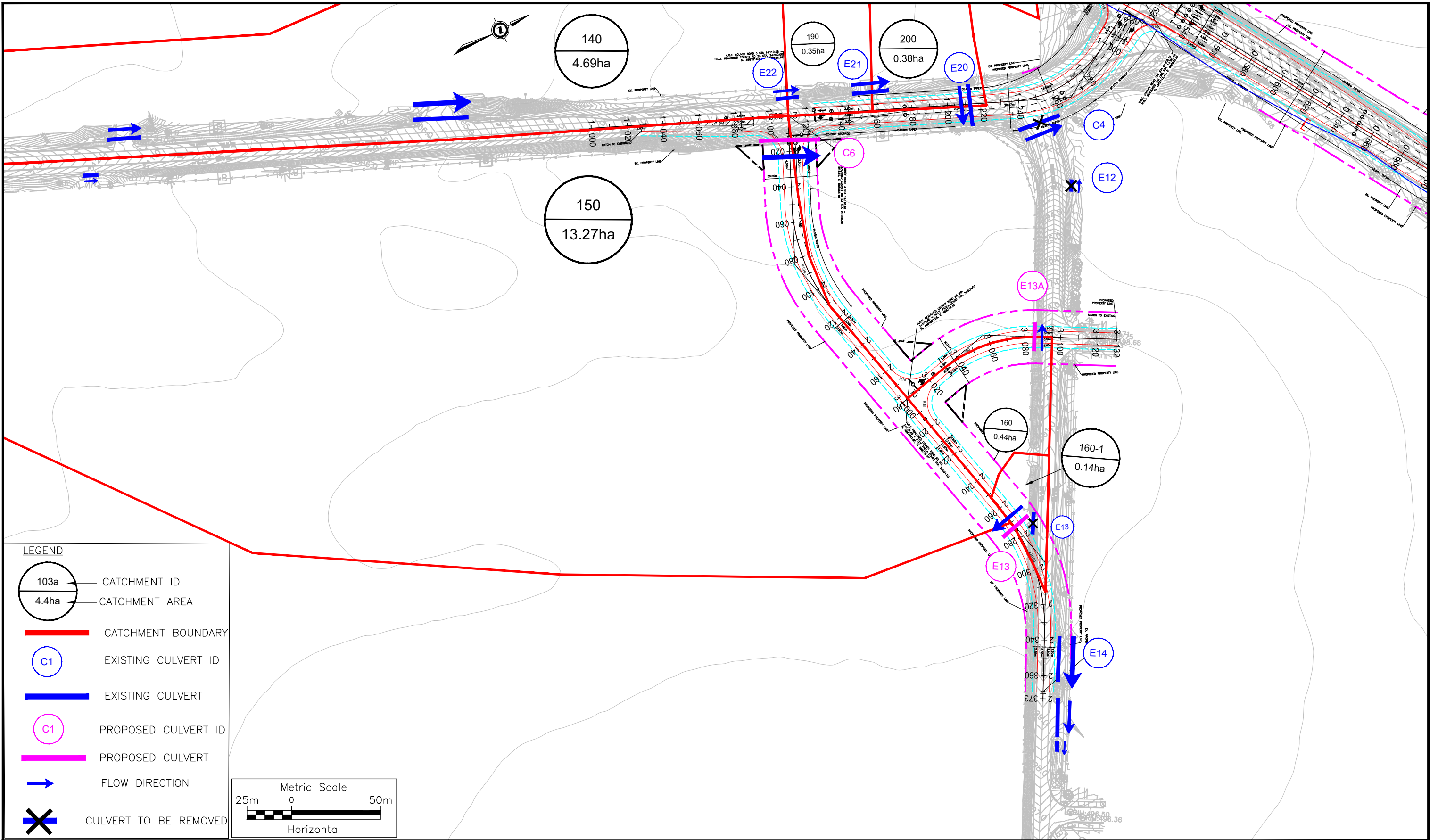
LEGEND

-  CATCHMENT ID  
CATCHMENT AREA
-  CATCHMENT BOUNDARY
-  EXISTING CULVERT ID
-  EXISTING CULVERT
-  PROPOSED CULVERT ID
-  PROPOSED CULVERT
-  FLOW DIRECTION
-  CULVERT TO BE REMOVED

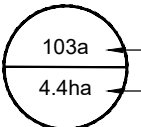









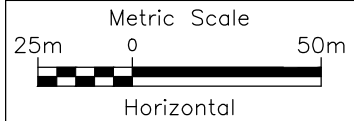
PROPOSED CONDITIONS DRAINAGE MOSAIC

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA



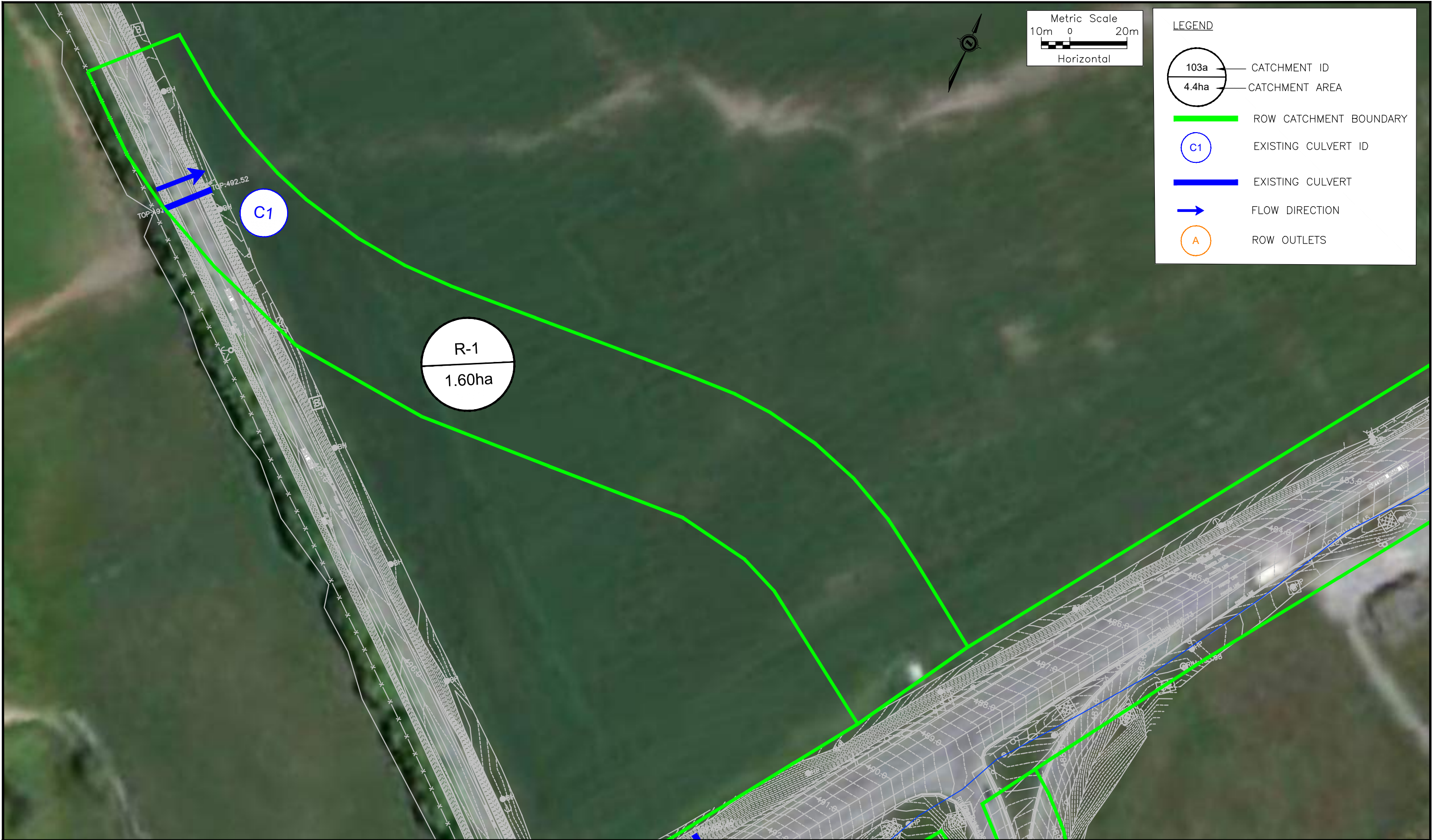
LEGEND

-  CATCHMENT ID  
CATCHMENT AREA
-  CATCHMENT BOUNDARY
-  EXISTING CULVERT ID
-  EXISTING CULVERT
-  PROPOSED CULVERT ID
-  PROPOSED CULVERT
-  FLOW DIRECTION
-  CULVERT TO BE REMOVED



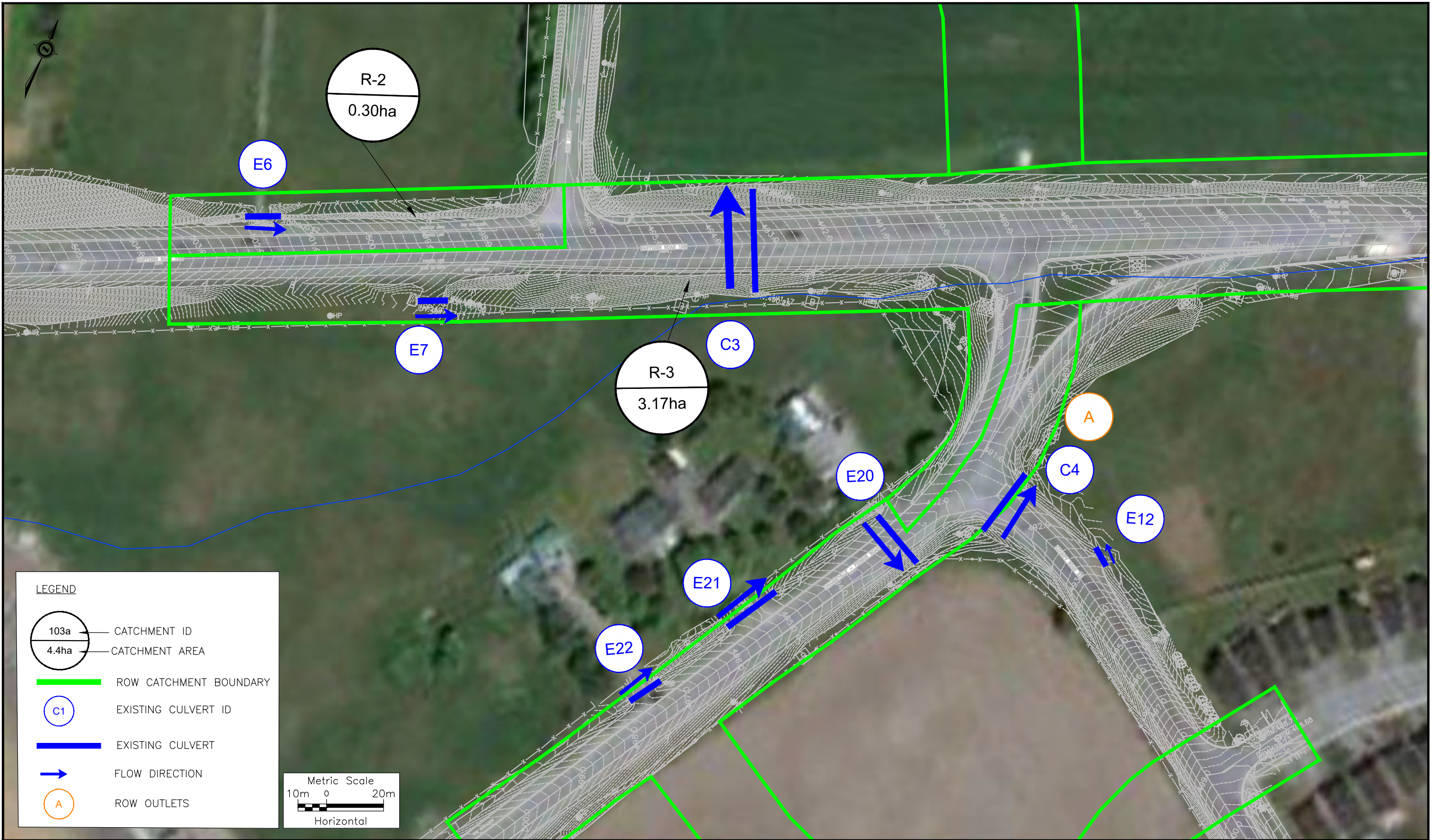
PROPOSED CONDITIONS DRAINAGE MOSAIC

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

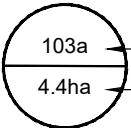







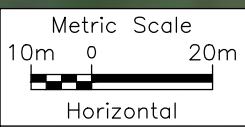
EXISTING CONDITIONS - SWM DRAINAGE MOSAICS

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA



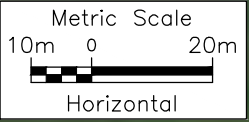
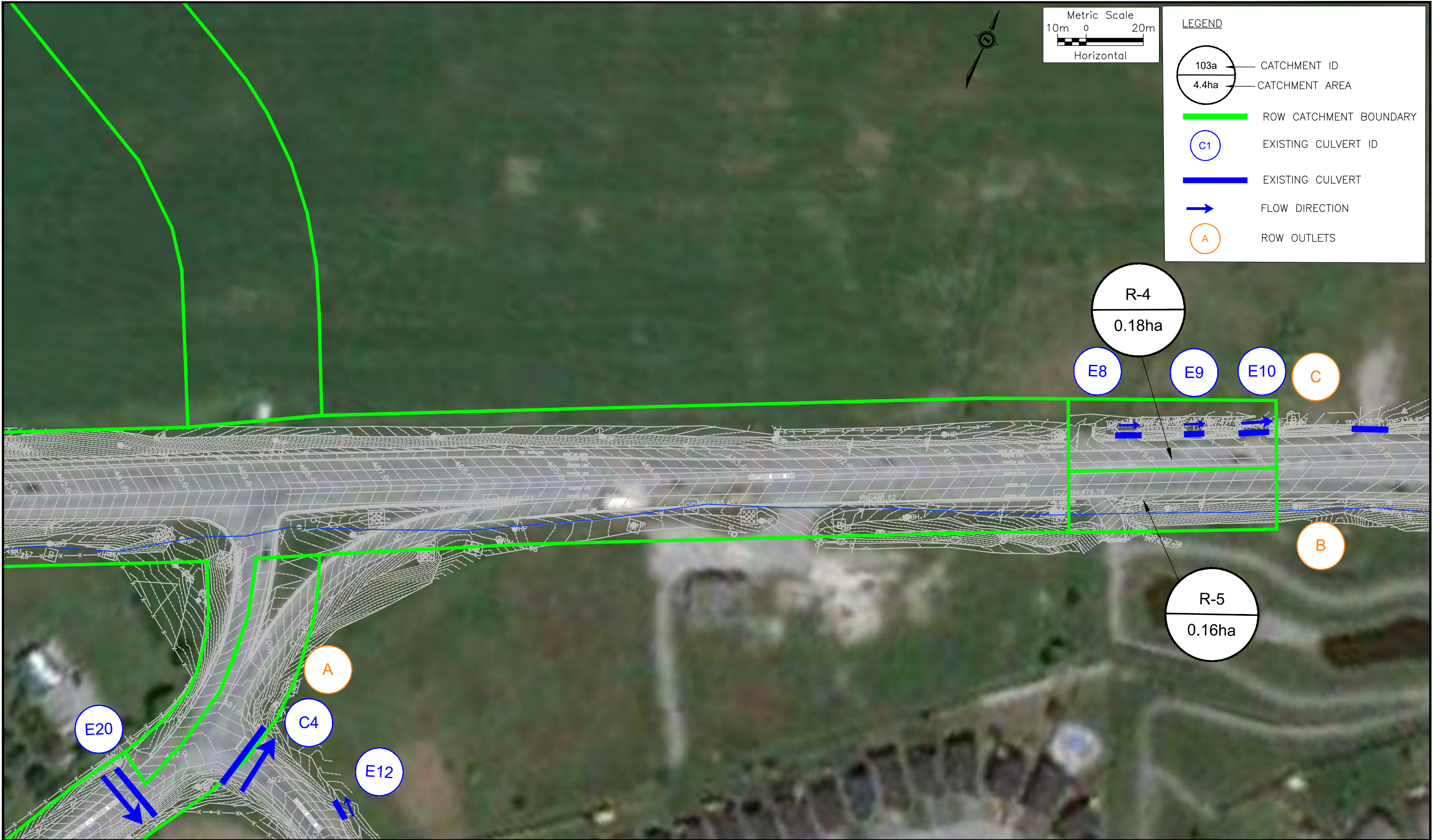
**LEGEND**

-  CATCHMENT ID  
CATCHMENT AREA
-  ROW CATCHMENT BOUNDARY
-  EXISTING CULVERT ID
-  EXISTING CULVERT
-  FLOW DIRECTION
-  ROW OUTLETS



**EXISTING CONDITIONS - SWM DRAINAGE MOSAICS**

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA



LEGEND	
	CATCHMENT ID
	CATCHMENT AREA
	ROW CATCHMENT BOUNDARY
	EXISTING CULVERT ID
	EXISTING CULVERT
	FLOW DIRECTION
	ROW OUTLETS



EXISTING CONDITIONS - SWM DRAINAGE MOSAICS

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA



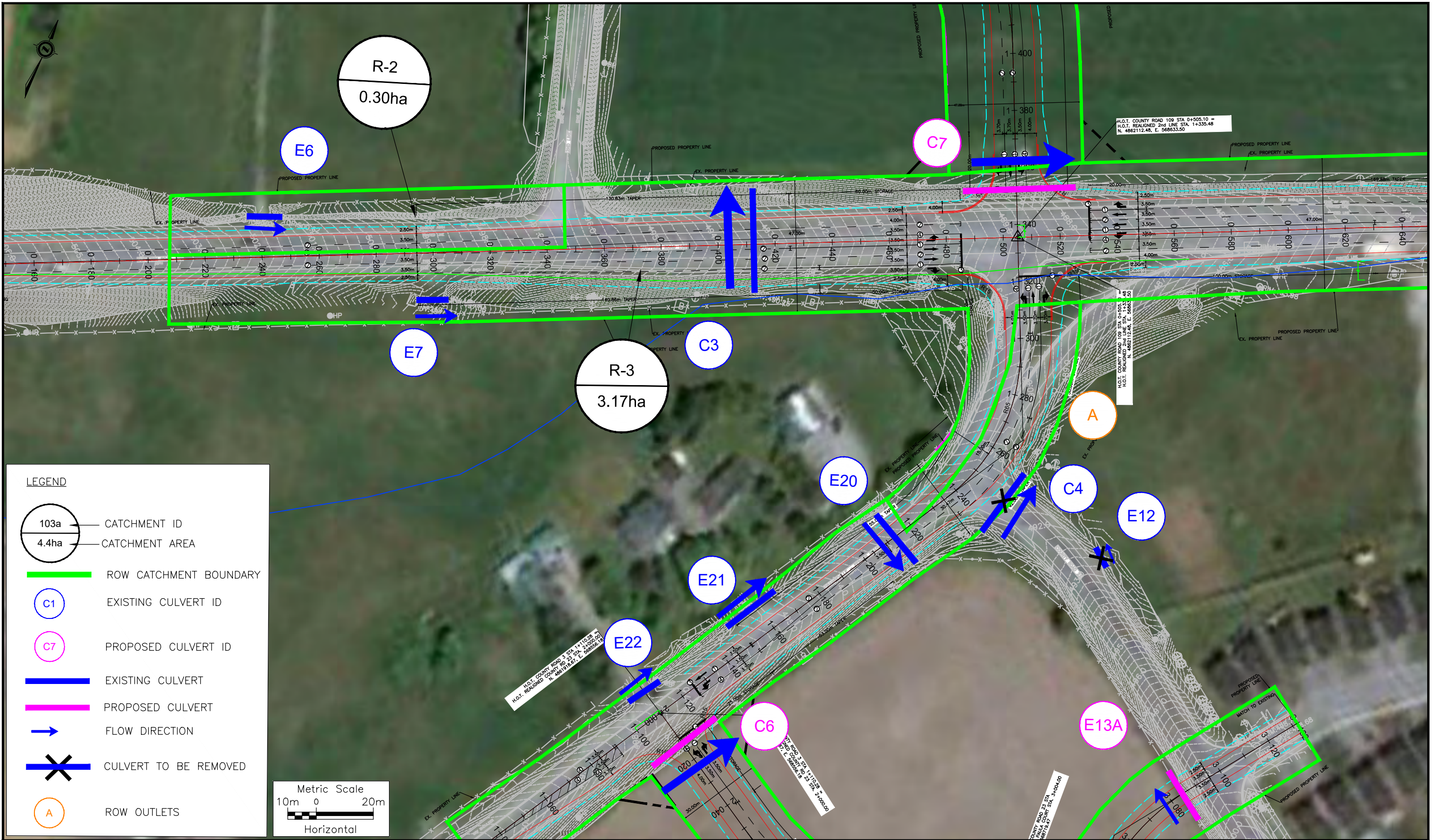
EXISTING CONDITIONS - SWM DRAINAGE MOSAICS

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA


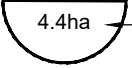










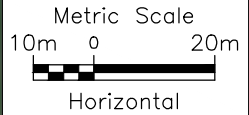
PROPOSED CONDITIONS - SWM DRAINAGE MOSAICS

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA



LEGEND

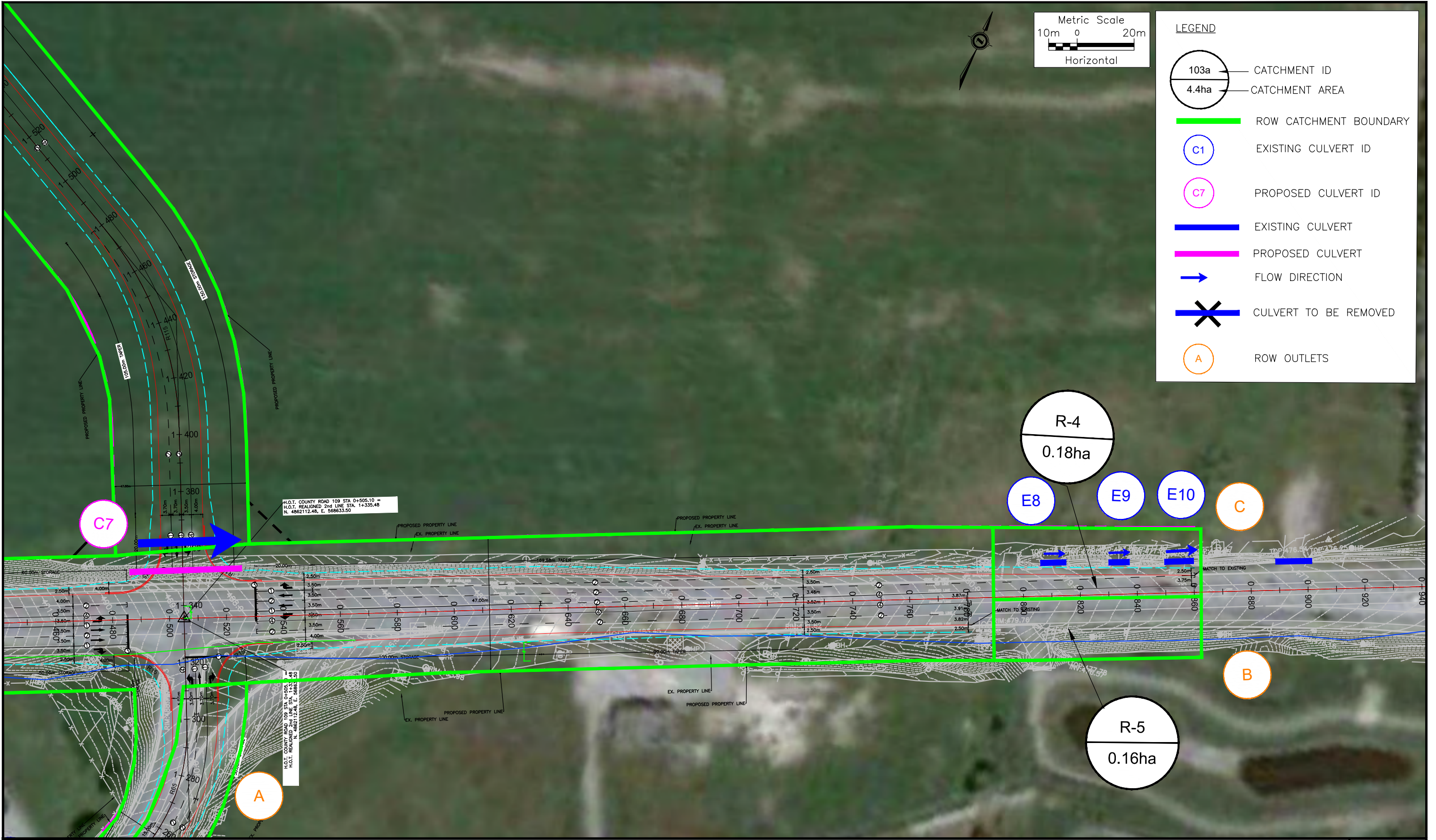
-  CATCHMENT ID
-  CATCHMENT AREA
-  ROW CATCHMENT BOUNDARY
-  EXISTING CULVERT ID
-  PROPOSED CULVERT ID
-  EXISTING CULVERT
-  PROPOSED CULVERT
-  FLOW DIRECTION
-  CULVERT TO BE REMOVED
-  ROW OUTLETS



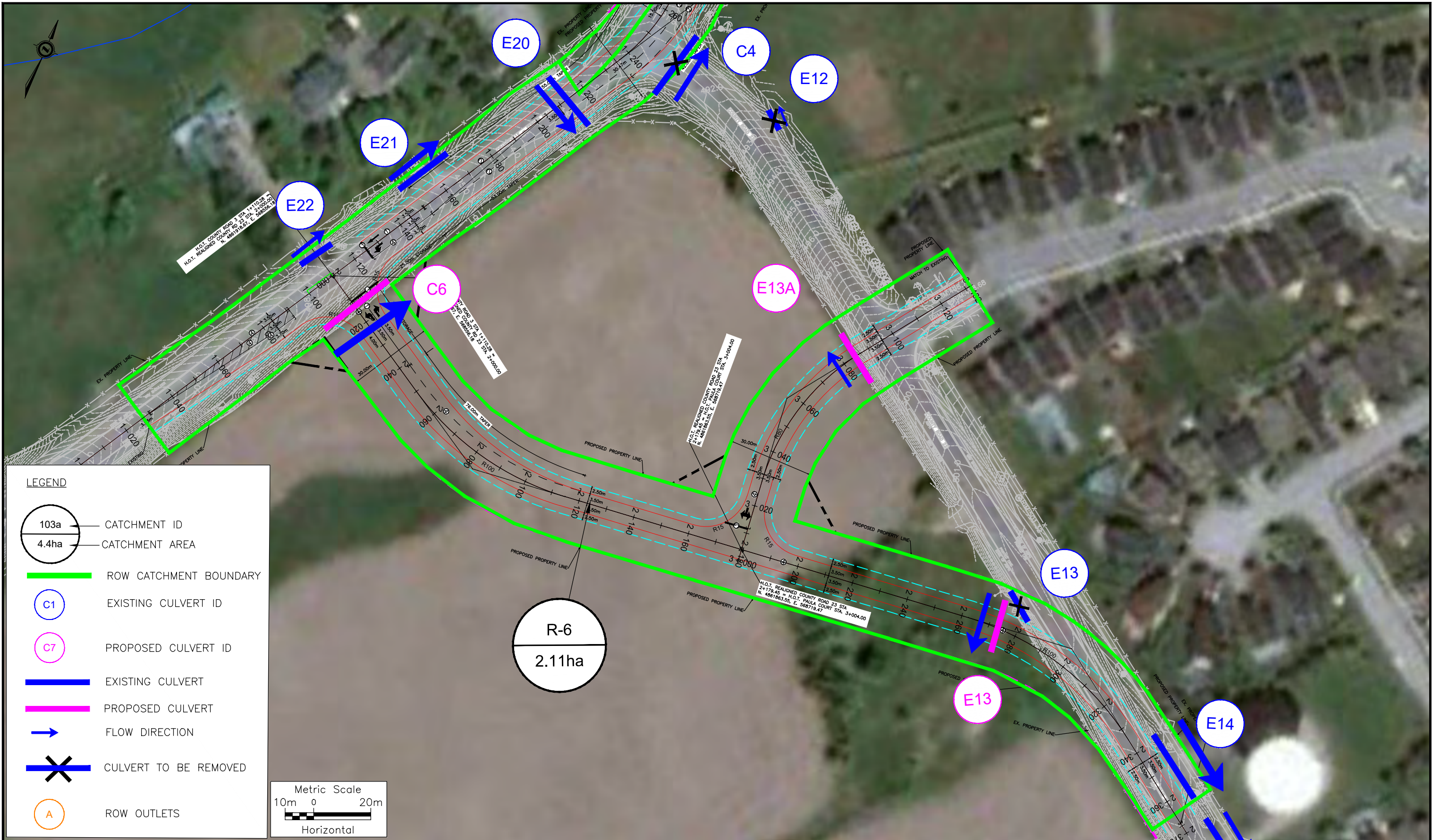
PROPOSED CONDITIONS - SWM DRAINAGE MOSAICS

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA





PROPOSED CONDITIONS - SWM DRAINAGE MOSAICS  
 DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA



**LEGEND**

- 103a — CATCHMENT ID
- 4.4ha — CATCHMENT AREA
- ROW CATCHMENT BOUNDARY
- C1 — EXISTING CULVERT ID
- C7 — PROPOSED CULVERT ID
- EXISTING CULVERT
- PROPOSED CULVERT
- — FLOW DIRECTION
- X — CULVERT TO BE REMOVED
- A — ROW OUTLETS

Metric Scale  
10m 0 20m  
Horizontal



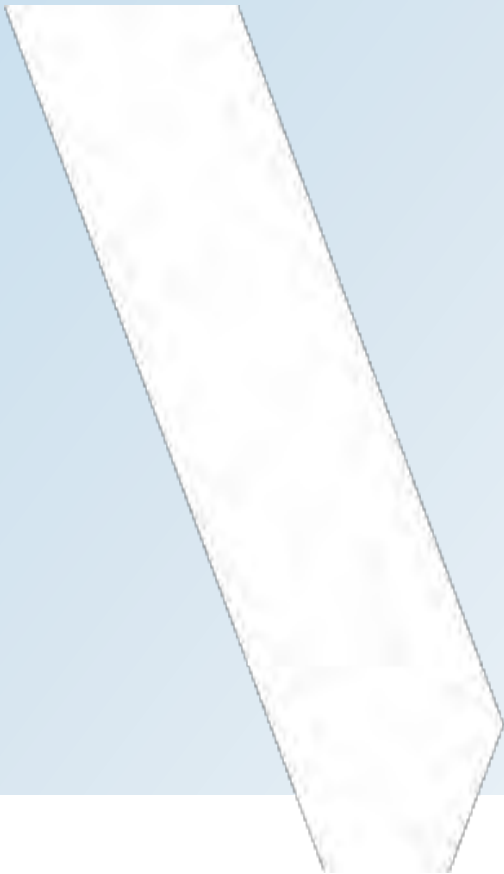
**PROPOSED CONDITIONS - SWM DRAINAGE MOSAICS**

DUFFERIN COUNTY ROAD 109 / 2ND LINE AMARANTH REALIGNMENT EA

# APPENDIX

# A

## Site Investigation



# APPENDIX

## A-1 Photographic Inventory

Culvert E22





Culvert E21



# APPENDIX

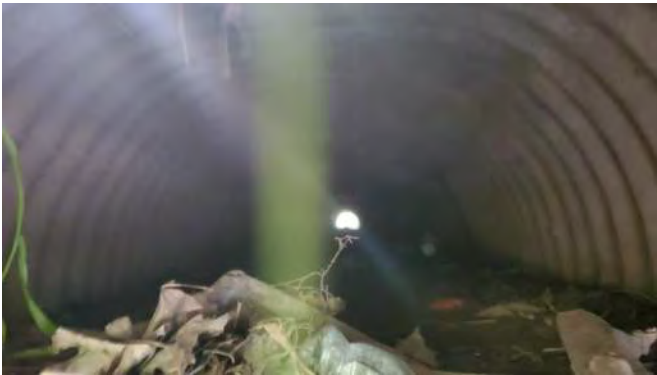




Culvert E20



# APPENDIX



Culvert C3



# APPENDIX



Culvert C4





Culvert E12



Culvert E7





# APPENDIX



Culvert E6



# APPENDIX



Culvert E10



Culvert E9



Culvert E8



Culvert C1



# APPENDIX

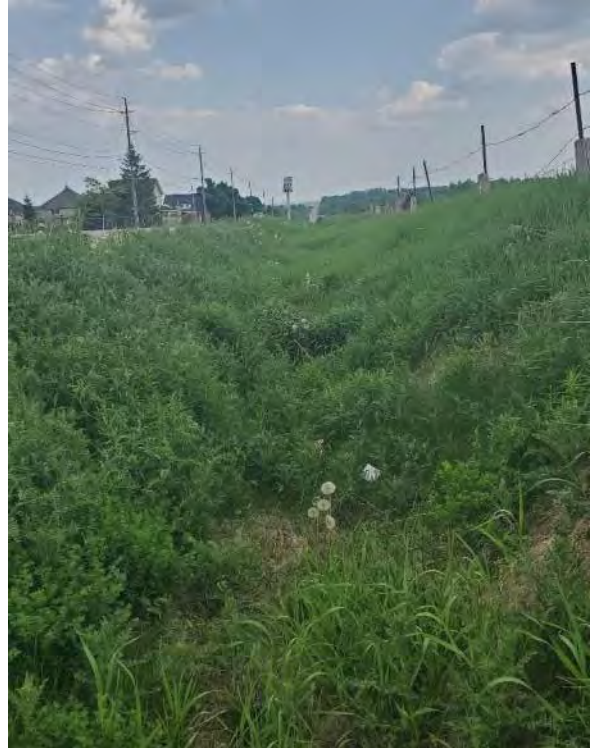




Culvert E13



# APPENDIX



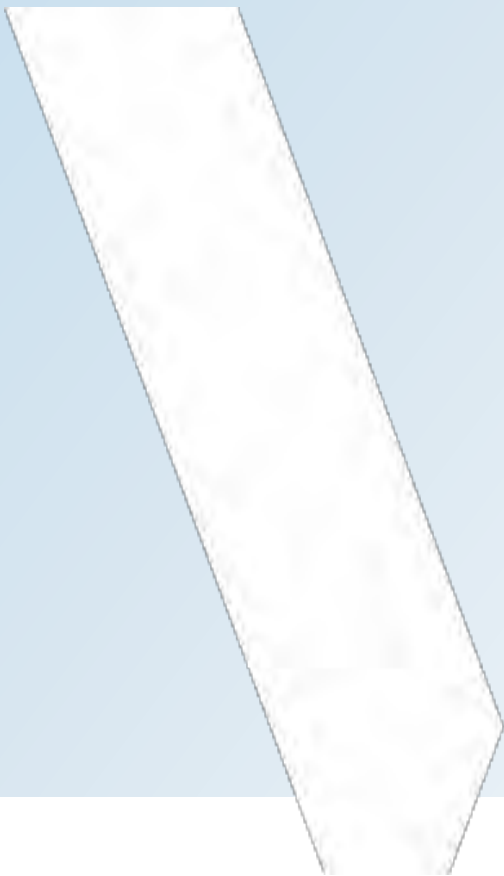
Culvert E14



# APPENDIX

## B

### Hydrologic Assessment



**B-1**    **IDF Curves**

### Active coordinate

43° 54' 15" N, 80° 8' 45" W (43.904167,-80.145833)

Retrieved: Fri, 29 Sep 2023 19:16:18 GMT



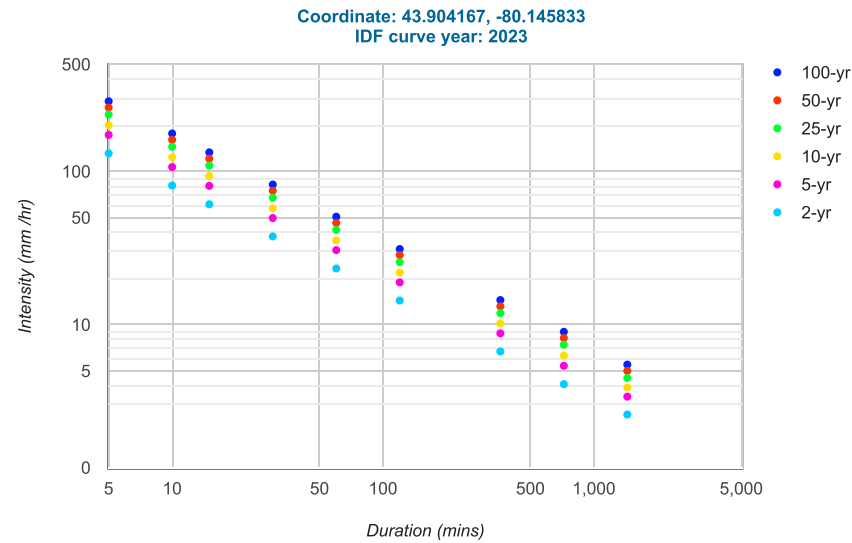
#### Location summary

These are the locations in the selection.

**IDF Curve:** 43° 54' 15" N, 80° 8' 45" W (43.904167,-80.145833)

#### Results

An IDF curve was found.



### Coefficient summary

IDF Curve: 43° 54' 15" N, 80° 8' 45" W (43.904167,-80.145833)

Retrieved: Fri, 29 Sep 2023 19:16:18 GMT

Data year: 2010

IDF curve year: 2023

### Statistics

#### Rainfall intensity (mm hr<sup>-1</sup>)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	131.3	81.0	61.1	37.7	23.3	14.4	6.7	4.1	2.6
5-yr	173.3	106.9	80.6	49.7	30.7	18.9	8.8	5.4	3.4
10-yr	200.6	123.7	93.2	57.5	35.5	21.9	10.2	6.3	3.9
25-yr	235.3	145.0	109.3	67.4	41.6	25.6	11.9	7.4	4.5
50-yr	261.4	161.1	121.4	74.9	46.2	28.5	13.2	8.2	5.0
100-yr	286.9	176.9	133.3	82.2	50.7	31.2	14.5	9.0	5.5

#### Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	10.9	13.5	15.3	18.9	23.3	28.8	40.2	49.2	62.4
5-yr	14.4	17.8	20.1	24.9	30.7	37.8	52.8	64.8	81.6
10-yr	16.7	20.6	23.3	28.8	35.5	43.8	61.2	75.6	93.6
25-yr	19.6	24.2	27.3	33.7	41.6	51.2	71.4	88.8	108.0
50-yr	21.8	26.9	30.4	37.5	46.2	57.0	79.2	98.4	120.0
100-yr	23.9	29.5	33.3	41.1	50.7	62.4	87.0	108.0	132.0

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Last Modified: September 2016

### Active coordinate

43° 54' 15" N, 80° 8' 45" W (43.904167,-80.145833)

Retrieved: Fri, 29 Sep 2023 19:21:13 GMT



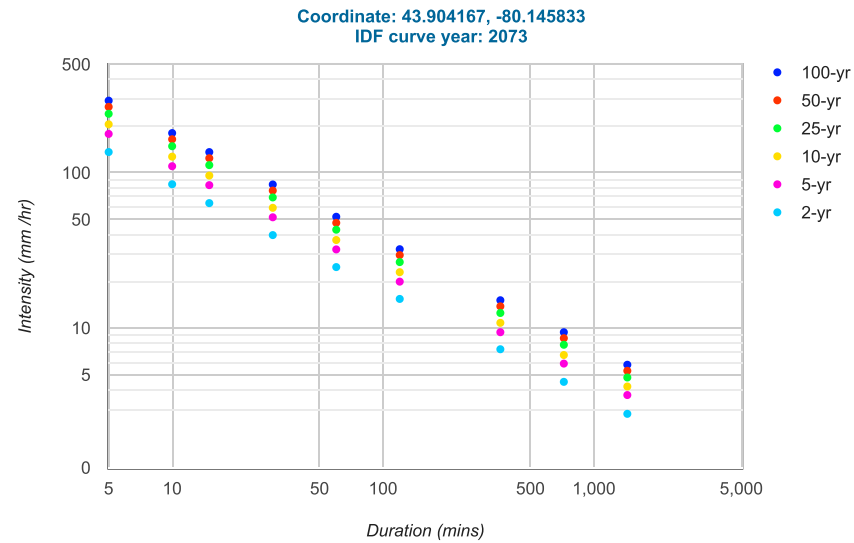
### Location summary

These are the locations in the selection.

**IDF Curve:** 43° 54' 15" N, 80° 8' 45" W (43.904167,-80.145833)

### Results

An IDF curve was found.





### Coefficient summary

IDF Curve: 43° 54' 15" N, 80° 8' 45" W (43.904167,-80.145833)

Retrieved: Fri, 29 Sep 2023 19:21:13 GMT

Data year: 2010

IDF curve year: 2073

### Statistics

#### Rainfall intensity (mm hr<sup>-1</sup>)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	136.1	84.4	63.8	39.7	24.7	15.4	7.3	4.5	2.8
5-yr	178.1	110.3	83.3	51.7	32.1	19.9	9.4	5.9	3.7
10-yr	205.4	127.1	96.0	59.5	36.9	22.9	10.8	6.7	4.2
25-yr	240.0	148.4	112.1	69.4	43.0	26.6	12.5	7.8	4.8
50-yr	266.1	164.5	124.2	76.8	47.6	29.5	13.8	8.6	5.3
100-yr	291.7	180.3	136.0	84.1	52.1	32.2	15.1	9.4	5.8

#### Rainfall depth (mm)

Duration	5-min	10-min	15-min	30-min	1-hr	2-hr	6-hr	12-hr	24-hr
2-yr	11.3	14.1	15.9	19.9	24.7	30.8	43.8	54.0	67.2
5-yr	14.8	18.4	20.8	25.9	32.1	39.8	56.4	70.8	88.8
10-yr	17.1	21.2	24.0	29.8	36.9	45.8	64.8	80.4	100.8
25-yr	20.0	24.7	28.0	34.7	43.0	53.2	75.0	93.6	115.2
50-yr	22.2	27.4	31.1	38.4	47.6	59.0	82.8	103.2	127.2
100-yr	24.3	30.1	34.0	42.0	52.1	64.4	90.6	112.8	139.2

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Last Modified: September 2016

# APPENDIX

## **B-2** Existing Conditions

=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

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Summary filename:

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DATE: 12-12-2023

TIME: 10:22:32

USER:

COMMENTS: \_\_\_\_\_

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\*\*\*\*\*  
\*\* SIMULATION : 12SCS002-2073 \*\*  
\*\*\*\*\*

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Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal= 54.00 mm |

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 Comments: 12SCS002-2073

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0.33	1.62	3.50	2.16	6.67	5.18	9.83	1.30
0.50	1.62	3.67	2.16	6.83	5.18	10.00	1.30
0.67	0.76	3.83	2.16	7.00	5.18	10.17	1.84
0.83	0.76	4.00	2.16	7.17	3.46	10.33	1.84
1.00	0.76	4.17	2.92	7.33	3.46	10.50	1.84
1.17	1.40	4.33	2.92	7.50	3.46	10.67	1.19
1.33	1.40	4.50	2.92	7.67	3.02	10.83	1.19
1.50	1.40	4.67	3.67	7.83	3.02	11.00	1.19
1.67	1.40	4.83	3.67	8.00	3.02	11.17	1.08
1.83	1.40	5.00	3.67	8.17	2.38	11.33	1.08
2.00	1.40	5.17	5.83	8.33	2.38	11.50	1.08
2.17	1.84	5.33	5.83	8.50	2.38	11.67	1.08
2.33	1.84	5.50	5.83	8.67	2.48	11.83	1.08
2.50	1.84	5.67	46.22	8.83	2.48	12.00	1.08
2.67	1.62	5.83	46.22	9.00	2.48		
2.83	1.62	6.00	46.22	9.17	1.62		
3.00	1.62	6.17	11.77	9.33	1.62		

| CALIB  
 | NASHYD ( 0100)  
 | ID= 1 DT= 5.0 min |

Area (ha)= 27.26 Curve Number (CN)= 67.0  
 Ia (mm)= 12.80 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.91

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30

1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.241 (i)  
 TIME TO PEAK (hrs)= 7.250  
 RUNOFF VOLUME (mm)= 10.207  
 TOTAL RAINFALL (mm)= 54.000  
 RUNOFF COEFFICIENT = 0.189

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

-----  
 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	46.22	8.08
over (min)	5.00	30.00
Storage Coeff. (min)=	2.71 (ii)	26.33 (ii)
Unit Hyd. Tpeak (min)=	5.00	30.00
Unit Hyd. peak (cms)=	0.29	0.04

\*TOTALS\*

PEAK FLOW	(cms)=	0.04	0.00	0.040 (iii)
TIME TO PEAK	(hrs)=	6.17	6.50	6.17
RUNOFF VOLUME	(mm)=	53.00	9.35	28.53
TOTAL RAINFALL	(mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT	=	0.98	0.17	0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0100):  27.26  0.241    7.25    10.21
+ ID2= 2 ( 0110):  0.65  0.040    6.17    28.53
=====
ID = 3 ( 0003):  27.91  0.248    7.17    10.63

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 1.32 Curve Number (CN)= 73.0
Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 3.167 1.62 | 6.250 11.77 | 9.33 1.62
0.167 0.00 | 3.250 2.16 | 6.333 11.77 | 9.42 1.62
0.250 1.62 | 3.333 2.16 | 6.417 11.77 | 9.50 1.62
0.333 1.62 | 3.417 2.16 | 6.500 11.77 | 9.58 1.62
0.417 1.62 | 3.500 2.16 | 6.583 11.77 | 9.67 1.62
0.500 1.62 | 3.583 2.16 | 6.667 11.77 | 9.75 1.30
0.583 1.62 | 3.667 2.16 | 6.750 5.18 | 9.83 1.30
0.667 1.62 | 3.750 2.16 | 6.833 5.18 | 9.92 1.30
0.750 0.76 | 3.833 2.16 | 6.917 5.18 | 10.00 1.30
0.833 0.76 | 3.917 2.16 | 7.000 5.18 | 10.08 1.30
0.917 0.76 | 4.000 2.16 | 7.083 5.18 | 10.17 1.30

```

1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.050 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 13.948  
 TOTAL RAINFALL (mm)= 54.000  
 RUNOFF COEFFICIENT = 0.258

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

CALIB	
STANDHYD ( 0120)	Area (ha)= 0.92
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350



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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 3.00 (ii) 26.62 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.28 0.04

\*TOTALS\*

PEAK FLOW	(cms)=	0.04	0.01	0.048 (iii)
TIME TO PEAK	(hrs)=	6.17	6.50	6.17
RUNOFF VOLUME	(mm)=	53.00	9.35	25.48
TOTAL RAINFALL	(mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT	=	0.98	0.17	0.47

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023) |
| 1 + 2 = 3 |
-----
| AREA   QPEAK   TPEAK   R.V. |
| (ha)   (cms)   (hrs)   (mm) |
-----
| ID1= 1 ( 0111): 1.32  0.050  6.17  13.95 |
| + ID2= 2 ( 0120): 0.92  0.048  6.17  25.48 |
|=====|
| ID = 3 ( 0023): 2.24  0.099  6.17  18.69 |
-----

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 18.61 |
| Total Imp(%)= 21.00 |
| Dir. Conn.(%)= 21.00 |
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN |
| hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr |
-----|-----|-----|-----|
| 0.083  0.00 | 3.167  1.62 | 6.250  11.77 | 9.33  1.62 |
| 0.167  0.00 | 3.250  2.16 | 6.333  11.77 | 9.42  1.62 |
| 0.250  1.62 | 3.333  2.16 | 6.417  11.77 | 9.50  1.62 |
| 0.333  1.62 | 3.417  2.16 | 6.500  11.77 | 9.58  1.62 |
| 0.417  1.62 | 3.500  2.16 | 6.583  11.77 | 9.67  1.62 |
-----|-----|-----|-----|

```

0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 9.36  
over (min) 5.00 30.00  
Storage Coeff. (min)= 7.40 (ii) 29.30 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.17 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.49 0.22 0.620 (iii)  
TIME TO PEAK (hrs)= 6.17 6.50 6.17  
RUNOFF VOLUME (mm)= 53.00 10.72 19.60  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.20 0.36

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):		18.61	0.620	6.17	19.60
+ ID2= 2 ( 0023):		2.24	0.099	6.17	18.69
=====					
ID = 3 ( 0006):		20.85	0.719	6.17	19.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area	(ha)=	0.08
STANDHYD ( 0160)		Total Imp(%)=	59.00	Dir. Conn.(%)= 59.00
ID= 1 DT= 5.0 min				

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	22.79	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84

1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 14.15  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.43 (ii) 20.31 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.007 (iii)  
TIME TO PEAK (hrs)= 6.00 6.42 6.17  
RUNOFF VOLUME (mm)= 53.00 14.72 37.19  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.27 0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 |  
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0  
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00  
----- U.H. Tp(hrs)= 0.38

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 0.349 (i)  
 TIME TO PEAK (hrs)= 6.417  
 RUNOFF VOLUME (mm)= 14.301  
 TOTAL RAINFALL (mm)= 54.000  
 RUNOFF COEFFICIENT = 0.265

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

CALIB			
STANDHYD ( 0140)	Area (ha)=	4.69	
ID= 1 DT= 5.0 min	Total Imp(%)=	43.00	Dir. Conn.(%)= 43.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08

2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 9.00  
over (min) 5.00 30.00  
Storage Coeff. (min)= 4.90 (ii) 27.13 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.22 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.26 0.04 0.282 (iii)  
TIME TO PEAK (hrs)= 6.17 6.50 6.17  
RUNOFF VOLUME (mm)= 53.00 10.35 28.68  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.19 0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35  
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62



0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 2.25 (ii) 25.87 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.30 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.019 (iii)  
TIME TO PEAK (hrs)= 6.08 6.50 6.17  
RUNOFF VOLUME (mm)= 53.00 9.35 26.33  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.17 0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0140):	4.69	0.282	6.17	28.68
+ ID2= 2 ( 0190):	0.35	0.019	6.17	26.33
=====				
ID = 3 ( 0009):	5.04	0.301	6.17	28.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.38
STANDHYD ( 0200)	Total Imp(%)=	47.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84

1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 2.30 (ii) 25.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.30 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.025 (iii)  
TIME TO PEAK (hrs)= 6.17 6.50 6.17  
RUNOFF VOLUME (mm)= 53.00 9.35 29.83  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.17 0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |  
| 1 + 2 = 3 |

AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.025	6.17	29.83
+ ID2= 2 ( 0009):	5.04	0.301	6.17	28.52
=====				
ID = 3 ( 0011):	5.42	0.325	6.17	28.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0014)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0011):	5.42	0.325	6.17	28.61
+ ID2= 2 ( 0150):	15.54	0.349	6.42	14.30
=====				
ID = 3 ( 0014):	20.96	0.565	6.17	18.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0170)				
ID= 1 DT= 5.0 min				
Area	(ha)=	0.06		
Total Imp(%)	=	70.00	Dir. Conn.(%)=	70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84

1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	46.22	22.89
over (min)	5.00	20.00
Storage Coeff. (min)=	1.31 (ii)	16.89 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.33	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	53.00	22.92	43.89
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.42	0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180)	Area (ha)= 0.13

|ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08

3.000	1.62	6.083	46.22	9.167	2.48
3.083	1.62	6.167	46.22	9.250	1.62

Max.Eff.Inten.(mm/hr)=	46.22	22.89
over (min)	5.00	20.00
Storage Coeff. (min)=	1.67 (ii)	17.25 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.012 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	53.00	22.92	41.48
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.42	0.77

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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	Area (ha)=	0.05
STANDHYD ( 0210)	Total Imp(%)=	41.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	41.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30

0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.21 (ii) 24.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.003 (iii)  
TIME TO PEAK (hrs)= 6.00 6.42 6.17  
RUNOFF VOLUME (mm)= 53.00 9.35 26.49  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.17 0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.06  
 Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62		6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16		6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16		6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16		6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16		6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16		6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16		6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16		6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16		6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16		7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16		7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16		7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16		7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92		7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92		7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92		7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92		7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92		7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92		7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67		7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67		7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67		8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67		8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67		8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67		8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83		8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83		8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83		8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83		8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83		8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83		8.750	2.48	11.83	1.08

2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.30 (ii) 24.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
TIME TO PEAK (hrs)= 6.00 6.42 6.17  
RUNOFF VOLUME (mm)= 53.00 9.35 27.56  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.17 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.003	6.17	26.49
+ ID2= 2 ( 0220):	0.06	0.004	6.17	27.56
===== ID = 3 ( 0020):	0.11	0.006	6.17	27.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	Imp(%)	Dir. Conn.(%)
STANDHYD ( 0230)	(ha)= 0.05		
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00		Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00

Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.21 (ii) 24.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00

Unit Hyd. peak (cms)=	0.33	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.003 (iii)
TIME TO PEAK (hrs)=	6.00	6.42	6.17
RUNOFF VOLUME (mm)=	53.00	9.35	28.41
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.17	0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0020):  0.11  0.006  6.17  27.07
+ ID2= 2 ( 0230):  0.05  0.003  6.17  28.41
=====
ID = 3 ( 0021):  0.16  0.010  6.17  27.49

```

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

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(v 6.2.2015)

```

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

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d3abc55a-7d2f-41fc-8607-73f2c3e046d6\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d3abc55a-7d2f-41fc-8607-73f2c3e046d6\s

DATE: 12-12-2023

TIME: 10:22:32

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS005-2073 \*\*  
\*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\b41cefb5-a35b-4bff-82a3-3087af79db79\7e427860
Ptotal= 70.80 mm	Comments: 12SCS005-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	2.83	6.33	15.43	9.50	2.12
0.17	2.12	3.33	2.83	6.50	15.43	9.67	1.70
0.33	2.12	3.50	2.83	6.67	6.80	9.83	1.70
0.50	2.12	3.67	2.83	6.83	6.80	10.00	1.70
0.67	0.99	3.83	2.83	7.00	6.80	10.17	2.41
0.83	0.99	4.00	2.83	7.17	4.53	10.33	2.41
1.00	0.99	4.17	3.82	7.33	4.53	10.50	2.41
1.17	1.84	4.33	3.82	7.50	4.53	10.67	1.56
1.33	1.84	4.50	3.82	7.67	3.96	10.83	1.56
1.50	1.84	4.67	4.81	7.83	3.96	11.00	1.56
1.67	1.84	4.83	4.81	8.00	3.96	11.17	1.42
1.83	1.84	5.00	4.81	8.17	3.12	11.33	1.42
2.00	1.84	5.17	7.65	8.33	3.12	11.50	1.42
2.17	2.41	5.33	7.65	8.50	3.12	11.67	1.42
2.33	2.41	5.50	7.65	8.67	3.26	11.83	1.42
2.50	2.41	5.67	60.60	8.83	3.26	12.00	1.42

2.67	2.12	5.83	60.60	9.00	3.26
2.83	2.12	6.00	60.60	9.17	2.12
3.00	2.12	6.17	15.43	9.33	2.12

CALIB			
NASHYD ( 0100)	Area (ha)=	27.26	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)=	12.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.91	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42

2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.456 (i)  
 TIME TO PEAK (hrs)= 7.167  
 RUNOFF VOLUME (mm)= 18.372  
 TOTAL RAINFALL (mm)= 70.800  
 RUNOFF COEFFICIENT = 0.259

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

CALIB			
STANDHYD ( 0110)			
ID= 1 DT= 5.0 min	Area (ha)=	0.65	
	Total Imp(%)=	44.00	Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41

1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.43 (ii) 20.90 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.30 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.05 0.01 0.055 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 39.56  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |

| 1 + 2 = 3 |

-----

ID1= 1 ( 0100):

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
27.26	0.456	7.17	18.37



```

+ ID2= 2 ( 0110):    0.65    0.055    6.17    39.56
=====
ID = 3 ( 0003):    27.91    0.466    7.17    18.87

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.13

```

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42

2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.087 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 23.714  
 TOTAL RAINFALL (mm)= 70.800  
 RUNOFF COEFFICIENT = 0.335

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

CALIB	
STANDHYD ( 0120)	Area (ha)= 0.92
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41

1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.70 (ii) 21.17 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.29 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.02 0.068 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 35.78  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 0111):  AREA   QPEAK   TPEAK   R.V.
                  (ha)    (cms)   (hrs)   (mm)
                  1.32   0.087   6.17   23.71

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+ ID2= 2 ( 0120):    0.92  0.068   6.17   35.78
=====
ID = 3 ( 0023):    2.24  0.155   6.17   28.67

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0130) | Area (ha)= 18.61
| ID= 1 DT= 5.0 min | Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42

2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 17.09  
over (min) 5.00 25.00  
Storage Coeff. (min)= 6.64 (ii) 23.85 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.18 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.65 0.42 0.948 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 69.80 17.96 28.85  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.25 0.41

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0130):	18.61	0.948	6.17	28.85
+ ID2= 2 ( 0023):	2.24	0.155	6.17	28.67
=====				
ID = 3 ( 0006):	20.85	1.104	6.17	28.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.08		
STANDHYD ( 0160)	Total Imp(%)=	59.00	Dir. Conn.(%)=	59.00
ID= 1 DT= 5.0 min				

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	0.05	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	22.79	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)=	60.60	23.38	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.29 (ii)	16.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.33	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	69.80	24.06	50.91
TOTAL RAINFALL (mm)=	70.80	70.80	70.80
RUNOFF COEFFICIENT =	0.99	0.34	0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 |
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00
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| U.H. Tp(hrs)= 0.38

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41





0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 16.51  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 4.39 (ii) 21.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.23 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.34 0.08 0.394 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.42 6.17  
 RUNOFF VOLUME (mm)= 69.80 17.38 39.92  
 TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
 RUNOFF COEFFICIENT = 0.99 0.25 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56

2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.02 (ii) 20.49 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.027 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 36.84  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.52

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0140):	4.69	0.394	6.17	39.92
+ ID2= 2 ( 0190):	0.35	0.027	6.17	36.84
=====				
ID = 3 ( 0009):	5.04	0.421	6.17	39.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |

| STANDHYD ( 0200) | Area (ha)= 0.38  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42

2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)=	60.60	14.95
over (min)	5.00	25.00
Storage Coeff. (min)=	2.07 (ii)	20.54 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.31	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.03	0.01	0.034 (iii)
TIME TO PEAK (hrs)=	6.08	6.42	6.17
RUNOFF VOLUME (mm)=	69.80	15.82	41.16
TOTAL RAINFALL (mm)=	70.80	70.80	70.80
RUNOFF COEFFICIENT =	0.99	0.22	0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0200):  0.38  0.034  6.17  41.16
+ ID2= 2 ( 0009):  5.04  0.421  6.17  39.71
=====
ID = 3 ( 0011):  5.42  0.455  6.17  39.81

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0014) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0011):  5.42  0.455  6.17  39.81
+ ID2= 2 ( 0150): 15.54  0.617  6.42  24.20
=====
ID = 3 ( 0014): 20.96  0.905  6.17  28.24

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0170)  
 ID= 1 DT= 5.0 min

Area (ha)= 0.06  
 Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42

2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 37.24  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.17 (ii) 14.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 69.80 35.62 59.45  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.50 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180) | Area (ha)= 0.13  
| ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70

0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 37.24  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.50 (ii) 14.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.017 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 69.80 35.62 56.75  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.50 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.02      0.03
Dep. Storage    (mm)=          1.00      5.00
Average Slope   (%)=          1.00      2.00
Length          (m)=         17.32     40.00
Mannings n     =            0.013     0.350

```

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42

2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.09 (ii) 19.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 37.80  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12

0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.16 (ii) 19.63 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 38.34  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.004	6.17	37.80
+ ID2= 2 ( 0220):	0.06	0.005	6.17	38.34
=====				
ID = 3 ( 0020):	0.11	0.009	6.17	38.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.05
STANDHYD ( 0230)	Total Imp(%)=	45.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41

1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.09 (ii) 19.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 39.97  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |  
| 1 + 2 = 3 |

AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0020):	0.11	0.009	6.17	38.10
+ ID2= 2 ( 0230):	0.05	0.004	6.17	39.97
=====				
ID = 3 ( 0021):	0.16	0.014	6.17	38.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

```

V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

```

```

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

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\72d6b541-b9a9-4179-8d44-1f532fe261dd\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\72d6b541-b9a9-4179-8d44-1f532fe261dd\s

DATE: 12-12-2023

TIME: 10:22:32

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----

\*\*\*\*\*  
 \*\* SIMULATION : 12SCS010-2073 \*\*  
 \*\*\*\*\*

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-----
| READ STORM |      Filename: C:\Users\caeh076182\AppData
|            |      ata\Local\Temp\
|            |      b41cefb5-a35b-4bff-82a3-3087af79db79\1699aa23
| Ptotal= 80.40 mm |      Comments: 12SCS010-2073
-----
  
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.22	6.33	17.53	9.50	2.41
0.17	2.41	3.33	3.22	6.50	17.53	9.67	1.93
0.33	2.41	3.50	3.22	6.67	7.72	9.83	1.93
0.50	2.41	3.67	3.22	6.83	7.72	10.00	1.93
0.67	1.13	3.83	3.22	7.00	7.72	10.17	2.73
0.83	1.13	4.00	3.22	7.17	5.15	10.33	2.73
1.00	1.13	4.17	4.34	7.33	5.15	10.50	2.73
1.17	2.09	4.33	4.34	7.50	5.15	10.67	1.77
1.33	2.09	4.50	4.34	7.67	4.50	10.83	1.77
1.50	2.09	4.67	5.47	7.83	4.50	11.00	1.77
1.67	2.09	4.83	5.47	8.00	4.50	11.17	1.61
1.83	2.09	5.00	5.47	8.17	3.54	11.33	1.61
2.00	2.09	5.17	8.68	8.33	3.54	11.50	1.61
2.17	2.73	5.33	8.68	8.50	3.54	11.67	1.61
2.33	2.73	5.50	8.68	8.67	3.70	11.83	1.61
2.50	2.73	5.67	68.82	8.83	3.70	12.00	1.61
2.67	2.41	5.83	68.82	9.00	3.70		
2.83	2.41	6.00	68.82	9.17	2.41		
3.00	2.41	6.17	17.53	9.33	2.41		

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-----
| CALIB |
| NASHYD ( 0100) |      Area (ha)= 27.26      Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min |      Ia (mm)= 12.80      # of Linear Res.(N)= 3.00
-----
|            |      U.H. Tp(hrs)= 0.91
  
```

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41

0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.599 (i)

TIME TO PEAK (hrs)= 7.167

RUNOFF VOLUME (mm)= 23.714

TOTAL RAINFALL (mm)= 80.400

RUNOFF COEFFICIENT = 0.295

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

---

CALIB			
STANDHYD ( 0110)	Area (ha)=	0.65	
ID= 1 DT= 5.0 min	Total Imp(%)=	44.00	Dir. Conn.(%)= 44.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		

3.083    2.41 | 6.167    68.82 | 9.250    2.41 |

Max.Eff.Inten.(mm/hr)=	68.82	19.05	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.31 (ii)	19.07 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.30	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.05	0.01	0.065 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	79.40	20.07	46.16
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.25	0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0    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 ( 0003) |
| 1 + 2 = 3      |
-----
| AREA      QPEAK   TPEAK   R.V.
| (ha)      (cms)   (hrs)   (mm)
|-----|
| ID1= 1 ( 0100): 27.26  0.599   7.17   23.71
| + ID2= 2 ( 0110): 0.65  0.065   6.17   46.16
|=====|
| ID = 3 ( 0003): 27.91  0.610   7.17   24.24

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 1.32  Curve Number (CN)= 73.0
| Ia (mm)= 9.90   # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.13

```

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

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----- TRANSFORMED HYETOGRAPH -----
| TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
| hrs     mm/hr | hrs     mm/hr | hrs     mm/hr | hrs     mm/hr
|-----|
| 0.083   0.00 | 3.167   2.41 | 6.250  17.53 | 9.33    2.41
| 0.167   0.00 | 3.250   3.22 | 6.333  17.53 | 9.42    2.41
| 0.250   2.41 | 3.333   3.22 | 6.417  17.53 | 9.50    2.41

```

0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.110 (i)

TIME TO PEAK (hrs)= 6.167

RUNOFF VOLUME (mm)= 29.925

TOTAL RAINFALL (mm)= 80.400

RUNOFF COEFFICIENT = 0.372

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

---

CALIB			
STANDHYD ( 0120)	Area (ha)=	0.92	
ID= 1 DT= 5.0 min	Total Imp(%)=	37.00	Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		

3.083    2.41 | 6.167    68.82 | 9.250    2.41 |

Max.Eff.Inten.(mm/hr)=	68.82	19.05	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.56 (ii)	19.32 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.29	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.07	0.02	0.082 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	79.40	20.07	42.01
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.25	0.52

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0    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 ( 0023) |
| 1 + 2 = 3      |
-----
| AREA      QPEAK   TPEAK   R.V.
| (ha)      (cms)   (hrs)   (mm)
|-----|
| ID1= 1 ( 0111): 1.32  0.110  6.17  29.92
| + ID2= 2 ( 0120): 0.92  0.082  6.17  42.01
|=====|
| ID = 3 ( 0023): 2.24  0.193  6.17  34.89

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 18.61
| Total Imp(%)= 21.00  Dir. Conn.(%)= 21.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 21.67  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 6.31 (ii) 21.96 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.74 0.55 1.141 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.42 6.17  
 RUNOFF VOLUME (mm)= 79.40 22.67 34.58

TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
 RUNOFF COEFFICIENT = 0.99 0.28 0.43

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 59.0 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 ( 0130):	18.61	1.141	6.17	34.58
+ ID2= 2 ( 0023):	2.24	0.193	6.17	34.89
=====				
ID = 3 ( 0006):	20.85	1.334	6.17	34.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0160)	0.08	
ID= 1 DT= 5.0 min	Total Imp(%)= 59.00	59.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	22.79	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93

0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 30.82  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.22 (ii) 15.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 30.00 58.99  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.37 0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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			
NASHYD ( 0150)	Area (ha)=	15.54	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)=	9.50	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.38	

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 0.789 (i)  
TIME TO PEAK (hrs)= 6.417  
RUNOFF VOLUME (mm)= 30.489  
TOTAL RAINFALL (mm)= 80.400  
RUNOFF COEFFICIENT = 0.379

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

-----  
| CALIB |  
| STANDHYD ( 0140) | Area (ha)= 4.69  
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77

1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 20.96  
over (min) 5.00 25.00  
Storage Coeff. (min)= 4.18 (ii) 20.03 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.24 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.39 0.10 0.459 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 79.40 21.97 46.66  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.27 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.35  
Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)=	68.82	19.05
over (min)	5.00	20.00
Storage Coeff. (min)=	1.92 (ii)	18.68 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.06

\*TOTALS\*

PEAK FLOW	(cms)=	0.03	0.01	0.032 (iii)
TIME TO PEAK	(hrs)=	6.08	6.33	6.17
RUNOFF VOLUME	(mm)=	79.40	20.07	43.18
TOTAL RAINFALL	(mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT	=	0.99	0.25	0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140): 4.69  0.459  6.17  46.66 |
| + ID2= 2 ( 0190): 0.35  0.032  6.17  43.18 |
|=====|
| ID = 3 ( 0009): 5.04  0.491  6.17  46.42 |
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.38 |
| Total Imp(%)= 47.00 |
| Dir. Conn.(%)= 47.00 |
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

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----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN |
| hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr |
-----
| 0.083  0.00 | 3.167  2.41 | 6.250 17.53 | 9.33  2.41 |
| 0.167  0.00 | 3.250  3.22 | 6.333 17.53 | 9.42  2.41 |
| 0.250  2.41 | 3.333  3.22 | 6.417 17.53 | 9.50  2.41 |
| 0.333  2.41 | 3.417  3.22 | 6.500 17.53 | 9.58  2.41 |
| 0.417  2.41 | 3.500  3.22 | 6.583 17.53 | 9.67  2.41 |
-----

```

0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)=	68.82	19.05
over (min)	5.00	20.00
Storage Coeff. (min)=	1.96 (ii)	18.73 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.06

			*TOTALS*
PEAK FLOW (cms)=	0.03	0.01	0.040 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	79.40	20.07	47.93
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.25	0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0200):  0.38  0.040  6.17  47.93
+ ID2= 2 ( 0009):  5.04  0.491  6.17  46.42
=====
ID = 3 ( 0011):  5.42  0.532  6.17  46.53
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0014) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0011):  5.42  0.532  6.17  46.53
+ ID2= 2 ( 0150): 15.54  0.789  6.42  30.49
=====
ID = 3 ( 0014): 20.96  1.119  6.17  34.64
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB
| STANDHYD ( 0170) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.06
Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00
  
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41

0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)=	68.82	45.15
over (min)	5.00	15.00
Storage Coeff. (min)=	1.12 (ii)	12.99 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.010 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	79.40	43.35	68.47
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.54	0.85

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 82.0    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 ( 0180) | Area (ha)= 0.13
| ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61

2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 45.15  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.42 (ii) 13.30 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.020 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 79.40 43.35 65.63  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.54 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05  
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----  
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN  
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr

0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)=	68.82	19.05
over (min)	5.00	20.00
Storage Coeff. (min)=	1.04 (ii)	17.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	79.40	20.07	44.22
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.25	0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77

2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.11 (ii) 17.87 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 44.82  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.005	6.17	44.22
+ ID2= 2 ( 0220):	0.06	0.006	6.17	44.82
=====				
ID = 3 ( 0020):	0.11	0.011	6.17	44.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

| CALIB |

| STANDHYD ( 0230) | Area (ha)= 0.05  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61

2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.04 (ii) 17.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 46.61  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0020):  0.11  0.011  6.17  44.55
+ ID2= 2 ( 0230):  0.05  0.005  6.17  46.61
=====
ID = 3 ( 0021):  0.16  0.016  6.17  45.19

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

  000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
  0  0  T  T  H  H  Y  Y  MM  MM  0  0
  0  0  T  T  H  H  Y  M  M  0  0
  000  T  T  H  H  Y  M  M  000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\07e24761-14b4-44eb-85ac-a4d7ba2ffa86\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\07e24761-14b4-44eb-85ac-a4d7ba2ffa86\s

DATE: 12-12-2023

TIME: 10:22:29

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : 12SCS025-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\b41cefb5-a35b-4bff-82a3-3087af79db79\f94d7968
Ptotal= 93.60 mm	Comments: 12SCS025-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.74	6.33	20.40	9.50	2.81
0.17	2.81	3.33	3.74	6.50	20.40	9.67	2.25
0.33	2.81	3.50	3.74	6.67	8.99	9.83	2.25
0.50	2.81	3.67	3.74	6.83	8.99	10.00	2.25
0.67	1.31	3.83	3.74	7.00	8.99	10.17	3.18
0.83	1.31	4.00	3.74	7.17	5.99	10.33	3.18
1.00	1.31	4.17	5.05	7.33	5.99	10.50	3.18
1.17	2.43	4.33	5.05	7.50	5.99	10.67	2.06



1.33	2.43	4.50	5.05	7.67	5.24	10.83	2.06
1.50	2.43	4.67	6.36	7.83	5.24	11.00	2.06
1.67	2.43	4.83	6.36	8.00	5.24	11.17	1.87
1.83	2.43	5.00	6.36	8.17	4.12	11.33	1.87
2.00	2.43	5.17	10.11	8.33	4.12	11.50	1.87
2.17	3.18	5.33	10.11	8.50	4.12	11.67	1.87
2.33	3.18	5.50	10.11	8.67	4.31	11.83	1.87
2.50	3.18	5.67	80.12	8.83	4.31	12.00	1.87
2.67	2.81	5.83	80.12	9.00	4.31		
2.83	2.81	6.00	80.12	9.17	2.81		
3.00	2.81	6.17	20.40	9.33	2.81		

CALIB							
NASHYD ( 0100)	Area	(ha)= 27.26	Curve Number	(CN)= 67.0			
ID= 1 DT= 5.0 min	Ia	(mm)= 12.80	# of Linear Res.(N)	= 3.00			
	U.H. Tp	(hrs)= 0.91					

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87

2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.815 (i)  
 TIME TO PEAK (hrs)= 7.083  
 RUNOFF VOLUME (mm)= 31.707  
 TOTAL RAINFALL (mm)= 93.600  
 RUNOFF COEFFICIENT = 0.339

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

CALIB	
STANDHYD ( 0110)	Area (ha)= 0.65
ID= 1 DT= 5.0 min	Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25

0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.17 (ii) 16.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.02 0.079 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 55.56  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	27.26	0.815	7.08	31.71
+ ID2= 2 ( 0110):	0.65	0.079	6.17	55.56
=====				
ID = 3 ( 0003):	27.91	0.828	7.08	32.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | NASHYD ( 0111) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 1.32 Curve Number (CN)= 73.0  
 Ia (mm)= 9.90 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.13

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87

2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.145 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 39.045  
 TOTAL RAINFALL (mm)= 93.600  
 RUNOFF COEFFICIENT = 0.417

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

CALIB	
STANDHYD ( 0120)	Area (ha)= 0.92
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25

0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.41 (ii) 17.04 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.03 0.100 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 50.94  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0111):	1.32	0.145	6.17	39.05
+ ID2= 2 ( 0120):	0.92	0.100	6.17	50.94
=====				
ID = 3 ( 0023):	2.24	0.245	6.17	43.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0130) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 18.61  
 Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06

1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 30.16  
over (min) 5.00 20.00  
Storage Coeff. (min)= 5.94 (ii) 19.65 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.19 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.86 0.78 1.519 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 29.72 42.93  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.32 0.46

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):	18.61	1.519	6.17	42.93
+ ID2= 2 ( 0023):	2.24	0.245	6.17	43.93
=====				
ID = 3 ( 0006):	20.85	1.763	6.17	43.03



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0160) | Area (ha)= 0.08
| ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=      0.05      0.03
Dep. Storage (mm)=     1.00      5.00
Average Slope (%)=     1.00      2.00
Length (m)=      22.79      40.00
Mannings n      =      0.013     0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87

2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 39.79  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.15 (ii) 13.64 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.013 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 92.60 38.72 70.40  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.41 0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 |
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.38

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25

0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 1.042 (i)

TIME TO PEAK (hrs)= 6.417

RUNOFF VOLUME (mm)= 39.719

TOTAL RAINFALL (mm)= 93.600

RUNOFF COEFFICIENT = 0.424

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

CALIB			
STANDHYD ( 0140)	Area (ha)=	4.69	
ID= 1 DT= 5.0 min	Total Imp(%)=	43.00	Dir. Conn.(%)= 43.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00

Mannings n = 0.013 0.340

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 29.26  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.93 (ii) 17.81 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00

Unit Hyd. peak (cms)=	0.24	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.45	0.14	0.570 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	92.60	28.86	56.27
TOTAL RAINFALL (mm)=	93.60	93.60	93.60
RUNOFF COEFFICIENT =	0.99	0.31	0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18

1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.80 (ii) 16.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.039 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 52.24  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 |

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ID1= 1 ( 0140): AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
4.69 0.570 6.17 56.27

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+ ID2= 2 ( 0190):    0.35    0.039    6.17    52.24
=====
ID = 3 ( 0009):    5.04    0.609    6.17    55.99

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0200) | Area (ha)= 0.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87

2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.85 (ii) 16.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.01 0.048 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 57.53  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.048	6.17	57.53
+ ID2= 2 ( 0009):	5.04	0.609	6.17	55.99
=====				
ID = 3 ( 0011):	5.42	0.657	6.17	56.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0014) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
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ID1= 1 ( 0011):	5.42	0.657	6.17	56.09
+ ID2= 2 ( 0150):	15.54	1.042	6.42	39.72
=====				
ID = 3 ( 0014):	20.96	1.451	6.17	43.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0170)	Area (ha)=	0.06	
ID= 1 DT= 5.0 min	Total Imp(%)=	70.00	Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87

2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 56.33  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.05 (ii) 11.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.012 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 92.60 54.38 81.01  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.58 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180) | Area (ha)= 0.13  
| ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.05
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	29.44	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 56.33  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.34 (ii) 12.21 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.024 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 92.60 54.38 78.03  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60

RUNOFF COEFFICIENT = 0.99 0.58 0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06

1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.97 (ii) 15.61 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 53.39  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.06  
Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)=	80.12	26.77
over (min)	5.00	20.00
Storage Coeff. (min)=	1.04 (ii)	15.67 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.07

\*TOTALS\*

PEAK FLOW	(cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK	(hrs)=	6.00	6.33	6.17
RUNOFF VOLUME	(mm)=	92.60	26.48	54.05
TOTAL RAINFALL	(mm)=	93.60	93.60	93.60
RUNOFF COEFFICIENT	=	0.99	0.28	0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----

```

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.006	6.17	53.39
+ ID2= 2 ( 0220):	0.06	0.007	6.17	54.05
=====				
ID = 3 ( 0020):	0.11	0.013	6.17	53.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.05		
Total Imp(%)=	45.00	Dir. Conn.(%)=	45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81

0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.97 (ii) 15.61 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 56.04  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.60

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0020):	0.11	0.013	6.17	53.75
+ ID2= 2 ( 0230):	0.05	0.006	6.17	56.04
=====				
ID = 3 ( 0021):	0.16	0.019	6.17	54.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
=====
=====
V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL
```

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\171385b7-3015-4448-a945-159f54a31d10\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\171385b7-3015-4448-a945-159f54a31d10\s

DATE: 12-12-2023

TIME: 10:22:29

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS050-2073 \*\*  
\*\*\*\*\*

-----  
| READ STORM | Filename: C:\Users\caeh076182\AppData  
| | ata\Local\Temp\  
| | b41cefb5-a35b-4bff-82a3-3087af79db79\580c1935  
| Ptotal=103.20 mm | Comments: 12SCS050-2073  
-----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	4.13	6.33	22.50	9.50	3.10
0.17	3.10	3.33	4.13	6.50	22.50	9.67	2.48
0.33	3.10	3.50	4.13	6.67	9.91	9.83	2.48
0.50	3.10	3.67	4.13	6.83	9.91	10.00	2.48
0.67	1.44	3.83	4.13	7.00	9.91	10.17	3.51
0.83	1.44	4.00	4.13	7.17	6.60	10.33	3.51
1.00	1.44	4.17	5.57	7.33	6.60	10.50	3.51
1.17	2.68	4.33	5.57	7.50	6.60	10.67	2.27
1.33	2.68	4.50	5.57	7.67	5.78	10.83	2.27
1.50	2.68	4.67	7.02	7.83	5.78	11.00	2.27
1.67	2.68	4.83	7.02	8.00	5.78	11.17	2.06
1.83	2.68	5.00	7.02	8.17	4.54	11.33	2.06
2.00	2.68	5.17	11.15	8.33	4.54	11.50	2.06
2.17	3.51	5.33	11.15	8.50	4.54	11.67	2.06
2.33	3.51	5.50	11.15	8.67	4.75	11.83	2.06
2.50	3.51	5.67	88.34	8.83	4.75	12.00	2.06
2.67	3.10	5.83	88.34	9.00	4.75		
2.83	3.10	6.00	88.34	9.17	3.10		
3.00	3.10	6.17	22.50	9.33	3.10		

-----  
| CALIB |  
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0  
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00  
-----  
U.H. Tp(hrs)= 0.91

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.984 (i)

TIME TO PEAK (hrs)= 7.083

RUNOFF VOLUME (mm)= 37.921

TOTAL RAINFALL (mm)= 103.200

RUNOFF COEFFICIENT = 0.367

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

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-----
| CALIB |
| STANDHYD ( 0110) | Area (ha)= 0.65
| ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.29      0.36
Dep. Storage    (mm)=          1.00      5.00
Average Slope   (%)=          1.00      2.00
Length          (m)=         65.83     40.00
Mannings n      =           0.013     0.350

```

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06

2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.09 (ii) 15.73 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.07 0.02 0.089 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 102.20 31.51 62.60  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.31 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0100):  27.26  0.984    7.08    37.92
+ ID2= 2 ( 0110):   0.65  0.089    6.17    62.60
=====
ID = 3 ( 0003):  27.91  0.999    7.08    38.50

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 1.32 Curve Number (CN)= 73.0
Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.171 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 46.028  
 TOTAL RAINFALL (mm)= 103.200  
 RUNOFF COEFFICIENT = 0.446

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

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-----
| CALIB |
| STANDHYD ( 0120) | Area (ha)= 0.92
| ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.34      0.58
Dep. Storage    (mm)=          1.00      5.00
Average Slope   (%)=          1.00      2.00
Length          (m)=         78.32     40.00
Mannings n      =           0.013     0.350

```

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06

2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.32 (ii) 15.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.04 0.114 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 102.20 31.51 57.66  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.31 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0111):	1.32	0.171	6.17	46.03
+ ID2= 2 ( 0120):	0.92	0.114	6.17	57.66
=====				
ID = 3 ( 0023):	2.24	0.284	6.17	50.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----

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Area (ha)=	18.61		
Total Imp(%)=	21.00	Dir. Conn.(%)=	21.00

Surface Area (ha)=	IMPERVIOUS 3.91	PERVIOUS (i) 14.70
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Dep. Storage (mm)= 1.00 4.80  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 352.23 40.00  
 Mannings n = 0.013 0.340

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max. Eff. Inten. (mm/hr)= 88.34 35.77

over (min)	5.00	20.00	
Storage Coeff. (min)=	5.71 (ii)	18.52 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.20	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.95	0.95	1.762 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	102.20	35.22	49.29
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.34	0.48

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 59.0 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 ( 0130):  18.61  1.762  6.17  49.29
+ ID2= 2 ( 0023):   2.24  0.284  6.17  50.80
=====
ID = 3 ( 0006):  20.85  2.046  6.17  49.45

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.08
Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	22.79	40.00	
Mannings n =	0.013	0.350	

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 3.167 3.10 | 6.250 22.50 | 9.33 3.10

```

0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)=	88.34	46.66
over (min)	5.00	15.00
Storage Coeff. (min)=	1.11 (ii)	12.82 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.015 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	102.20	45.42	78.84
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.44	0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0    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 |
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.38

```

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06

2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 1.236 (i)  
 TIME TO PEAK (hrs)= 6.417  
 RUNOFF VOLUME (mm)= 46.782  
 TOTAL RAINFALL (mm)= 103.200  
 RUNOFF COEFFICIENT = 0.453

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

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-----			
CALIB			
STANDHYD ( 0140)	Area (ha)=	4.69	
ID= 1 DT= 5.0 min	Total Imp(%)=	43.00	Dir. Conn.(%)= 43.00
-----			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51

1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 34.75  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.78 (ii) 16.73 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.25 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.49 0.17 0.644 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 102.20 34.24 63.46  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.33 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35  
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		

3.083    3.10 | 6.167    88.34 | 9.250    3.10 |

Max.Eff.Inten.(mm/hr)=	88.34	31.88	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.73 (ii)	15.38 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.03	0.01	0.045 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	102.20	31.51	59.05
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.31	0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0    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 ( 0140): 4.69   0.644   6.17   63.46
| + ID2= 2 ( 0190): 0.35   0.045   6.17   59.05
|=====|
| ID = 3 ( 0009): 5.04   0.689   6.17   63.15

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.38
| Total Imp(%)= 47.00   Dir. Conn.(%)= 47.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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



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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.78 (ii) 15.42 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.32 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.01 0.054 (iii)  
 TIME TO PEAK (hrs)= 6.08 6.33 6.17  
 RUNOFF VOLUME (mm)= 102.20 31.51 64.71

TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
 RUNOFF COEFFICIENT = 0.99 0.31 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.054	6.17	64.71
+ ID2= 2 ( 0009):	5.04	0.689	6.17	63.15
=====				
ID = 3 ( 0011):	5.42	0.743	6.17	63.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD ( 0014) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0011):	5.42	0.743	6.17	63.26
+ ID2= 2 ( 0150):	15.54	1.236	6.42	46.78
=====				
ID = 3 ( 0014):	20.96	1.697	6.17	51.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0170) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.06		
Total Imp(%)=	70.00	Dir. Conn.(%)=	70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max. Eff. Inten. (mm/hr)= 88.34 64.61  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.01 (ii) 11.30 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.013 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17

RUNOFF VOLUME	(mm)=	102.20	62.64	90.20
TOTAL RAINFALL	(mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT	=	0.99	0.61	0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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	Area	(ha)=	0.13		
STANDHYD ( 0180)	Total Imp(%)=	62.00	Dir. Conn.(%)=	62.00	
ID= 1 DT= 5.0 min					

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27

1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 64.61  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.29 (ii) 11.57 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.027 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 102.20 62.64 87.12  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.61 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.05  
Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00

Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.94 (ii) 14.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00

Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	102.20	31.51	60.30
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.31	0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.32	40.00
Mannings n =	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51

1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.00 (ii) 14.64 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 102.20 31.51 61.06  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.31 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |  
| 1 + 2 = 3 |

-----  
ID1= 1 ( 0210): AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
0.05 0.007 6.17 60.30



```

+ ID2= 2 ( 0220):    0.06  0.008  6.17  61.06
=====
ID = 3 ( 0020):    0.11  0.015  6.17  60.71

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0230) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06

2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.94 (ii) 14.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.007 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 102.20 31.51 63.14  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.31 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0020):	0.11	0.015	6.17	60.71
+ ID2= 2 ( 0230):	0.05	0.007	6.17	63.14
=====				
ID = 3 ( 0021):	0.16	0.022	6.17	61.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d  
954e7c8-d7cd-4ad6-8ab3-7cbb383a835b\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d  
954e7c8-d7cd-4ad6-8ab3-7cbb383a835b\s

DATE: 12-12-2023

TIME: 10:22:33

USER:

COMMENTS: \_\_\_\_\_

-----  
\*\*\*\*\*  
\*\* SIMULATION : 12SCS100-2073 \*\*  
\*\*\*\*\*

-----  
| READ STORM | Filename: C:\Users\caeh076182\AppData  
| | ata\Local\Temp\  
| | b41cefb5-a35b-4bff-82a3-3087af79db79\ca259ca46  
| Ptotal=112.80 mm | Comments: 12SCS100-2073  
-----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.00	0.00	3.17	4.51	6.33	24.59	9.50	3.38
0.17	3.38	3.33	4.51	6.50	24.59	9.67	2.71
0.33	3.38	3.50	4.51	6.67	10.83	9.83	2.71
0.50	3.38	3.67	4.51	6.83	10.83	10.00	2.71
0.67	1.58	3.83	4.51	7.00	10.83	10.17	3.84
0.83	1.58	4.00	4.51	7.17	7.22	10.33	3.84
1.00	1.58	4.17	6.09	7.33	7.22	10.50	3.84
1.17	2.93	4.33	6.09	7.50	7.22	10.67	2.48
1.33	2.93	4.50	6.09	7.67	6.32	10.83	2.48
1.50	2.93	4.67	7.67	7.83	6.32	11.00	2.48
1.67	2.93	4.83	7.67	8.00	6.32	11.17	2.26
1.83	2.93	5.00	7.67	8.17	4.96	11.33	2.26
2.00	2.93	5.17	12.18	8.33	4.96	11.50	2.26
2.17	3.84	5.33	12.18	8.50	4.96	11.67	2.26
2.33	3.84	5.50	12.18	8.67	5.19	11.83	2.26
2.50	3.84	5.67	96.56	8.83	5.19	12.00	2.26
2.67	3.38	5.83	96.56	9.00	5.19		
2.83	3.38	6.00	96.56	9.17	3.38		
3.00	3.38	6.17	24.59	9.33	3.38		

CALIB							
NASHYD ( 0100)	Area (ha)=	27.26	Curve Number (CN)=	67.0			
ID= 1 DT= 5.0 min	Ia (mm)=	12.80	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.91					

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84

1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 1.162 (i)  
 TIME TO PEAK (hrs)= 7.083  
 RUNOFF VOLUME (mm)= 44.423  
 TOTAL RAINFALL (mm)= 112.800  
 RUNOFF COEFFICIENT = 0.394

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

-----			
-----			
CALIB			
STANDHYD ( 0110)	Area (ha)=	0.65	
ID= 1 DT= 5.0 min	Total Imp(%)=	44.00	Dir. Conn.(%)= 44.00
-----			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.02 (ii) 14.83 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.03 0.103 (iii)  
 TIME TO PEAK (hrs)= 6.08 6.25 6.17  
 RUNOFF VOLUME (mm)= 111.80 36.82 69.80  
 TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
 RUNOFF COEFFICIENT = 0.99 0.33 0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	27.26	1.162	7.08	44.42
+ ID2= 2 ( 0110):	0.65	0.103	6.17	69.80
=====				
ID = 3 ( 0003):	27.91	1.178	7.08	45.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
-----

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Area (ha)=	1.32	Curve Number (CN)=	73.0
Ia (mm)=	9.90	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.13		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84

1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.197 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 53.257  
 TOTAL RAINFALL (mm)= 112.800  
 RUNOFF COEFFICIENT = 0.472

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

CALIB			
STANDHYD ( 0120)	Area (ha)=	0.92	
ID= 1 DT= 5.0 min	Total Imp(%)=	37.00	Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN



hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.24 (ii) 15.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.09 0.04 0.128 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 111.80 36.82 64.55  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.33 0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023) |
| 1 + 2 = 3      |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0111):	1.32	0.197	6.17	53.26
+ ID2= 2 ( 0120):	0.92	0.128	6.17	64.55
=====				
ID = 3 ( 0023):	2.24	0.325	6.17	57.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB          |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	18.61		
Total Imp(%)=	21.00	Dir. Conn.(%)=	21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

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

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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71

0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 41.67  
over (min) 5.00 20.00  
Storage Coeff. (min)= 5.51 (ii) 17.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.20 0.06

\*TOTALS\*

PEAK FLOW (cms)= 1.04 1.13 2.018 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 111.80 41.00 55.87  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.36 0.50

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):	18.61	2.018	6.17	55.87
+ ID2= 2 ( 0023):	2.24	0.325	6.17	57.90
=====				
ID = 3 ( 0006):	20.85	2.344	6.17	56.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD ( 0160)	
ID= 1 DT= 5.0 min	
Area (ha)=	0.08
Total Imp(%)=	59.00
Dir. Conn.(%)=	59.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	22.79	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48

1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 53.76  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.07 (ii) 12.14 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.016 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 111.80 52.37 87.35  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.46 0.77

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 |  
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0  
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00  
|-----| U.H. Tp(hrs)= 0.38

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38

0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 1.438 (i)

TIME TO PEAK (hrs)= 6.417

RUNOFF VOLUME (mm)= 54.091

TOTAL RAINFALL (mm)= 112.800

RUNOFF COEFFICIENT = 0.480

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

| STANDHYD ( 0140) | Area (ha)= 4.69  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26

2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)=	96.56	40.52	
over (min)	5.00	20.00	
Storage Coeff. (min)=	3.65 (ii)	15.83 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.25	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.54	0.21	0.721 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	111.80	39.89	70.81
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.35	0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190)	Area (ha)= 0.35
ID= 1 DT= 5.0 min	Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71



0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.67 (ii) 14.49 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.02 0.052 (iii)  
TIME TO PEAK (hrs)= 6.08 6.25 6.17  
RUNOFF VOLUME (mm)= 111.80 36.82 66.04  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.33 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140):	4.69	0.721	6.17	70.81
+ ID2= 2 ( 0190):	0.35	0.052	6.17	66.04
=====				
ID = 3 ( 0009):	5.04	0.773	6.17	70.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0200) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.38  
 Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48

1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.72 (ii) 14.53 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.05 0.02 0.062 (iii)  
TIME TO PEAK (hrs)= 6.08 6.25 6.17  
RUNOFF VOLUME (mm)= 111.80 36.82 72.03  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.33 0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.062	6.17	72.03
+ ID2= 2 ( 0009):	5.04	0.773	6.17	70.48
=====				
ID = 3 ( 0011):	5.42	0.835	6.17	70.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0014)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0011):	5.42	0.835	6.17	70.59
+ ID2= 2 ( 0150):	15.54	1.438	6.42	54.09
=====				
ID = 3 ( 0014):	20.96	1.956	6.17	58.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		STANDHYD ( 0170)	
ID= 1 DT= 5.0 min			
Area	(ha)=	0.06	
Total Imp	(%)=	70.00	Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)= 0.04	0.02
Dep. Storage	(mm)= 1.00	5.00
Average Slope	(%)= 1.00	2.00
Length	(m)= 19.61	40.00
Mannings n	= 0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84

1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 74.71  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.97 (ii) 10.68 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.014 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 111.80 71.05 99.43  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.63 0.88

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180) | Area (ha)= 0.13  
| ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00  
-----

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.08 0.05  
Dep. Storage (mm)= 1.00 5.00

Average Slope (%)= 1.00 2.00  
 Length (m)= 29.44 40.00  
 Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max. Eff. Inten. (mm/hr)= 96.56 74.71  
 over (min) 5.00 15.00

Storage Coeff. (min)=	1.24 (ii)	10.95 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.09	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.01	0.030 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	111.80	71.05	96.26
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.63	0.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	17.32	40.00	
Mannings n =	0.013	0.350	

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84

1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.90 (ii) 13.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 111.80 36.82 67.35  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.33 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		

3.083    3.38 | 6.167    96.56 | 9.250    3.38 |

Max.Eff.Inten.(mm/hr)=	96.56	37.29	
over (min)	5.00	15.00	
Storage Coeff. (min)=	0.97 (ii)	13.78 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	111.80	36.82	68.16
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.33	0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0    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 ( 0020) |
| 1 + 2 = 3      |
-----
|                | AREA   QPEAK   TPEAK   R.V.
|                | (ha)   (cms)   (hrs)   (mm)
| ID1= 1 ( 0210):| 0.05  0.008   6.17   67.35
| + ID2= 2 ( 0220):| 0.06  0.009   6.17   68.16
|=====|
| ID = 3 ( 0020):| 0.11  0.017   6.17   67.79

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB          |
| STANDHYD ( 0230)| Area   (ha)= 0.05
| ID= 1 DT= 5.0 min| Total Imp(%)= 45.00  Dir. Conn.(%)= 45.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 0.90 (ii) 13.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
 TIME TO PEAK (hrs)= 6.00 6.25 6.17  
 RUNOFF VOLUME (mm)= 111.80 36.82 70.36

TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
 RUNOFF COEFFICIENT = 0.99 0.33 0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0021)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0020):	0.11	0.017	6.17	67.79
+ ID2= 2 ( 0230):	0.05	0.008	6.17	70.36
=====				
ID = 3 ( 0021):	0.16	0.025	6.17	68.59

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 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A  L
VV    I   SSSSS  UUUUU  A   A  LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\48ac6263-e4d0-4ef4-8f4f-6e207a2652a8\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\48ac6263-e4d0-4ef4-8f4f-6e207a2652a8\s

DATE: 12-12-2023

TIME: 10:22:31

USER:

COMMENTS: \_\_\_\_\_

```

*****
** SIMULATION : Chicago 3hrs_002-2073      **
*****

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| READ STORM | Filename: C:\Users\caeh076182\AppData
|            |   ata\Local\Temp\
|            |   b41cefb5-a35b-4bff-82a3-3087af79db79\8a869b05
| Ptotal= 35.00 mm | Comments: Chicago 3hrs_002-2073
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	24.98	1.67	6.86	2.50	2.12
0.17	1.96	1.00	79.04	1.83	5.02	2.67	1.81
0.33	2.80	1.17	33.41	2.00	3.86	2.83	1.57
0.50	4.43	1.33	16.59	2.17	3.08	3.00	1.38
0.67	8.46	1.50	10.08	2.33	2.53		

```

-----
| CALIB |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
|            | U.H. Tp(hrs)= 0.91
-----

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12

0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.115 (i)  
 TIME TO PEAK (hrs)= 2.500  
 RUNOFF VOLUME (mm)= 3.346  
 TOTAL RAINFALL (mm)= 35.000  
 RUNOFF COEFFICIENT = 0.096

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78	
over (min)	5.00	35.00	
Storage Coeff. (min)=	2.18 (ii)	31.34 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.31	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.06	0.00	0.063 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	17.05
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0003) |
| 1 + 2 = 3      |
-----
                AREA    QPEAK    TPEAK    R.V.
                (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0100):  27.26  0.115   2.50    3.35
+ ID2= 2 ( 0110):  0.65  0.063   1.17    17.05
=====
ID = 3 ( 0003):  27.91  0.119   2.50    3.66

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
-----
                U.H. Tp(hrs)= 0.13

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
hrs     mm/hr | hrs     mm/hr | hrs     mm/hr | hrs     mm/hr
0.083   0.00 | 0.917   24.98 | 1.750   6.86 | 2.58    2.12
0.167   0.00 | 1.000   24.98 | 1.833   6.86 | 2.67    2.12
0.250   1.96 | 1.083   79.04 | 1.917   5.02 | 2.75    1.81
0.333   1.96 | 1.167   79.04 | 2.000   5.02 | 2.83    1.81
0.417   2.80 | 1.250   33.41 | 2.083   3.86 | 2.92    1.57

```

0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.026 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 5.240  
 TOTAL RAINFALL (mm)= 35.000  
 RUNOFF COEFFICIENT = 0.150

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

CALIB	
STANDHYD ( 0120)	Area (ha)= 0.92
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)= 79.04 4.78  
 over (min) 5.00 35.00  
 Storage Coeff. (min)= 2.42 (ii) 31.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00



Unit Hyd. peak (cms)=	0.30	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.07	0.00	0.074 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	14.95
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.43

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023) |
| 1 + 2 = 3 |
-----
|          AREA   QPEAK   TPEAK   R.V.
|          (ha)   (cms)   (hrs)   (mm)
| ID1= 1 ( 0111):  1.32  0.026  1.33  5.24
| + ID2= 2 ( 0120):  0.92  0.074  1.17  14.95
|=====
| ID = 3 ( 0023):  2.24  0.088  1.17  9.23

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 18.61
| Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70	
Dep. Storage (mm)=	1.00	4.80	
Average Slope (%)=	1.00	2.00	
Length (m)=	352.23	40.00	
Mannings n =	0.013	0.340	

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN
|  hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr
| 0.083  0.00 | 0.917  24.98 | 1.750  6.86 | 2.58  2.12
| 0.167  0.00 | 1.000  24.98 | 1.833  6.86 | 2.67  2.12
| 0.250  1.96 | 1.083  79.04 | 1.917  5.02 | 2.75  1.81

```

0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)= 79.04 5.60  
over (min) 5.00 35.00  
Storage Coeff. (min)= 5.97 (ii) 32.86 (ii)  
Unit Hyd. Tpeak (min)= 5.00 35.00  
Unit Hyd. peak (cms)= 0.19 0.03

\*TOTALS\*

PEAK FLOW (cms)= 0.74 0.12 0.753 (iii)  
TIME TO PEAK (hrs)= 1.17 1.83 1.17  
RUNOFF VOLUME (mm)= 34.00 4.41 10.62  
TOTAL RAINFALL (mm)= 35.00 35.00 35.00  
RUNOFF COEFFICIENT = 0.97 0.13 0.30

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):	18.61	0.753	1.17	10.62
+ ID2= 2 ( 0023):	2.24	0.088	1.17	9.23
=====				
ID = 3 ( 0006):	20.85	0.841	1.17	10.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.08
STANDHYD ( 0160)	Total Imp(%)=	59.00	Dir. Conn.(%)= 59.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	22.79	40.00

Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)= 79.04 8.61  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 1.16 (ii) 24.19 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.34 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.67 1.17  
 RUNOFF VOLUME (mm)= 34.00 6.24 22.44  
 TOTAL RAINFALL (mm)= 35.00 35.00 35.00  
 RUNOFF COEFFICIENT = 0.97 0.18 0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 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 |  
 | NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.38

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 0.191 (i)  
 TIME TO PEAK (hrs)= 1.750  
 RUNOFF VOLUME (mm)= 5.443  
 TOTAL RAINFALL (mm)= 35.000  
 RUNOFF COEFFICIENT = 0.156

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

-----  
 | CALIB |  
 | STANDHYD ( 0140) |  
ID= 1 DT= 5.0 min

Area (ha)= 4.69  
 Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38

0.750	8.46	1.583	10.08	2.417	2.53
0.833	8.46	1.667	10.08	2.500	2.53

Max.Eff.Inten.(mm/hr)=	79.04	5.36
over (min)	5.00	35.00
Storage Coeff. (min)=	3.95 (ii)	31.30 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.24	0.03

\*TOTALS\*

PEAK FLOW (cms)=	0.42	0.02	0.420 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	4.23	17.03
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.12	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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	Area (ha)=	0.35
STANDHYD ( 0190)	Total Imp(%)=	39.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	39.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38

0.750	8.46	1.583	10.08	2.417	2.53
0.833	8.46	1.667	10.08	2.500	2.53

Max.Eff.Inten.(mm/hr)=	79.04	4.78	
over (min)	5.00	35.00	
Storage Coeff. (min)=	1.81 (ii)	30.97 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.32	0.04	
			*TOTALS*
PEAK FLOW (cms)=	0.03	0.00	0.030 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	15.52
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.44

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0140): 4.69  0.420  1.17  17.03
| + ID2= 2 ( 0190): 0.35  0.030  1.17  15.52
|=====|
| ID = 3 ( 0009): 5.04  0.450  1.17  16.92

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.38
| Total Imp(%)= 47.00  Dir. Conn.(%)= 47.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)= 79.04 4.78  
 over (min) 5.00 35.00  
 Storage Coeff. (min)= 1.86 (ii) 31.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00  
 Unit Hyd. peak (cms)= 0.32 0.03

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.00 0.039 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.83 1.17  
 RUNOFF VOLUME (mm)= 34.00 3.78 17.94  
 TOTAL RAINFALL (mm)= 35.00 35.00 35.00  
 RUNOFF COEFFICIENT = 0.97 0.11 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0011) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.039	1.17	17.94
+ ID2= 2 ( 0009):	5.04	0.450	1.17	16.92
=====				
ID = 3 ( 0011):	5.42	0.489	1.17	17.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -----

ADD HYD ( 0014)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0011):	5.42	0.489	1.17	17.00
+ ID2= 2 ( 0150):	15.54	0.191	1.75	5.44
=====				
ID = 3 ( 0014):	20.96	0.509	1.17	8.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.06
STANDHYD ( 0170)	Total Imp(%)=	70.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	16.79
over (min)	5.00	20.00
Storage Coeff. (min)=	1.06 (ii)	18.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	34.00	10.49	26.82
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.30	0.77



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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180) | Area (ha)= 0.13
| ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	16.79
over (min)	5.00	20.00
Storage Coeff. (min)=	1.35 (ii)	18.98 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.33	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.018 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	34.00	10.49	24.99
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.30	0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00
Storage Coeff. (min)=	0.98 (ii)	30.14 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.34	0.04

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	15.90
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.45

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00
Storage Coeff. (min)=	1.05 (ii)	30.20 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.34	0.04

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	16.21
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.46

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3      |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0210):	0.05	0.005	1.17	15.90
+ ID2= 2 ( 0220):	0.06	0.006	1.17	16.21
=====				
ID = 3 ( 0020):	0.11	0.010	1.17	16.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.05
Total Imp(%)=	45.00
Dir. Conn.(%)=	45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

```

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

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78	
over (min)	5.00	35.00	
Storage Coeff. (min)=	0.98 (ii)	30.14 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.34	0.04	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	17.13
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0020):  0.11  0.010  1.17  16.07
+ ID2= 2 ( 0230):  0.05  0.005  1.17  17.13
=====
ID = 3 ( 0021):  0.16  0.015  1.17  16.40

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
=====
V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
VV   I  SSSSS  UUUUU  A  A  LLLLL
000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM MM 0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\3265083-e35f-4217-81f2-9d93618c7076\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\3265083-e35f-4217-81f2-9d93618c7076\s

DATE: 12-12-2023

TIME: 10:22:34

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----  
 \*\*\*\*\*  
 \*\* SIMULATION : Chicago 3hrs\_005-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\
Ptotal= 45.60 mm	b41cefb5-a35b-4bff-82a3-3087af79db79\c5348a04
	Comments: Chicago 3hrs_005-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	32.55	1.67	8.94	2.50	2.77
0.17	2.56	1.00	102.98	1.83	6.54	2.67	2.36
0.33	3.65	1.17	43.53	2.00	5.03	2.83	2.05
0.50	5.77	1.33	21.61	2.17	4.01	3.00	1.80
0.67	11.02	1.50	13.14	2.33	3.30		

-----  
 -----  

CALIB	Area	(ha)=	27.26	Curve Number	(CN)=	67.0
NASHYD (0100)						

|ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.91

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.238 (i)  
 TIME TO PEAK (hrs)= 2.417  
 RUNOFF VOLUME (mm)= 6.813  
 TOTAL RAINFALL (mm)= 45.600  
 RUNOFF COEFFICIENT = 0.149

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

-----  
 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77

0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 9.15  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.96 (ii) 24.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.01 0.082 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 44.60 6.64 23.32  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.15 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	27.26	0.238	2.42	6.81
+ ID2= 2 ( 0110):	0.65	0.082	1.17	23.32
=====				
ID = 3 ( 0003):	27.91	0.243	2.42	7.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	1.32	Curve Number (CN)=	73.0
Ia (mm)=	9.90	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.13		

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



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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.051 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 9.733  
 TOTAL RAINFALL (mm)= 45.600  
 RUNOFF COEFFICIENT = 0.213

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0120) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.92  
 Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05

0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 9.15  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.18 (ii) 24.66 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.10 0.01 0.098 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 44.60 6.64 20.67  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.15 0.45

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0111):	1.32	0.051	1.33	9.73
+ ID2= 2 ( 0120):	0.92	0.098	1.17	20.67
=====				
ID = 3 ( 0023):	2.24	0.131	1.17	14.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0130)	18.61	
ID= 1 DT= 5.0 min	Total Imp(%)= 21.00	Dir. Conn.(%)= 21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 11.85  
 over (min) 5.00 30.00  
 Storage Coeff. (min)= 5.37 (ii) 25.30 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.21 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.99 0.25 1.027 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.67 1.17  
 RUNOFF VOLUME (mm)= 44.60 7.66 15.42  
 TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
 RUNOFF COEFFICIENT = 0.98 0.17 0.34

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 59.0 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 ( 0130):	18.61	1.027	1.17	15.42
+ ID2= 2 ( 0023):	2.24	0.131	1.17	14.22
=====				
ID = 3 ( 0006):	20.85	1.158	1.17	15.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0160) | Area (ha)= 0.08
| ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.05          0.03
Dep. Storage    (mm)=          1.00          5.00
Average Slope   (%)=          1.00          2.00
Length          (m)=          22.79         40.00
Mannings n      =             0.013         0.350

```

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

```

                ----- TRANSFORMED HYETOGRAPH -----
                TIME      RAIN | TIME      RAIN | TIME      RAIN | TIME      RAIN
                hrs      mm/hr | hrs      mm/hr | hrs      mm/hr | hrs      mm/hr
0.083      0.00 | 0.917    32.55 | 1.750     8.94 | 2.58     2.77
0.167      0.00 | 1.000    32.55 | 1.833     8.94 | 2.67     2.77
0.250      2.56 | 1.083   102.98 | 1.917     6.54 | 2.75     2.36
0.333      2.56 | 1.167   102.98 | 2.000     6.54 | 2.83     2.36
0.417      3.65 | 1.250    43.53 | 2.083     5.03 | 2.92     2.05
0.500      3.65 | 1.333    43.53 | 2.167     5.03 | 3.00     2.05
0.583      5.77 | 1.417    21.61 | 2.250     4.01 | 3.08     1.80
0.667      5.77 | 1.500    21.61 | 2.333     4.01 | 3.17     1.80
0.750     11.02 | 1.583    13.14 | 2.417     3.30 |
0.833     11.02 | 1.667    13.14 | 2.500     3.30 |

```

```

Max.Eff.Inten.(mm/hr)= 102.98      16.82
over (min)           5.00      20.00
Storage Coeff. (min)= 1.04 (ii)  18.66 (ii)
Unit Hyd. Tpeak (min)= 5.00      20.00
Unit Hyd. peak (cms)= 0.34      0.06

```

```

                *TOTALS*
PEAK FLOW (cms)= 0.01      0.00      0.014 (iii)
TIME TO PEAK (hrs)= 1.17      1.50      1.17
RUNOFF VOLUME (mm)= 44.60     10.65     30.53
TOTAL RAINFALL (mm)= 45.60     45.60     45.60
RUNOFF COEFFICIENT = 0.98      0.23      0.67

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 |
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.38

```

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

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 32.55 | 1.750 8.94 | 2.58 2.77
0.167 0.00 | 1.000 32.55 | 1.833 8.94 | 2.67 2.77
0.250 2.56 | 1.083 102.98 | 1.917 6.54 | 2.75 2.36
0.333 2.56 | 1.167 102.98 | 2.000 6.54 | 2.83 2.36
0.417 3.65 | 1.250 43.53 | 2.083 5.03 | 2.92 2.05
0.500 3.65 | 1.333 43.53 | 2.167 5.03 | 3.00 2.05
0.583 5.77 | 1.417 21.61 | 2.250 4.01 | 3.08 1.80
0.667 5.77 | 1.500 21.61 | 2.333 4.01 | 3.17 1.80
0.750 11.02 | 1.583 13.14 | 2.417 3.30 |
0.833 11.02 | 1.667 13.14 | 2.500 3.30 |

```

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 0.364 (i)  
 TIME TO PEAK (hrs)= 1.667  
 RUNOFF VOLUME (mm)= 10.020  
 TOTAL RAINFALL (mm)= 45.600  
 RUNOFF COEFFICIENT = 0.220

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

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-----
| CALIB |
| STANDHYD ( 0140) | Area (ha)= 4.69
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00
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IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.02 2.67
Dep. Storage (mm)= 1.00 4.90
Average Slope (%)= 1.00 2.00
Length (m)= 176.82 40.00
Mannings n = 0.013 0.340

```

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 10.22  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.55 (ii) 24.69 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.26 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.55 0.04 0.560 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 44.60 7.37 23.38  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.16 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35  
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 9.15  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.63 (ii) 24.11 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.00 0.040 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 44.60 6.64 21.40  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.15 0.47

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0140):	4.69	0.560	1.17	23.38
+ ID2= 2 ( 0190):	0.35	0.040	1.17	21.40
=====				
ID = 3 ( 0009):	5.04	0.600	1.17	23.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----

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Area (ha)=	0.38
Total Imp(%)=	47.00 Dir. Conn.(%)= 47.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)=	102.98	9.15
over (min)	5.00	25.00
Storage Coeff. (min)=	1.67 (ii)	24.15 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.32	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.05	0.00	0.052 (iii)
TIME TO PEAK (hrs)=	1.17	1.67	1.17
RUNOFF VOLUME (mm)=	44.60	6.64	24.44
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.15	0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |

| 1 + 2 = 3 |

AREA QPEAK TPEAK R.V.



	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.052	1.17	24.44
+ ID2= 2 ( 0009):	5.04	0.600	1.17	23.24
=====				
ID = 3 ( 0011):	5.42	0.652	1.17	23.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0014)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0011):	5.42	0.652	1.17	23.33
+ ID2= 2 ( 0150):	15.54	0.364	1.67	10.02
=====				
ID = 3 ( 0014):	20.96	0.703	1.17	13.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0170)				
ID= 1 DT= 5.0 min				
Area	(ha)=	0.06		
Total Imp(%)=		70.00	Dir. Conn.(%)=	70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max. Eff. Inten. (mm/hr)= 102.98 29.85

over (min)	5.00	15.00	
Storage Coeff. (min)=	0.95 (ii)	14.96 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.012 (iii)
TIME TO PEAK (hrs)=	1.17	1.42	1.17
RUNOFF VOLUME (mm)=	44.60	17.11	36.22
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.38	0.79

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180)	Area (ha)= 0.13
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max. Eff. Inten. (mm/hr)=	102.98	29.85
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over (min)	5.00	20.00	
Storage Coeff. (min)=	1.21 (ii)	15.22 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.33	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.024 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	44.60	17.11	34.09
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.38	0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max. Eff. Inten. (mm/hr)= 102.98 9.15

over (min)	5.00	25.00	
Storage Coeff. (min)=	0.88 (ii)	23.36 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.34	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	1.17	1.67	1.17
RUNOFF VOLUME (mm)=	44.60	6.64	21.94
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.15	0.48

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.32	40.00
Mannings n =	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max. Eff. Inten. (mm/hr)= 102.98 9.15

Storage Coeff. (min)=	0.94 (ii)	23.42 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.34	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	1.17	1.67	1.17
RUNOFF VOLUME (mm)=	44.60	6.64	22.32
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.15	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0210):  0.05  0.006  1.17  21.94
+ ID2= 2 ( 0220):  0.06  0.007  1.17  22.32
=====
ID = 3 ( 0020):  0.11  0.013  1.17  22.15

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.05
Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN |' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr |' hrs mm/hr | hrs mm/hr

```

0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 9.15  
over (min) 5.00 25.00  
Storage Coeff. (min)= 0.88 (ii) 23.36 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.34 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.007 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 44.60 6.64 23.47  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.15 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0020):	0.11	0.013	1.17	22.15
+ ID2= 2 ( 0230):	0.05	0.007	1.17	23.47
=====				
ID = 3 ( 0021):	0.16	0.020	1.17	22.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
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V V I SSSSS U U A L (v 6.2.2015)
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

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d  
f0c67bd-c623-4b0c-a0a5-1ff741867c78\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d  
f0c67bd-c623-4b0c-a0a5-1ff741867c78\s

DATE: 12-12-2023

TIME: 10:22:33

USER:

COMMENTS: \_\_\_\_\_

-----  
\*\*\*\*\*  
\*\* SIMULATION : Chicago 3hrs\_010-2073 \*\*  
\*\*\*\*\*

-----  
| READ STORM | Filename: C:\Users\caeh076182\AppData  
| | ata\Local\Temp\  
| | b41cefb5-a35b-4b0c-82a3-3087af79db79\8e12adb2  
| Ptotal= 52.20 mm | Comments: Chicago 3hrs\_010-2073  
-----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	37.26	1.67	10.23	2.50	3.17

0.17	2.93	1.00	117.88	1.83	7.49	2.67	2.70
0.33	4.17	1.17	49.84	2.00	5.76	2.83	2.35
0.50	6.61	1.33	24.74	2.17	4.59	3.00	2.06
0.67	12.61	1.50	15.04	2.33	3.77		

CALIB			
NASHYD ( 0100)	Area (ha)=	27.26	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)=	12.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.91	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.332 (i)  
 TIME TO PEAK (hrs)= 2.417  
 RUNOFF VOLUME (mm)= 9.436  
 TOTAL RAINFALL (mm)= 52.200  
 RUNOFF COEFFICIENT = 0.181

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

CALIB			
STANDHYD ( 0110)	Area (ha)=	0.65	
ID= 1 DT= 5.0 min	Total Imp(%)=	44.00	Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00



Length (m)= 65.83 40.00  
Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.86 (ii) 21.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.09 0.01 0.095 (iii)  
TIME TO PEAK (hrs)= 1.17 1.58 1.17  
RUNOFF VOLUME (mm)= 51.20 8.74 27.40  
TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
RUNOFF COEFFICIENT = 0.98 0.17 0.52

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0100):	27.26	0.332	2.42	9.44
+ ID2= 2 ( 0110):	0.65	0.095	1.17	27.40
=====				
ID = 3 ( 0003):	27.91	0.338	2.33	9.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.13

```

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
      hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr
0.083   0.00 | 0.917  37.26 | 1.750  10.23 | 2.58   3.17
0.167   0.00 | 1.000  37.26 | 1.833  10.23 | 2.67   3.17
0.250   2.93 | 1.083 117.88 | 1.917   7.49 | 2.75   2.70
0.333   2.93 | 1.167 117.88 | 2.000   7.49 | 2.83   2.70
0.417   4.17 | 1.250  49.84 | 2.083   5.76 | 2.92   2.35
0.500   4.17 | 1.333  49.84 | 2.167   5.76 | 3.00   2.35
0.583   6.61 | 1.417  24.74 | 2.250   4.59 | 3.08   2.06
0.667   6.61 | 1.500  24.74 | 2.333   4.59 | 3.17   2.06
0.750  12.61 | 1.583  15.04 | 2.417   3.77 |
0.833  12.61 | 1.667  15.04 | 2.500   3.77 |

```

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.069 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 13.003  
 TOTAL RAINFALL (mm)= 52.200  
 RUNOFF COEFFICIENT = 0.249

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

```

-----
| CALIB |
| STANDHYD ( 0120) | Area (ha)= 0.92
| ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00
-----

```

```

      IMPERVIOUS    PERVIOUS (i)
Surface Area (ha)= 0.34    0.58
Dep. Storage (mm)= 1.00    5.00
Average Slope (%)= 1.00    2.00
Length (m)= 78.32    40.00
Mannings n = 0.013    0.350

```

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 2.07 (ii) 21.28 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.11 0.01 0.113 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.58 1.17  
 RUNOFF VOLUME (mm)= 51.20 8.74 24.43  
 TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
 RUNOFF COEFFICIENT = 0.98 0.17 0.47

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0023) |  
 | 1 + 2 = 3 |

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0111):	1.32	0.069	1.33	13.00
+ ID2= 2 ( 0120):	0.92	0.113	1.17	24.43
=====				
ID = 3 ( 0023):	2.24	0.161	1.17	17.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -----

CALIB		
STANDHYD ( 0130)		Area (ha)= 18.61
ID= 1 DT= 5.0 min		Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	15.70
over (min)	5.00	25.00
Storage Coeff. (min)=	5.09 (ii)	22.89 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.21	0.05

			*TOTALS*
PEAK FLOW (cms)=	1.15	0.35	1.216 (iii)
TIME TO PEAK (hrs)=	1.17	1.58	1.17
RUNOFF VOLUME (mm)=	51.20	10.03	18.68
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.19	0.36

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):	18.61	1.216	1.17	18.68
+ ID2= 2 ( 0023):	2.24	0.161	1.17	17.70
=====				
ID = 3 ( 0006):	20.85	1.378	1.17	18.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0160)				
ID= 1 DT= 5.0 min				
Area	(ha)=	0.08		
Total Imp(%)	=	59.00	Dir. Conn.(%)	= 59.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	22.79	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	22.08
over (min)	5.00	20.00
Storage Coeff. (min)=	0.98 (ii)	16.79 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.016 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	51.20	13.81	35.75
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.26	0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 |
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.38

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 0.491 (i)  
 TIME TO PEAK (hrs)= 1.667  
 RUNOFF VOLUME (mm)= 13.341  
 TOTAL RAINFALL (mm)= 52.200  
 RUNOFF COEFFICIENT = 0.256

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

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-----
| CALIB |
| STANDHYD ( 0140) | Area (ha)= 4.69
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00
-----

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IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	15.10
over (min)	5.00	25.00
Storage Coeff. (min)=	3.37 (ii)	21.45 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.26	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.64	0.06	0.649 (iii)
TIME TO PEAK (hrs)=	1.17	1.58	1.17
RUNOFF VOLUME (mm)=	51.20	9.68	27.53
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.19	0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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	Area (ha)=	0.35	
STANDHYD ( 0190)	Total Imp(%)=	39.00	Dir. Conn.(%)= 39.00
ID= 1 DT= 5.0 min			

-----

IMPERVIOUS      PERVIOUS (i)

Surface Area (ha)= 0.14 0.21  
 Dep. Storage (mm)= 1.00 5.00  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 48.30 40.00  
 Mannings n = 0.013 0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 1.55 (ii) 20.76 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.00 0.045 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.58 1.17  
 RUNOFF VOLUME (mm)= 51.20 8.74 25.26  
 TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
 RUNOFF COEFFICIENT = 0.98 0.17 0.48

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0140):	4.69	0.649	1.17	27.53



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+ ID= 2 ( 0190):    0.35    0.045    1.17    25.26
=====
ID = 3 ( 0009):    5.04    0.694    1.17    27.37

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0200) | Area (ha)= 0.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 37.26 | 1.750 10.23 | 2.58 3.17
0.167 0.00 | 1.000 37.26 | 1.833 10.23 | 2.67 3.17
0.250 2.93 | 1.083 117.88 | 1.917 7.49 | 2.75 2.70
0.333 2.93 | 1.167 117.88 | 2.000 7.49 | 2.83 2.70
0.417 4.17 | 1.250 49.84 | 2.083 5.76 | 2.92 2.35
0.500 4.17 | 1.333 49.84 | 2.167 5.76 | 3.00 2.35
0.583 6.61 | 1.417 24.74 | 2.250 4.59 | 3.08 2.06
0.667 6.61 | 1.500 24.74 | 2.333 4.59 | 3.17 2.06
0.750 12.61 | 1.583 15.04 | 2.417 3.77 |
0.833 12.61 | 1.667 15.04 | 2.500 3.77 |

```

Max. Eff. Inten. (mm/hr)=	117.88	13.55
over (min)	5.00	25.00
Storage Coeff. (min)=	1.58 (ii)	20.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.33	0.05

			*TOTALS*
PEAK FLOW	(cms)=	0.06	0.00
TIME TO PEAK	(hrs)=	1.17	1.58
RUNOFF VOLUME	(mm)=	51.20	8.74
TOTAL RAINFALL	(mm)=	52.20	52.20
RUNOFF COEFFICIENT	=	0.98	0.17

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 55.0    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 ( 0011)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):		0.38	0.059	1.17	28.66
+ ID2= 2 ( 0009):		5.04	0.694	1.17	27.37
=====					
ID = 3 ( 0011):		5.42	0.753	1.17	27.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0014)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0011):		5.42	0.753	1.17	27.46
+ ID2= 2 ( 0150):		15.54	0.491	1.67	13.34
=====					
ID = 3 ( 0014):		20.96	0.832	1.17	16.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area	(ha)=	0.06
STANDHYD ( 0170)		Total Imp(%)=	70.00	Dir. Conn.(%)= 70.00
ID= 1 DT= 5.0 min				

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17

0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 38.55  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.90 (ii) 13.55 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.014 (iii)  
TIME TO PEAK (hrs)= 1.17 1.33 1.17  
RUNOFF VOLUME (mm)= 51.20 21.64 42.19  
TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
RUNOFF COEFFICIENT = 0.98 0.41 0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180) | Area (ha)= 0.13  
| ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17

0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 38.55  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.15 (ii) 13.79 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.00 0.028 (iii)  
TIME TO PEAK (hrs)= 1.17 1.33 1.17  
RUNOFF VOLUME (mm)= 51.20 21.64 39.90  
TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
RUNOFF COEFFICIENT = 0.98 0.41 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05  
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17

0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
over (min) 5.00 25.00  
Storage Coeff. (min)= 0.84 (ii) 20.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.34 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.007 (iii)  
TIME TO PEAK (hrs)= 1.17 1.58 1.17  
RUNOFF VOLUME (mm)= 51.20 8.74 25.87  
TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
RUNOFF COEFFICIENT = 0.98 0.17 0.50

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17

0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
over (min) 5.00 25.00  
Storage Coeff. (min)= 0.89 (ii) 20.10 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.34 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 1.17 1.58 1.17  
RUNOFF VOLUME (mm)= 51.20 8.74 26.34  
TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
RUNOFF COEFFICIENT = 0.98 0.17 0.50

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0210):	0.05	0.007	1.17	25.87
+ ID2= 2 ( 0220):	0.06	0.008	1.17	26.34
=====				
ID = 3 ( 0020):	0.11	0.015	1.17	26.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.05		
Total Imp(%)=	45.00	Dir. Conn.(%)=	45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00

Average Slope (%)= 1.00 2.00  
 Length (m)= 17.32 40.00  
 Mannings n = 0.013 0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 0.84 (ii) 20.05 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.34 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.007 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.58 1.17  
 RUNOFF VOLUME (mm)= 51.20 8.74 27.58  
 TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
 RUNOFF COEFFICIENT = 0.98 0.17 0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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.

-----

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ADD HYD ( 0021) 1 + 2 = 3				
ID1= 1 ( 0020):	0.11	0.015	1.17	26.13
+ ID2= 2 ( 0230):	0.05	0.007	1.17	27.58

=====

ID = 3 ( 0021): 0.16 0.023 1.17 26.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
=====

V V I SSSSS U U A L (v 6.2.2015)  
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 UUUU A A LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5c9649c1-f6f7-4896-a1db-0fe5a4414889\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5c9649c1-f6f7-4896-a1db-0fe5a4414889\s

DATE: 12-12-2023

TIME: 10:22:31

USER:

COMMENTS: \_\_\_\_\_

-----  
-----

\*\*\*\*\*  
\*\* SIMULATION : Chicago 3hrs\_025-2073 \*\*  
\*\*\*\*\*



```

-----
| READ STORM |
|            |
| Ptotal= 60.60 mm |
|            |
-----

```

```

Filename: C:\Users\caeh076182\AppData
         ata\Local\Temp\
         b41cefb5-a35b-4bff-82a3-3087af79db79\f9993ac2
Comments: Chicago 3hrs_025-2073

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	43.25	1.67	11.88	2.50	3.68
0.17	3.40	1.00	136.85	1.83	8.69	2.67	3.14
0.33	4.85	1.17	57.86	2.00	6.68	2.83	2.72
0.50	7.67	1.33	28.72	2.17	5.33	3.00	2.40
0.67	14.64	1.50	17.46	2.33	4.38		

```

-----
| CALIB |
| NASHYD ( 0100) |
| ID= 1 DT= 5.0 min |
|            |
-----

```

```

Area      (ha)= 27.26  Curve Number (CN)= 67.0
Ia        (mm)= 12.80  # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.91

```

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.468 (i)

TIME TO PEAK (hrs)= 2.333

RUNOFF VOLUME (mm)= 13.214

TOTAL RAINFALL (mm)= 60.600

RUNOFF COEFFICIENT = 0.218

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

```

-----
| CALIB |
| STANDHYD ( 0110) | Area (ha)= 0.65
| ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00
-----

```

```

                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.29      0.36
Dep. Storage    (mm)=          1.00      5.00
Average Slope   (%)=          1.00      2.00
Length          (m)=         65.83     40.00
Mannings n     =             0.013     0.350

```

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME    RAIN |   TIME    RAIN |'  TIME    RAIN |   TIME    RAIN
      hrs    mm/hr |   hrs    mm/hr |'  hrs    mm/hr |   hrs    mm/hr
0.083    0.00 | 0.917   43.25 | 1.750   11.88 | 2.58    3.68
0.167    0.00 | 1.000   43.25 | 1.833   11.88 | 2.67    3.68
0.250    3.40 | 1.083  136.85 | 1.917    8.69 | 2.75    3.14
0.333    3.40 | 1.167  136.85 | 2.000    8.69 | 2.83    3.14
0.417    4.85 | 1.250   57.86 | 2.083    6.68 | 2.92    2.72
0.500    4.85 | 1.333   57.86 | 2.167    6.68 | 3.00    2.72
0.583    7.67 | 1.417   28.72 | 2.250    5.33 | 3.08    2.40
0.667    7.67 | 1.500   28.72 | 2.333    5.33 | 3.17    2.40
0.750   14.64 | 1.583   17.46 | 2.417    4.38 |
0.833   14.64 | 1.667   17.46 | 2.500    4.38 |

```

```

Max.Eff.Inten.(mm/hr)=    136.85      18.41
      over (min)          5.00      20.00
Storage Coeff. (min)=    1.75 (ii)   18.75 (ii)
Unit Hyd. Tpeak (min)=    5.00      20.00
Unit Hyd. peak (cms)=    0.32      0.06

```

```

                                     *TOTALS*
PEAK FLOW      (cms)=    0.11      0.01      0.111 (iii)
TIME TO PEAK   (hrs)=    1.17      1.50      1.17
RUNOFF VOLUME  (mm)=    59.60     11.74     32.78
TOTAL RAINFALL (mm)=    60.60     60.60     60.60
RUNOFF COEFFICIENT =    0.98      0.19      0.54

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0100):  27.26  0.468      2.33      13.21
+ ID2= 2 ( 0110):  0.65  0.111      1.17      32.78
=====
ID = 3 ( 0003):  27.91  0.476      2.33      13.67

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 1.32 Curve Number (CN)= 73.0
Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.13

```

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.095 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 17.595  
 TOTAL RAINFALL (mm)= 60.600  
 RUNOFF COEFFICIENT = 0.290

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

```

-----
| CALIB |
| STANDHYD ( 0120) |
-----
Area (ha)= 0.92

```

|ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)=	136.85	18.41
over (min)	5.00	20.00
Storage Coeff. (min)=	1.95 (ii)	18.94 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.13	0.02	0.134 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	59.60	11.74	29.43
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.19	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023)|

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0111):	1.32	0.095	1.33	17.59
+ ID2= 2 ( 0120):	0.92	0.134	1.17	29.43
=====				
ID = 3 ( 0023):	2.24	0.204	1.17	22.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0130)	18.61	
ID= 1 DT= 5.0 min	Total Imp(%)= 21.00	21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68		
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68		
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14		
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14		
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72		
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72		
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40		
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40		
0.750	14.64	1.583	17.46	2.417	4.38				
0.833	14.64	1.667	17.46	2.500	4.38				

Max.Eff.Inten.(mm/hr)=	136.85	21.21	
over (min)	5.00	25.00	
Storage Coeff. (min)=	4.80 (ii)	20.58 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.22	0.05	
			*TOTALS*
PEAK FLOW (cms)=	1.35	0.49	1.453 (iii)
TIME TO PEAK (hrs)=	1.17	1.58	1.17
RUNOFF VOLUME (mm)=	59.60	13.40	23.10
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.22	0.38

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):	18.61	1.453	1.17	23.10
+ ID2= 2 ( 0023):	2.24	0.204	1.17	22.46
=====				
ID = 3 ( 0006):	20.85	1.657	1.17	23.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.08
Total Imp(%)=	59.00
Dir. Conn.(%)=	59.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	22.79	40.00
Mannings n =	0.013	0.350

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

```

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

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)=	136.85	30.99	
over (min)	5.00	15.00	
Storage Coeff. (min)=	0.93 (ii)	14.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.019 (iii)
TIME TO PEAK (hrs)=	1.17	1.42	1.17
RUNOFF VOLUME (mm)=	59.60	18.21	42.53
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.30	0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   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 |
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.38

```

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Unit Hyd Qpeak (cms)=	1.562
PEAK FLOW (cms)=	0.671 (i)
TIME TO PEAK (hrs)=	1.667
RUNOFF VOLUME (mm)=	18.000
TOTAL RAINFALL (mm)=	60.600

RUNOFF COEFFICIENT = 0.297

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

```

-----
| CALIB |
| STANDHYD ( 0140) | Area (ha)= 4.69
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)=	136.85	20.43
over (min)	5.00	20.00
Storage Coeff. (min)=	3.17 (ii)	19.19 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.27	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.74	0.09	0.768 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	59.60	12.95	33.01
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.21	0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
-----

```

```

                IMPERVIOUS    PERVIOUS (i)
Surface Area    (ha)=         0.14        0.21
Dep. Storage    (mm)=         1.00        5.00
Average Slope   (%)=         1.00        2.00
Length          (m)=        48.30       40.00
Mannings n     =          0.013       0.350

```

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

```

                ----- TRANSFORMED HYETOGRAPH -----
                TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
                hrs    mm/hr | hrs    mm/hr | hrs    mm/hr | hrs    mm/hr
0.083    0.00 | 0.917  43.25 | 1.750  11.88 | 2.58    3.68
0.167    0.00 | 1.000  43.25 | 1.833  11.88 | 2.67    3.68
0.250    3.40 | 1.083  136.85 | 1.917   8.69 | 2.75    3.14
0.333    3.40 | 1.167  136.85 | 2.000   8.69 | 2.83    3.14
0.417    4.85 | 1.250   57.86 | 2.083   6.68 | 2.92    2.72
0.500    4.85 | 1.333   57.86 | 2.167   6.68 | 3.00    2.72
0.583    7.67 | 1.417   28.72 | 2.250   5.33 | 3.08    2.40
0.667    7.67 | 1.500   28.72 | 2.333   5.33 | 3.17    2.40
0.750   14.64 | 1.583   17.46 | 2.417   4.38 |
0.833   14.64 | 1.667   17.46 | 2.500   4.38 |

```

```

Max.Eff.Inten.(mm/hr)= 136.85    18.41
                    over (min)   5.00    20.00
Storage Coeff. (min)= 1.46 (ii)  18.45 (ii)
Unit Hyd. Tpeak (min)= 5.00    20.00
Unit Hyd. peak (cms)= 0.33    0.06

```

```

                *TOTALS*
PEAK FLOW (cms)= 0.05    0.01    0.054 (iii)
TIME TO PEAK (hrs)= 1.17    1.50    1.17
RUNOFF VOLUME (mm)= 59.60    11.74    30.37
TOTAL RAINFALL (mm)= 60.60    60.60    60.60
RUNOFF COEFFICIENT = 0.98    0.19    0.50

```

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0140):	4.69	0.768	1.17	33.01
+ ID2= 2 ( 0190):	0.35	0.054	1.17	30.37
=====				
ID = 3 ( 0009):	5.04	0.822	1.17	32.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.38
STANDHYD ( 0200)	Total Imp(%)=	47.00	Dir. Conn.(%)= 47.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)=	136.85	18.41
over (min)	5.00	20.00
Storage Coeff. (min)=	1.49 (ii)	18.49 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00

Unit Hyd. peak (cms)=	0.33	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.07	0.01	0.069 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	59.60	11.74	34.20
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.19	0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0200):  0.38  0.069  1.17  34.20
+ ID2= 2 ( 0009):  5.04  0.822  1.17  32.82
=====
ID = 3 ( 0011):  5.42  0.891  1.17  32.92

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0014) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0011):  5.42  0.891  1.17  32.92
+ ID2= 2 ( 0150): 15.54  0.671  1.67  18.00
=====
ID = 3 ( 0014): 20.96  1.011  1.17  21.86

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0170) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00

Length (m)= 19.61 40.00  
Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 50.44  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.85 (ii) 12.20 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.017 (iii)  
TIME TO PEAK (hrs)= 1.17 1.33 1.17  
RUNOFF VOLUME (mm)= 59.60 27.76 49.89  
TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
RUNOFF COEFFICIENT = 0.98 0.46 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180) | Area (ha)= 0.13  
| ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.05
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00

Length (m)= 29.44 40.00  
 Mannings n = 0.013 0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 50.44  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.08 (ii) 12.44 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.00 0.033 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.33 1.17  
 RUNOFF VOLUME (mm)= 59.60 27.76 47.44  
 TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
 RUNOFF COEFFICIENT = 0.98 0.46 0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00

Length (m)= 17.32 40.00  
Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 18.41  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.79 (ii) 17.78 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 59.60 11.74 31.08  
TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
RUNOFF COEFFICIENT = 0.98 0.19 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00

Length (m)= 19.32 40.00  
 Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 18.41  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 0.84 (ii) 17.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.50 1.17  
 RUNOFF VOLUME (mm)= 59.60 11.74 31.67  
 TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
 RUNOFF COEFFICIENT = 0.98 0.19 0.52

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0020)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.008	1.17	31.08
+ ID2= 2 ( 0220):	0.06	0.010	1.17	31.67
=====				
ID = 3 ( 0020):	0.11	0.018	1.17	31.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00
-----

```

```

                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.02          0.03
Dep. Storage    (mm)=          1.00          5.00
Average Slope   (%)=          1.00          2.00
Length          (m)=         17.32         40.00
Mannings n      =           0.013         0.350

```

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
      hrs    mm/hr | hrs    mm/hr | hrs    mm/hr | hrs    mm/hr
0.083    0.00 | 0.917  43.25 | 1.750  11.88 | 2.58    3.68
0.167    0.00 | 1.000  43.25 | 1.833  11.88 | 2.67    3.68
0.250    3.40 | 1.083 136.85 | 1.917   8.69 | 2.75    3.14
0.333    3.40 | 1.167 136.85 | 2.000   8.69 | 2.83    3.14
0.417    4.85 | 1.250  57.86 | 2.083   6.68 | 2.92    2.72
0.500    4.85 | 1.333  57.86 | 2.167   6.68 | 3.00    2.72
0.583    7.67 | 1.417  28.72 | 2.250   5.33 | 3.08    2.40
0.667    7.67 | 1.500  28.72 | 2.333   5.33 | 3.17    2.40
0.750   14.64 | 1.583  17.46 | 2.417   4.38 |
0.833   14.64 | 1.667  17.46 | 2.500   4.38 |

```

```

Max.Eff.Inten.(mm/hr)= 136.85      18.41
                    over (min)    5.00      20.00
Storage Coeff. (min)= 0.79 (ii)  17.78 (ii)
Unit Hyd. Tpeak (min)= 5.00      20.00
Unit Hyd. peak (cms)= 0.34      0.06

```

```

                                *TOTALS*
PEAK FLOW      (cms)= 0.01      0.00      0.009 (iii)
TIME TO PEAK   (hrs)= 1.17      1.50      1.17
RUNOFF VOLUME  (mm)= 59.60      11.74     33.02
TOTAL RAINFALL (mm)= 60.60      60.60     60.60
RUNOFF COEFFICIENT = 0.98      0.19      0.54

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021)|
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0020):	0.11	0.018	1.17	31.40
+ ID2= 2 ( 0230):	0.05	0.009	1.17	33.02
=====				
ID = 3 ( 0021):	0.16	0.027	1.17	31.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
=====
=====
V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

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Summary filename:

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DATE: 12-12-2023

TIME: 10:22:30

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : Chicago 3hrs\_050-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData ata\Local\Temp\ b41cefb5-a35b-4bff-82a3-3087af79db79\d8a3dde9
Ptotal= 66.90 mm	Comments: Chicago 3hrs_050-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	47.75	1.67	13.11	2.50	4.06
0.17	3.75	1.00	151.08	1.83	9.59	2.67	3.47
0.33	5.35	1.17	63.87	2.00	7.38	2.83	3.01
0.50	8.47	1.33	31.71	2.17	5.89	3.00	2.64
0.67	16.17	1.50	19.27	2.33	4.84		

CALIB			
NASHYD ( 0100)	Area (ha)= 27.26	Curve Number (CN)= 67.0	
ID= 1 DT= 5.0 min	Ia (mm)= 12.80	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.91		

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.581 (i)  
TIME TO PEAK (hrs)= 2.333  
RUNOFF VOLUME (mm)= 16.332  
TOTAL RAINFALL (mm)= 66.900  
RUNOFF COEFFICIENT = 0.244

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

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-----  
| CALIB |  
| STANDHYD ( 0110) | Area (ha)= 0.65  
| ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	22.43
over (min)	5.00	20.00
Storage Coeff. (min)=	1.69 (ii)	17.39 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.12	0.01	0.124 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	65.90	14.21	36.94

TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
 RUNOFF COEFFICIENT = 0.99 0.21 0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	27.26	0.581	2.33	16.33
+ ID2= 2 ( 0110):	0.65	0.124	1.17	36.94
=====				
ID = 3 ( 0003):	27.91	0.591	2.33	16.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	1.32	Curve Number (CN)=	73.0
Ia (mm)=	9.90	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.13		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.116 (i)

TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 21.311  
 TOTAL RAINFALL (mm)= 66.900  
 RUNOFF COEFFICIENT = 0.319

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

```

-----
| CALIB |
| STANDHYD ( 0120) | Area (ha)= 0.92
| ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00
-----
  
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
      hrs    mm/hr | hrs    mm/hr | hrs    mm/hr | hrs    mm/hr
0.083    0.00 | 0.917  47.75 | 1.750  13.11 | 2.58    4.06
0.167    0.00 | 1.000  47.75 | 1.833  13.11 | 2.67    4.06
0.250    3.75 | 1.083 151.08 | 1.917   9.59 | 2.75    3.47
0.333    3.75 | 1.167 151.08 | 2.000   9.59 | 2.83    3.47
0.417    5.35 | 1.250  63.87 | 2.083   7.38 | 2.92    3.01
0.500    5.35 | 1.333  63.87 | 2.167   7.38 | 3.00    3.01
0.583    8.47 | 1.417  31.71 | 2.250   5.89 | 3.08    2.64
0.667    8.47 | 1.500  31.71 | 2.333   5.89 | 3.17    2.64
0.750   16.17 | 1.583  19.27 | 2.417   4.83 |
0.833   16.17 | 1.667  19.27 | 2.500   4.84 |
  
```

Max.Eff.Inten.(mm/hr)=	151.08	22.43
over (min)	5.00	20.00
Storage Coeff. (min)=	1.87 (ii)	17.57 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.14	0.02	0.149 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	65.90	14.21	33.32
TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.21	0.50

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0023)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0111):	1.32	0.116	1.33	21.31
+ ID2= 2 ( 0120):	0.92	0.149	1.17	33.32
=====				
ID = 3 ( 0023):	2.24	0.238	1.17	26.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0130)	18.61	
ID= 1 DT= 5.0 min	Total Imp(%)= 21.00	21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max. Eff. Inten. (mm/hr)=      151.08                  26.94

over (min)	5.00	20.00	
Storage Coeff. (min)=	4.61 (ii)	18.95 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			*TOTALS*
PEAK FLOW (cms)=	1.51	0.63	1.683 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	65.90	16.16	26.61
TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.24	0.40

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):  18.61  1.683      1.17      26.61
+ ID2= 2 ( 0023):   2.24  0.238      1.17      26.24
=====
ID = 3 ( 0006):  20.85  1.921      1.17      26.57

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.08
Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.05	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	22.79	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME   RAIN | TIME   RAIN |'  TIME   RAIN | TIME   RAIN
hrs    mm/hr | hrs    mm/hr |'  hrs    mm/hr | hrs    mm/hr

```

0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 37.48  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.89 (ii) 13.68 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.021 (iii)  
TIME TO PEAK (hrs)= 1.17 1.42 1.17  
RUNOFF VOLUME (mm)= 65.90 21.77 47.70  
TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
RUNOFF COEFFICIENT = 0.99 0.33 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 |
| NASHYD ( 0150) | Area (ha)= 15.54 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.50 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.38

```

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01



0.583	8.47		1.417	31.71		2.250	5.89		3.08	2.64
0.667	8.47		1.500	31.71		2.333	5.89		3.17	2.64
0.750	16.17		1.583	19.27		2.417	4.83			
0.833	16.17		1.667	19.27		2.500	4.84			

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 0.818 (i)  
 TIME TO PEAK (hrs)= 1.667  
 RUNOFF VOLUME (mm)= 21.767  
 TOTAL RAINFALL (mm)= 66.900  
 RUNOFF COEFFICIENT = 0.325

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

CALIB		
STANDHYD ( 0140)	Area (ha)= 4.69	
ID= 1 DT= 5.0 min	Total Imp(%)= 43.00	Dir. Conn.(%)= 43.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 25.96  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.05 (ii) 17.61 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.27 0.06

				*TOTALS*
PEAK FLOW	(cms)=	0.82	0.12	0.856 (iii)
TIME TO PEAK	(hrs)=	1.17	1.50	1.17
RUNOFF VOLUME	(mm)=	65.90	15.63	37.24
TOTAL RAINFALL	(mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT	=	0.99	0.23	0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	22.43
over (min)	5.00	20.00
Storage Coeff. (min)=	1.40 (ii)	17.10 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.33	0.06

				*TOTALS*
PEAK FLOW	(cms)=	0.06	0.01	0.060 (iii)
TIME TO PEAK	(hrs)=	1.17	1.50	1.17
RUNOFF VOLUME	(mm)=	65.90	14.21	34.34
TOTAL RAINFALL	(mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT	=	0.99	0.21	0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140):   4.69   0.856   1.17   37.24
+ ID2= 2 ( 0190):   0.35   0.060   1.17   34.34
=====
ID = 3 ( 0009):   5.04   0.916   1.17   37.04

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.38 |
| Total Imp(%)= 47.00 |
| Dir. Conn.(%)= 47.00 |

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN
hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr
0.083  0.00 | 0.917  47.75 | 1.750  13.11 | 2.58  4.06
0.167  0.00 | 1.000  47.75 | 1.833  13.11 | 2.67  4.06
0.250  3.75 | 1.083 151.08 | 1.917   9.59 | 2.75  3.47
0.333  3.75 | 1.167 151.08 | 2.000   9.59 | 2.83  3.47

```

0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 22.43  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.43 (ii) 17.14 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.07 0.01 0.077 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 65.90 14.21 38.47  
TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
RUNOFF COEFFICIENT = 0.99 0.21 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.077	1.17	38.47
+ ID2= 2 ( 0009):	5.04	0.916	1.17	37.04
=====				
ID = 3 ( 0011):	5.42	0.993	1.17	37.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0014) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0011):	5.42	0.993	1.17	37.14
+ ID2= 2 ( 0150):	15.54	0.818	1.67	21.77
=====				
ID = 3 ( 0014):	20.96	1.150	1.17	25.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0170)	Area (ha)=	0.06	
ID= 1 DT= 5.0 min	Total Imp(%)=	70.00	Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	69.53
over (min)	5.00	15.00
Storage Coeff. (min)=	0.81 (ii)	10.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.09

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.019 (iii)
TIME TO PEAK (hrs)=	1.17	1.33	1.17
RUNOFF VOLUME (mm)=	65.90	32.57	55.79
TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.49	0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180) |
| ID= 1 DT= 5.0 min |
-----

```

```

Area (ha)= 0.13
Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00

```

```

                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.08          0.05
Dep. Storage (mm)= 1.00          5.00
Average Slope (%)= 1.00          2.00
Length (m)= 29.44                40.00
Mannings n = 0.013                0.350

```

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

```

Max.Eff.Inten.(mm/hr)= 151.08          69.53
over (min) 5.00          15.00
Storage Coeff. (min)= 1.04 (ii) 11.03 (ii)
Unit Hyd. Tpeak (min)= 5.00          15.00
Unit Hyd. peak (cms)= 0.34          0.09

```

\*TOTALS\*

```

PEAK FLOW (cms)= 0.03          0.01          0.037 (iii)
TIME TO PEAK (hrs)= 1.17          1.33          1.17
RUNOFF VOLUME (mm)= 65.90          32.57          53.18
TOTAL RAINFALL (mm)= 66.90          66.90          66.90
RUNOFF COEFFICIENT = 0.99          0.49          0.79

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) |
| ID= 1 DT= 5.0 min |
-----

```

```

Area (ha)= 0.05
Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00

```

```

                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.02          0.03
Dep. Storage (mm)= 1.00         5.00
Average Slope (%)= 1.00         2.00
Length (m)= 17.32              40.00
Mannings n = 0.013             0.350

```

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

```

Max.Eff.Inten.(mm/hr)= 151.08      22.43
over (min) 5.00      20.00
Storage Coeff. (min)= 0.76 (ii) 16.46 (ii)
Unit Hyd. Tpeak (min)= 5.00      20.00
Unit Hyd. peak (cms)= 0.34      0.06

```

\*TOTALS\*

```

PEAK FLOW (cms)= 0.01      0.00      0.009 (iii)
TIME TO PEAK (hrs)= 1.17      1.50      1.17
RUNOFF VOLUME (mm)= 65.90      14.21      35.16
TOTAL RAINFALL (mm)= 66.90      66.90      66.90
RUNOFF COEFFICIENT = 0.99      0.21      0.53

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.06  
 Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	22.43
over (min)	5.00	20.00
Storage Coeff. (min)=	0.81 (ii)	16.51 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.011 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	65.90	14.21	35.74
TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.21	0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0020) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0210):	0.05	0.009	1.17	35.16
+ ID2= 2 ( 0220):	0.06	0.011	1.17	35.74
=====				
ID = 3 ( 0020):	0.11	0.020	1.17	35.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0230) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.05  
 Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 22.43  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 0.76 (ii) 16.46 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.34 0.06

PEAK FLOW (cms)= 0.01 0.00 \*TOTALS\* 0.010 (iii)

TIME TO PEAK	(hrs)=	1.17	1.50	1.17
RUNOFF VOLUME	(mm)=	65.90	14.21	37.25
TOTAL RAINFALL	(mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT	=	0.99	0.21	0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
-----	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0020):	0.11	0.020	1.17	35.48
+ ID2= 2 ( 0230):	0.05	0.010	1.17	37.25
=====				
ID = 3 ( 0021):	0.16	0.030	1.17	36.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

=====

```

V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A  L
  VV    I   SSSSS  UUUUU  A   A  LLLLL

```

```

000  TTTTT  TTTTT  H   H   Y   Y   M   M   000  TM
0  0  T      T   H   H   Y Y   MM MM  0  0
0  0  T      T   H   H   Y   M   M  0  0
000  T      T   H   H   Y   M   M  000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\4476ff0d-d021-4a19-97e6-f4707f685062\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\4476ff0d-d021-4a19-97e6-f4707f685062\s

DATE: 12-12-2023

TIME: 10:22:30

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : Chicago 3hrs\_100-2073 \*\*  
\*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\
Ptotal= 73.30 mm	b41cefb5-a35b-4bff-82a3-3087af79db79\ab2842ac
	Comments: Chicago 3hrs_100-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	52.32	1.67	14.37	2.50	4.45
0.17	4.11	1.00	165.53	1.83	10.51	2.67	3.80
0.33	5.86	1.17	69.98	2.00	8.09	2.83	3.29
0.50	9.28	1.33	34.74	2.17	6.45	3.00	2.90
0.67	17.71	1.50	21.11	2.33	5.30		

CALIB	Area (ha)= 27.26	Curve Number (CN)= 67.0
NASHYD ( 0100)	Ia (mm)= 12.80	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.91	

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.705 (i)  
 TIME TO PEAK (hrs)= 2.333  
 RUNOFF VOLUME (mm)= 19.721  
 TOTAL RAINFALL (mm)= 73.300  
 RUNOFF COEFFICIENT = 0.269

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

-----  
 | CALIB |  
 | STANDHYD ( 0110) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.65  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		

0.833 17.71 | 1.667 21.11 | 2.500 5.30 |

Max.Eff.Inten.(mm/hr)=	165.53	28.07	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.62 (ii)	15.98 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.13	0.02	0.136 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	72.30	16.89	41.26
TOTAL RAINFALL (mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT =	0.99	0.23	0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0003) |
| 1 + 2 = 3      |
-----
| AREA      QPEAK   TPEAK   R.V.
| (ha)      (cms)   (hrs)   (mm)
|-----|
| ID1= 1 ( 0100): 27.26  0.705   2.33   19.72
| + ID2= 2 ( 0110): 0.65  0.136   1.17   41.26
|=====|
| ID = 3 ( 0003): 27.91  0.715   2.33   20.22

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| NASHYD ( 0111) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 1.32  Curve Number (CN)= 73.0
| Ia (mm)= 9.90   # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.13

```

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
| hrs     mm/hr | hrs     mm/hr | hrs     mm/hr | hrs     mm/hr
|-----|
| 0.083   0.00 | 0.917  52.32 | 1.750  14.37 | 2.58    4.45
| 0.167   0.00 | 1.000  52.32 | 1.833  14.37 | 2.67    4.45
| 0.250   4.11 | 1.083  165.53 | 1.917  10.51 | 2.75    3.80

```

0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.138 (i)

TIME TO PEAK (hrs)= 1.333

RUNOFF VOLUME (mm)= 25.293

TOTAL RAINFALL (mm)= 73.300

RUNOFF COEFFICIENT = 0.345

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

CALIB	
STANDHYD ( 0120)	Area (ha)= 0.92
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
over (min) 5.00 20.00

Storage Coeff. (min)=	1.80 (ii)	16.16 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.16	0.03	0.164 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	72.30	16.89	37.38
TOTAL RAINFALL (mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT =	0.99	0.23	0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0111):  1.32  0.138  1.33  25.29
+ ID2= 2 ( 0120):  0.92  0.164  1.17  37.38
=====
ID = 3 ( 0023):  2.24  0.275  1.17  30.26

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 18.61
Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 52.32 | 1.750 14.37 | 2.58 4.45

```

0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 32.23  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.45 (ii) 17.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.06

\*TOTALS\*

PEAK FLOW (cms)= 1.66 0.78 1.887 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 19.15 30.31  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.26 0.41

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0130):  18.61  1.887    1.17    30.31
+ ID2= 2 ( 0023):   2.24  0.275    1.17    30.26
=====
ID = 3 ( 0006):  20.85  2.162    1.17    30.31

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----
          Area    (ha)=  0.08
          Total Imp(%)= 59.00  Dir. Conn.(%)= 59.00

```

Surface Area (ha)= IMPERVIOUS 0.05 PERVIOUS (i) 0.03



Dep. Storage (mm)= 1.00 5.00  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 22.79 40.00  
 Mannings n = 0.013 0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 44.49  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 0.86 (ii) 12.80 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.023 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.33 1.17  
 RUNOFF VOLUME (mm)= 72.30 25.57 53.03  
 TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
 RUNOFF COEFFICIENT = 0.99 0.35 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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			
NASHYD ( 0150)	Area (ha)=	15.54	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)=	9.50	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.38	

-----

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 0.975 (i)  
 TIME TO PEAK (hrs)= 1.667  
 RUNOFF VOLUME (mm)= 25.800  
 TOTAL RAINFALL (mm)= 73.300  
 RUNOFF COEFFICIENT = 0.352

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0140) |  
ID= 1 DT= 5.0 min

Area (ha)= 4.69  
 Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29

0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 31.09  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.94 (ii) 16.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.91 0.14 0.947 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 18.54 41.66  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.25 0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35  
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29

0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.35 (ii) 15.71 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.01 0.066 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 16.89 38.47  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.23 0.52

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0140):	4.69	0.947	1.17	41.66
+ ID2= 2 ( 0190):	0.35	0.066	1.17	38.47
=====				
ID = 3 ( 0009):	5.04	1.013	1.17	41.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 0200)	0.38		
ID= 1 DT= 5.0 min	47.00	47.00	47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.38 (ii) 15.74 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.01 0.085 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 16.89 42.91  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.23 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.085	1.17	42.91
+ ID2= 2 ( 0009):	5.04	1.013	1.17	41.43
=====				
ID = 3 ( 0011):	5.42	1.097	1.17	41.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0014)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0011):	5.42	1.097	1.17	41.54
+ ID2= 2 ( 0150):	15.54	0.975	1.67	25.80
=====				
ID = 3 ( 0014):	20.96	1.309	1.50	29.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0170)			
ID= 1 DT= 5.0 min	Area (ha)=	0.06	
	Total Imp(%)=	70.00	Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max. Eff. Inten. (mm/hr)=	165.53	81.43	
over (min)	5.00	15.00	
Storage Coeff. (min)=	0.79 (ii)	10.16 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.10	
*TOTALS*			
PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK (hrs)=	1.17	1.33	1.17

RUNOFF VOLUME	(mm)=	72.30	37.60	61.77
TOTAL RAINFALL	(mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT	=	0.99	0.51	0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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	Area (ha)=	0.13		
STANDHYD ( 0180)	Total Imp(%)=	62.00	Dir. Conn.(%)=	62.00
ID= 1 DT= 5.0 min				

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.05
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	29.44	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	81.43
over (min)	5.00	15.00
Storage Coeff. (min)=	1.00 (ii)	10.38 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.09

\*TOTALS\*

PEAK FLOW	(cms)=	0.04	0.01	0.041 (iii)
TIME TO PEAK	(hrs)=	1.17	1.33	1.17

RUNOFF VOLUME	(mm)=	72.30	37.60	59.06
TOTAL RAINFALL	(mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT	=	0.99	0.51	0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	28.07
over (min)	5.00	20.00
Storage Coeff. (min)=	0.73 (ii)	15.09 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.07

\*TOTALS\*

PEAK FLOW	(cms)=	0.01	0.00	0.010 (iii)
TIME TO PEAK	(hrs)=	1.17	1.50	1.17



RUNOFF VOLUME	(mm)=	72.30	16.89	39.43
TOTAL RAINFALL	(mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT	=	0.99	0.23	0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	28.07
over (min)	5.00	20.00
Storage Coeff. (min)=	0.78 (ii)	15.13 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.07

\*TOTALS\*

PEAK FLOW	(cms)=	0.01	0.00	0.012 (iii)
TIME TO PEAK	(hrs)=	1.17	1.50	1.17

RUNOFF VOLUME	(mm)=	72.30	16.89	40.04
TOTAL RAINFALL	(mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT	=	0.99	0.23	0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----
| AREA   QPEAK   TPEAK   R.V.
| (ha)   (cms)   (hrs)   (mm)
-----
| ID1= 1 ( 0210): 0.05  0.010  1.17  39.43
| + ID2= 2 ( 0220): 0.06  0.012  1.17  40.04
| =====
| ID = 3 ( 0020): 0.11  0.022  1.17  39.76
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----
| Area   (ha)= 0.05
| Total Imp(%)= 45.00   Dir. Conn.(%)= 45.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN
| hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr
-----
| 0.083  0.00 | 0.917  52.32 | 1.750  14.37 | 2.58   4.45
| 0.167  0.00 | 1.000  52.32 | 1.833  14.37 | 2.67   4.45
| 0.250  4.11 | 1.083  165.53 | 1.917  10.51 | 2.75   3.80
| 0.333  4.11 | 1.167  165.53 | 2.000  10.51 | 2.83   3.80
| 0.417  5.86 | 1.250  69.98 | 2.083   8.09 | 2.92   3.29
| 0.500  5.86 | 1.333  69.98 | 2.167   8.09 | 3.00   3.29
| 0.583  9.28 | 1.417  34.74 | 2.250   6.45 | 3.08   2.90
-----

```

0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.73 (ii) 15.09 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 16.89 41.66  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.23 0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0020):  0.11  0.022  1.17  39.76
+ ID2= 2 ( 0230):  0.05  0.011  1.17  41.66
=====
ID = 3 ( 0021):  0.16  0.033  1.17  40.35

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

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

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\2698058-e5cf-4168-8105-aeba92a52bc0\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\2698058-e5cf-4168-8105-aeba92a52bc0\s

DATE: 12-12-2023

TIME: 10:22:34

USER:

COMMENTS: \_\_\_\_\_

-----  
\*\*\*\*\*  
\*\* SIMULATION : Hazel \*\*  
\*\*\*\*\*

-----  
| READ STORM | Filename: C:\Users\caeh076182\AppData  
| | ata\Local\Temp\  
| | b41cefb5-a35b-4bff-82a3-3087af79db79\76ce5f01  
| 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
0.00	6.00	3.00	13.00	6.00	23.00	9.00	53.00
1.00	4.00	4.00	17.00	7.00	13.00	10.00	38.00
2.00	6.00	5.00	13.00	8.00	13.00	11.00	13.00

-----  
CALIB

| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.91

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 2.335 (i)

TIME TO PEAK (hrs)= 11.167  
 RUNOFF VOLUME (mm)= 122.356  
 TOTAL RAINFALL (mm)= 212.000  
 RUNOFF COEFFICIENT = 0.577

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

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-----
| CALIB |
| STANDHYD ( 0110) |
| ID= 1 DT= 5.0 min |
-----
  
```

Area (ha)= 0.65  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
  
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00

2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.56 (ii) 15.70 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.03 0.075 (iii)  
TIME TO PEAK (hrs)= 9.67 10.08 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 150.67  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0100):  27.26  2.335  11.17  122.36
+ ID2= 2 ( 0110):   0.65  0.075  10.00  150.67
=====
ID = 3 ( 0003):  27.91  2.379  11.00  123.02

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00

```

----- U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.162 (i)

TIME TO PEAK (hrs)= 10.000

RUNOFF VOLUME (mm)= 136.600



TOTAL RAINFALL (mm)= 212.000  
 RUNOFF COEFFICIENT = 0.644

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00

2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.84 (ii) 15.98 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.05 0.05 0.102 (iii)  
TIME TO PEAK (hrs)= 9.67 10.08 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 143.14  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0023) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0111):	1.32	0.162	10.00	136.60
+ ID2= 2 ( 0120):	0.92	0.102	10.00	143.14
=====				
ID = 3 ( 0023):	2.24	0.264	10.00	139.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	18.61		
Total Imp(%)=	21.00	Dir. Conn.(%)=	21.00

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max. Eff. Inten. (mm/hr)=	53.00	37.46
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over (min)	5.00	20.00	
Storage Coeff. (min)=	7.01 (ii)	19.58 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.17	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.58	1.40	1.955 (iii)
TIME TO PEAK (hrs)=	10.00	10.08	10.00
RUNOFF VOLUME (mm)=	211.00	111.89	132.70
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.53	0.63

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 59.0 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 ( 0130):  18.61  1.955  10.00  132.70
+ ID2= 2 ( 0023):   2.24  0.264  10.00  139.28
=====
ID = 3 ( 0006):  20.85  2.219  10.00  133.41
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.08
Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00
  
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.05	0.03	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	22.79	40.00	
Mannings n =	0.013	0.350	

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 6.00 | 3.083 13.00 | 6.083 23.00 | 9.08 53.00
  
```

0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)=	53.00	43.05
over (min)	5.00	15.00
Storage Coeff. (min)=	1.36 (ii)	13.45 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.011 (iii)
TIME TO PEAK (hrs)=	9.33	10.00	10.00
RUNOFF VOLUME (mm)=	211.00	133.44	179.10
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.63	0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0    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			
NASHYD ( 0150)	Area (ha)=	15.54	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)=	9.50	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.38	

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

----- TRANSFORMED HYETOGRAPH -----								
TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	'	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	'	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	'	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	'	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	'	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	'	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	'	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	'	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	'	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	'	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	'	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	'	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	'	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	'	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	'	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	'	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	'	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	'	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	'	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	'	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	'	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	'	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	'	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	'	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	'	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	'	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	'	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	'	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	'	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	'	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	'	8.583	13.00	11.58	13.00

2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.562

PEAK FLOW (cms)= 1.773 (i)

TIME TO PEAK (hrs)= 10.083

RUNOFF VOLUME (mm)= 138.306

TOTAL RAINFALL (mm)= 212.000

RUNOFF COEFFICIENT = 0.652

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

CALIB	
STANDHYD ( 0140)	Area (ha)= 4.69
ID= 1 DT= 5.0 min	Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00

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

Max.Eff.Inten.(mm/hr)= 53.00 36.86  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.64 (ii) 17.29 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.30 0.25 0.548 (iii)  
TIME TO PEAK (hrs)= 10.00 10.08 10.00  
RUNOFF VOLUME (mm)= 211.00 109.69 153.25  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.52 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0190) | Area (ha)= 0.35  
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00  
-----

Surface Area (ha)= IMPERVIOUS 0.14 PERVIOUS (i) 0.21



Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max. Eff. Inten. (mm/hr)=	53.00	35.05
over (min)	5.00	20.00

Storage Coeff. (min)=	2.13 (ii)	15.26 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.31	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.02	0.039 (iii)
TIME TO PEAK (hrs)=	9.50	10.08	10.00
RUNOFF VOLUME (mm)=	211.00	103.30	145.28
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.49	0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140): 4.69 0.548 10.00 153.25 |
| + ID2= 2 ( 0190): 0.35 0.039 10.00 145.28 |
|=====|
| ID = 3 ( 0009): 5.04 0.588 10.00 152.69 |

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.38 |
| Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00 |

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		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	50.33	40.00	
Mannings n =	0.013	0.350	

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

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----- TRANSFORMED HYETOGRAPH -----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN |
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr |
| 0.083 6.00 | 3.083 13.00 | 6.083 23.00 | 9.08 53.00 |

```

0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)=	53.00	35.05
over (min)	5.00	20.00
Storage Coeff. (min)=	2.18 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.07

			*TOTALS*
PEAK FLOW (cms)=	0.03	0.02	0.045 (iii)
TIME TO PEAK (hrs)=	9.58	10.08	10.00
RUNOFF VOLUME (mm)=	211.00	103.30	153.89
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.49	0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.045	10.00	153.89
+ ID2= 2 ( 0009):	5.04	0.588	10.00	152.69
=====				
ID = 3 ( 0011):	5.42	0.632	10.00	152.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0014)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0011):	5.42	0.632	10.00	152.78
+ ID2= 2 ( 0150):	15.54	1.773	10.08	138.31
=====				
ID = 3 ( 0014):	20.96	2.374	10.00	142.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.06
STANDHYD ( 0170)	Total Imp(%)=	70.00	Dir. Conn.(%)= 70.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00

0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 49.08  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.24 (ii) 12.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.009 (iii)  
TIME TO PEAK (hrs)= 9.33 10.00 10.00  
RUNOFF VOLUME (mm)= 211.00 163.08 196.47  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.77 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0180)	Area (ha)= 0.13
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00 Dir. Conn.(%)= 62.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.05
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	29.44	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00

2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 49.08  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.58 (ii) 13.06 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.018 (iii)  
TIME TO PEAK (hrs)= 9.42 10.00 10.00  
RUNOFF VOLUME (mm)= 211.00 163.08 192.72  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.77 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 ( 0210) | Area (ha)= 0.05  
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----  
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)=	53.00	35.05
over (min)	5.00	15.00
Storage Coeff. (min)=	1.15 (ii)	14.29 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	9.33	10.00	10.00
RUNOFF VOLUME (mm)=	211.00	103.30	147.30
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.49	0.69



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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00

2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.23 (ii) 14.36 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.007 (iii)  
TIME TO PEAK (hrs)= 9.33 10.00 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 148.38  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0210):	0.05	0.006	10.00	147.30
+ ID2= 2 ( 0220):	0.06	0.007	10.00	148.38
=====				
ID = 3 ( 0020):	0.11	0.013	10.00	147.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) | Area (ha)= 0.05
-----

```

|ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00

3.000 6.00 | 6.000 13.00 | 9.000 13.00 | 12.00 13.00

Max.Eff.Inten.(mm/hr)=	53.00	35.05	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.15 (ii)	14.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	9.33	10.00	10.00
RUNOFF VOLUME (mm)=	211.00	103.30	151.62
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.49	0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0021)|
| 1 + 2 = 3      |
-----
      AREA      QPEAK      TPEAK      R.V.
      (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0020):  0.11  0.013  10.00  147.89
+ ID2= 2 ( 0230):  0.05  0.006  10.00  151.62
=====
ID = 3 ( 0021):  0.16  0.019  10.00  149.05

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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=====

# APPENDIX

## **B-3** Proposed Conditions

=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\133c5b3b-e08e-49e6-999d-f4ae586b3dbc\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\133c5b3b-e08e-49e6-999d-f4ae586b3dbc\s

DATE: 12-12-2023

TIME: 10:33:33

USER:

COMMENTS: \_\_\_\_\_

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\*\*\*\*\*  
\*\* SIMULATION : 12SCS002-2073 \*\*  
\*\*\*\*\*

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| READ STORM | Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal= 54.00 mm |

0a2ab211-eeb5-4a53-acea-3e72082fedbe\9c3dbdbc  
 Comments: 12SCS002-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	2.16	6.33	11.77	9.50	1.62
0.17	1.62	3.33	2.16	6.50	11.77	9.67	1.30
0.33	1.62	3.50	2.16	6.67	5.18	9.83	1.30
0.50	1.62	3.67	2.16	6.83	5.18	10.00	1.30
0.67	0.76	3.83	2.16	7.00	5.18	10.17	1.84
0.83	0.76	4.00	2.16	7.17	3.46	10.33	1.84
1.00	0.76	4.17	2.92	7.33	3.46	10.50	1.84
1.17	1.40	4.33	2.92	7.50	3.46	10.67	1.19
1.33	1.40	4.50	2.92	7.67	3.02	10.83	1.19
1.50	1.40	4.67	3.67	7.83	3.02	11.00	1.19
1.67	1.40	4.83	3.67	8.00	3.02	11.17	1.08
1.83	1.40	5.00	3.67	8.17	2.38	11.33	1.08
2.00	1.40	5.17	5.83	8.33	2.38	11.50	1.08
2.17	1.84	5.33	5.83	8.50	2.38	11.67	1.08
2.33	1.84	5.50	5.83	8.67	2.48	11.83	1.08
2.50	1.84	5.67	46.22	8.83	2.48	12.00	1.08
2.67	1.62	5.83	46.22	9.00	2.48		
2.83	1.62	6.00	46.22	9.17	1.62		
3.00	1.62	6.17	11.77	9.33	1.62		

-----  
 | CALIB |  
 | STANDHYD ( 0190) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.35  
 Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62

0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 2.25 (ii) 25.87 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.30 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.019 (iii)  
TIME TO PEAK (hrs)= 6.08 6.50 6.17  
RUNOFF VOLUME (mm)= 53.00 9.35 26.33  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.17 0.49

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140)	Area (ha)=	4.69	
ID= 1 DT= 5.0 min	Total Imp(%)=	43.00	Dir. Conn.(%)= 43.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08

2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 9.00  
over (min) 5.00 30.00  
Storage Coeff. (min)= 4.90 (ii) 27.13 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.22 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.26 0.04 0.282 (iii)  
TIME TO PEAK (hrs)= 6.17 6.50 6.17  
RUNOFF VOLUME (mm)= 53.00 10.35 28.68  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.19 0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0140):	4.69	0.282	6.17	28.68
+ ID2= 2 ( 0190):	0.35	0.019	6.17	26.33
=====				
ID = 3 ( 0009):	5.04	0.301	6.17	28.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----

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Area (ha)=	0.38
Total Imp(%)=	47.00 Dir. Conn.(%)= 47.00

Surface Area (ha)=	IMPERVIOUS 0.18	PERVIOUS (i) 0.20
--------------------	-----------------	-------------------

Dep. Storage (mm)= 1.00 5.00  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 50.33 40.00  
 Mannings n = 0.013 0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max. Eff. Inten. (mm/hr)= 46.22 8.08

over (min)	5.00	30.00	
Storage Coeff. (min)=	2.30 (ii)	25.92 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.30	0.04	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.025 (iii)
TIME TO PEAK (hrs)=	6.17	6.50	6.17
RUNOFF VOLUME (mm)=	53.00	9.35	29.83
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.17	0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0200):  0.38  0.025  6.17  29.83
+ ID2= 2 ( 0009):  5.04  0.301  6.17  28.52
=====
ID = 3 ( 0011):  5.42  0.325  6.17  28.61

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0150) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 13.27 Curve Number (CN)= 72.0
Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.32

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 3.167 1.62 | 6.250 11.77 | 9.33 1.62
0.167 0.00 | 3.250 2.16 | 6.333 11.77 | 9.42 1.62
0.250 1.62 | 3.333 2.16 | 6.417 11.77 | 9.50 1.62
0.333 1.62 | 3.417 2.16 | 6.500 11.77 | 9.58 1.62
0.417 1.62 | 3.500 2.16 | 6.583 11.77 | 9.67 1.62
0.500 1.62 | 3.583 2.16 | 6.667 11.77 | 9.75 1.30

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0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.310 (i)

TIME TO PEAK (hrs)= 6.333

RUNOFF VOLUME (mm)= 13.555

TOTAL RAINFALL (mm)= 54.000

RUNOFF COEFFICIENT = 0.251

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

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CALIB	
STANDHYD ( 0170)	Area (ha)= 0.06
ID= 1 DT= 5.0 min	Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

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Surface Area (ha)=	IMPERVIOUS 0.04	PERVIOUS (i) 0.02
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Dep. Storage (mm)= 1.00 5.00  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 19.61 40.00  
 Mannings n = 0.013 0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max. Eff. Inten. (mm/hr)= 46.22 22.89

over (min)	5.00	20.00	
Storage Coeff. (min)=	1.31 (ii)	16.89 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.33	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	53.00	22.92	43.89
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.42	0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
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| U.H. Tp(hrs)= 0.91

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19

1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.241 (i)  
 TIME TO PEAK (hrs)= 7.250  
 RUNOFF VOLUME (mm)= 10.207  
 TOTAL RAINFALL (mm)= 54.000  
 RUNOFF COEFFICIENT = 0.189

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

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 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62



0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)=	46.22	8.08
over (min)	5.00	30.00
Storage Coeff. (min)=	2.71 (ii)	26.33 (ii)
Unit Hyd. Tpeak (min)=	5.00	30.00
Unit Hyd. peak (cms)=	0.29	0.04

\*TOTALS\*

PEAK FLOW (cms)=	0.04	0.00	0.040 (iii)
TIME TO PEAK (hrs)=	6.17	6.50	6.17
RUNOFF VOLUME (mm)=	53.00	9.35	28.53
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.17	0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0003)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0100):	27.26	0.241	7.25	10.21
+ ID2= 2 ( 0110):	0.65	0.040	6.17	28.53
=====				
ID = 3 ( 0003):	27.91	0.248	7.17	10.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0210)	0.05	
ID= 1 DT= 5.0 min	Total Imp(%)= 41.00	41.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84

1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 8.08  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.21 (ii) 24.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.003 (iii)  
TIME TO PEAK (hrs)= 6.00 6.42 6.17  
RUNOFF VOLUME (mm)= 53.00 9.35 26.49  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.17 0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06

|ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08

3.000	1.62	6.083	46.22	9.167	2.48
3.083	1.62	6.167	46.22	9.250	1.62

Max.Eff.Inten.(mm/hr)=	46.22	8.08	
over (min)	5.00	25.00	
Storage Coeff. (min)=	1.30 (ii)	24.92 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.33	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.004 (iii)
TIME TO PEAK (hrs)=	6.00	6.42	6.17
RUNOFF VOLUME (mm)=	53.00	9.35	27.56
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.17	0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0020) |
| 1 + 2 = 3      |
-----
| AREA   QPEAK  TPEAK  R.V.
| (ha)   (cms)  (hrs)  (mm)
|-----|
| ID1= 1 ( 0210): 0.05  0.003  6.17  26.49
| + ID2= 2 ( 0220): 0.06  0.004  6.17  27.56
|=====|
| ID = 3 ( 0020):  0.11  0.006  6.17  27.07

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.05
| Total Imp(%)= 45.00  Dir. Conn.(%)= 45.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max. Eff. Inten. (mm/hr)= 46.22 8.08  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 1.21 (ii) 24.83 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.003 (iii)  
 TIME TO PEAK (hrs)= 6.00 6.42 6.17

RUNOFF VOLUME	(mm)=	53.00	9.35	28.41
TOTAL RAINFALL	(mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT	=	0.98	0.17	0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0020):  0.11  0.006  6.17  27.07
+ ID2= 2 ( 0230):  0.05  0.003  6.17  28.41
=====
ID = 3 ( 0021):  0.16  0.010  6.17  27.49

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0101) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 2.94 Curve Number (CN)= 72.0
Ia (mm)= 10.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.31

```

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

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 3.167 1.62 | 6.250 11.77 | 9.33 1.62
0.167 0.00 | 3.250 2.16 | 6.333 11.77 | 9.42 1.62
0.250 1.62 | 3.333 2.16 | 6.417 11.77 | 9.50 1.62
0.333 1.62 | 3.417 2.16 | 6.500 11.77 | 9.58 1.62
0.417 1.62 | 3.500 2.16 | 6.583 11.77 | 9.67 1.62
0.500 1.62 | 3.583 2.16 | 6.667 11.77 | 9.75 1.30
0.583 1.62 | 3.667 2.16 | 6.750 5.18 | 9.83 1.30
0.667 1.62 | 3.750 2.16 | 6.833 5.18 | 9.92 1.30
0.750 0.76 | 3.833 2.16 | 6.917 5.18 | 10.00 1.30
0.833 0.76 | 3.917 2.16 | 7.000 5.18 | 10.08 1.30
0.917 0.76 | 4.000 2.16 | 7.083 5.18 | 10.17 1.30
1.000 0.76 | 4.083 2.16 | 7.167 5.18 | 10.25 1.84
1.083 0.76 | 4.167 2.16 | 7.250 3.46 | 10.33 1.84

```

1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.067 (i)

TIME TO PEAK (hrs)= 6.333

RUNOFF VOLUME (mm)= 13.088

TOTAL RAINFALL (mm)= 54.000

RUNOFF COEFFICIENT = 0.242

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

```

-----
| CALIB |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.13

```

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62



0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.050 (i)

TIME TO PEAK (hrs)= 6.167

RUNOFF VOLUME (mm)= 13.948

TOTAL RAINFALL (mm)= 54.000

RUNOFF COEFFICIENT = 0.258

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

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-----  
| CALIB |  
| STANDHYD ( 0120) | Area (ha)= 0.92

|ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08

3.000	1.62	6.083	46.22	9.167	2.48
3.083	1.62	6.167	46.22	9.250	1.62

Max.Eff.Inten.(mm/hr)=	46.22	8.08	
over (min)	5.00	30.00	
Storage Coeff. (min)=	3.00 (ii)	26.62 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.28	0.04	
			*TOTALS*
PEAK FLOW (cms)=	0.04	0.01	0.048 (iii)
TIME TO PEAK (hrs)=	6.17	6.50	6.17
RUNOFF VOLUME (mm)=	53.00	9.35	25.48
TOTAL RAINFALL (mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT =	0.98	0.17	0.47

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0012) |
| 1 + 2 = 3      |
-----
| AREA      QPEAK   TPEAK   R.V.
| (ha)      (cms)   (hrs)   (mm)
|-----|
| ID1= 1 ( 0111): 1.32  0.050  6.17  13.95
| + ID2= 2 ( 0120): 0.92  0.048  6.17  25.48
|=====|
| ID = 3 ( 0012): 2.24  0.099  6.17  18.69

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 18.61
| Total Imp(%)= 21.00  Dir. Conn.(%)= 21.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max. Eff. Inten. (mm/hr)= 46.22 9.36  
 over (min) 5.00 30.00  
 Storage Coeff. (min)= 7.40 (ii) 29.30 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.17 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.49 0.22 0.620 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.50 6.17

RUNOFF VOLUME	(mm)=	53.00	10.72	19.60
TOTAL RAINFALL	(mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT	=	0.98	0.20	0.36

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0    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 ( 0012):	2.24	0.099	6.17	18.69
	+ ID2= 2 ( 0130):	18.61	0.620	6.17	19.60
	=====				
	ID = 3 ( 0006):	20.85	0.719	6.17	19.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----					
ADD HYD ( 0007)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 ( 0101):	2.94	0.067	6.33	13.09
	+ ID2= 2 ( 0006):	20.85	0.719	6.17	19.50
	=====				
	ID = 3 ( 0007):	23.79	0.771	6.17	18.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
STANDHYD ( 0160)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	0.44	
	Total Imp(%)=	21.00	Dir. Conn.(%)=	21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.35
Dep. Storage	(mm)=	1.00	4.60
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.16	40.00
Mannings n	=	0.013	0.330

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19
1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 14.34  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.41 (ii) 20.54 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.30 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.018 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17

RUNOFF VOLUME	(mm)=	53.00	14.92	22.89
TOTAL RAINFALL	(mm)=	54.00	54.00	54.00
RUNOFF COEFFICIENT	=	0.98	0.28	0.42

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.62	6.250	11.77	9.33	1.62
0.167	0.00	3.250	2.16	6.333	11.77	9.42	1.62
0.250	1.62	3.333	2.16	6.417	11.77	9.50	1.62
0.333	1.62	3.417	2.16	6.500	11.77	9.58	1.62
0.417	1.62	3.500	2.16	6.583	11.77	9.67	1.62
0.500	1.62	3.583	2.16	6.667	11.77	9.75	1.30
0.583	1.62	3.667	2.16	6.750	5.18	9.83	1.30
0.667	1.62	3.750	2.16	6.833	5.18	9.92	1.30
0.750	0.76	3.833	2.16	6.917	5.18	10.00	1.30
0.833	0.76	3.917	2.16	7.000	5.18	10.08	1.30
0.917	0.76	4.000	2.16	7.083	5.18	10.17	1.30
1.000	0.76	4.083	2.16	7.167	5.18	10.25	1.84
1.083	0.76	4.167	2.16	7.250	3.46	10.33	1.84
1.167	0.76	4.250	2.92	7.333	3.46	10.42	1.84
1.250	1.40	4.333	2.92	7.417	3.46	10.50	1.84
1.333	1.40	4.417	2.92	7.500	3.46	10.58	1.84
1.417	1.40	4.500	2.92	7.583	3.46	10.67	1.84
1.500	1.40	4.583	2.92	7.667	3.46	10.75	1.19
1.583	1.40	4.667	2.92	7.750	3.02	10.83	1.19

1.667	1.40	4.750	3.67	7.833	3.02	10.92	1.19
1.750	1.40	4.833	3.67	7.917	3.02	11.00	1.19
1.833	1.40	4.917	3.67	8.000	3.02	11.08	1.19
1.917	1.40	5.000	3.67	8.083	3.02	11.17	1.19
2.000	1.40	5.083	3.67	8.167	3.02	11.25	1.08
2.083	1.40	5.167	3.67	8.250	2.38	11.33	1.08
2.167	1.40	5.250	5.83	8.333	2.38	11.42	1.08
2.250	1.84	5.333	5.83	8.417	2.38	11.50	1.08
2.333	1.84	5.417	5.83	8.500	2.38	11.58	1.08
2.417	1.84	5.500	5.83	8.583	2.38	11.67	1.08
2.500	1.84	5.583	5.83	8.667	2.38	11.75	1.08
2.583	1.84	5.667	5.83	8.750	2.48	11.83	1.08
2.667	1.84	5.750	46.22	8.833	2.48	11.92	1.08
2.750	1.62	5.833	46.22	8.917	2.48	12.00	1.08
2.833	1.62	5.917	46.22	9.000	2.48	12.08	1.08
2.917	1.62	6.000	46.22	9.083	2.48	12.17	1.08
3.000	1.62	6.083	46.22	9.167	2.48		
3.083	1.62	6.167	46.22	9.250	1.62		

Max.Eff.Inten.(mm/hr)= 46.22 14.15  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.71 (ii) 20.59 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 6.00 6.42 6.17  
RUNOFF VOLUME (mm)= 53.00 14.72 24.20  
TOTAL RAINFALL (mm)= 54.00 54.00 54.00  
RUNOFF COEFFICIENT = 0.98 0.27 0.45

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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V   V   I   SSSSS U   U   A   L           (v 6.2.2015)
V   V   I   SS   U   U   A A L
V   V   I   SS   U   U   AAAAA L
V   V   I   SS   U   U   A   A L
  VV   I   SSSSS UUUUU A   A LLLLL

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000 TTTTT TTTTT H H Y Y M M 000 TM



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O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\39b26583-cb6e-4f36-a68b-c817d54ef2e7\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\39b26583-cb6e-4f36-a68b-c817d54ef2e7\s

DATE: 12-12-2023

TIME: 10:33:34

USER:

COMMENTS: \_\_\_\_\_

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 \*\*\*\*\*  
 \*\* SIMULATION : 12SCS005-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\0a2ab211-eeb5-4a53-acea-3e72082fedbe\7e427860
Ptotal= 70.80 mm	Comments: 12SCS005-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	2.83	6.33	15.43	9.50	2.12
0.17	2.12	3.33	2.83	6.50	15.43	9.67	1.70
0.33	2.12	3.50	2.83	6.67	6.80	9.83	1.70
0.50	2.12	3.67	2.83	6.83	6.80	10.00	1.70
0.67	0.99	3.83	2.83	7.00	6.80	10.17	2.41

0.83	0.99	4.00	2.83	7.17	4.53	10.33	2.41
1.00	0.99	4.17	3.82	7.33	4.53	10.50	2.41
1.17	1.84	4.33	3.82	7.50	4.53	10.67	1.56
1.33	1.84	4.50	3.82	7.67	3.96	10.83	1.56
1.50	1.84	4.67	4.81	7.83	3.96	11.00	1.56
1.67	1.84	4.83	4.81	8.00	3.96	11.17	1.42
1.83	1.84	5.00	4.81	8.17	3.12	11.33	1.42
2.00	1.84	5.17	7.65	8.33	3.12	11.50	1.42
2.17	2.41	5.33	7.65	8.50	3.12	11.67	1.42
2.33	2.41	5.50	7.65	8.67	3.26	11.83	1.42
2.50	2.41	5.67	60.60	8.83	3.26	12.00	1.42
2.67	2.12	5.83	60.60	9.00	3.26		
2.83	2.12	6.00	60.60	9.17	2.12		
3.00	2.12	6.17	15.43	9.33	2.12		

-----  
 | CALIB |  
 | STANDHYD ( 0190) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.35  
 Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41

1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.02 (ii) 20.49 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.027 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 36.84  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.52

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140) | Area (ha)= 4.69  
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00  
-----

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)=	60.60	16.51	
over (min)	5.00	25.00	
Storage Coeff. (min)=	4.39 (ii)	21.84 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.23	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.34	0.08	0.394 (iii)
TIME TO PEAK (hrs)=	6.17	6.42	6.17
RUNOFF VOLUME (mm)=	69.80	17.38	39.92
TOTAL RAINFALL (mm)=	70.80	70.80	70.80
RUNOFF COEFFICIENT =	0.99	0.25	0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0140): 4.69  0.394  6.17  39.92
| + ID2= 2 ( 0190): 0.35  0.027  6.17  36.84
|=====|
| ID = 3 ( 0009): 5.04  0.421  6.17  39.71

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.38
| Total Imp(%)= 47.00  Dir. Conn.(%)= 47.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

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----- TRANSFORMED HYETOGRAPH -----
TIME  RAIN | TIME  RAIN | TIME  RAIN | TIME  RAIN

```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 2.07 (ii) 20.54 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.034 (iii)  
 TIME TO PEAK (hrs)= 6.08 6.42 6.17  
 RUNOFF VOLUME (mm)= 69.80 15.82 41.16  
 TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
 RUNOFF COEFFICIENT = 0.99 0.22 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.034	6.17	41.16
+ ID2= 2 ( 0009):	5.04	0.421	6.17	39.71
=====				
ID = 3 ( 0011):	5.42	0.455	6.17	39.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| NASHYD ( 0150) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	13.27	Curve Number (CN)=	72.0
Ia (mm)=	10.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.32		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41

1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.556 (i)  
 TIME TO PEAK (hrs)= 6.333  
 RUNOFF VOLUME (mm)= 23.158  
 TOTAL RAINFALL (mm)= 70.800  
 RUNOFF COEFFICIENT = 0.327

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

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-----			
CALIB			
STANDHYD ( 0170)	Area (ha)=	0.06	
ID= 1 DT= 5.0 min	Total Imp(%)=	70.00	Dir. Conn.(%)= 70.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN



hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 37.24  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.17 (ii) 14.00 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
 TIME TO PEAK (hrs)= 6.00 6.25 6.17  
 RUNOFF VOLUME (mm)= 69.80 35.62 59.45  
 TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
 RUNOFF COEFFICIENT = 0.99 0.50 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.91

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42

2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.456 (i)  
 TIME TO PEAK (hrs)= 7.167  
 RUNOFF VOLUME (mm)= 18.372  
 TOTAL RAINFALL (mm)= 70.800  
 RUNOFF COEFFICIENT = 0.259

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70

1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.43 (ii) 20.90 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.30 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.05 0.01 0.055 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 39.56  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0100):		27.26	0.456	7.17	18.37
+ ID2= 2 ( 0110):		0.65	0.055	6.17	39.56
=====					
ID = 3 ( 0003):		27.91	0.466	7.17	18.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)=	0.05
STANDHYD ( 0210)		Total Imp(%)=	41.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)=	41.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56

1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.09 (ii) 19.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 37.80  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.32	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	'	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	'	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	'	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	'	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	'	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	'	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	'	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	'	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	'	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	'	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	'	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	'	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	'	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	'	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	'	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	'	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	'	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	'	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	'	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	'	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	'	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	'	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	'	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	'	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	'	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	'	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	'	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	'	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	'	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	'	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	'	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	'	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	'	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	'	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	'	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	'	9.167	3.26		
3.083	2.12	6.167	60.60	'	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.16 (ii) 19.63 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)

TIME TO PEAK	(hrs)=	6.00	6.33	6.17
RUNOFF VOLUME	(mm)=	69.80	15.82	38.34
TOTAL RAINFALL	(mm)=	70.80	70.80	70.80
RUNOFF COEFFICIENT	=	0.99	0.22	0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----
| AREA   QPEAK   TPEAK   R.V. |
| (ha)   (cms)   (hrs)   (mm) |
-----
| ID1= 1 ( 0210): 0.05  0.004  6.17  37.80 |
| + ID2= 2 ( 0220): 0.06  0.005  6.17  38.34 |
|=====|
| ID = 3 ( 0020): 0.11  0.009  6.17  38.10 |
-----

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.05 |
| Total Imp(%)= 45.00 |
| Dir. Conn.(%)= 45.00 |
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN |
| hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr |
|-----|-----|-----|-----|
| 0.083  0.00 | 3.167  2.12 | 6.250 15.43 | 9.33  2.12 |
| 0.167  0.00 | 3.250  2.83 | 6.333 15.43 | 9.42  2.12 |
| 0.250  2.12 | 3.333  2.83 | 6.417 15.43 | 9.50  2.12 |
| 0.333  2.12 | 3.417  2.83 | 6.500 15.43 | 9.58  2.12 |
| 0.417  2.12 | 3.500  2.83 | 6.583 15.43 | 9.67  2.12 |
| 0.500  2.12 | 3.583  2.83 | 6.667 15.43 | 9.75  1.70 |

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0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.09 (ii) 19.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.004 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 69.80 15.82 39.97  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.22 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0020):	0.11	0.009	6.17	38.10
+ ID2= 2 ( 0230):	0.05	0.004	6.17	39.97
=====				
ID = 3 ( 0021):	0.16	0.014	6.17	38.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
NASHYD ( 0101)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	Curve Number	(CN)=
		2.94		72.0
	Ia	(mm)=	# of Linear Res.(N)=	3.00
	U.H. Tp	(hrs)=		0.31

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56

2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.122 (i)  
 TIME TO PEAK (hrs)= 6.333  
 RUNOFF VOLUME (mm)= 22.604  
 TOTAL RAINFALL (mm)= 70.800  
 RUNOFF COEFFICIENT = 0.319

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

CALIB			
NASHYD ( 0111)	Area (ha)=	1.32	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)=	9.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.13	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41

1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.087 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 23.714  
 TOTAL RAINFALL (mm)= 70.800  
 RUNOFF COEFFICIENT = 0.335

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

-----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12		6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83		6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83		6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83		6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83		6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83		6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83		6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83		6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83		6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83		7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83		7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83		7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83		7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82		7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82		7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82		7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82		7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82		7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82		7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81		7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81		7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81		8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81		8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81		8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81		8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65		8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65		8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65		8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65		8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65		8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65		8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60		8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60		8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60		9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60		9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60		9.167	3.26		
3.083	2.12	6.167	60.60		9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 14.95  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 2.70 (ii) 21.17 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.02 0.068 (iii)

TIME TO PEAK	(hrs)=	6.17	6.42	6.17
RUNOFF VOLUME	(mm)=	69.80	15.82	35.78
TOTAL RAINFALL	(mm)=	70.80	70.80	70.80
RUNOFF COEFFICIENT	=	0.99	0.22	0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012) |
| 1 + 2 = 3 |
-----
| AREA   QPEAK   TPEAK   R.V. |
| (ha)   (cms)   (hrs)   (mm) |
-----
| ID1= 1 ( 0111): 1.32  0.087  6.17  23.71 |
| + ID2= 2 ( 0120): 0.92  0.068  6.17  35.78 |
|=====|
| ID = 3 ( 0012): 2.24  0.155  6.17  28.67 |
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
| Area   (ha)= 18.61 |
| Total Imp(%)= 21.00 |
| Dir. Conn.(%)= 21.00 |
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN |
| hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr |
|-----|-----|-----|-----|
| 0.083  0.00 | 3.167  2.12 | 6.250 15.43 | 9.33  2.12 |
| 0.167  0.00 | 3.250  2.83 | 6.333 15.43 | 9.42  2.12 |
| 0.250  2.12 | 3.333  2.83 | 6.417 15.43 | 9.50  2.12 |
| 0.333  2.12 | 3.417  2.83 | 6.500 15.43 | 9.58  2.12 |
| 0.417  2.12 | 3.500  2.83 | 6.583 15.43 | 9.67  2.12 |
| 0.500  2.12 | 3.583  2.83 | 6.667 15.43 | 9.75  1.70 |

```

0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 17.09  
over (min) 5.00 25.00  
Storage Coeff. (min)= 6.64 (ii) 23.85 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.18 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.65 0.42 0.948 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 69.80 17.96 28.85  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.25 0.41

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0012):	2.24	0.155	6.17	28.67
+ ID2= 2 ( 0130):	18.61	0.948	6.17	28.85
=====				
ID = 3 ( 0006):	20.85	1.104	6.17	28.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0007) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0101):	2.94	0.122	6.33	22.60
+ ID2= 2 ( 0006):	20.85	1.104	6.17	28.83
=====				
ID = 3 ( 0007):	23.79	1.203	6.17	28.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.44		
Total Imp(%)=	21.00	Dir. Conn.(%)=	21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.35
Dep. Storage (mm)=	1.00	4.60
Average Slope (%)=	1.00	2.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.330

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

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

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70



0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42
2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 24.91  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.16 (ii) 16.70 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.02 0.029 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 69.80 24.30 33.83  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.34 0.48

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.12	6.250	15.43	9.33	2.12
0.167	0.00	3.250	2.83	6.333	15.43	9.42	2.12
0.250	2.12	3.333	2.83	6.417	15.43	9.50	2.12
0.333	2.12	3.417	2.83	6.500	15.43	9.58	2.12
0.417	2.12	3.500	2.83	6.583	15.43	9.67	2.12
0.500	2.12	3.583	2.83	6.667	15.43	9.75	1.70
0.583	2.12	3.667	2.83	6.750	6.80	9.83	1.70
0.667	2.12	3.750	2.83	6.833	6.80	9.92	1.70
0.750	0.99	3.833	2.83	6.917	6.80	10.00	1.70
0.833	0.99	3.917	2.83	7.000	6.80	10.08	1.70
0.917	0.99	4.000	2.83	7.083	6.80	10.17	1.70
1.000	0.99	4.083	2.83	7.167	6.80	10.25	2.41
1.083	0.99	4.167	2.83	7.250	4.53	10.33	2.41
1.167	0.99	4.250	3.82	7.333	4.53	10.42	2.41
1.250	1.84	4.333	3.82	7.417	4.53	10.50	2.41
1.333	1.84	4.417	3.82	7.500	4.53	10.58	2.41
1.417	1.84	4.500	3.82	7.583	4.53	10.67	2.41
1.500	1.84	4.583	3.82	7.667	4.53	10.75	1.56
1.583	1.84	4.667	3.82	7.750	3.96	10.83	1.56
1.667	1.84	4.750	4.81	7.833	3.96	10.92	1.56
1.750	1.84	4.833	4.81	7.917	3.96	11.00	1.56
1.833	1.84	4.917	4.81	8.000	3.96	11.08	1.56
1.917	1.84	5.000	4.81	8.083	3.96	11.17	1.56
2.000	1.84	5.083	4.81	8.167	3.96	11.25	1.42
2.083	1.84	5.167	4.81	8.250	3.12	11.33	1.42
2.167	1.84	5.250	7.65	8.333	3.12	11.42	1.42
2.250	2.41	5.333	7.65	8.417	3.12	11.50	1.42
2.333	2.41	5.417	7.65	8.500	3.12	11.58	1.42
2.417	2.41	5.500	7.65	8.583	3.12	11.67	1.42

2.500	2.41	5.583	7.65	8.667	3.12	11.75	1.42
2.583	2.41	5.667	7.65	8.750	3.26	11.83	1.42
2.667	2.41	5.750	60.60	8.833	3.26	11.92	1.42
2.750	2.12	5.833	60.60	8.917	3.26	12.00	1.42
2.833	2.12	5.917	60.60	9.000	3.26	12.08	1.42
2.917	2.12	6.000	60.60	9.083	3.26	12.17	1.42
3.000	2.12	6.083	60.60	9.167	3.26		
3.083	2.12	6.167	60.60	9.250	2.12		

Max.Eff.Inten.(mm/hr)= 60.60 23.38  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.53 (ii) 16.98 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 69.80 24.06 35.42  
TOTAL RAINFALL (mm)= 70.80 70.80 70.80  
RUNOFF COEFFICIENT = 0.99 0.34 0.50

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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V V I SSSSS U U A L (v 6.2.2015)
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V V I SS U U A A L
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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\1c84845-031e-4e05-9bc9-260501a82788\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\1c84845-031e-4e05-9bc9-260501a82788\s

DATE: 12-12-2023

TIME: 10:33:36

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS010-2073 \*\*  
\*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\0a2ab211-eeb5-4a53-acea-3e72082fedbe\1699aa23
Ptotal= 80.40 mm	Comments: 12SCS010-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.22	6.33	17.53	9.50	2.41
0.17	2.41	3.33	3.22	6.50	17.53	9.67	1.93
0.33	2.41	3.50	3.22	6.67	7.72	9.83	1.93
0.50	2.41	3.67	3.22	6.83	7.72	10.00	1.93
0.67	1.13	3.83	3.22	7.00	7.72	10.17	2.73
0.83	1.13	4.00	3.22	7.17	5.15	10.33	2.73
1.00	1.13	4.17	4.34	7.33	5.15	10.50	2.73
1.17	2.09	4.33	4.34	7.50	5.15	10.67	1.77
1.33	2.09	4.50	4.34	7.67	4.50	10.83	1.77
1.50	2.09	4.67	5.47	7.83	4.50	11.00	1.77
1.67	2.09	4.83	5.47	8.00	4.50	11.17	1.61
1.83	2.09	5.00	5.47	8.17	3.54	11.33	1.61
2.00	2.09	5.17	8.68	8.33	3.54	11.50	1.61
2.17	2.73	5.33	8.68	8.50	3.54	11.67	1.61
2.33	2.73	5.50	8.68	8.67	3.70	11.83	1.61

2.50	2.73	5.67	68.82	8.83	3.70	12.00	1.61
2.67	2.41	5.83	68.82	9.00	3.70		
2.83	2.41	6.00	68.82	9.17	2.41		
3.00	2.41	6.17	17.53	9.33	2.41		

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CALIB	
STANDHYD ( 0190)	Area (ha)= 0.35
ID= 1 DT= 5.0 min	Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61

2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.92 (ii) 18.68 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.032 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 43.18  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140) | Area (ha)= 4.69  
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 20.96  
over (min) 5.00 25.00  
Storage Coeff. (min)= 4.18 (ii) 20.03 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.24 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.39 0.10 0.459 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 79.40 21.97 46.66  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40

RUNOFF COEFFICIENT = 0.99 0.27 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0140):	4.69	0.459	6.17	46.66
+ ID2= 2 ( 0190):	0.35	0.032	6.17	43.18
=====				
ID = 3 ( 0009):	5.04	0.491	6.17	46.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0200)	0.38	
ID= 1 DT= 5.0 min	Total Imp(%)= 47.00	Dir. Conn.(%)= 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93



0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.96 (ii) 18.73 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.040 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 47.93  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.040	6.17	47.93
+ ID2= 2 ( 0009):	5.04	0.491	6.17	46.42
=====				
ID = 3 ( 0011):	5.42	0.532	6.17	46.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 13.27		Curve Number (CN)= 72.0	
NASHYD ( 0150)		Ia (mm)= 10.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min		U.H. Tp(hrs)= 0.32			

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61

2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.715 (i)  
 TIME TO PEAK (hrs)= 6.333  
 RUNOFF VOLUME (mm)= 29.287  
 TOTAL RAINFALL (mm)= 80.400  
 RUNOFF COEFFICIENT = 0.364

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

-----  
 | CALIB |  
 | STANDHYD ( 0170) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.06  
 Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93

0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 45.15  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.12 (ii) 12.99 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 79.40 43.35 68.47  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.54 0.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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			
NASHYD ( 0100)	Area (ha)=	27.26	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)=	12.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.91	

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.599 (i)

TIME TO PEAK (hrs)= 7.167

RUNOFF VOLUME (mm)= 23.714

TOTAL RAINFALL (mm)= 80.400

RUNOFF COEFFICIENT = 0.295

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

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-----  
| CALIB |  
| STANDHYD ( 0110) | Area (ha)= 0.65  
| ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77

1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.31 (ii) 19.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.05 0.01 0.065 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 46.16  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0100):	27.26	0.599	7.17	23.71
+ ID2= 2 ( 0110):	0.65	0.065	6.17	46.16
=====				
ID = 3 ( 0003):	27.91	0.610	7.17	24.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0210) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.05  
 Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41		6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22		6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22		6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22		6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22		6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22		6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22		6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22		6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22		6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22		7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22		7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22		7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22		7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34		7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34		7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34		7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34		7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34		7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34		7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47		7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47		7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47		8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47		8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47		8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47		8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68		8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68		8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68		8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68		8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68		8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68		8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82		8.833	3.70	11.92	1.61



2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.04 (ii) 17.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 44.22  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41

0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.11 (ii) 17.87 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 44.82  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.56

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.005	6.17	44.22
+ ID2= 2 ( 0220):	0.06	0.006	6.17	44.82
=====				
ID = 3 ( 0020):	0.11	0.011	6.17	44.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	0.05
STANDHYD ( 0230)	Total Imp(%)=	45.00	Dir. Conn.(%)= 45.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73

1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.04 (ii) 17.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 46.61  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0020):	0.11	0.011	6.17	44.55
+ ID2= 2 ( 0230):	0.05	0.005	6.17	46.61

=====

ID = 3 ( 0021):      0.16   0.016      6.17      45.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB			
NASHYD ( 0101)	Area (ha)=	2.94	Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)=	10.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.31	

-----

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61

2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.158 (i)  
 TIME TO PEAK (hrs)= 6.333  
 RUNOFF VOLUME (mm)= 28.694  
 TOTAL RAINFALL (mm)= 80.400  
 RUNOFF COEFFICIENT = 0.357

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

CALIB			
NASHYD ( 0111)	Area (ha)=	1.32	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)=	9.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.13	

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77

1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.110 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 29.925  
 TOTAL RAINFALL (mm)= 80.400  
 RUNOFF COEFFICIENT = 0.372

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41

0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 19.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.56 (ii) 19.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.07 0.02 0.082 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 20.07 42.01  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.25 0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0111):	1.32	0.110	6.17	29.92
+ ID2= 2 ( 0120):	0.92	0.082	6.17	42.01
=====				
ID = 3 ( 0012):	2.24	0.193	6.17	34.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	18.61
STANDHYD ( 0130)	Total Imp(%)=	21.00	Dir. Conn.(%)= 21.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73

1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 21.67  
over (min) 5.00 25.00  
Storage Coeff. (min)= 6.31 (ii) 21.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.74 0.55 1.141 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 79.40 22.67 34.58  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.28 0.43

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0012):	2.24	0.193	6.17	34.89
+ ID2= 2 ( 0130):	18.61	1.141	6.17	34.58
=====				

ID = 3 ( 0006): 20.85 1.334 6.17 34.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0007)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0101):	2.94	0.158	6.33	28.69
+ ID2= 2 ( 0006):	20.85	1.334	6.17	34.62
=====				
ID = 3 ( 0007):	23.79	1.465	6.17	33.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0160)	0.44	
ID= 1 DT= 5.0 min	Total Imp(%)= 21.00	Dir. Conn.(%)= 21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.35
Dep. Storage (mm)=	1.00	4.60
Average Slope (%)=	1.00	2.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.330

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73

1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max.Eff.Inten.(mm/hr)= 68.82 31.02  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.05 (ii) 15.37 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.02 0.036 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 79.40 30.25 40.55  
TOTAL RAINFALL (mm)= 80.40 80.40 80.40  
RUNOFF COEFFICIENT = 0.99 0.38 0.50

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601)	Area (ha)= 0.14
ID= 1 DT= 5.0 min	Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

Surface Area (ha)= IMPERVIOUS 0.04 PERVIOUS (i) 0.10

Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.41	6.250	17.53	9.33	2.41
0.167	0.00	3.250	3.22	6.333	17.53	9.42	2.41
0.250	2.41	3.333	3.22	6.417	17.53	9.50	2.41
0.333	2.41	3.417	3.22	6.500	17.53	9.58	2.41
0.417	2.41	3.500	3.22	6.583	17.53	9.67	2.41
0.500	2.41	3.583	3.22	6.667	17.53	9.75	1.93
0.583	2.41	3.667	3.22	6.750	7.72	9.83	1.93
0.667	2.41	3.750	3.22	6.833	7.72	9.92	1.93
0.750	1.13	3.833	3.22	6.917	7.72	10.00	1.93
0.833	1.13	3.917	3.22	7.000	7.72	10.08	1.93
0.917	1.13	4.000	3.22	7.083	7.72	10.17	1.93
1.000	1.13	4.083	3.22	7.167	7.72	10.25	2.73
1.083	1.13	4.167	3.22	7.250	5.15	10.33	2.73
1.167	1.13	4.250	4.34	7.333	5.15	10.42	2.73
1.250	2.09	4.333	4.34	7.417	5.15	10.50	2.73
1.333	2.09	4.417	4.34	7.500	5.15	10.58	2.73
1.417	2.09	4.500	4.34	7.583	5.15	10.67	2.73
1.500	2.09	4.583	4.34	7.667	5.15	10.75	1.77
1.583	2.09	4.667	4.34	7.750	4.50	10.83	1.77
1.667	2.09	4.750	5.47	7.833	4.50	10.92	1.77
1.750	2.09	4.833	5.47	7.917	4.50	11.00	1.77
1.833	2.09	4.917	5.47	8.000	4.50	11.08	1.77
1.917	2.09	5.000	5.47	8.083	4.50	11.17	1.77
2.000	2.09	5.083	5.47	8.167	4.50	11.25	1.61
2.083	2.09	5.167	5.47	8.250	3.54	11.33	1.61
2.167	2.09	5.250	8.68	8.333	3.54	11.42	1.61
2.250	2.73	5.333	8.68	8.417	3.54	11.50	1.61
2.333	2.73	5.417	8.68	8.500	3.54	11.58	1.61
2.417	2.73	5.500	8.68	8.583	3.54	11.67	1.61
2.500	2.73	5.583	8.68	8.667	3.54	11.75	1.61
2.583	2.73	5.667	8.68	8.750	3.70	11.83	1.61
2.667	2.73	5.750	68.82	8.833	3.70	11.92	1.61
2.750	2.41	5.833	68.82	8.917	3.70	12.00	1.61
2.833	2.41	5.917	68.82	9.000	3.70	12.08	1.61
2.917	2.41	6.000	68.82	9.083	3.70	12.17	1.61
3.000	2.41	6.083	68.82	9.167	3.70		
3.083	2.41	6.167	68.82	9.250	2.41		

Max. Eff. Inten. (mm/hr)=	68.82	30.82
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Storage Coeff. (min)=	5.00	20.00	
Unit Hyd. Tpeak (min)=	1.46 (ii)	15.29 (ii)	
Unit Hyd. peak (cms)=	5.00	20.00	
	0.33	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.01	0.012 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	79.40	30.00	42.29
TOTAL RAINFALL (mm)=	80.40	80.40	80.40
RUNOFF COEFFICIENT =	0.99	0.37	0.53

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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=====

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V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

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000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\b  
dd3efd0-95af-4b56-81ef-066099ca9510\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\b  
dd3efd0-95af-4b56-81ef-066099ca9510\s

DATE: 12-12-2023

TIME: 10:33:36

USER:

COMMENTS: \_\_\_\_\_

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 -----  
 \*\*\*\*\*  
 \*\* SIMULATION : 12SCS025-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData Local\Temp\ 0a2ab211-eeb5-4a53-acea-3e72082fedbe\f94d7968
Ptotal= 93.60 mm	Comments: 12SCS025-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.74	6.33	20.40	9.50	2.81
0.17	2.81	3.33	3.74	6.50	20.40	9.67	2.25
0.33	2.81	3.50	3.74	6.67	8.99	9.83	2.25
0.50	2.81	3.67	3.74	6.83	8.99	10.00	2.25
0.67	1.31	3.83	3.74	7.00	8.99	10.17	3.18
0.83	1.31	4.00	3.74	7.17	5.99	10.33	3.18
1.00	1.31	4.17	5.05	7.33	5.99	10.50	3.18
1.17	2.43	4.33	5.05	7.50	5.99	10.67	2.06
1.33	2.43	4.50	5.05	7.67	5.24	10.83	2.06
1.50	2.43	4.67	6.36	7.83	5.24	11.00	2.06
1.67	2.43	4.83	6.36	8.00	5.24	11.17	1.87
1.83	2.43	5.00	6.36	8.17	4.12	11.33	1.87
2.00	2.43	5.17	10.11	8.33	4.12	11.50	1.87
2.17	3.18	5.33	10.11	8.50	4.12	11.67	1.87
2.33	3.18	5.50	10.11	8.67	4.31	11.83	1.87
2.50	3.18	5.67	80.12	8.83	4.31	12.00	1.87
2.67	2.81	5.83	80.12	9.00	4.31		
2.83	2.81	6.00	80.12	9.17	2.81		
3.00	2.81	6.17	20.40	9.33	2.81		

-----  
 -----  
 CALIB  
 STANDHYD ( 0190) | Area (ha)= 0.35

|ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87



3.000	2.81	6.083	80.12	9.167	4.31
3.083	2.81	6.167	80.12	9.250	2.81

Max.Eff.Inten.(mm/hr)=	80.12	26.77	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.80 (ii)	16.44 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.03	0.01	0.039 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	92.60	26.48	52.24
TOTAL RAINFALL (mm)=	93.60	93.60	93.60
RUNOFF COEFFICIENT =	0.99	0.28	0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0140)		Area (ha)= 4.69
ID= 1 DT= 5.0 min		Total Imp(%)= 43.00   Dir. Conn.(%)= 43.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25

0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 29.26  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.93 (ii) 17.81 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.24 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.45 0.14 0.570 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 28.86 56.27  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.31 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0140):	4.69	0.570	6.17	56.27
+ ID2= 2 ( 0190):	0.35	0.039	6.17	52.24
=====				
ID = 3 ( 0009):	5.04	0.609	6.17	55.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0200)			
ID= 1 DT= 5.0 min	Area (ha)=	0.38	
	Total Imp(%)=	47.00	Dir. Conn.(%)= 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06

1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.85 (ii) 16.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.01 0.048 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 57.53  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.048	6.17	57.53
+ ID2= 2 ( 0009):	5.04	0.609	6.17	55.99
=====				
ID = 3 ( 0011):	5.42	0.657	6.17	56.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0150) | Area (ha)= 13.27 Curve Number (CN)= 72.0
| ID= 1 DT= 5.0 min | Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.32

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		

3.083    2.81 | 6.167    80.12 | 9.250    2.81 |

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.949 (i)  
 TIME TO PEAK (hrs)= 6.333  
 RUNOFF VOLUME (mm)= 38.310  
 TOTAL RAINFALL (mm)= 93.600  
 RUNOFF COEFFICIENT = 0.409

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

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 | CALIB |  
 | STANDHYD ( 0170) | Area (ha)= 0.06  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06

1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 56.33  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.05 (ii) 11.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.012 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 92.60 54.38 81.01  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.58 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
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| U.H. Tp(hrs)= 0.91

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.815 (i)

TIME TO PEAK (hrs)= 7.083

RUNOFF VOLUME (mm)= 31.707

TOTAL RAINFALL (mm)= 93.600

RUNOFF COEFFICIENT = 0.339

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



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 | CALIB |  
 | STANDHYD ( 0110) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.65  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	'	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	'	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	'	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	'	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	'	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	'	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	'	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	'	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	'	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	'	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	'	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	'	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	'	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	'	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	'	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	'	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	'	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	'	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	'	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	'	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	'	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	'	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	'	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	'	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	'	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	'	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	'	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	'	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	'	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	'	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	'	8.750	4.31	11.83	1.87

2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)=	80.12	26.77	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.17 (ii)	16.80 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.31	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.06	0.02	0.079 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	92.60	26.48	55.56
TOTAL RAINFALL (mm)=	93.60	93.60	93.60
RUNOFF COEFFICIENT =	0.99	0.28	0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0003) |
| 1 + 2 = 3 |
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	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0100):	27.26	0.815	7.08	31.71
+ ID2= 2 ( 0110):	0.65	0.079	6.17	55.56
=====				
ID = 3 ( 0003):	27.91	0.828	7.08	32.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0210) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.05		
Total Imp(%)=	41.00	Dir. Conn.(%)=	41.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00

Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.97 (ii) 15.61 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00

Unit Hyd. peak (cms)=	0.34	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	92.60	26.48	53.39
TOTAL RAINFALL (mm)=	93.60	93.60	93.60
RUNOFF COEFFICIENT =	0.99	0.28	0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.32	40.00
Mannings n =	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18

1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.04 (ii) 15.67 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.007 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 54.05  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |  
| 1 + 2 = 3 |

-----  
ID1= 1 ( 0210): AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
0.05 0.006 6.17 53.39

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+ ID2= 2 ( 0220):    0.06  0.007   6.17   54.05
=====
ID = 3 ( 0020):    0.11  0.013   6.17   53.75

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0230) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87

2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.97 (ii) 15.61 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 56.04  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0020):	0.11	0.013	6.17	53.75
+ ID2= 2 ( 0230):	0.05	0.006	6.17	56.04
=====				
ID = 3 ( 0021):	0.16	0.019	6.17	54.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| NASHYD ( 0101) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	2.94	Curve Number (CN)=	72.0
Ia (mm)=	10.90	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.31		

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.210 (i)

TIME TO PEAK (hrs)= 6.333

RUNOFF VOLUME (mm)= 37.674



TOTAL RAINFALL (mm)= 93.600  
 RUNOFF COEFFICIENT = 0.402

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

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 -----  
 | CALIB |  
 | NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00  
 -----  
 U.H. Tp(hrs)= 0.13

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87

2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.145 (i)  
 TIME TO PEAK (hrs)= 6.167  
 RUNOFF VOLUME (mm)= 39.045  
 TOTAL RAINFALL (mm)= 93.600  
 RUNOFF COEFFICIENT = 0.417

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

CALIB	
STANDHYD ( 0120)	Area (ha)= 0.92
ID= 1 DT= 5.0 min	Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18

1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 26.77  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.41 (ii) 17.04 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.03 0.100 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 26.48 50.94  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.28 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012) |  
| 1 + 2 = 3 |

-----  
ID1= 1 ( 0111): AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
1.32 0.145 6.17 39.05

```

+ ID2= 2 ( 0120):    0.92  0.100  6.17  50.94
=====
ID = 3 ( 0012):    2.24  0.245  6.17  43.93

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0130) | Area (ha)= 18.61
| ID= 1 DT= 5.0 min | Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87

2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 30.16  
over (min) 5.00 20.00  
Storage Coeff. (min)= 5.94 (ii) 19.65 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.19 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.86 0.78 1.519 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 92.60 29.72 42.93  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.32 0.46

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0012):	2.24	0.245	6.17	43.93
+ ID2= 2 ( 0130):	18.61	1.519	6.17	42.93
=====				
ID = 3 ( 0006):	20.85	1.763	6.17	43.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0007) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0101):	2.94	0.210	6.33	37.67

```

+ ID2= 2 ( 0006):    20.85    1.763    6.17    43.03
=====
ID = 3 ( 0007):    23.79    1.941    6.17    42.37

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0160) | Area (ha)= 0.44
| ID= 1 DT= 5.0 min | Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.35
Dep. Storage	(mm)=	1.00	4.60
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.16	40.00
Mannings n	=	0.013	0.330

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

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87

2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 39.99  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.93 (ii) 13.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.03 0.048 (iii)  
TIME TO PEAK (hrs)= 6.08 6.25 6.17  
RUNOFF VOLUME (mm)= 92.60 39.00 50.24  
TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
RUNOFF COEFFICIENT = 0.99 0.42 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.81	6.250	20.40	9.33	2.81
0.167	0.00	3.250	3.74	6.333	20.40	9.42	2.81
0.250	2.81	3.333	3.74	6.417	20.40	9.50	2.81
0.333	2.81	3.417	3.74	6.500	20.40	9.58	2.81
0.417	2.81	3.500	3.74	6.583	20.40	9.67	2.81
0.500	2.81	3.583	3.74	6.667	20.40	9.75	2.25
0.583	2.81	3.667	3.74	6.750	8.99	9.83	2.25
0.667	2.81	3.750	3.74	6.833	8.99	9.92	2.25
0.750	1.31	3.833	3.74	6.917	8.99	10.00	2.25
0.833	1.31	3.917	3.74	7.000	8.99	10.08	2.25
0.917	1.31	4.000	3.74	7.083	8.99	10.17	2.25
1.000	1.31	4.083	3.74	7.167	8.99	10.25	3.18
1.083	1.31	4.167	3.74	7.250	5.99	10.33	3.18
1.167	1.31	4.250	5.05	7.333	5.99	10.42	3.18
1.250	2.43	4.333	5.05	7.417	5.99	10.50	3.18
1.333	2.43	4.417	5.05	7.500	5.99	10.58	3.18
1.417	2.43	4.500	5.05	7.583	5.99	10.67	3.18
1.500	2.43	4.583	5.05	7.667	5.99	10.75	2.06
1.583	2.43	4.667	5.05	7.750	5.24	10.83	2.06
1.667	2.43	4.750	6.36	7.833	5.24	10.92	2.06
1.750	2.43	4.833	6.36	7.917	5.24	11.00	2.06
1.833	2.43	4.917	6.36	8.000	5.24	11.08	2.06
1.917	2.43	5.000	6.36	8.083	5.24	11.17	2.06
2.000	2.43	5.083	6.36	8.167	5.24	11.25	1.87
2.083	2.43	5.167	6.36	8.250	4.12	11.33	1.87
2.167	2.43	5.250	10.11	8.333	4.12	11.42	1.87
2.250	3.18	5.333	10.11	8.417	4.12	11.50	1.87
2.333	3.18	5.417	10.11	8.500	4.12	11.58	1.87
2.417	3.18	5.500	10.11	8.583	4.12	11.67	1.87
2.500	3.18	5.583	10.11	8.667	4.12	11.75	1.87
2.583	3.18	5.667	10.11	8.750	4.31	11.83	1.87
2.667	3.18	5.750	80.12	8.833	4.31	11.92	1.87
2.750	2.81	5.833	80.12	8.917	4.31	12.00	1.87
2.833	2.81	5.917	80.12	9.000	4.31	12.08	1.87
2.917	2.81	6.000	80.12	9.083	4.31	12.17	1.87
3.000	2.81	6.083	80.12	9.167	4.31		
3.083	2.81	6.167	80.12	9.250	2.81		

Max.Eff.Inten.(mm/hr)= 80.12 39.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.37 (ii) 13.86 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.016 (iii)  
 TIME TO PEAK (hrs)= 6.00 6.25 6.17  
 RUNOFF VOLUME (mm)= 92.60 38.72 52.12  
 TOTAL RAINFALL (mm)= 93.60 93.60 93.60  
 RUNOFF COEFFICIENT = 0.99 0.41 0.56



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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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V   V   I   SSSSS U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A   L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A   L
  VV    I   SSSSS UUUUU A   A   LLLLL

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000  TTTTT  TTTTT  H   H   Y   Y   M   M   000  TM
0 0  T    T    H   H   Y Y   MM MM 0 0
0 0  T    T    H   H   Y   M   M 0 0
000  T    T    H   H   Y   M   M 000

```

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\c2ef6db3-427f-4699-bb51-707a8e91d84a\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\c2ef6db3-427f-4699-bb51-707a8e91d84a\s

DATE: 12-12-2023

TIME: 10:33:36

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : 12SCS050-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData Local\Temp\ 0a2ab211-eeb5-4a53-acea-3e72082fedbe\580c1935
Ptotal=103.20 mm	Comments: 12SCS050-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	4.13	6.33	22.50	9.50	3.10
0.17	3.10	3.33	4.13	6.50	22.50	9.67	2.48
0.33	3.10	3.50	4.13	6.67	9.91	9.83	2.48
0.50	3.10	3.67	4.13	6.83	9.91	10.00	2.48
0.67	1.44	3.83	4.13	7.00	9.91	10.17	3.51
0.83	1.44	4.00	4.13	7.17	6.60	10.33	3.51
1.00	1.44	4.17	5.57	7.33	6.60	10.50	3.51
1.17	2.68	4.33	5.57	7.50	6.60	10.67	2.27
1.33	2.68	4.50	5.57	7.67	5.78	10.83	2.27
1.50	2.68	4.67	7.02	7.83	5.78	11.00	2.27
1.67	2.68	4.83	7.02	8.00	5.78	11.17	2.06
1.83	2.68	5.00	7.02	8.17	4.54	11.33	2.06
2.00	2.68	5.17	11.15	8.33	4.54	11.50	2.06
2.17	3.51	5.33	11.15	8.50	4.54	11.67	2.06
2.33	3.51	5.50	11.15	8.67	4.75	11.83	2.06
2.50	3.51	5.67	88.34	8.83	4.75	12.00	2.06
2.67	3.10	5.83	88.34	9.00	4.75		
2.83	3.10	6.00	88.34	9.17	3.10		
3.00	3.10	6.17	22.50	9.33	3.10		

CALIB	
STANDHYD ( 0190)	Area (ha)= 0.35
ID= 1 DT= 5.0 min	Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10		6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13		6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13		6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13		6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13		6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13		6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13		6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13		6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13		6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13		7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13		7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13		7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13		7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57		7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57		7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57		7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57		7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57		7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57		7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02		7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02		7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02		8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02		8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02		8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02		8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15		8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15		8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15		8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15		8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15		8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15		8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34		8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34		8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34		9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34		9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34		9.167	4.75		
3.083	3.10	6.167	88.34		9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.73 (ii) 15.38 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.045 (iii)

TIME TO PEAK	(hrs)=	6.08	6.33	6.17
RUNOFF VOLUME	(mm)=	102.20	31.51	59.05
TOTAL RAINFALL	(mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT	=	0.99	0.31	0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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	Area	(ha)=	4.69	
STANDHYD ( 0140)	Total Imp(%)=	43.00	Dir. Conn.(%)=	43.00
ID= 1 DT= 5.0 min				

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27

1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 34.75  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.78 (ii) 16.73 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.25 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.49 0.17 0.644 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 102.20 34.24 63.46  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.33 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0140):	4.69	0.644	6.17	63.46
+ ID2= 2 ( 0190):	0.35	0.045	6.17	59.05
=====				
ID = 3 ( 0009):	5.04	0.689	6.17	63.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0200) | Area (ha)= 0.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.18      0.20
Dep. Storage    (mm)=          1.00      5.00
Average Slope   (%)=          1.00      2.00
Length          (m)=         50.33      40.00
Mannings n      =           0.013      0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06

2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.78 (ii) 15.42 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.01 0.054 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 102.20 31.51 64.71  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.31 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011)|
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.054	6.17	64.71
+ ID2= 2 ( 0009):	5.04	0.689	6.17	63.15
=====				
ID = 3 ( 0011):	5.42	0.743	6.17	63.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB
| NASHYD ( 0150)|
| ID= 1 DT= 5.0 min |
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Area (ha)=	13.27	Curve Number (CN)=	72.0
Ia (mm)=	10.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.32		

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	'	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.10		6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13		6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13		6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13		6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13		6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13		6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13		6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13		6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13		6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13		7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13		7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13		7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13		7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57		7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57		7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57		7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57		7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57		7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57		7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02		7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02		7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02		8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02		8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02		8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02		8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15		8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15		8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15		8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15		8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15		8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15		8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34		8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34		8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34		9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34		9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34		9.167	4.75		
3.083	3.10	6.167	88.34		9.250	3.10		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 1.130 (i)

TIME TO PEAK (hrs)= 6.333

RUNOFF VOLUME (mm)= 45.232

TOTAL RAINFALL (mm)= 103.200

RUNOFF COEFFICIENT = 0.438



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

CALIB			
STANDHYD ( 0170)	Area (ha)=	0.06	
ID= 1 DT= 5.0 min	Total Imp(%)=	70.00	Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06

2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 64.61  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.01 (ii) 11.30 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.013 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 102.20 62.64 90.20  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.61 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.91

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48

0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.984 (i)

TIME TO PEAK (hrs)= 7.083

RUNOFF VOLUME (mm)= 37.921

TOTAL RAINFALL (mm)= 103.200

RUNOFF COEFFICIENT = 0.367

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00

Length (m)= 65.83 40.00  
 Mannings n = 0.013 0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10	
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10	
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10	
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10	
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10	
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48	
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48	
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48	
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48	
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48	
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48	
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51	
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51	
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51	
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51	
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51	
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51	
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27	
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27	
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27	
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27	
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27	
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27	
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06	
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06	
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06	
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06	
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06	
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06	
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06	
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06	
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06	
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06	
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06	
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06	
3.000	3.10	6.083	88.34	9.167	4.75			
3.083	3.10	6.167	88.34	9.250	3.10			

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.09 (ii) 15.73 (ii)

Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.31	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.07	0.02	0.089 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	102.20	31.51	62.60
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.31	0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
| AREA   QPEAK   TPEAK   R.V. |
| (ha)   (cms)   (hrs)   (mm) |
| ID1= 1 ( 0100): 27.26  0.984  7.08  37.92 |
| + ID2= 2 ( 0110):  0.65  0.089  6.17  62.60 |
|=====|
| ID = 3 ( 0003): 27.91  0.999  7.08  38.50 |

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0210) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.05 |
| Total Imp(%)= 41.00 | Dir. Conn.(%)= 41.00 |

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN |
| hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr |
| 0.083  0.00 | 3.167  3.10 | 6.250 22.50 | 9.33  3.10 |
| 0.167  0.00 | 3.250  4.13 | 6.333 22.50 | 9.42  3.10 |

```

0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)=	88.34	31.88
over (min)	5.00	15.00
Storage Coeff. (min)=	0.94 (ii)	14.58 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	102.20	31.51	60.30
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.31	0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06

2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.00 (ii) 14.64 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 102.20 31.51 61.06  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.31 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0210):	0.05	0.007	6.17	60.30
+ ID2= 2 ( 0220):	0.06	0.008	6.17	61.06
=====				
ID = 3 ( 0020):	0.11	0.015	6.17	60.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.05
Total Imp(%)=	45.00
Dir. Conn.(%)=	45.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		

3.083    3.10 | 6.167    88.34 | 9.250    3.10 |

Max.Eff.Inten.(mm/hr)=	88.34	31.88	
over (min)	5.00	15.00	
Storage Coeff. (min)=	0.94 (ii)	14.58 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	102.20	31.51	63.14
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.31	0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0    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 ( 0021) |
| 1 + 2 = 3      |
-----
| AREA   QPEAK  TPEAK   R.V.
| (ha)   (cms)  (hrs)   (mm)
|-----|
| ID1= 1 ( 0020): 0.11  0.015  6.17  60.71
| + ID2= 2 ( 0230): 0.05  0.007  6.17  63.14
|=====|
| ID = 3 ( 0021): 0.16  0.022  6.17  61.47

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| NASHYD ( 0101) | Area (ha)= 2.94 Curve Number (CN)= 72.0
| ID= 1 DT= 5.0 min | Ia (mm)= 10.90 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.31

```

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN
| hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr
|-----|
| 0.083  0.00 | 3.167  3.10 | 6.250 22.50 | 9.33  3.10
| 0.167  0.00 | 3.250  4.13 | 6.333 22.50 | 9.42  3.10
| 0.250  3.10 | 3.333  4.13 | 6.417 22.50 | 9.50  3.10

```

0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.251 (i)

TIME TO PEAK (hrs)= 6.333

RUNOFF VOLUME (mm)= 44.570

TOTAL RAINFALL (mm)= 103.200

RUNOFF COEFFICIENT = 0.432

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

---

CALIB				
NASHYD ( 0111)	Area	(ha)=	1.32	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia	(mm)=	9.90	# of Linear Res.(N)= 3.00

----- U.H. Tp(hrs)= 0.13

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.171 (i)

TIME TO PEAK (hrs)= 6.167

RUNOFF VOLUME (mm)= 46.028  
 TOTAL RAINFALL (mm)= 103.200  
 RUNOFF COEFFICIENT = 0.446

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06

2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 31.88  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.32 (ii) 15.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.04 0.114 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 102.20 31.51 57.66  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.31 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0111):  1.32  0.171  6.17  46.03
+ ID2= 2 ( 0120):  0.92  0.114  6.17  57.66
=====
ID = 3 ( 0012):  2.24  0.284  6.17  50.80

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 18.61
Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		

3.083    3.10 | 6.167    88.34 | 9.250    3.10 |

Max.Eff.Inten.(mm/hr)=	88.34	35.77	
over (min)	5.00	20.00	
Storage Coeff. (min)=	5.71 (ii)	18.52 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.20	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.95	0.95	1.762 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	102.20	35.22	49.29
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.34	0.48

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 59.0    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 ( 0012):	2.24	0.284	6.17	50.80
+ ID2= 2 ( 0130):	18.61	1.762	6.17	49.29
=====				
ID = 3 ( 0006):	20.85	2.046	6.17	49.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0007)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0101):	2.94	0.251	6.33	44.57
+ ID2= 2 ( 0006):	20.85	2.046	6.17	49.45
=====				
ID = 3 ( 0007):	23.79	2.261	6.17	48.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0160)	Area (ha)=	0.44	
ID= 1 DT= 5.0 min	Total Imp(%)=	21.00	Dir. Conn.(%)= 21.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.35
Dep. Storage	(mm)=	1.00	4.60
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.16	40.00
Mannings n	=	0.013	0.330

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48
0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		

3.083    3.10 | 6.167    88.34 | 9.250    3.10 |

Max.Eff.Inten.(mm/hr)=	88.34	46.86	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.86 (ii)	13.15 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.32	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.03	0.056 (iii)
TIME TO PEAK (hrs)=	6.08	6.25	6.17
RUNOFF VOLUME (mm)=	102.20	45.70	57.55
TOTAL RAINFALL (mm)=	103.20	103.20	103.20
RUNOFF COEFFICIENT =	0.99	0.44	0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0    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 ( 1601)		Area (ha)= 0.14
ID= 1 DT= 5.0 min		Total Imp(%)= 25.00    Dir. Conn.(%)= 25.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.10	6.250	22.50	9.33	3.10
0.167	0.00	3.250	4.13	6.333	22.50	9.42	3.10
0.250	3.10	3.333	4.13	6.417	22.50	9.50	3.10
0.333	3.10	3.417	4.13	6.500	22.50	9.58	3.10
0.417	3.10	3.500	4.13	6.583	22.50	9.67	3.10
0.500	3.10	3.583	4.13	6.667	22.50	9.75	2.48
0.583	3.10	3.667	4.13	6.750	9.91	9.83	2.48
0.667	3.10	3.750	4.13	6.833	9.91	9.92	2.48
0.750	1.44	3.833	4.13	6.917	9.91	10.00	2.48

0.833	1.44	3.917	4.13	7.000	9.91	10.08	2.48
0.917	1.44	4.000	4.13	7.083	9.91	10.17	2.48
1.000	1.44	4.083	4.13	7.167	9.91	10.25	3.51
1.083	1.44	4.167	4.13	7.250	6.60	10.33	3.51
1.167	1.44	4.250	5.57	7.333	6.60	10.42	3.51
1.250	2.68	4.333	5.57	7.417	6.60	10.50	3.51
1.333	2.68	4.417	5.57	7.500	6.60	10.58	3.51
1.417	2.68	4.500	5.57	7.583	6.60	10.67	3.51
1.500	2.68	4.583	5.57	7.667	6.60	10.75	2.27
1.583	2.68	4.667	5.57	7.750	5.78	10.83	2.27
1.667	2.68	4.750	7.02	7.833	5.78	10.92	2.27
1.750	2.68	4.833	7.02	7.917	5.78	11.00	2.27
1.833	2.68	4.917	7.02	8.000	5.78	11.08	2.27
1.917	2.68	5.000	7.02	8.083	5.78	11.17	2.27
2.000	2.68	5.083	7.02	8.167	5.78	11.25	2.06
2.083	2.68	5.167	7.02	8.250	4.54	11.33	2.06
2.167	2.68	5.250	11.15	8.333	4.54	11.42	2.06
2.250	3.51	5.333	11.15	8.417	4.54	11.50	2.06
2.333	3.51	5.417	11.15	8.500	4.54	11.58	2.06
2.417	3.51	5.500	11.15	8.583	4.54	11.67	2.06
2.500	3.51	5.583	11.15	8.667	4.54	11.75	2.06
2.583	3.51	5.667	11.15	8.750	4.75	11.83	2.06
2.667	3.51	5.750	88.34	8.833	4.75	11.92	2.06
2.750	3.10	5.833	88.34	8.917	4.75	12.00	2.06
2.833	3.10	5.917	88.34	9.000	4.75	12.08	2.06
2.917	3.10	6.000	88.34	9.083	4.75	12.17	2.06
3.000	3.10	6.083	88.34	9.167	4.75		
3.083	3.10	6.167	88.34	9.250	3.10		

Max.Eff.Inten.(mm/hr)= 88.34 46.66  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.32 (ii) 13.03 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.019 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 102.20 45.42 59.57  
TOTAL RAINFALL (mm)= 103.20 103.20 103.20  
RUNOFF COEFFICIENT = 0.99 0.44 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\101443a5-4d56-4090-90a8-06364504cffd\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\101443a5-4d56-4090-90a8-06364504cffd\s

DATE: 12-12-2023

TIME: 10:33:32

USER:

COMMENTS: \_\_\_\_\_

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\*\*\*\*\*  
\*\* SIMULATION : 12SCS100-2073 \*\*  
\*\*\*\*\*

-----  
| READ STORM |

Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal=112.80 mm |

0a2ab211-eeb5-4a53-acea-3e72082fedbe\ a259ca46  
 Comments: 12SCS100-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	4.51	6.33	24.59	9.50	3.38
0.17	3.38	3.33	4.51	6.50	24.59	9.67	2.71
0.33	3.38	3.50	4.51	6.67	10.83	9.83	2.71
0.50	3.38	3.67	4.51	6.83	10.83	10.00	2.71
0.67	1.58	3.83	4.51	7.00	10.83	10.17	3.84
0.83	1.58	4.00	4.51	7.17	7.22	10.33	3.84
1.00	1.58	4.17	6.09	7.33	7.22	10.50	3.84
1.17	2.93	4.33	6.09	7.50	7.22	10.67	2.48
1.33	2.93	4.50	6.09	7.67	6.32	10.83	2.48
1.50	2.93	4.67	7.67	7.83	6.32	11.00	2.48
1.67	2.93	4.83	7.67	8.00	6.32	11.17	2.26
1.83	2.93	5.00	7.67	8.17	4.96	11.33	2.26
2.00	2.93	5.17	12.18	8.33	4.96	11.50	2.26
2.17	3.84	5.33	12.18	8.50	4.96	11.67	2.26
2.33	3.84	5.50	12.18	8.67	5.19	11.83	2.26
2.50	3.84	5.67	96.56	8.83	5.19	12.00	2.26
2.67	3.38	5.83	96.56	9.00	5.19		
2.83	3.38	6.00	96.56	9.17	3.38		
3.00	3.38	6.17	24.59	9.33	3.38		

-----  
 | CALIB |  
 | STANDHYD ( 0190) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.35  
 Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38

0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)=	96.56	37.29
over (min)	5.00	15.00
Storage Coeff. (min)=	1.67 (ii)	14.49 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.04	0.02	0.052 (iii)
TIME TO PEAK (hrs)=	6.08	6.25	6.17
RUNOFF VOLUME (mm)=	111.80	36.82	66.04
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.33	0.59

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140)	Area (ha)=	4.69	
ID= 1 DT= 5.0 min	Total Imp(%)=	43.00	Dir. Conn.(%)= 43.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26

2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 40.52  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.65 (ii) 15.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.25 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.54 0.21 0.721 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 111.80 39.89 70.81  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.35 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0140):	4.69	0.721	6.17	70.81
+ ID2= 2 ( 0190):	0.35	0.052	6.17	66.04
=====				
ID = 3 ( 0009):	5.04	0.773	6.17	70.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
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Area (ha)=	0.38
Total Imp(%)=	47.00 Dir. Conn.(%)= 47.00

Surface Area (ha)=	IMPERVIOUS 0.18	PERVIOUS (i) 0.20
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Dep. Storage (mm)= 1.00 5.00  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 50.33 40.00  
 Mannings n = 0.013 0.350

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max. Eff. Inten. (mm/hr)= 96.56 37.29

over (min)	5.00	15.00	
Storage Coeff. (min)=	1.72 (ii)	14.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.32	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.05	0.02	0.062 (iii)
TIME TO PEAK (hrs)=	6.08	6.25	6.17
RUNOFF VOLUME (mm)=	111.80	36.82	72.03
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.33	0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0200):  0.38  0.062  6.17  72.03
+ ID2= 2 ( 0009):  5.04  0.773  6.17  70.48
=====
ID = 3 ( 0011):  5.42  0.835  6.17  70.59

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0150) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 13.27 Curve Number (CN)= 72.0
Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.32

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

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 3.167 3.38 | 6.250 24.59 | 9.33 3.38
0.167 0.00 | 3.250 4.51 | 6.333 24.59 | 9.42 3.38
0.250 3.38 | 3.333 4.51 | 6.417 24.59 | 9.50 3.38
0.333 3.38 | 3.417 4.51 | 6.500 24.59 | 9.58 3.38
0.417 3.38 | 3.500 4.51 | 6.583 24.59 | 9.67 3.38
0.500 3.38 | 3.583 4.51 | 6.667 24.59 | 9.75 2.71

```

0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 1.317 (i)

TIME TO PEAK (hrs)= 6.333

RUNOFF VOLUME (mm)= 52.410

TOTAL RAINFALL (mm)= 112.800

RUNOFF COEFFICIENT = 0.465

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

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0170) | Area (ha)= 0.06  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00  
 -----

Surface Area (ha)= IMPERVIOUS 0.04 PERVIOUS (i) 0.02

Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max. Eff. Inten. (mm/hr)=	96.56	74.71
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over (min)	5.00	15.00	
Storage Coeff. (min)=	0.97 (ii)	10.68 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.09	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.014 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	111.80	71.05	99.43
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.63	0.88

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
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| U.H. Tp(hrs)= 0.91

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48

1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 1.162 (i)

TIME TO PEAK (hrs)= 7.083

RUNOFF VOLUME (mm)= 44.423

TOTAL RAINFALL (mm)= 112.800

RUNOFF COEFFICIENT = 0.394

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

CALIB	
STANDHYD ( 0110)	Area (ha)= 0.65
ID= 1 DT= 5.0 min	Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38

0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)=	96.56	37.29
over (min)	5.00	15.00
Storage Coeff. (min)=	2.02 (ii)	14.83 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.31	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.08	0.03	0.103 (iii)
TIME TO PEAK (hrs)=	6.08	6.25	6.17
RUNOFF VOLUME (mm)=	111.80	36.82	69.80
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.33	0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0100):	27.26	1.162	7.08	44.42
+ ID2= 2 ( 0110):	0.65	0.103	6.17	69.80
=====				
ID = 3 ( 0003):	27.91	1.178	7.08	45.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0210)	0.05	
ID= 1 DT= 5.0 min	Total Imp(%)= 41.00	41.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84



1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.90 (ii) 13.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 111.80 36.82 67.35  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.33 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06

|ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26

3.000	3.38	6.083	96.56	9.167	5.19
3.083	3.38	6.167	96.56	9.250	3.38

Max.Eff.Inten.(mm/hr)=	96.56	37.29	
over (min)	5.00	15.00	
Storage Coeff. (min)=	0.97 (ii)	13.78 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	111.80	36.82	68.16
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.33	0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0020) |
| 1 + 2 = 3      |
-----
| AREA   QPEAK  TPEAK  R.V. |
| (ha)   (cms)  (hrs)  (mm) |
| ID1= 1 ( 0210): 0.05  0.008  6.17  67.35 |
| + ID2= 2 ( 0220): 0.06  0.009  6.17  68.16 |
|=====|
| ID = 3 ( 0020): 0.11  0.017  6.17  67.79 |

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.05 |
| Total Imp(%)= 45.00 |
| Dir. Conn.(%)= 45.00 |

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 37.29  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.90 (ii) 13.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17

RUNOFF VOLUME (mm)=	111.80	36.82	70.36
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.33	0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
| AREA QPEAK TPEAK R.V. |
| (ha) (cms) (hrs) (mm) |
| ID1= 1 ( 0020): 0.11 0.017 6.17 67.79 |
| + ID2= 2 ( 0230): 0.05 0.008 6.17 70.36 |
|=====|
| ID = 3 ( 0021): 0.16 0.025 6.17 68.59 |

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0101) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 2.94 Curve Number (CN)= 72.0 |
| Ia (mm)= 10.90 # of Linear Res.(N)= 3.00 |
| U.H. Tp(hrs)= 0.31 |

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

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----- TRANSFORMED HYETOGRAPH -----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN |
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr |
| 0.083 0.00 | 3.167 3.38 | 6.250 24.59 | 9.33 3.38 |
| 0.167 0.00 | 3.250 4.51 | 6.333 24.59 | 9.42 3.38 |
| 0.250 3.38 | 3.333 4.51 | 6.417 24.59 | 9.50 3.38 |
| 0.333 3.38 | 3.417 4.51 | 6.500 24.59 | 9.58 3.38 |
| 0.417 3.38 | 3.500 4.51 | 6.583 24.59 | 9.67 3.38 |
| 0.500 3.38 | 3.583 4.51 | 6.667 24.59 | 9.75 2.71 |
| 0.583 3.38 | 3.667 4.51 | 6.750 10.83 | 9.83 2.71 |
| 0.667 3.38 | 3.750 4.51 | 6.833 10.83 | 9.92 2.71 |
| 0.750 1.58 | 3.833 4.51 | 6.917 10.83 | 10.00 2.71 |
| 0.833 1.58 | 3.917 4.51 | 7.000 10.83 | 10.08 2.71 |
| 0.917 1.58 | 4.000 4.51 | 7.083 10.83 | 10.17 2.71 |
| 1.000 1.58 | 4.083 4.51 | 7.167 10.83 | 10.25 3.84 |
| 1.083 1.58 | 4.167 4.51 | 7.250 7.22 | 10.33 3.84 |

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1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.293 (i)

TIME TO PEAK (hrs)= 6.333

RUNOFF VOLUME (mm)= 51.725

TOTAL RAINFALL (mm)= 112.800

RUNOFF COEFFICIENT = 0.459

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

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CALIB							
NASHYD ( 0111)	Area (ha)=	1.32	Curve Number (CN)=	73.0			
ID= 1 DT= 5.0 min	Ia (mm)=	9.90	# of Linear Res.(N)=	3.00			
	U.H. Tp(hrs)=	0.13					

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38

0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.197 (i)

TIME TO PEAK (hrs)= 6.167

RUNOFF VOLUME (mm)= 53.257

TOTAL RAINFALL (mm)= 112.800

RUNOFF COEFFICIENT = 0.472

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

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 -----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92

|ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26



3.000	3.38	6.083	96.56	9.167	5.19
3.083	3.38	6.167	96.56	9.250	3.38

Max.Eff.Inten.(mm/hr)=	96.56	37.29	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.24 (ii)	15.05 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.30	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.09	0.04	0.128 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	111.80	36.82	64.55
TOTAL RAINFALL (mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT =	0.99	0.33	0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0012) |
| 1 + 2 = 3      |
-----
| AREA    QPEAK   TPEAK   R.V.
| (ha)    (cms)   (hrs)   (mm)
| ID1= 1 ( 0111): 1.32  0.197  6.17  53.26
| + ID2= 2 ( 0120): 0.92  0.128  6.17  64.55
|=====
| ID = 3 ( 0012): 2.24  0.325  6.17  57.90

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 18.61
| Total Imp(%)= 21.00  Dir. Conn.(%)= 21.00

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max. Eff. Inten. (mm/hr)= 96.56 41.67  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.51 (ii) 17.56 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.20 0.06

\*TOTALS\*

PEAK FLOW (cms)= 1.04 1.13 2.018 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.33 6.17

RUNOFF VOLUME	(mm)=	111.80	41.00	55.87
TOTAL RAINFALL	(mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT	=	0.99	0.36	0.50

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0    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 ( 0012):	2.24	0.325	6.17	57.90
	+ ID2= 2 ( 0130):	18.61	2.018	6.17	55.87
	=====				
	ID = 3 ( 0006):	20.85	2.344	6.17	56.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----					
ADD HYD ( 0007)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 ( 0101):	2.94	0.293	6.33	51.72
	+ ID2= 2 ( 0006):	20.85	2.344	6.17	56.08
	=====				
	ID = 3 ( 0007):	23.79	2.597	6.17	55.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----				
CALIB				
STANDHYD ( 0160)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	0.44	
	Total Imp(%)=	21.00	Dir. Conn.(%)=	21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.35
Dep. Storage	(mm)=	1.00	4.60
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.16	40.00
Mannings n	=	0.013	0.330

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	'	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	3.38		6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51		6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51		6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51		6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51		6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51		6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51		6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51		6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51		6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51		7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51		7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51		7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51		7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09		7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09		7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09		7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09		7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09		7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09		7.750	6.32	10.83	2.48
1.667	2.93	4.750	7.67		7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67		7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67		8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67		8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67		8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67		8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18		8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18		8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18		8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18		8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18		8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18		8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56		8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56		8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56		9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56		9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56		9.167	5.19		
3.083	3.38	6.167	96.56		9.250	3.38		

Max. Eff. Inten. (mm/hr)= 96.56 53.96  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.79 (ii) 12.46 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.04 0.064 (iii)  
TIME TO PEAK (hrs)= 6.08 6.25 6.17

RUNOFF VOLUME	(mm)=	111.80	52.66	65.06
TOTAL RAINFALL	(mm)=	112.80	112.80	112.80
RUNOFF COEFFICIENT	=	0.99	0.47	0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

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

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

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.38	6.250	24.59	9.33	3.38
0.167	0.00	3.250	4.51	6.333	24.59	9.42	3.38
0.250	3.38	3.333	4.51	6.417	24.59	9.50	3.38
0.333	3.38	3.417	4.51	6.500	24.59	9.58	3.38
0.417	3.38	3.500	4.51	6.583	24.59	9.67	3.38
0.500	3.38	3.583	4.51	6.667	24.59	9.75	2.71
0.583	3.38	3.667	4.51	6.750	10.83	9.83	2.71
0.667	3.38	3.750	4.51	6.833	10.83	9.92	2.71
0.750	1.58	3.833	4.51	6.917	10.83	10.00	2.71
0.833	1.58	3.917	4.51	7.000	10.83	10.08	2.71
0.917	1.58	4.000	4.51	7.083	10.83	10.17	2.71
1.000	1.58	4.083	4.51	7.167	10.83	10.25	3.84
1.083	1.58	4.167	4.51	7.250	7.22	10.33	3.84
1.167	1.58	4.250	6.09	7.333	7.22	10.42	3.84
1.250	2.93	4.333	6.09	7.417	7.22	10.50	3.84
1.333	2.93	4.417	6.09	7.500	7.22	10.58	3.84
1.417	2.93	4.500	6.09	7.583	7.22	10.67	3.84
1.500	2.93	4.583	6.09	7.667	7.22	10.75	2.48
1.583	2.93	4.667	6.09	7.750	6.32	10.83	2.48

1.667	2.93	4.750	7.67	7.833	6.32	10.92	2.48
1.750	2.93	4.833	7.67	7.917	6.32	11.00	2.48
1.833	2.93	4.917	7.67	8.000	6.32	11.08	2.48
1.917	2.93	5.000	7.67	8.083	6.32	11.17	2.48
2.000	2.93	5.083	7.67	8.167	6.32	11.25	2.26
2.083	2.93	5.167	7.67	8.250	4.96	11.33	2.26
2.167	2.93	5.250	12.18	8.333	4.96	11.42	2.26
2.250	3.84	5.333	12.18	8.417	4.96	11.50	2.26
2.333	3.84	5.417	12.18	8.500	4.96	11.58	2.26
2.417	3.84	5.500	12.18	8.583	4.96	11.67	2.26
2.500	3.84	5.583	12.18	8.667	4.96	11.75	2.26
2.583	3.84	5.667	12.18	8.750	5.19	11.83	2.26
2.667	3.84	5.750	96.56	8.833	5.19	11.92	2.26
2.750	3.38	5.833	96.56	8.917	5.19	12.00	2.26
2.833	3.38	5.917	96.56	9.000	5.19	12.08	2.26
2.917	3.38	6.000	96.56	9.083	5.19	12.17	2.26
3.000	3.38	6.083	96.56	9.167	5.19		
3.083	3.38	6.167	96.56	9.250	3.38		

Max.Eff.Inten.(mm/hr)= 96.56 53.76  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.27 (ii) 12.34 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.01 0.021 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 111.80 52.37 67.18  
TOTAL RAINFALL (mm)= 112.80 112.80 112.80  
RUNOFF COEFFICIENT = 0.99 0.46 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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=====

V V I SSSSS U U A L (v 6.2.2015)  
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 UUUU A A LLLLL

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O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\0d20bd5-7547-4a92-9b61-2a353b19b9dc\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\0d20bd5-7547-4a92-9b61-2a353b19b9dc\s

DATE: 12-12-2023

TIME: 10:33:31

USER:

COMMENTS: \_\_\_\_\_

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 \*\*\*\*\*  
 \*\* SIMULATION : Chicago 3hrs\_002-2073 \*\*  
 \*\*\*\*\*

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-----
| READ STORM | Filename: C:\Users\caeh076182\AppData
|            | ata\Local\Temp\
|            | 0a2ab211-eeb5-4a53-acea-3e72082fedbe\8a869b05
| Ptotal= 35.00 mm | Comments: Chicago 3hrs_002-2073
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	24.98	1.67	6.86	2.50	2.12
0.17	1.96	1.00	79.04	1.83	5.02	2.67	1.81
0.33	2.80	1.17	33.41	2.00	3.86	2.83	1.57
0.50	4.43	1.33	16.59	2.17	3.08	3.00	1.38
0.67	8.46	1.50	10.08	2.33	2.53		

-----  
 | CALIB |  
 | STANDHYD ( 0190) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.35  
 Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00
Storage Coeff. (min)=	1.81 (ii)	30.97 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.32	0.04

\*TOTALS\*

PEAK FLOW (cms)=	0.03	0.00	0.030 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	15.52
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.44

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0140) | Area (ha)= 4.69
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	5.36
over (min)	5.00	35.00
Storage Coeff. (min)=	3.95 (ii)	31.30 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.24	0.03

			*TOTALS*
PEAK FLOW	(cms)=	0.42	0.02
TIME TO PEAK	(hrs)=	1.17	1.83
RUNOFF VOLUME	(mm)=	34.00	4.23
TOTAL RAINFALL	(mm)=	35.00	35.00
RUNOFF COEFFICIENT	=	0.97	0.12

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0140):		4.69	0.420	1.17	17.03
+ ID2= 2 ( 0190):		0.35	0.030	1.17	15.52
=====					
ID = 3 ( 0009):		5.04	0.450	1.17	16.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area	(ha)=	0.38
STANDHYD ( 0200)		Total Imp(%)=	47.00	Dir. Conn.(%)= 47.00
ID= 1 DT= 5.0 min				

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00
Storage Coeff. (min)=	1.86 (ii)	31.01 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.32	0.03

\*TOTALS\*

PEAK FLOW	(cms)=	0.04	0.00	0.039 (iii)
TIME TO PEAK	(hrs)=	1.17	1.83	1.17
RUNOFF VOLUME	(mm)=	34.00	3.78	17.94
TOTAL RAINFALL	(mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT	=	0.97	0.11	0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----
| AREA    QPEAK   TPEAK   R.V.
| (ha)    (cms)   (hrs)   (mm)
|-----|
| ID1= 1 ( 0200):  0.38  0.039   1.17   17.94
| + ID2= 2 ( 0009):  5.04  0.450   1.17   16.92
|=====|
| ID = 3 ( 0011):  5.42  0.489   1.17   17.00

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| NASHYD ( 0150) |
| ID= 1 DT= 5.0 min |
|-----|
| Area    (ha)= 13.27   Curve Number (CN)= 72.0
| Ia      (mm)= 10.00   # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.32

```

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
| hrs     mm/hr | hrs     mm/hr | hrs     mm/hr | hrs     mm/hr
|-----|
| 0.083   0.00 | 0.917  24.98 | 1.750   6.86 | 2.58    2.12
| 0.167   0.00 | 1.000  24.98 | 1.833   6.86 | 2.67    2.12
| 0.250   1.96 | 1.083  79.04 | 1.917   5.02 | 2.75    1.81
| 0.333   1.96 | 1.167  79.04 | 2.000   5.02 | 2.83    1.81
| 0.417   2.80 | 1.250  33.41 | 2.083   3.86 | 2.92    1.57
| 0.500   2.80 | 1.333  33.41 | 2.167   3.86 | 3.00    1.57
| 0.583   4.43 | 1.417  16.59 | 2.250   3.08 | 3.08    1.38
| 0.667   4.43 | 1.500  16.59 | 2.333   3.08 | 3.17    1.38
| 0.750   8.46 | 1.583  10.08 | 2.417   2.53 |
| 0.833   8.46 | 1.667  10.08 | 2.500   2.53 |

```

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.165 (i)

TIME TO PEAK (hrs)= 1.667

RUNOFF VOLUME (mm)= 5.048

TOTAL RAINFALL (mm)= 35.000

RUNOFF COEFFICIENT = 0.144

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

-----  
| CALIB |  
| STANDHYD ( 0170) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	16.79
over (min)	5.00	20.00
Storage Coeff. (min)=	1.06 (ii)	18.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.06

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	34.00	10.49	26.82
TOTAL RAINFALL (mm)=	35.00	35.00	35.00

RUNOFF COEFFICIENT = 0.97 0.30 0.77

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.91

```

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.115 (i)  
 TIME TO PEAK (hrs)= 2.500  
 RUNOFF VOLUME (mm)= 3.346  
 TOTAL RAINFALL (mm)= 35.000  
 RUNOFF COEFFICIENT = 0.096

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

```

-----
| CALIB |
| STANDHYD ( 0110) | Area (ha)= 0.65
| ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00
Storage Coeff. (min)=	2.18 (ii)	31.34 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.31	0.03

\*TOTALS\*

PEAK FLOW (cms)=	0.06	0.00	0.063 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	17.05
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)

```

ID1= 1 ( 0100):    27.26   0.115   2.50   3.35
+ ID2= 2 ( 0110):    0.65   0.063   1.17  17.05
=====
ID = 3 ( 0003):    27.91   0.119   2.50   3.66

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 24.98 | 1.750 6.86 | 2.58 2.12
0.167 0.00 | 1.000 24.98 | 1.833 6.86 | 2.67 2.12
0.250 1.96 | 1.083 79.04 | 1.917 5.02 | 2.75 1.81
0.333 1.96 | 1.167 79.04 | 2.000 5.02 | 2.83 1.81
0.417 2.80 | 1.250 33.41 | 2.083 3.86 | 2.92 1.57
0.500 2.80 | 1.333 33.41 | 2.167 3.86 | 3.00 1.57
0.583 4.43 | 1.417 16.59 | 2.250 3.08 | 3.08 1.38
0.667 4.43 | 1.500 16.59 | 2.333 3.08 | 3.17 1.38
0.750 8.46 | 1.583 10.08 | 2.417 2.53 |
0.833 8.46 | 1.667 10.08 | 2.500 2.53 |

```

```

Max.Eff.Inten.(mm/hr)= 79.04 4.78
over (min) 5.00 35.00
Storage Coeff. (min)= 0.98 (ii) 30.14 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.34 0.04

```

```

*TOTALS*
PEAK FLOW (cms)= 0.00 0.00 0.005 (iii)
TIME TO PEAK (hrs)= 1.17 1.83 1.17
RUNOFF VOLUME (mm)= 34.00 3.78 15.90
TOTAL RAINFALL (mm)= 35.00 35.00 35.00
RUNOFF COEFFICIENT = 0.97 0.11 0.45

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00
Storage Coeff. (min)=	1.05 (ii)	30.20 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.34	0.04

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.006 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	16.21
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.46

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



- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.005	1.17	15.90
+ ID2= 2 ( 0220):	0.06	0.006	1.17	16.21
=====				
ID = 3 ( 0020):	0.11	0.010	1.17	16.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.05
STANDHYD ( 0230)	Total Imp(%)=	45.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00

Storage Coeff. (min)=	0.98 (ii)	30.14 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.34	0.04	
			*TOTALS*
PEAK FLOW (cms)=	0.00	0.00	0.005 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	17.13
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0020):  0.11  0.010  1.17  16.07
+ ID2= 2 ( 0230):  0.05  0.005  1.17  17.13
=====
ID = 3 ( 0021):  0.16  0.015  1.17  16.40

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0101) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 2.94 Curve Number (CN)= 72.0
Ia (mm)= 10.90 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.31

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 24.98 | 1.750 6.86 | 2.58 2.12
0.167 0.00 | 1.000 24.98 | 1.833 6.86 | 2.67 2.12
0.250 1.96 | 1.083 79.04 | 1.917 5.02 | 2.75 1.81
0.333 1.96 | 1.167 79.04 | 2.000 5.02 | 2.83 1.81
0.417 2.80 | 1.250 33.41 | 2.083 3.86 | 2.92 1.57
0.500 2.80 | 1.333 33.41 | 2.167 3.86 | 3.00 1.57
0.583 4.43 | 1.417 16.59 | 2.250 3.08 | 3.08 1.38

```

0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.034 (i)  
 TIME TO PEAK (hrs)= 1.667  
 RUNOFF VOLUME (mm)= 4.725  
 TOTAL RAINFALL (mm)= 35.000  
 RUNOFF COEFFICIENT = 0.135

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

-----  
 -----  
 | CALIB |  
 | NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00  
 -----  
 -----  
 U.H. Tp(hrs)= 0.13

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.026 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 5.240  
 TOTAL RAINFALL (mm)= 35.000  
 RUNOFF COEFFICIENT = 0.150

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

-----  
 -----

CALIB				
STANDHYD ( 0120)		Area (ha)=	0.92	
ID= 1 DT= 5.0 min		Total Imp(%)=	37.00	Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)=	79.04	4.78
over (min)	5.00	35.00
Storage Coeff. (min)=	2.42 (ii)	31.58 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.30	0.03

			*TOTALS*
PEAK FLOW (cms)=	0.07	0.00	0.074 (iii)
TIME TO PEAK (hrs)=	1.17	1.83	1.17
RUNOFF VOLUME (mm)=	34.00	3.78	14.95
TOTAL RAINFALL (mm)=	35.00	35.00	35.00
RUNOFF COEFFICIENT =	0.97	0.11	0.43

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0111):	1.32	0.026	1.33	5.24
+ ID2= 2 ( 0120):	0.92	0.074	1.17	14.95
=====				
ID = 3 ( 0012):	2.24	0.088	1.17	9.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0130)				
ID= 1 DT= 5.0 min				
Area	(ha)=	18.61		
Total Imp(%)	=	21.00	Dir. Conn.(%)	= 21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12		
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12		
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81		
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81		
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57		
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57		
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38		
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38		
0.750	8.46	1.583	10.08	2.417	2.53				
0.833	8.46	1.667	10.08	2.500	2.53				

Max.Eff.Inten.(mm/hr)=		79.04		5.60	
over (min)		5.00		35.00	
Storage Coeff. (min)=		5.97 (ii)		32.86 (ii)	
Unit Hyd. Tpeak (min)=		5.00		35.00	
Unit Hyd. peak (cms)=		0.19		0.03	
*TOTALS*					
PEAK FLOW (cms)=		0.74		0.12	0.753 (iii)
TIME TO PEAK (hrs)=		1.17		1.83	1.17
RUNOFF VOLUME (mm)=		34.00		4.41	10.62
TOTAL RAINFALL (mm)=		35.00		35.00	35.00

RUNOFF COEFFICIENT = 0.97 0.13 0.30

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0012):	2.24	0.088	1.17	9.23
+ ID2= 2 ( 0130):	18.61	0.753	1.17	10.62
=====				
ID = 3 ( 0006):	20.85	0.841	1.17	10.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0007)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0101):	2.94	0.034	1.67	4.72
+ ID2= 2 ( 0006):	20.85	0.841	1.17	10.47
=====				
ID = 3 ( 0007):	23.79	0.845	1.17	9.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.44
STANDHYD ( 0160)	Total Imp(%)=	21.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.35
Dep. Storage (mm)=	1.00	4.60
Average Slope (%)=	1.00	2.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.330

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)= 79.04 8.86  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.94 (ii) 23.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.021 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 34.00 6.39 12.16  
TOTAL RAINFALL (mm)= 35.00 35.00 35.00  
RUNOFF COEFFICIENT = 0.97 0.18 0.35

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14  
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.55	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	24.98	1.750	6.86	2.58	2.12
0.167	0.00	1.000	24.98	1.833	6.86	2.67	2.12
0.250	1.96	1.083	79.04	1.917	5.02	2.75	1.81
0.333	1.96	1.167	79.04	2.000	5.02	2.83	1.81
0.417	2.80	1.250	33.41	2.083	3.86	2.92	1.57
0.500	2.80	1.333	33.41	2.167	3.86	3.00	1.57
0.583	4.43	1.417	16.59	2.250	3.08	3.08	1.38
0.667	4.43	1.500	16.59	2.333	3.08	3.17	1.38
0.750	8.46	1.583	10.08	2.417	2.53		
0.833	8.46	1.667	10.08	2.500	2.53		

Max.Eff.Inten.(mm/hr)= 79.04 8.61  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.38 (ii) 24.41 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 34.00 6.24 13.08  
TOTAL RAINFALL (mm)= 35.00 35.00 35.00  
RUNOFF COEFFICIENT = 0.97 0.18 0.37

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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=====

V V I SSSSS U U A L (v 6.2.2015)  
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 UUUU A A LLLLL

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

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\44f058a5-7fb9-41cd-bae0-da795378bbfa\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\44f058a5-7fb9-41cd-bae0-da795378bbfa\s

DATE: 12-12-2023

TIME: 10:33:34

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----  
 \*\*\*\*\*  
 \*\* SIMULATION : Chicago 3hrs\_005-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\0a2ab211-eeb5-4a53-acea-3e72082fedbe\c5348a04
Ptotal= 45.60 mm	Comments: Chicago 3hrs_005-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	32.55	1.67	8.94	2.50	2.77
0.17	2.56	1.00	102.98	1.83	6.54	2.67	2.36
0.33	3.65	1.17	43.53	2.00	5.03	2.83	2.05
0.50	5.77	1.33	21.61	2.17	4.01	3.00	1.80
0.67	11.02	1.50	13.14	2.33	3.30		

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0190) | Area (ha)= 0.35

| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.14	0.21
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	48.30	40.00
Mannings n	=	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)=	102.98	9.15
over (min)	5.00	25.00
Storage Coeff. (min)=	1.63 (ii)	24.11 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.32	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.04	0.00	0.040 (iii)
TIME TO PEAK (hrs)=	1.17	1.67	1.17
RUNOFF VOLUME (mm)=	44.60	6.64	21.40
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.15	0.47

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140)		Area (ha)= 4.69

| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)=	102.98	10.22
over (min)	5.00	25.00
Storage Coeff. (min)=	3.55 (ii)	24.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.26	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.55	0.04	0.560 (iii)
TIME TO PEAK (hrs)=	1.17	1.67	1.17
RUNOFF VOLUME (mm)=	44.60	7.37	23.38
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.16	0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0140):	4.69	0.560	1.17	23.38
+ ID2= 2 ( 0190):	0.35	0.040	1.17	21.40
=====				
ID = 3 ( 0009):	5.04	0.600	1.17	23.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.38
STANDHYD ( 0200)	Total Imp(%)=	47.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77		
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77		
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36		
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36		
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05		
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05		
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80		
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80		
0.750	11.02	1.583	13.14	2.417	3.30				
0.833	11.02	1.667	13.14	2.500	3.30				

Max.Eff.Inten.(mm/hr)=	102.98	9.15	
over (min)	5.00	25.00	
Storage Coeff. (min)=	1.67 (ii)	24.15 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.32	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.05	0.00	0.052 (iii)
TIME TO PEAK (hrs)=	1.17	1.67	1.17
RUNOFF VOLUME (mm)=	44.60	6.64	24.44
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.15	0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3      |
-----
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.052	1.17	24.44
+ ID2= 2 ( 0009):	5.04	0.600	1.17	23.24
=====				
ID = 3 ( 0011):	5.42	0.652	1.17	23.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB          |
| NASHYD ( 0150) |
| ID= 1 DT= 5.0 min |
-----
```

Area (ha)=	13.27	Curve Number (CN)=	72.0
Ia (mm)=	10.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.32		

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

```
----- TRANSFORMED HYETOGRAPH -----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.321 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 9.428  
 TOTAL RAINFALL (mm)= 45.600

RUNOFF COEFFICIENT = 0.207

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

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-----
| CALIB |
| STANDHYD ( 0170) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00
-----

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)=	102.98	29.85
over (min)	5.00	15.00
Storage Coeff. (min)=	0.95 (ii)	14.96 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.012 (iii)
TIME TO PEAK (hrs)=	1.17	1.42	1.17
RUNOFF VOLUME (mm)=	44.60	17.11	36.22
TOTAL RAINFALL (mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT =	0.98	0.38	0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 82.0 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			
NASHYD ( 0100)	Area (ha)=	27.26	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)=	12.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.91	

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.238 (i)  
 TIME TO PEAK (hrs)= 2.417  
 RUNOFF VOLUME (mm)= 6.813  
 TOTAL RAINFALL (mm)= 45.600  
 RUNOFF COEFFICIENT = 0.149

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

CALIB			
STANDHYD ( 0110)	Area (ha)=	0.65	
ID= 1 DT= 5.0 min	Total Imp(%)=	44.00	Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 9.15  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.96 (ii) 24.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.01 0.082 (iii)  
TIME TO PEAK (hrs)= 1.17 1.67 1.17  
RUNOFF VOLUME (mm)= 44.60 6.64 23.32  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.15 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0100):	27.26	0.238	2.42	6.81
+ ID2= 2 ( 0110):	0.65	0.082	1.17	23.32
=====				
ID = 3 ( 0003):	27.91	0.243	2.42	7.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



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-----
| CALIB |
| STANDHYD ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area   (ha)=      0.02      0.03
Dep. Storage   (mm)=      1.00      5.00
Average Slope  (%)=      1.00      2.00
Length         (m)=     17.32     40.00
Mannings n    =         0.013     0.350

```

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME    RAIN |   TIME    RAIN |'  TIME    RAIN |   TIME    RAIN
      hrs    mm/hr |   hrs    mm/hr |'  hrs    mm/hr |   hrs    mm/hr
0.083    0.00 | 0.917   32.55 | 1.750    8.94 | 2.58    2.77
0.167    0.00 | 1.000   32.55 | 1.833    8.94 | 2.67    2.77
0.250    2.56 | 1.083  102.98 | 1.917    6.54 | 2.75    2.36
0.333    2.56 | 1.167  102.98 | 2.000    6.54 | 2.83    2.36
0.417    3.65 | 1.250   43.53 | 2.083    5.03 | 2.92    2.05
0.500    3.65 | 1.333   43.53 | 2.167    5.03 | 3.00    2.05
0.583    5.77 | 1.417   21.61 | 2.250    4.01 | 3.08    1.80
0.667    5.77 | 1.500   21.61 | 2.333    4.01 | 3.17    1.80
0.750   11.02 | 1.583   13.14 | 2.417    3.30 |
0.833   11.02 | 1.667   13.14 | 2.500    3.30 |

```

```

Max.Eff.Inten.(mm/hr)= 102.98      9.15
over (min)           5.00      25.00
Storage Coeff. (min)= 0.88 (ii)  23.36 (ii)
Unit Hyd. Tpeak (min)= 5.00      25.00
Unit Hyd. peak (cms)= 0.34      0.05

```

```

                                     *TOTALS*
PEAK FLOW      (cms)= 0.01      0.00      0.006 (iii)
TIME TO PEAK   (hrs)= 1.17      1.67      1.17
RUNOFF VOLUME  (mm)= 44.60      6.64      21.94
TOTAL RAINFALL (mm)= 45.60      45.60     45.60
RUNOFF COEFFICIENT = 0.98      0.15      0.48

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area   (ha)=      0.03      0.03
Dep. Storage   (mm)=      1.00      5.00
Average Slope  (%)=      1.00      2.00
Length         (m)=     19.32     40.00
Mannings n    =         0.013     0.350

```

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
      hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr
0.083   0.00 | 0.917  32.55 | 1.750   8.94 | 2.58   2.77
0.167   0.00 | 1.000  32.55 | 1.833   8.94 | 2.67   2.77
0.250   2.56 | 1.083 102.98 | 1.917   6.54 | 2.75   2.36
0.333   2.56 | 1.167 102.98 | 2.000   6.54 | 2.83   2.36
0.417   3.65 | 1.250  43.53 | 2.083   5.03 | 2.92   2.05
0.500   3.65 | 1.333  43.53 | 2.167   5.03 | 3.00   2.05
0.583   5.77 | 1.417  21.61 | 2.250   4.01 | 3.08   1.80
0.667   5.77 | 1.500  21.61 | 2.333   4.01 | 3.17   1.80
0.750  11.02 | 1.583  13.14 | 2.417   3.30 |
0.833  11.02 | 1.667  13.14 | 2.500   3.30 |

```

```

Max.Eff.Inten.(mm/hr)= 102.98      9.15
over (min)           5.00      25.00
Storage Coeff. (min)= 0.94 (ii)  23.42 (ii)
Unit Hyd. Tpeak (min)= 5.00      25.00
Unit Hyd. peak (cms)= 0.34      0.05

```

```

                                     *TOTALS*
PEAK FLOW      (cms)= 0.01      0.00      0.007 (iii)
TIME TO PEAK   (hrs)= 1.17      1.67      1.17
RUNOFF VOLUME  (mm)= 44.60      6.64      22.32
TOTAL RAINFALL (mm)= 45.60      45.60     45.60
RUNOFF COEFFICIENT = 0.98      0.15      0.49

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.006	1.17	21.94
+ ID2= 2 ( 0220):	0.06	0.007	1.17	22.32
=====				
ID = 3 ( 0020):	0.11	0.013	1.17	22.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0230)			
ID= 1 DT= 5.0 min	Area (ha)=	0.05	
	Total Imp(%)=	45.00	Dir. Conn.(%)= 45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)=	102.98	9.15	
over (min)	5.00	25.00	
Storage Coeff. (min)=	0.88 (ii)	23.36 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.34	0.05	
*TOTALS*			
PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	1.17	1.67	1.17

RUNOFF VOLUME	(mm)=	44.60	6.64	23.47
TOTAL RAINFALL	(mm)=	45.60	45.60	45.60
RUNOFF COEFFICIENT	=	0.98	0.15	0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |
| 1 + 2 = 3 |
-----
| AREA   QPEAK   TPEAK   R.V. |
| (ha)   (cms)   (hrs)   (mm) |
-----
| ID1= 1 ( 0020): 0.11  0.013  1.17  22.15 |
| + ID2= 2 ( 0230): 0.05  0.007  1.17  23.47 |
|=====|
| ID = 3 ( 0021): 0.16  0.020  1.17  22.56 |
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0101) |
| ID= 1 DT= 5.0 min |
-----
| Area   (ha)= 2.94   Curve Number (CN)= 72.0 |
| Ia     (mm)= 10.90  # of Linear Res.(N)= 3.00 |
| U.H. Tp(hrs)= 0.31 |
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME   RAIN | TIME   RAIN | TIME   RAIN | TIME   RAIN |
|  hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr |
|-----|-----|-----|-----|
| 0.083  0.00 | 0.917  32.55 | 1.750  8.94 | 2.58   2.77 |
| 0.167  0.00 | 1.000  32.55 | 1.833  8.94 | 2.67   2.77 |
| 0.250  2.56 | 1.083 102.98 | 1.917  6.54 | 2.75   2.36 |
| 0.333  2.56 | 1.167 102.98 | 2.000  6.54 | 2.83   2.36 |
| 0.417  3.65 | 1.250  43.53 | 2.083  5.03 | 2.92   2.05 |
| 0.500  3.65 | 1.333  43.53 | 2.167  5.03 | 3.00   2.05 |
| 0.583  5.77 | 1.417  21.61 | 2.250  4.01 | 3.08   1.80 |
| 0.667  5.77 | 1.500  21.61 | 2.333  4.01 | 3.17   1.80 |
| 0.750 11.02 | 1.583  13.14 | 2.417  3.30 |         |
| 0.833 11.02 | 1.667  13.14 | 2.500  3.30 |         |

```

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.069 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 9.018  
 TOTAL RAINFALL (mm)= 45.600  
 RUNOFF COEFFICIENT = 0.198

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

-----

CALIB			
NASHYD ( 0111)		Area (ha)= 1.32	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min		Ia (mm)= 9.90	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.13	

-----

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.051 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 9.733  
 TOTAL RAINFALL (mm)= 45.600  
 RUNOFF COEFFICIENT = 0.213

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

-----

CALIB			
STANDHYD ( 0120)		Area (ha)= 0.92	
ID= 1 DT= 5.0 min		Total Imp(%)= 37.00	Dir. Conn.(%)= 37.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58

Dep. Storage (mm)= 1.00 5.00  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 78.32 40.00  
 Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 9.15  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 2.18 (ii) 24.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.10 0.01 0.098 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.67 1.17  
 RUNOFF VOLUME (mm)= 44.60 6.64 20.67  
 TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
 RUNOFF COEFFICIENT = 0.98 0.15 0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0012)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0111):	1.32	0.051	1.33	9.73
+ ID2= 2 ( 0120):	0.92	0.098	1.17	20.67

=====

ID = 3 ( 0012):      2.24   0.131      1.17      14.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB			
STANDHYD ( 0130)	Area (ha)=	18.61	
ID= 1 DT= 5.0 min	Total Imp(%)=	21.00	Dir. Conn.(%)= 21.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36
0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)=	102.98	11.85
over (min)	5.00	30.00
Storage Coeff. (min)=	5.37 (ii)	25.30 (ii)
Unit Hyd. Tpeak (min)=	5.00	30.00
Unit Hyd. peak (cms)=	0.21	0.04

			*TOTALS*
PEAK FLOW	(cms)=	0.99	0.25
TIME TO PEAK	(hrs)=	1.17	1.67
RUNOFF VOLUME	(mm)=	44.60	7.66
TOTAL RAINFALL	(mm)=	45.60	45.60
RUNOFF COEFFICIENT	=	0.98	0.17
			1.027 (iii)
			15.42
			45.60
			0.34

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 59.0    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 ( 0012):  2.24  0.131  1.17  14.22
+ ID2= 2 ( 0130): 18.61  1.027  1.17  15.42
=====
ID = 3 ( 0006):  20.85  1.158  1.17  15.29
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0007) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0101):  2.94  0.069  1.58  9.02
+ ID2= 2 ( 0006): 20.85  1.158  1.17  15.29
=====
ID = 3 ( 0007):  23.79  1.170  1.17  14.51
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.44
Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00
  
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.35
Dep. Storage (mm)=	1.00	4.60
Average Slope (%)=	1.00	2.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.330

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

-----
          ----- TRANSFORMED HYETOGRAPH -----
          TIME      RAIN | TIME      RAIN | TIME      RAIN | TIME      RAIN
          hrs      mm/hr | hrs      mm/hr | hrs      mm/hr | hrs      mm/hr
0.083    0.00 | 0.917    32.55 | 1.750    8.94 | 2.58    2.77
0.167    0.00 | 1.000    32.55 | 1.833    8.94 | 2.67    2.77
0.250    2.56 | 1.083   102.98 | 1.917    6.54 | 2.75    2.36
0.333    2.56 | 1.167   102.98 | 2.000    6.54 | 2.83    2.36
  
```



0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 17.16  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.75 (ii) 18.62 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.029 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 44.60 10.84 17.90  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.24 0.39

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14  
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	32.55	1.750	8.94	2.58	2.77
0.167	0.00	1.000	32.55	1.833	8.94	2.67	2.77
0.250	2.56	1.083	102.98	1.917	6.54	2.75	2.36
0.333	2.56	1.167	102.98	2.000	6.54	2.83	2.36

0.417	3.65	1.250	43.53	2.083	5.03	2.92	2.05
0.500	3.65	1.333	43.53	2.167	5.03	3.00	2.05
0.583	5.77	1.417	21.61	2.250	4.01	3.08	1.80
0.667	5.77	1.500	21.61	2.333	4.01	3.17	1.80
0.750	11.02	1.583	13.14	2.417	3.30		
0.833	11.02	1.667	13.14	2.500	3.30		

Max.Eff.Inten.(mm/hr)= 102.98 16.82  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.24 (ii) 18.86 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 44.60 10.65 19.07  
TOTAL RAINFALL (mm)= 45.60 45.60 45.60  
RUNOFF COEFFICIENT = 0.98 0.23 0.42

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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.

-----  
=====

```
V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL
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000 TTTTT TTTTT H H Y Y M M 000 TM
O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000
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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:  
 C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\2c899ec8-8493-49c0-90e9-96c7e93a317e\s  
 Summary filename:  
 C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\2c899ec8-8493-49c0-90e9-96c7e93a317e\s

DATE: 12-12-2023 TIME: 10:33:33

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----  
 \*\*\*\*\*  
 \*\* SIMULATION : Chicago 3hrs\_010-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\0a2ab211-eeb5-4a53-acea-3e72082fedbe\8e12adb2
Ptotal= 52.20 mm	Comments: Chicago 3hrs_010-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	37.26	1.67	10.23	2.50	3.17
0.17	2.93	1.00	117.88	1.83	7.49	2.67	2.70
0.33	4.17	1.17	49.84	2.00	5.76	2.83	2.35
0.50	6.61	1.33	24.74	2.17	4.59	3.00	2.06
0.67	12.61	1.50	15.04	2.33	3.77		

CALIB	Area (ha)= 0.35
STANDHYD ( 0190)	Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
ID= 1 DT= 5.0 min	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00

Length (m)= 48.30 40.00  
Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.55 (ii) 20.76 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.33 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.00 0.045 (iii)  
TIME TO PEAK (hrs)= 1.17 1.58 1.17  
RUNOFF VOLUME (mm)= 51.20 8.74 25.26  
TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
RUNOFF COEFFICIENT = 0.98 0.17 0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140) | Area (ha)= 4.69  
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00

Length (m)= 176.82 40.00  
 Mannings n = 0.013 0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 15.10  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.37 (ii) 21.45 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.26 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.64 0.06 0.649 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.58 1.17  
 RUNOFF VOLUME (mm)= 51.20 9.68 27.53  
 TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
 RUNOFF COEFFICIENT = 0.98 0.19 0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 58.0 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)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0140):	4.69	0.649	1.17	27.53
+ ID2= 2 ( 0190):	0.35	0.045	1.17	25.26
=====				
ID = 3 ( 0009):	5.04	0.694	1.17	27.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0200) | Area (ha)= 0.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00
-----

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                IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=          0.18      0.20
Dep. Storage    (mm)=          1.00      5.00
Average Slope   (%)=          1.00      2.00
Length          (m)=         50.33      40.00
Mannings n     =            0.013      0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

```

Max.Eff.Inten.(mm/hr)= 117.88      13.55
over (min)            5.00      25.00
Storage Coeff. (min)= 1.58 (ii) 20.80 (ii)
Unit Hyd. Tpeak (min)= 5.00      25.00
Unit Hyd. peak (cms)= 0.33      0.05

```

\*TOTALS\*

```

PEAK FLOW (cms)= 0.06      0.00      0.059 (iii)
TIME TO PEAK (hrs)= 1.17      1.58      1.17
RUNOFF VOLUME (mm)= 51.20      8.74      28.66
TOTAL RAINFALL (mm)= 52.20      52.20      52.20
RUNOFF COEFFICIENT = 0.98      0.17      0.55

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.059	1.17	28.66
+ ID2= 2 ( 0009):	5.04	0.694	1.17	27.37
=====				
ID = 3 ( 0011):	5.42	0.753	1.17	27.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0150) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	13.27	Curve Number (CN)=	72.0
Ia (mm)=	10.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.32		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.437 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 12.628

TOTAL RAINFALL (mm)= 52.200

RUNOFF COEFFICIENT = 0.242

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 0170)		Area (ha)= 0.06	
ID= 1 DT= 5.0 min		Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	38.55
over (min)	5.00	15.00
Storage Coeff. (min)=	0.90 (ii)	13.55 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.014 (iii)
TIME TO PEAK (hrs)=	1.17	1.33	1.17
RUNOFF VOLUME (mm)=	51.20	21.64	42.19
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.41	0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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			
NASHYD ( 0100)		Area (ha)= 27.26	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min		Ia (mm)= 12.80	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)= 0.91	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.332 (i)  
 TIME TO PEAK (hrs)= 2.417  
 RUNOFF VOLUME (mm)= 9.436  
 TOTAL RAINFALL (mm)= 52.200  
 RUNOFF COEFFICIENT = 0.181

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 0110)		Area (ha)= 0.65	
ID= 1 DT= 5.0 min		Total Imp(%)= 44.00	Dir. Conn.(%)= 44.00
-----			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.86 (ii) 21.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.09 0.01 0.095 (iii)  
TIME TO PEAK (hrs)= 1.17 1.58 1.17  
RUNOFF VOLUME (mm)= 51.20 8.74 27.40  
TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
RUNOFF COEFFICIENT = 0.98 0.17 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
| AREA QPEAK TPEAK R.V. |
| (ha) (cms) (hrs) (mm) |
| ID1= 1 ( 0100): 27.26 0.332 2.42 9.44 |
| + ID2= 2 ( 0110): 0.65 0.095 1.17 27.40 |
|=====|
| ID = 3 ( 0003): 27.91 0.338 2.33 9.85 |

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0210) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.05 |
| Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00 |

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	13.55
over (min)	5.00	25.00
Storage Coeff. (min)=	0.84 (ii)	20.05 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.34	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	1.17	1.58	1.17
RUNOFF VOLUME (mm)=	51.20	8.74	25.87
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.17	0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220)	Area (ha)= 0.06
ID= 1 DT= 5.0 min	Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	13.55
over (min)	5.00	25.00
Storage Coeff. (min)=	0.89 (ii)	20.10 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.34	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.008 (iii)
TIME TO PEAK (hrs)=	1.17	1.58	1.17
RUNOFF VOLUME (mm)=	51.20	8.74	26.34
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.17	0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)

```

ID1= 1 ( 0210):    0.05  0.007  1.17  25.87
+ ID2= 2 ( 0220):    0.06  0.008  1.17  26.34
=====
ID = 3 ( 0020):    0.11  0.015  1.17  26.13

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	13.55
over (min)	5.00	25.00
Storage Coeff. (min)=	0.84 (ii)	20.05 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.34	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	1.17	1.58	1.17
RUNOFF VOLUME (mm)=	51.20	8.74	27.58
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.17	0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0020):	0.11	0.015	1.17	26.13
+ ID2= 2 ( 0230):	0.05	0.007	1.17	27.58
=====				
ID = 3 ( 0021):	0.16	0.023	1.17	26.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	Curve Number	(CN)=
NASHYD ( 0101)	2.94		72.0	
ID= 1 DT= 5.0 min	Ia	(mm)=	# of Linear Res.(N)=	
	10.90		3.00	
	U.H. Tp(hrs)=	0.31		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.094 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 12.172  
 TOTAL RAINFALL (mm)= 52.200  
 RUNOFF COEFFICIENT = 0.233

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-----
| CALIB |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.13

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
      TIME    RAIN | TIME    RAIN | TIME    RAIN | TIME    RAIN
      hrs   mm/hr | hrs   mm/hr | hrs   mm/hr | hrs   mm/hr
0.083   0.00 | 0.917  37.26 | 1.750  10.23 | 2.58   3.17
0.167   0.00 | 1.000  37.26 | 1.833  10.23 | 2.67   3.17
0.250   2.93 | 1.083 117.88 | 1.917   7.49 | 2.75   2.70
0.333   2.93 | 1.167 117.88 | 2.000   7.49 | 2.83   2.70
0.417   4.17 | 1.250  49.84 | 2.083   5.76 | 2.92   2.35
0.500   4.17 | 1.333  49.84 | 2.167   5.76 | 3.00   2.35
0.583   6.61 | 1.417  24.74 | 2.250   4.59 | 3.08   2.06
0.667   6.61 | 1.500  24.74 | 2.333   4.59 | 3.17   2.06
0.750  12.61 | 1.583  15.04 | 2.417   3.77 |
0.833  12.61 | 1.667  15.04 | 2.500   3.77 |

```

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.069 (i)

TIME TO PEAK (hrs)= 1.333

RUNOFF VOLUME (mm)= 13.003

TOTAL RAINFALL (mm)= 52.200

RUNOFF COEFFICIENT = 0.249

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-----
| CALIB |
| STANDHYD ( 0120) | Area (ha)= 0.92
| ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00
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      IMPERVIOUS    PERVIOUS (i)
Surface Area (ha)= 0.34    0.58
Dep. Storage (mm)= 1.00    5.00
Average Slope (%)= 1.00    2.00
Length (m)= 78.32    40.00
Mannings n = 0.013    0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)= 117.88 13.55  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 2.07 (ii) 21.28 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.11 0.01 0.113 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.58 1.17  
 RUNOFF VOLUME (mm)= 51.20 8.74 24.43  
 TOTAL RAINFALL (mm)= 52.20 52.20 52.20  
 RUNOFF COEFFICIENT = 0.98 0.17 0.47

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0012) |  
 | 1 + 2 = 3 |

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0111):	1.32	0.069	1.33	13.00
+ ID2= 2 ( 0120):	0.92	0.113	1.17	24.43
=====				
ID = 3 ( 0012):	2.24	0.161	1.17	17.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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CALIB		
STANDHYD ( 0130)		Area (ha)= 18.61
ID= 1 DT= 5.0 min		Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	15.70
over (min)	5.00	25.00
Storage Coeff. (min)=	5.09 (ii)	22.89 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.21	0.05

			*TOTALS*
PEAK FLOW (cms)=	1.15	0.35	1.216 (iii)
TIME TO PEAK (hrs)=	1.17	1.58	1.17
RUNOFF VOLUME (mm)=	51.20	10.03	18.68
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.19	0.36

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0012):		2.24	0.161	1.17	17.70
+ ID2= 2 ( 0130):		18.61	1.216	1.17	18.68
=====					
ID = 3 ( 0006):		20.85	1.378	1.17	18.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0007)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0101):		2.94	0.094	1.58	12.17
+ ID2= 2 ( 0006):		20.85	1.378	1.17	18.57
=====					
ID = 3 ( 0007):		23.79	1.397	1.17	17.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)=	0.44
STANDHYD ( 0160)		Total Imp(%)=	21.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)=	21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.35
Dep. Storage	(mm)=	1.00	4.60
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.16	40.00
Mannings n	=	0.013	0.330

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	23.48	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.66 (ii)	16.54 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.03	0.01	0.034 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	51.20	14.01	21.80
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.27	0.42

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   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 ( 1601) | Area (ha)= 0.14
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	37.26	1.750	10.23	2.58	3.17
0.167	0.00	1.000	37.26	1.833	10.23	2.67	3.17
0.250	2.93	1.083	117.88	1.917	7.49	2.75	2.70
0.333	2.93	1.167	117.88	2.000	7.49	2.83	2.70
0.417	4.17	1.250	49.84	2.083	5.76	2.92	2.35
0.500	4.17	1.333	49.84	2.167	5.76	3.00	2.35
0.583	6.61	1.417	24.74	2.250	4.59	3.08	2.06
0.667	6.61	1.500	24.74	2.333	4.59	3.17	2.06
0.750	12.61	1.583	15.04	2.417	3.77		
0.833	12.61	1.667	15.04	2.500	3.77		

Max.Eff.Inten.(mm/hr)=	117.88	22.08	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.17 (ii)	16.98 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.34	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.013 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	51.20	13.81	23.09
TOTAL RAINFALL (mm)=	52.20	52.20	52.20
RUNOFF COEFFICIENT =	0.98	0.26	0.44

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 69.0   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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=====

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V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

  000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
  O  O  T  T  H  H  Y  Y  MM  MM  O  O
  O  O  T  T  H  H  Y  M  M  O  O
  000  T  T  H  H  Y  M  M  000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\08f35209-ccd6-43d3-93a0-d5cf856bdc85\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\0

8f35209-ccd6-43d3-93a0-d5cf856bdc85\s

DATE: 12-12-2023

TIME: 10:33:32

USER:

COMMENTS: \_\_\_\_\_

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\*\*\*\*\*

\*\* SIMULATION : Chicago 3hrs\_025-2073 \*\*

\*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData Local\Temp\ 0a2ab211-eeb5-4a53-acea-3e72082fedbe\xf9993ac2
Ptotal= 60.60 mm	Comments: Chicago 3hrs_025-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	43.25	1.67	11.88	2.50	3.68
0.17	3.40	1.00	136.85	1.83	8.69	2.67	3.14
0.33	4.85	1.17	57.86	2.00	6.68	2.83	2.72
0.50	7.67	1.33	28.72	2.17	5.33	3.00	2.40
0.67	14.64	1.50	17.46	2.33	4.38		

CALIB	Area (ha)= 0.35
STANDHYD ( 0190)	Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
ID= 1 DT= 5.0 min	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 18.41  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.46 (ii) 18.45 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.05 0.01 0.054 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.50 1.17  
 RUNOFF VOLUME (mm)= 59.60 11.74 30.37  
 TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
 RUNOFF COEFFICIENT = 0.98 0.19 0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0140) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 4.69  
 Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.02	2.67
Dep. Storage (mm)=	1.00	4.90
Average Slope (%)=	1.00	2.00
Length (m)=	176.82	40.00
Mannings n =	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 20.43  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.17 (ii) 19.19 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.74 0.09 0.768 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.50 1.17  
 RUNOFF VOLUME (mm)= 59.60 12.95 33.01  
 TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
 RUNOFF COEFFICIENT = 0.98 0.21 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 58.0 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0140):	4.69	0.768	1.17	33.01
+ ID2= 2 ( 0190):	0.35	0.054	1.17	30.37
=====				
ID = 3 ( 0009):	5.04	0.822	1.17	32.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	0.38
STANDHYD ( 0200)		

| ID= 1 DT= 5.0 min | Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.18	0.20
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	50.33	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)=	136.85	18.41
over (min)	5.00	20.00
Storage Coeff. (min)=	1.49 (ii)	18.49 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.33	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.07	0.01	0.069 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	59.60	11.74	34.20
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.19	0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0011)|



1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0200):	0.38	0.069	1.17	34.20
+ ID2= 2 ( 0009):	5.04	0.822	1.17	32.82
=====				
ID = 3 ( 0011):	5.42	0.891	1.17	32.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 0150)	13.27	72.0
ID= 1 DT= 5.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.32	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.603 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 17.135  
 TOTAL RAINFALL (mm)= 60.600  
 RUNOFF COEFFICIENT = 0.283

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 0170)	0.06	70.00
ID= 1 DT= 5.0 min	Total Imp(%)= 70.00	

Surface Area (ha)= IMPERVIOUS 0.04 PERVIOUS (i) 0.02

Dep. Storage (mm)= 1.00 5.00  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 19.61 40.00  
 Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 50.44  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 0.85 (ii) 12.20 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.34 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.017 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.33 1.17  
 RUNOFF VOLUME (mm)= 59.60 27.76 49.89  
 TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
 RUNOFF COEFFICIENT = 0.98 0.46 0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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			
NASHYD ( 0100)	Area (ha)=	27.26	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)=	12.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.91	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.468 (i)  
 TIME TO PEAK (hrs)= 2.333  
 RUNOFF VOLUME (mm)= 13.214  
 TOTAL RAINFALL (mm)= 60.600  
 RUNOFF COEFFICIENT = 0.218

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72

0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 18.41  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.75 (ii) 18.75 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.11 0.01 0.111 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 59.60 11.74 32.78  
TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
RUNOFF COEFFICIENT = 0.98 0.19 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0100):	27.26	0.468	2.33	13.21
+ ID2= 2 ( 0110):	0.65	0.111	1.17	32.78
=====				
ID = 3 ( 0003):	27.91	0.476	2.33	13.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0210)	0.05	
ID= 1 DT= 5.0 min	Total Imp(%)= 41.00	Dir. Conn.(%)= 41.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 18.41  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.79 (ii) 17.78 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.008 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 59.60 11.74 31.08  
TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
RUNOFF COEFFICIENT = 0.98 0.19 0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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	Area (ha)= 0.06
STANDHYD ( 0220)	Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
ID= 1 DT= 5.0 min	

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.32	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 18.41  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.84 (ii) 17.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 59.60 11.74 31.67  
TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
RUNOFF COEFFICIENT = 0.98 0.19 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0210):	0.05	0.008	1.17	31.08
+ ID2= 2 ( 0220):	0.06	0.010	1.17	31.67
=====				
ID = 3 ( 0020):	0.11	0.018	1.17	31.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0230) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 45.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area   (ha)=      0.02      0.03
Dep. Storage   (mm)=      1.00      5.00
Average Slope  (%)=      1.00      2.00
Length         (m)=     17.32     40.00
Mannings n     =        0.013     0.350

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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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                ----- TRANSFORMED HYETOGRAPH -----
                TIME      RAIN | TIME      RAIN | TIME      RAIN | TIME      RAIN
                hrs      mm/hr | hrs      mm/hr | hrs      mm/hr | hrs      mm/hr
0.083      0.00 | 0.917    43.25 | 1.750    11.88 | 2.58      3.68
0.167      0.00 | 1.000    43.25 | 1.833    11.88 | 2.67      3.68
0.250      3.40 | 1.083   136.85 | 1.917     8.69 | 2.75      3.14
0.333      3.40 | 1.167   136.85 | 2.000     8.69 | 2.83      3.14
0.417      4.85 | 1.250    57.86 | 2.083     6.68 | 2.92      2.72
0.500      4.85 | 1.333    57.86 | 2.167     6.68 | 3.00      2.72
0.583      7.67 | 1.417    28.72 | 2.250     5.33 | 3.08      2.40
0.667      7.67 | 1.500    28.72 | 2.333     5.33 | 3.17      2.40
0.750     14.64 | 1.583    17.46 | 2.417     4.38 |
0.833     14.64 | 1.667    17.46 | 2.500     4.38 |

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Max.Eff.Inten.(mm/hr)= 136.85      18.41
over (min)           5.00      20.00
Storage Coeff. (min)= 0.79 (ii)  17.78 (ii)
Unit Hyd. Tpeak (min)= 5.00      20.00
Unit Hyd. peak (cms)= 0.34      0.06

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                *TOTALS*
PEAK FLOW (cms)= 0.01      0.00      0.009 (iii)
TIME TO PEAK (hrs)= 1.17      1.50      1.17
RUNOFF VOLUME (mm)= 59.60     11.74     33.02
TOTAL RAINFALL (mm)= 60.60     60.60     60.60
RUNOFF COEFFICIENT = 0.98      0.19      0.54

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\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0020):	0.11	0.018	1.17	31.40
+ ID2= 2 ( 0230):	0.05	0.009	1.17	33.02
=====				
ID = 3 ( 0021):	0.16	0.027	1.17	31.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD ( 0101)				
ID= 1 DT= 5.0 min	Area	(ha)=	2.94	Curve Number (CN)= 72.0
	Ia	(mm)=	10.90	# of Linear Res.(N)= 3.00
	U.H. Tp	(hrs)=	0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.131 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 16.630  
 TOTAL RAINFALL (mm)= 60.600  
 RUNOFF COEFFICIENT = 0.274

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
NASHYD ( 0111)				
	Area	(ha)=	1.32	Curve Number (CN)= 73.0



|ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.13

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.095 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 17.595  
 TOTAL RAINFALL (mm)= 60.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68

0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 18.41  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.95 (ii) 18.94 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.13 0.02 0.134 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 59.60 11.74 29.43  
TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
RUNOFF COEFFICIENT = 0.98 0.19 0.49

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0111):	1.32	0.095	1.33	17.59
+ ID2= 2 ( 0120):	0.92	0.134	1.17	29.43
=====				
ID = 3 ( 0012):	2.24	0.204	1.17	22.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	18.61
Total Imp(%)=	21.00 Dir. Conn.(%)= 21.00

Surface Area (ha)=	IMPERVIOUS 3.91	PERVIOUS (i) 14.70
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Dep. Storage (mm)= 1.00 4.80  
 Average Slope (%)= 1.00 2.00  
 Length (m)= 352.23 40.00  
 Mannings n = 0.013 0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)= 136.85 21.21  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 4.80 (ii) 20.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.22 0.05

\*TOTALS\*

PEAK FLOW (cms)= 1.35 0.49 1.453 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.58 1.17  
 RUNOFF VOLUME (mm)= 59.60 13.40 23.10  
 TOTAL RAINFALL (mm)= 60.60 60.60 60.60  
 RUNOFF COEFFICIENT = 0.98 0.22 0.38

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0012):	2.24	0.204	1.17	22.46
+ ID2= 2 ( 0130):	18.61	1.453	1.17	23.10

=====

ID = 3 ( 0006):      20.85    1.657    1.17    23.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----

ADD HYD ( 0007)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0101):	2.94	0.131	1.58	16.63
+ ID2= 2 ( 0006):	20.85	1.657	1.17	23.03
=====				
ID = 3 ( 0007):	23.79	1.687	1.17	22.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB			
STANDHYD ( 0160)	Area (ha)=	0.44	
ID= 1 DT= 5.0 min	Total Imp(%)=	21.00	Dir. Conn.(%)= 21.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.35
Dep. Storage	(mm)=	1.00	4.60
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.16	40.00
Mannings n	=	0.013	0.330

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)=	136.85	31.46
over (min)	5.00	15.00
Storage Coeff. (min)=	1.56 (ii)	14.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00

Unit Hyd. peak (cms)=	0.33	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.04	0.02	0.043 (iii)
TIME TO PEAK (hrs)=	1.17	1.42	1.17
RUNOFF VOLUME (mm)=	59.60	18.43	27.06
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.30	0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
-----

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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.55	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	43.25	1.750	11.88	2.58	3.68
0.167	0.00	1.000	43.25	1.833	11.88	2.67	3.68
0.250	3.40	1.083	136.85	1.917	8.69	2.75	3.14
0.333	3.40	1.167	136.85	2.000	8.69	2.83	3.14
0.417	4.85	1.250	57.86	2.083	6.68	2.92	2.72
0.500	4.85	1.333	57.86	2.167	6.68	3.00	2.72
0.583	7.67	1.417	28.72	2.250	5.33	3.08	2.40
0.667	7.67	1.500	28.72	2.333	5.33	3.17	2.40
0.750	14.64	1.583	17.46	2.417	4.38		
0.833	14.64	1.667	17.46	2.500	4.38		

Max.Eff.Inten.(mm/hr)=	136.85	30.99
over (min)	5.00	15.00
Storage Coeff. (min)=	1.11 (ii)	14.91 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00

Unit Hyd. peak (cms)=	0.34	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.01	0.016 (iii)
TIME TO PEAK (hrs)=	1.17	1.42	1.17
RUNOFF VOLUME (mm)=	59.60	18.21	28.49
TOTAL RAINFALL (mm)=	60.60	60.60	60.60
RUNOFF COEFFICIENT =	0.98	0.30	0.47

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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 =====  
 =====

```

V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL

```

```

  000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
O  O  T  T  H  H  Y  Y  MM  MM  O  O
O  O  T  T  H  H  Y  M  M  O  O
  000  T  T  H  H  Y  M  M  000

```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\7bb47e8-13db-4226-910d-fef561b83479\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\7bb47e8-13db-4226-910d-fef561b83479\s

DATE: 12-12-2023

TIME: 10:33:35

USER:

COMMENTS: \_\_\_\_\_

```

*****
** SIMULATION : Chicago 3hrs_050-2073      **
*****

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-----
| READ STORM | Filename: C:\Users\caeh076182\AppData
|            |   ata\Local\Temp\
|            |   0a2ab211-eeb5-4a53-acea-3e72082fedbe\d8a3dde9
| Ptotal= 66.90 mm | Comments: Chicago 3hrs_050-2073
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	47.75	1.67	13.11	2.50	4.06
0.17	3.75	1.00	151.08	1.83	9.59	2.67	3.47
0.33	5.35	1.17	63.87	2.00	7.38	2.83	3.01
0.50	8.47	1.33	31.71	2.17	5.89	3.00	2.64
0.67	16.17	1.50	19.27	2.33	4.84		

```

-----
| CALIB |
| STANDHYD ( 0190) | Area (ha)= 0.35
| ID= 1 DT= 5.0 min | Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06

0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 22.43  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.40 (ii) 17.10 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.01 0.060 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 65.90 14.21 34.34  
TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
RUNOFF COEFFICIENT = 0.99 0.21 0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140) | Area (ha)= 4.69  
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06



0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 25.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.05 (ii) 17.61 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.82 0.12 0.856 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 65.90 15.63 37.24  
TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
RUNOFF COEFFICIENT = 0.99 0.23 0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0140):	4.69	0.856	1.17	37.24
+ ID2= 2 ( 0190):	0.35	0.060	1.17	34.34
=====				
ID = 3 ( 0009):	5.04	0.916	1.17	37.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.38
Total Imp(%)=	47.00
Dir. Conn.(%)=	47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00

Average Slope (%)= 1.00 2.00  
 Length (m)= 50.33 40.00  
 Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 22.43  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.43 (ii) 17.14 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.07 0.01 0.077 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.50 1.17  
 RUNOFF VOLUME (mm)= 65.90 14.21 38.47  
 TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
 RUNOFF COEFFICIENT = 0.99 0.21 0.58

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0011)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.077	1.17	38.47
+ ID2= 2 ( 0009):	5.04	0.916	1.17	37.04

=====

ID = 3 ( 0011): 5.42 0.993 1.17 37.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0150) | Area (ha)= 13.27 Curve Number (CN)= 72.0
| ID= 1 DT= 5.0 min | Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.32

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 47.75 | 1.750 13.11 | 2.58 4.06
0.167 0.00 | 1.000 47.75 | 1.833 13.11 | 2.67 4.06
0.250 3.75 | 1.083 151.08 | 1.917 9.59 | 2.75 3.47
0.333 3.75 | 1.167 151.08 | 2.000 9.59 | 2.83 3.47
0.417 5.35 | 1.250 63.87 | 2.083 7.38 | 2.92 3.01
0.500 5.35 | 1.333 63.87 | 2.167 7.38 | 3.00 3.01
0.583 8.47 | 1.417 31.71 | 2.250 5.89 | 3.08 2.64
0.667 8.47 | 1.500 31.71 | 2.333 5.89 | 3.17 2.64
0.750 16.17 | 1.583 19.27 | 2.417 4.83 |
0.833 16.17 | 1.667 19.27 | 2.500 4.84 |

```

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.737 (i)

TIME TO PEAK (hrs)= 1.583

RUNOFF VOLUME (mm)= 20.791

TOTAL RAINFALL (mm)= 66.900

RUNOFF COEFFICIENT = 0.311

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0170) | Area (ha)= 0.06
| ID= 1 DT= 5.0 min | Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00
-----

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```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.04 0.02
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 19.61 40.00
Mannings n = 0.013 0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	69.53
over (min)	5.00	15.00
Storage Coeff. (min)=	0.81 (ii)	10.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.09

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.019 (iii)
TIME TO PEAK (hrs)=	1.17	1.33	1.17
RUNOFF VOLUME (mm)=	65.90	32.57	55.79
TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.49	0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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		
NASHYD ( 0100)	Area (ha)= 27.26	Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min	Ia (mm)= 12.80	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.91	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.581 (i)  
 TIME TO PEAK (hrs)= 2.333  
 RUNOFF VOLUME (mm)= 16.332  
 TOTAL RAINFALL (mm)= 66.900  
 RUNOFF COEFFICIENT = 0.244

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD ( 0110)	Area (ha)= 0.65
ID= 1 DT= 5.0 min	Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	22.43	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.69 (ii)	17.39 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.12	0.01	0.124 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	65.90	14.21	36.94
TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.21	0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0003) |
| 1 + 2 = 3      |
-----
| AREA   QPEAK  TPEAK  R.V. |
| (ha)   (cms)  (hrs)  (mm) |
| ID1= 1 ( 0100): 27.26 0.581 2.33 16.33 |
| + ID2= 2 ( 0110): 0.65 0.124 1.17 36.94 |
|=====|
| ID = 3 ( 0003): 27.91 0.591 2.33 16.81 |

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0210) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.05 |
| Total Imp(%)= 41.00 |
| Dir. Conn.(%)= 41.00 |

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 22.43  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.76 (ii) 16.46 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.009 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 65.90 14.21 35.16  
TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
RUNOFF COEFFICIENT = 0.99 0.21 0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.03	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.32	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 22.43  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.81 (ii) 16.51 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 65.90 14.21 35.74  
TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
RUNOFF COEFFICIENT = 0.99 0.21 0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0210):	0.05	0.009	1.17	35.16
+ ID2= 2 ( 0220):	0.06	0.011	1.17	35.74
=====				
ID = 3 ( 0020):	0.11	0.020	1.17	35.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.05
Total Imp(%)=	45.00 Dir. Conn.(%)= 45.00



		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.02	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	17.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	22.43
over (min)	5.00	20.00
Storage Coeff. (min)=	0.76 (ii)	16.46 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.34	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.010 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	65.90	14.21	37.25
TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.21	0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021) |  
| 1 + 2 = 3 |

AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0020):	0.11	0.020	1.17	35.48
+ ID2= 2 ( 0230):	0.05	0.010	1.17	37.25
=====				
ID = 3 ( 0021):	0.16	0.030	1.17	36.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 0101)	Area (ha)=	2.94	Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)=	10.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.31	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.161 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 20.254  
 TOTAL RAINFALL (mm)= 66.900  
 RUNOFF COEFFICIENT = 0.303

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD ( 0111)	Area (ha)=	1.32	Curve Number (CN)= 73.0
ID= 1 DT= 5.0 min	Ia (mm)=	9.90	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.13	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.116 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 21.311  
 TOTAL RAINFALL (mm)= 66.900  
 RUNOFF COEFFICIENT = 0.319

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.58
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	78.32	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01

0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 22.43  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.87 (ii) 17.57 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.14 0.02 0.149 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 65.90 14.21 33.32  
TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
RUNOFF COEFFICIENT = 0.99 0.21 0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0111):	1.32	0.116	1.33	21.31
+ ID2= 2 ( 0120):	0.92	0.149	1.17	33.32
=====				
ID = 3 ( 0012):	2.24	0.238	1.17	26.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0130)	18.61	
ID= 1 DT= 5.0 min	Total Imp(%)= 21.00	21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)= 151.08 26.94  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.61 (ii) 18.95 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*

PEAK FLOW (cms)= 1.51 0.63 1.683 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.50 1.17  
 RUNOFF VOLUME (mm)= 65.90 16.16 26.61  
 TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
 RUNOFF COEFFICIENT = 0.99 0.24 0.40

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 59.0 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 ( 0012):	2.24	0.238	1.17	26.24
+ ID2= 2 ( 0130):	18.61	1.683	1.17	26.61
=====				
ID = 3 ( 0006):	20.85	1.921	1.17	26.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0007)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0101):	2.94	0.161	1.58	20.25
+ ID2= 2 ( 0006):	20.85	1.921	1.17	26.57
=====				
ID = 3 ( 0007):	23.79	1.961	1.17	25.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0160)			
ID= 1 DT= 5.0 min	Area (ha)=	0.44	
	Total Imp(%)=	21.00	Dir. Conn.(%)= 21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.35
Dep. Storage (mm)=	1.00	4.60
Average Slope (%)=	1.00	2.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.330

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	37.98	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.50 (ii)	13.78 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
*TOTALS*			
PEAK FLOW (cms)=	0.04	0.02	0.049 (iii)
TIME TO PEAK (hrs)=	1.17	1.33	1.17
RUNOFF VOLUME (mm)=	65.90	22.00	31.20

TOTAL RAINFALL (mm)= 66.90 66.90 66.90  
 RUNOFF COEFFICIENT = 0.99 0.33 0.47

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	30.55	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	47.75	1.750	13.11	2.58	4.06
0.167	0.00	1.000	47.75	1.833	13.11	2.67	4.06
0.250	3.75	1.083	151.08	1.917	9.59	2.75	3.47
0.333	3.75	1.167	151.08	2.000	9.59	2.83	3.47
0.417	5.35	1.250	63.87	2.083	7.38	2.92	3.01
0.500	5.35	1.333	63.87	2.167	7.38	3.00	3.01
0.583	8.47	1.417	31.71	2.250	5.89	3.08	2.64
0.667	8.47	1.500	31.71	2.333	5.89	3.17	2.64
0.750	16.17	1.583	19.27	2.417	4.83		
0.833	16.17	1.667	19.27	2.500	4.84		

Max.Eff.Inten.(mm/hr)=	151.08	37.48
over (min)	5.00	15.00
Storage Coeff. (min)=	1.06 (ii)	13.85 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.01	0.018 (iii)
TIME TO PEAK (hrs)=	1.17	1.42	1.17
RUNOFF VOLUME (mm)=	65.90	21.77	32.74

TOTAL RAINFALL (mm)=	66.90	66.90	66.90
RUNOFF COEFFICIENT =	0.99	0.33	0.49

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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 =====  
 =====

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V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA L
V  V  I  SS    U  U  A  A  L
  VV   I  SSSSS  UUUUU  A  A  LLLLL
  
```

```

000  TTTT  TTTT  H  H  Y  Y  M  M  000  TM
0  0  T    T  H  H  Y  Y  MM MM  0  0
0  0  T    T  H  H  Y  M  M  0  0
000  T    T  H  H  Y  M  M  000
  
```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\4a4d378-cb02-4009-80b3-b168eb787f8d\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\4a4d378-cb02-4009-80b3-b168eb787f8d\s

DATE: 12-12-2023

TIME: 10:33:35

USER:

COMMENTS: \_\_\_\_\_



\*\*\*\*\*  
 \*\* SIMULATION : Chicago 3hrs\_100-2073 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData Local\Temp\ 0a2ab211-eeb5-4a53-acea-3e72082fedbe\ab2842ac
Ptotal= 73.30 mm	Comments: Chicago 3hrs_100-2073

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	0.83	52.32	1.67	14.37	2.50	4.45
0.17	4.11	1.00	165.53	1.83	10.51	2.67	3.80
0.33	5.86	1.17	69.98	2.00	8.09	2.83	3.29
0.50	9.28	1.33	34.74	2.17	6.45	3.00	2.90
0.67	17.71	1.50	21.11	2.33	5.30		

CALIB	Area (ha)= 0.35
STANDHYD ( 0190)	Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
ID= 1 DT= 5.0 min	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90

0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	28.07
over (min)	5.00	20.00
Storage Coeff. (min)=	1.35 (ii)	15.71 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.33	0.07

\*TOTALS\*

PEAK FLOW (cms)=	0.06	0.01	0.066 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	72.30	16.89	38.47
TOTAL RAINFALL (mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT =	0.99	0.23	0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140)		Area (ha)=	4.69	
ID= 1 DT= 5.0 min		Total Imp(%)=	43.00	Dir. Conn.(%)= 43.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90

0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	31.09
over (min)	5.00	20.00
Storage Coeff. (min)=	2.94 (ii)	16.48 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.28	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.91	0.14	0.947 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	72.30	18.54	41.66
TOTAL RAINFALL (mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT =	0.99	0.25	0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0140): 4.69  0.947  1.17  41.66
| + ID2= 2 ( 0190): 0.35  0.066  1.17  38.47
|=====|
| ID = 3 ( 0009): 5.04  1.013  1.17  41.43

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 0.38
| Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		0.18	0.20
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		50.33	40.00
Mannings n =		0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.38 (ii) 15.74 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.08 0.01 0.085 (iii)  
 TIME TO PEAK (hrs)= 1.17 1.50 1.17  
 RUNOFF VOLUME (mm)= 72.30 16.89 42.91  
 TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
 RUNOFF COEFFICIENT = 0.99 0.23 0.59

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0011) |  
 | 1 + 2 = 3 |

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.085	1.17	42.91
+ ID2= 2 ( 0009):	5.04	1.013	1.17	41.43
=====				
ID = 3 ( 0011):	5.42	1.097	1.17	41.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 -----

CALIB			
NASHYD ( 0150)		Area (ha)= 13.27	Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min		Ia (mm)= 10.00	# of Linear Res.(N)= 3.00
-----		U.H. Tp(hrs)= 0.32	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 0.883 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 24.715  
 TOTAL RAINFALL (mm)= 73.300  
 RUNOFF COEFFICIENT = 0.337

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 0170)		Area (ha)= 0.06	
ID= 1 DT= 5.0 min		Total Imp(%)= 70.00	Dir. Conn.(%)= 70.00
-----			

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.04	0.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.61	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 81.43  
over (min) 5.00 15.00  
Storage Coeff. (min)= 0.79 (ii) 10.16 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.10

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.021 (iii)  
TIME TO PEAK (hrs)= 1.17 1.33 1.17  
RUNOFF VOLUME (mm)= 72.30 37.60 61.77  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.51 0.84

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.0 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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.91

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29

0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 0.705 (i)  
 TIME TO PEAK (hrs)= 2.333  
 RUNOFF VOLUME (mm)= 19.721  
 TOTAL RAINFALL (mm)= 73.300  
 RUNOFF COEFFICIENT = 0.269

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD ( 0110)	Area (ha)= 0.65
ID= 1 DT= 5.0 min	Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.29	0.36
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	65.83	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.62 (ii) 15.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00

Unit Hyd. peak (cms)=	0.32	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.13	0.02	0.136 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	72.30	16.89	41.26
TOTAL RAINFALL (mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT =	0.99	0.23	0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0100):  27.26  0.705      2.33      19.72
+ ID2= 2 ( 0110):  0.65  0.136      1.17      41.26
=====
ID = 3 ( 0003):  27.91  0.715      2.33      20.22

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0210) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.05
Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 52.32 | 1.750 14.37 | 2.58 4.45
0.167 0.00 | 1.000 52.32 | 1.833 14.37 | 2.67 4.45
0.250 4.11 | 1.083 165.53 | 1.917 10.51 | 2.75 3.80

```



0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.73 (ii) 15.09 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 16.89 39.43  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.23 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80

0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.78 (ii) 15.13 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.012 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 16.89 40.04  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.23 0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0020) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0210):	0.05	0.010	1.17	39.43
+ ID2= 2 ( 0220):	0.06	0.012	1.17	40.04
=====				
ID = 3 ( 0020):	0.11	0.022	1.17	39.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0230) |
| ID= 1 DT= 5.0 min |
-----

```

Area (ha)=	0.05		
Total Imp(%)=	45.00	Dir. Conn.(%)=	45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00

Length (m)= 17.32 40.00  
Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 28.07  
over (min) 5.00 20.00  
Storage Coeff. (min)= 0.73 (ii) 15.09 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.34 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 16.89 41.66  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.23 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0020):	0.11	0.022	1.17	39.76
+ ID2= 2 ( 0230):	0.05	0.011	1.17	41.66
=====				
ID = 3 ( 0021):	0.16	0.033	1.17	40.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0101) | Area (ha)= 2.94 Curve Number (CN)= 72.0
| ID= 1 DT= 5.0 min | Ia (mm)= 10.90 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.31

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 52.32 | 1.750 14.37 | 2.58 4.45
0.167 0.00 | 1.000 52.32 | 1.833 14.37 | 2.67 4.45
0.250 4.11 | 1.083 165.53 | 1.917 10.51 | 2.75 3.80
0.333 4.11 | 1.167 165.53 | 2.000 10.51 | 2.83 3.80
0.417 5.86 | 1.250 69.98 | 2.083 8.09 | 2.92 3.29
0.500 5.86 | 1.333 69.98 | 2.167 8.09 | 3.00 3.29
0.583 9.28 | 1.417 34.74 | 2.250 6.45 | 3.08 2.90
0.667 9.28 | 1.500 34.74 | 2.333 6.45 | 3.17 2.90
0.750 17.71 | 1.583 21.11 | 2.417 5.30 |
0.833 17.71 | 1.667 21.11 | 2.500 5.30 |

```

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.193 (i)  
 TIME TO PEAK (hrs)= 1.583  
 RUNOFF VOLUME (mm)= 24.150  
 TOTAL RAINFALL (mm)= 73.300  
 RUNOFF COEFFICIENT = 0.329

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.13

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 0.917 52.32 | 1.750 14.37 | 2.58 4.45

```

0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.138 (i)  
 TIME TO PEAK (hrs)= 1.333  
 RUNOFF VOLUME (mm)= 25.293  
 TOTAL RAINFALL (mm)= 73.300  
 RUNOFF COEFFICIENT = 0.345

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0120) | Area (ha)= 0.92  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	28.07	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.80 (ii)	16.16 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.32	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.16	0.03	0.164 (iii)
TIME TO PEAK (hrs)=	1.17	1.50	1.17
RUNOFF VOLUME (mm)=	72.30	16.89	37.38
TOTAL RAINFALL (mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT =	0.99	0.23	0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
    CN\* = 55.0   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 ( 0012) |
| 1 + 2 = 3      |
-----
                AREA    QPEAK    TPEAK    R.V.
                (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0111):  1.32  0.138  1.33  25.29
+ ID2= 2 ( 0120):  0.92  0.164  1.17  37.38
=====
ID = 3 ( 0012):  2.24  0.275  1.17  30.26

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| STANDHYD ( 0130) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 18.61
Total Imp(%)= 21.00   Dir. Conn.(%)= 21.00

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.91	14.70
Dep. Storage	(mm)=	1.00	4.80
Average Slope	(%)=	1.00	2.00
Length	(m)=	352.23	40.00
Mannings n	=	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME  RAIN | TIME  RAIN | TIME  RAIN | TIME  RAIN

```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)= 165.53 32.23  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.45 (ii) 17.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.06

\*TOTALS\*

PEAK FLOW (cms)= 1.66 0.78 1.887 (iii)  
TIME TO PEAK (hrs)= 1.17 1.50 1.17  
RUNOFF VOLUME (mm)= 72.30 19.15 30.31  
TOTAL RAINFALL (mm)= 73.30 73.30 73.30  
RUNOFF COEFFICIENT = 0.99 0.26 0.41

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0012):	2.24	0.275	1.17	30.26
+ ID2= 2 ( 0130):	18.61	1.887	1.17	30.31
=====				
ID = 3 ( 0006):	20.85	2.162	1.17	30.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0007) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
--	--------------	----------------	----------------	--------------

ID1= 1 ( 0101):	2.94	0.193	1.58	24.15
+ ID2= 2 ( 0006):	20.85	2.162	1.17	30.31
=====				
ID = 3 ( 0007):	23.79	2.212	1.17	29.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0160) | Area (ha)= 0.44
| ID= 1 DT= 5.0 min | Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00
-----

```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.35
Dep. Storage	(mm)=	1.00	4.60
Average Slope	(%)=	1.00	2.00
Length	(m)=	54.16	40.00
Mannings n	=	0.013	0.330

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	45.01
over (min)	5.00	15.00
Storage Coeff. (min)=	1.45 (ii)	12.92 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

			*TOTALS*
PEAK FLOW	(cms)=	0.04	0.03
TIME TO PEAK	(hrs)=	1.17	1.17
RUNOFF VOLUME	(mm)=	72.30	25.82
TOTAL RAINFALL	(mm)=	73.30	73.30
RUNOFF COEFFICIENT	=	0.99	0.35
			0.056 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!



- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601)	Area (ha)=	0.14	
ID= 1 DT= 5.0 min	Total Imp(%)=	25.00	Dir. Conn.(%)= 25.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.55	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	0.917	52.32	1.750	14.37	2.58	4.45
0.167	0.00	1.000	52.32	1.833	14.37	2.67	4.45
0.250	4.11	1.083	165.53	1.917	10.51	2.75	3.80
0.333	4.11	1.167	165.53	2.000	10.51	2.83	3.80
0.417	5.86	1.250	69.98	2.083	8.09	2.92	3.29
0.500	5.86	1.333	69.98	2.167	8.09	3.00	3.29
0.583	9.28	1.417	34.74	2.250	6.45	3.08	2.90
0.667	9.28	1.500	34.74	2.333	6.45	3.17	2.90
0.750	17.71	1.583	21.11	2.417	5.30		
0.833	17.71	1.667	21.11	2.500	5.30		

Max.Eff.Inten.(mm/hr)=	165.53	44.49
over (min)	5.00	15.00
Storage Coeff. (min)=	1.03 (ii)	12.97 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.34	0.08

*TOTALS*			
PEAK FLOW (cms)=	0.02	0.01	0.020 (iii)
TIME TO PEAK (hrs)=	1.17	1.33	1.17
RUNOFF VOLUME (mm)=	72.30	25.57	37.19
TOTAL RAINFALL (mm)=	73.30	73.30	73.30
RUNOFF COEFFICIENT =	0.99	0.35	0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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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 =====  
 =====

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V  V  I  SSSSS  U  U  A  L          (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL
  
```

```

000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
0  0  T  T  H  H  Y  Y  MM  MM  0  0
0  0  T  T  H  H  Y  M  M  0  0
000  T  T  H  H  Y  M  M  000
  
```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5347c84a-8454-4068-80b9-acf6b0176d2c\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5347c84a-8454-4068-80b9-acf6b0176d2c\s

DATE: 12-12-2023

TIME: 10:33:37

USER:

COMMENTS: \_\_\_\_\_

-----  
 -----  
 \*\*\*\*\*

\*\* SIMULATION : Hazel \*\*  
 \*\*\*\*\*

```

-----
| READ STORM |      Filename: C:\Users\caeh076182\AppData
|             |      ata\Local\Temp\
|             |      0a2ab211-eeb5-4a53-acea-3e72082fedbe\8b6ae0cb
| 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
0.00	6.00	3.00	13.00	6.00	23.00	9.00	53.00
1.00	4.00	4.00	17.00	7.00	13.00	10.00	38.00
2.00	6.00	5.00	13.00	8.00	13.00	11.00	13.00

```

-----
| CALIB |
| STANDHYD ( 0190) |      Area (ha)= 0.35
| ID= 1 DT= 5.0 min |      Total Imp(%)= 39.00 Dir. Conn.(%)= 39.00
-----
  
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.14	0.21
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	48.30	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00

1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.13 (ii) 15.26 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.02 0.039 (iii)  
TIME TO PEAK (hrs)= 9.50 10.08 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 145.28  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0140) | Area (ha)= 4.69  
| ID= 1 DT= 5.0 min | Total Imp(%)= 43.00 Dir. Conn.(%)= 43.00  
-----

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	2.02	2.67
Dep. Storage	(mm)=	1.00	4.90
Average Slope	(%)=	1.00	2.00
Length	(m)=	176.82	40.00
Mannings n	=	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max. Eff. Inten. (mm/hr)=	53.00	36.86
---------------------------	-------	-------

over (min)	5.00	20.00	
Storage Coeff. (min)=	4.64 (ii)	17.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.30	0.25	0.548 (iii)
TIME TO PEAK (hrs)=	10.00	10.08	10.00
RUNOFF VOLUME (mm)=	211.00	109.69	153.25
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.52	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.0 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 ( 0140):  4.69   0.548   10.00   153.25
+ ID2= 2 ( 0190):  0.35   0.039   10.00   145.28
=====
ID = 3 ( 0009):  5.04   0.588   10.00   152.69

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0200) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 0.38
Total Imp(%)= 47.00 Dir. Conn.(%)= 47.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.18	0.20
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	50.33	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN |' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr |' hrs mm/hr | hrs mm/hr

```

0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)=	53.00	35.05
over (min)	5.00	20.00
Storage Coeff. (min)=	2.18 (ii)	15.32 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.31	0.07

			*TOTALS*
PEAK FLOW (cms)=	0.03	0.02	0.045 (iii)
TIME TO PEAK (hrs)=	9.58	10.08	10.00
RUNOFF VOLUME (mm)=	211.00	103.30	153.89
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.49	0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0011)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0200):	0.38	0.045	10.00	153.89
+ ID2= 2 ( 0009):	5.04	0.588	10.00	152.69
=====				
ID = 3 ( 0011):	5.42	0.632	10.00	152.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD ( 0150)				
ID= 1 DT= 5.0 min	Area	(ha)=	Curve Number	(CN)=
	Ia	(mm)=	# of Linear Res.	(N)=
	U.H. Tp	(hrs)=		
	13.27		72.0	
	10.00		3.00	
	0.32			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00



1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.584

PEAK FLOW (cms)= 1.541 (i)  
 TIME TO PEAK (hrs)= 10.083  
 RUNOFF VOLUME (mm)= 135.621  
 TOTAL RAINFALL (mm)= 212.000  
 RUNOFF COEFFICIENT = 0.640

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD ( 0170)	Area (ha)= 0.06
ID= 1 DT= 5.0 min	Total Imp(%)= 70.00 Dir. Conn.(%)= 70.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	19.61	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00

0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)=	53.00	49.08
over (min)	5.00	15.00
Storage Coeff. (min)=	1.24 (ii)	12.72 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.009 (iii)
TIME TO PEAK (hrs)=	9.33	10.00	10.00
RUNOFF VOLUME (mm)=	211.00	163.08	196.47
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.77	0.93

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 82.0    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 |
| NASHYD ( 0100) | Area (ha)= 27.26 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 12.80 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.91

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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00

2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 1.144

PEAK FLOW (cms)= 2.335 (i)  
 TIME TO PEAK (hrs)= 11.167  
 RUNOFF VOLUME (mm)= 122.356  
 TOTAL RAINFALL (mm)= 212.000  
 RUNOFF COEFFICIENT = 0.577

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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 -----  
 | CALIB |  
 | STANDHYD ( 0110) | Area (ha)= 0.65  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.29	0.36
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	65.83	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00

1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.56 (ii) 15.70 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.04 0.03 0.075 (iii)  
TIME TO PEAK (hrs)= 9.67 10.08 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 150.67  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0100):  27.26  2.335   11.17  122.36
+ ID2= 2 ( 0110):   0.65  0.075   10.00  150.67
=====

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ID = 3 ( 0003): 27.91 2.379 11.00 123.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 0210) | Area (ha)= 0.05
| ID= 1 DT= 5.0 min | Total Imp(%)= 41.00 Dir. Conn.(%)= 41.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area   (ha)=          0.02      0.03
Dep. Storage   (mm)=          1.00      5.00
Average Slope  (%)=          1.00      2.00
Length         (m)=         17.32     40.00
Mannings n     =           0.013     0.350

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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00

2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.15 (ii) 14.29 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 9.33 10.00 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 147.30  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0220) | Area (ha)= 0.06  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.03	0.03
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	19.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00

0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)=	53.00	35.05
over (min)	5.00	15.00
Storage Coeff. (min)=	1.23 (ii)	14.36 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.00	0.00	0.007 (iii)
TIME TO PEAK (hrs)=	9.33	10.00	10.00
RUNOFF VOLUME (mm)=	211.00	103.30	148.38
TOTAL RAINFALL (mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT =	1.00	0.49	0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:



- CN\* = 55.0    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 ( 0020)						
1	2	3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1	( 0210)	:	0.05	0.006	10.00	147.30
+ ID2= 2	( 0220)	:	0.06	0.007	10.00	148.38
=====						
ID = 3	( 0020)	:	0.11	0.013	10.00	147.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		STANDHYD ( 0230)	
ID= 1	DT= 5.0 min	Area (ha)=	0.05
		Total Imp(%)=	45.00
		Dir. Conn.(%)=	45.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.02	0.03
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	17.32	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00

1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.15 (ii) 14.29 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.34 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.00 0.00 0.006 (iii)  
TIME TO PEAK (hrs)= 9.33 10.00 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 151.62  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0021)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 0020):  AREA   QPEAK   TPEAK   R.V.
                  (ha)    (cms)   (hrs)   (mm)
                  0.11   0.013  10.00  147.89

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+ ID2= 2 ( 0230):    0.05    0.006    10.00    151.62
=====
ID = 3 ( 0021):    0.16    0.019    10.00    149.05

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0101) | Area (ha)= 2.94 Curve Number (CN)= 72.0
| ID= 1 DT= 5.0 min | Ia (mm)= 10.90 # of Linear Res.(N)= 3.00
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| U.H. Tp(hrs)= 0.31

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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00

2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.362

PEAK FLOW (cms)= 0.342 (i)  
 TIME TO PEAK (hrs)= 10.083  
 RUNOFF VOLUME (mm)= 134.813  
 TOTAL RAINFALL (mm)= 212.000  
 RUNOFF COEFFICIENT = 0.636

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-----
| CALIB |
| NASHYD ( 0111) | Area (ha)= 1.32 Curve Number (CN)= 73.0
| ID= 1 DT= 5.0 min | Ia (mm)= 9.90 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.13

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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00

1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Unit Hyd Qpeak (cms)= 0.388

PEAK FLOW (cms)= 0.162 (i)  
 TIME TO PEAK (hrs)= 10.000  
 RUNOFF VOLUME (mm)= 136.600  
 TOTAL RAINFALL (mm)= 212.000  
 RUNOFF COEFFICIENT = 0.644

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0120) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.92  
 Total Imp(%)= 37.00 Dir. Conn.(%)= 37.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.34	0.58
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	78.32	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00

0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 35.05  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.84 (ii) 15.98 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.05 0.05 0.102 (iii)  
TIME TO PEAK (hrs)= 9.67 10.08 10.00  
RUNOFF VOLUME (mm)= 211.00 103.30 143.14  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.49 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0012) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0111):	1.32	0.162	10.00	136.60
+ ID2= 2 ( 0120):	0.92	0.102	10.00	143.14
=====				
ID = 3 ( 0012):	2.24	0.264	10.00	139.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0130) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 18.61  
 Total Imp(%)= 21.00 Dir. Conn.(%)= 21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.91	14.70
Dep. Storage (mm)=	1.00	4.80
Average Slope (%)=	1.00	2.00
Length (m)=	352.23	40.00
Mannings n =	0.013	0.340

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00

1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 37.46  
over (min) 5.00 20.00  
Storage Coeff. (min)= 7.01 (ii) 19.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.17 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.58 1.40 1.955 (iii)  
TIME TO PEAK (hrs)= 10.00 10.08 10.00  
RUNOFF VOLUME (mm)= 211.00 111.89 132.70  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.53 0.63

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 59.0 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 ( 0012):	2.24	0.264	10.00	139.28
+ ID2= 2 ( 0130):	18.61	1.955	10.00	132.70
=====				
ID = 3 ( 0006):	20.85	2.219	10.00	133.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



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-----
| ADD HYD ( 0007) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0101):	2.94	0.342	10.08	134.81
+ ID2= 2 ( 0006):	20.85	2.219	10.00	133.41
=====				
ID = 3 ( 0007):	23.79	2.560	10.00	133.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0160) |
| ID= 1 DT= 5.0 min |
-----

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Area (ha)=	0.44		
Total Imp(%)=	21.00	Dir. Conn.(%)=	21.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.35
Dep. Storage (mm)=	1.00	4.60
Average Slope (%)=	1.00	2.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.330

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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          ---- TRANSFORMED HYETOGRAPH ----

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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00

1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)= 53.00 43.08  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.28 (ii) 13.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.04 0.054 (iii)  
TIME TO PEAK (hrs)= 9.58 10.00 10.00  
RUNOFF VOLUME (mm)= 211.00 133.79 149.98  
TOTAL RAINFALL (mm)= 212.00 212.00 212.00  
RUNOFF COEFFICIENT = 1.00 0.63 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 1601) | Area (ha)= 0.14  
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.04	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	30.55	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	6.00	3.083	13.00	6.083	23.00	9.08	53.00
0.167	6.00	3.167	13.00	6.167	23.00	9.17	53.00
0.250	6.00	3.250	13.00	6.250	23.00	9.25	53.00
0.333	6.00	3.333	13.00	6.333	23.00	9.33	53.00
0.417	6.00	3.417	13.00	6.417	23.00	9.42	53.00
0.500	6.00	3.500	13.00	6.500	23.00	9.50	53.00
0.583	6.00	3.583	13.00	6.583	23.00	9.58	53.00
0.667	6.00	3.667	13.00	6.667	23.00	9.67	53.00
0.750	6.00	3.750	13.00	6.750	23.00	9.75	53.00
0.833	6.00	3.833	13.00	6.833	23.00	9.83	53.00
0.917	6.00	3.917	13.00	6.917	23.00	9.92	53.00
1.000	6.00	4.000	13.00	7.000	23.00	10.00	53.00
1.083	4.00	4.083	17.00	7.083	13.00	10.08	38.00
1.167	4.00	4.167	17.00	7.167	13.00	10.17	38.00
1.250	4.00	4.250	17.00	7.250	13.00	10.25	38.00
1.333	4.00	4.333	17.00	7.333	13.00	10.33	38.00
1.417	4.00	4.417	17.00	7.417	13.00	10.42	38.00
1.500	4.00	4.500	17.00	7.500	13.00	10.50	38.00
1.583	4.00	4.583	17.00	7.583	13.00	10.58	38.00
1.667	4.00	4.667	17.00	7.667	13.00	10.67	38.00
1.750	4.00	4.750	17.00	7.750	13.00	10.75	38.00
1.833	4.00	4.833	17.00	7.833	13.00	10.83	38.00
1.917	4.00	4.917	17.00	7.917	13.00	10.92	38.00
2.000	4.00	5.000	17.00	8.000	13.00	11.00	38.00
2.083	6.00	5.083	13.00	8.083	13.00	11.08	13.00
2.167	6.00	5.167	13.00	8.167	13.00	11.17	13.00
2.250	6.00	5.250	13.00	8.250	13.00	11.25	13.00
2.333	6.00	5.333	13.00	8.333	13.00	11.33	13.00
2.417	6.00	5.417	13.00	8.417	13.00	11.42	13.00
2.500	6.00	5.500	13.00	8.500	13.00	11.50	13.00
2.583	6.00	5.583	13.00	8.583	13.00	11.58	13.00
2.667	6.00	5.667	13.00	8.667	13.00	11.67	13.00
2.750	6.00	5.750	13.00	8.750	13.00	11.75	13.00
2.833	6.00	5.833	13.00	8.833	13.00	11.83	13.00
2.917	6.00	5.917	13.00	8.917	13.00	11.92	13.00
3.000	6.00	6.000	13.00	9.000	13.00	12.00	13.00

Max.Eff.Inten.(mm/hr)=	53.00	43.05
over (min)	5.00	15.00
Storage Coeff. (min)=	1.62 (ii)	13.72 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*

PEAK FLOW	(cms)=	0.01	0.01	0.017 (iii)
TIME TO PEAK	(hrs)=	9.42	10.00	10.00
RUNOFF VOLUME	(mm)=	211.00	133.44	152.76
TOTAL RAINFALL	(mm)=	212.00	212.00	212.00
RUNOFF COEFFICIENT	=	1.00	0.63	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0    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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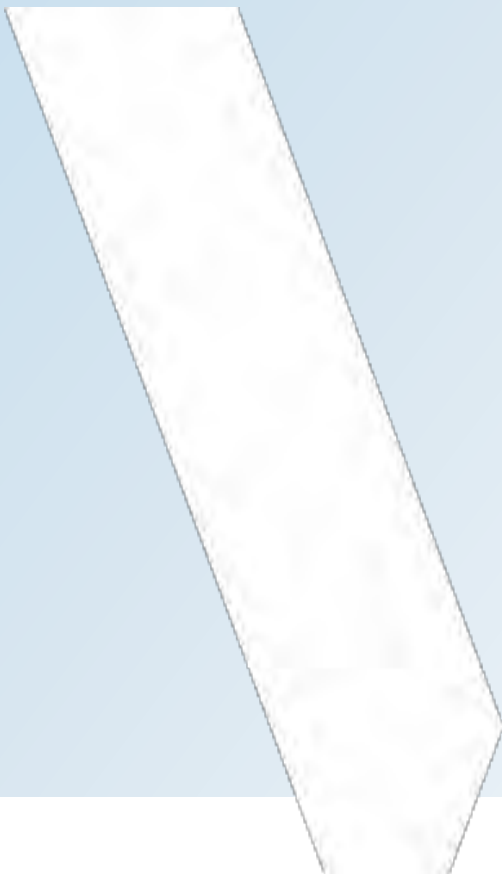
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# APPENDIX

## C

### Hydraulic Assessments



**APPENDIX**

**C-1**

**Existing Conditions**

Dufferin County Road 109 / 2nd Line Amaranth Realignment EA Hydraulic Performance of Existing Culverts

Culvert Number	Proposed Culvert Size			Inverts		Length	Slope (m/m)	Design Peak Flow (m <sup>3</sup> /s)	100-yr Peak Flow (m <sup>3</sup> /s)	Spill Elev. (m)	Cover (m)	Headwater Elev. (m)		Velocity (m/s)		Entrance loss coefficient	Energy Grade Line Elev. (m)		Headwater Depth (m)		Headwater Depth / Culv. Height (HW/D)		Freeboard from Energy Grade Line (m)		Freeboard from Hydraulic Grade Line (m)		Meets HW/D<1.5 Criterion: Yes/No	Meets Desirable Freeboard Criterion: Yes/No	Meets Minimum Freeboard Criterion: Yes/No	Meets Highway Overlapping Criterion: Yes/No
												Design	100-yr	Design	100-yr		Design	100-yr	Design	100-yr	Design	100-yr	Design	100-yr	Design	100-yr				
	Width (mm)	Height (mm)	Type	U/S	D/S																									
C1	600	600	CSP	491.33	491.33	16.7	0.000	0.83	1.18	493.07	1.14	493.10	493.14	2.55	2.58	0.90	493.13	493.17	1.77	1.81	2.95	3.02	-0.06	-0.10	-0.03	-0.07	N	N	N	N
C3	750	750	CSP	489.50	488.73	36.1	0.021	1.76	2.34	491.17	0.92	491.26	491.30	2.77	2.79	0.90	491.30	491.34	1.76	1.80	2.35	2.40	-0.13	-0.17	-0.09	-0.13	N	N	N	N
C4	900	900	CSP	490.26	490.05	24.2	0.009	1.45	1.96	491.54	0.38	491.58	491.63	2.50	2.53	0.90	491.61	491.66	1.32	1.37	1.47	1.52	-0.07	-0.12	-0.04	-0.09	Y	N	N	N
E20	800	800	CSP	491.45	490.97	21.5	0.022	0.66	0.84	492.64	0.39	492.32	492.46	2.24	2.37	0.90	492.35	492.49	0.87	1.01	1.09	1.26	0.29	0.15	0.32	0.18	Y	N	N	Y
E13	450	450	HDPE	500.52	500.29	12.5	0.018	0.01	0.02	501.28	0.31	500.64	500.66	0.11	0.16	0.90	500.64	500.66	0.12	0.14	0.27	0.31	0.64	0.62	0.64	0.62	Y	Y	Y	Y

# Culvert Analysis Report

## C1 Existing

Analysis Component			
Storm Event	Check	Discharge	1.1780 m <sup>3</sup> /s
Peak Discharge Method: User-Specified			
Design Discharge	0.8280 m <sup>3</sup> /s	Check Discharge	1.1780 m <sup>3</sup> /s
Tailwater Conditions: Constant Tailwater			
Tailwater Elevation	491.69 m		

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	1-600 mm Circular	0.6998 m <sup>3</sup> /s	493.14 m	2.58 m/s
Weir	Roadway (Constant Elevation)	0.4792 m <sup>3</sup> /s	493.14 m	N/A
Total	-----	1.1790 m <sup>3</sup> /s	493.14 m	N/A



# Culvert Analysis Report

## C1 Existing

Component: Culvert-1

Culvert Summary			
Computed Headwater Elevation	493.14 m	Discharge	0.6998 m <sup>3</sup> /s
Inlet Control HW Elev.	492.29 m	Tailwater Elevation	491.69 m
Outlet Control HW Elev.	493.14 m	Control Type	Outlet Control
Headwater Depth/Height	2.97		

Grades			
Upstream Invert	491.33 m	Downstream Invert	491.33 m
Length	16.67 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	CompositeH2PressureProfile	Depth, Downstream	0.53 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.53 m
Velocity Downstream	2.58 m/s	Critical Slope	0.036736 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.61 m
Section Size	600 mm	Rise	0.61 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	493.14 m	Upstream Velocity Head	0.29 m
Ke	0.90	Entrance Loss	0.26 m

Inlet Control Properties			
Inlet Control HW Elev.	492.29 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.3 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Analysis Report

## C1 Existing

Component: Weir

Hydraulic Component(s): Roadway (Constant Elevation)			
Discharge	0.4792 m <sup>3</sup> /s	Allowable HW Elevation	493.14 m
Roadway Width	7.64 m	Overtopping Coefficient	1.64 SI
Length	15.00 m	Crest Elevation	493.07 m
Headwater Elevation	493.14 m	Discharge Coefficient (Cr)	2.97
Submergence Factor (Kt)	1.00		

Sta (m)	Elev. (m)
0.00	493.07
15.00	493.07

# Culvert Analysis Report

## C3 Existing

Analysis Component			
Storm Event	Check	Discharge	2.3440 m <sup>3</sup> /s
Peak Discharge Method: User-Specified			
Design Discharge	1.7630 m <sup>3</sup> /s	Check Discharge	2.3440 m <sup>3</sup> /s
Tailwater Conditions: Constant Tailwater			
Tailwater Elevation	489.18 m		

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	1-750 mm Circular	1.1641 m <sup>3</sup> /s	491.30 m	2.79 m/s
Weir	Roadway (Constant Elevation)	1.1818 m <sup>3</sup> /s	491.30 m	N/A
Total	-----	2.3459 m <sup>3</sup> /s	491.30 m	N/A

# Culvert Analysis Report

## C3 Existing

Component: Culvert-1

Culvert Summary			
Computed Headwater Elevation	491.30 m	Discharge	1.1641 m <sup>3</sup> /s
Inlet Control HW Elev.	490.64 m	Tailwater Elevation	489.18 m
Outlet Control HW Elev.	491.30 m	Control Type	Outlet Control
Headwater Depth/Height	2.36		

Grades			
Upstream Invert	489.50 m	Downstream Invert	488.73 m
Length	36.10 m	Constructed Slope	0.021330 m/m

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	0.66 m
Slope Type	Mild	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.66 m
Velocity Downstream	2.79 m/s	Critical Slope	0.031657 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.76 m
Section Size	750 mm	Rise	0.76 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	491.30 m	Upstream Velocity Head	0.33 m
Ke	0.90	Entrance Loss	0.30 m

Inlet Control Properties			
Inlet Control HW Elev.	490.64 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.5 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Analysis Report

## C3 Existing

Component: Weir

Hydraulic Component(s): Roadway (Constant Elevation)			
Discharge	1.1818	m <sup>3</sup> /s	Allowable HW Elevation
Roadway Width	21.19	m	Overtopping Coefficient
Length	15.00	m	Crest Elevation
Headwater Elevation	491.30	m	Discharge Coefficient (Cr)
Submergence Factor (Kt)	1.00		

Sta (m)	Elev. (m)
0.00	491.17
15.00	491.17

# Culvert Analysis Report

## C4 Existing

Analysis Component			
Storm Event	Design	Discharge	1.4510 m <sup>3</sup> /s
Peak Discharge Method: User-Specified			
Design Discharge	1.4510 m <sup>3</sup> /s	Check Discharge	1.9560 m <sup>3</sup> /s
Tailwater Conditions: Constant Tailwater			
Tailwater Elevation	490.59 m		

Name	Description	Discharge	HW Elev.	Velocity
Culvert-1	1-900 mm Circular	1.2876 m <sup>3</sup> /s	491.58 m	2.50 m/s
Weir	Roadway (Constant Elevation)	0.1642 m <sup>3</sup> /s	491.58 m	N/A
Total	-----	1.4519 m <sup>3</sup> /s	491.58 m	N/A

# Culvert Analysis Report

## C4 Existing

Component: Culvert-1

Culvert Summary			
Computed Headwater Elevation	491.58 m	Discharge	1.2876 m <sup>3</sup> /s
Inlet Control HW Elev.	491.30 m	Tailwater Elevation	490.59 m
Outlet Control HW Elev.	491.58 m	Control Type	Outlet Control
Headwater Depth/Height	1.44		

Grades			
Upstream Invert	490.26 m	Downstream Invert	490.05 m
Length	24.20 m	Constructed Slope	0.008678 m/m

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	0.67 m
Slope Type	Mild	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.67 m
Velocity Downstream	2.50 m/s	Critical Slope	0.020165 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.91 m
Section Size	900 mm	Rise	0.91 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	491.58 m	Upstream Velocity Head	0.20 m
Ke	0.90	Entrance Loss	0.18 m

Inlet Control Properties			
Inlet Control HW Elev.	491.30 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.7 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Analysis Report

## C4 Existing

Component: Weir

Hydraulic Component(s): Roadway (Constant Elevation)			
Discharge	0.1642 m <sup>3</sup> /s	Allowable HW Elevation	491.58 m
Roadway Width	16.04 m	Overtopping Coefficient	1.62 SI
Length	15.00 m	Crest Elevation	491.54 m
Headwater Elevation	491.58 m	Discharge Coefficient (Cr)	2.94
Submergence Factor (Kt)	1.00		

Sta (m)	Elev. (m)
0.00	491.54
15.00	491.54



# Culvert Design Report

## E13 Existing

Peak Discharge Method: User-Specified				
Design Discharge	0.0110 m <sup>3</sup> /s	Check Discharge	0.0160 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	500.52 m	Invert Downstream	500.29 m	
Length	12.49 m	Slope	0.018415 m/m	
Drop	0.23 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	500.56 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-450 mm Circular	0.0110 m <sup>3</sup> /s	500.64 m	0.11 m/s
Trial-2	1-450 mm Circular	0.0160 m <sup>3</sup> /s	500.66 m	0.16 m/s

# Culvert Design Report

## E13 Existing

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	500.64 m	Discharge	0.0110 m <sup>3</sup> /s
Headwater Depth/Height	0.25	Tailwater Elevation	500.56 m
Inlet Control HW Elev.	500.61 m	Control Type	Entrance Control
Outlet Control HW Elev.	500.64 m		

Grades			
Upstream Invert	500.52 m	Downstream Invert	500.29 m
Length	12.49 m	Constructed Slope	0.018415 m/m

Hydraulic Profile			
Profile	CompositeS1S2	Depth, Downstream	0.27 m
Slope Type	Steep	Normal Depth	0.05 m
Flow Regime	N/A	Critical Depth	0.07 m
Velocity Downstream	0.11 m/s	Critical Slope	0.004495 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.012
Section Material	Corrugated HDPE (Smooth Interior)	Span	0.46 m
Section Size	450 mm	Rise	0.46 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	500.64 m	Upstream Velocity Head	0.02 m
Ke	0.90	Entrance Loss	0.02 m

Inlet Control Properties			
Inlet Control HW Elev.	500.61 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° bevels	Area Full	0.2 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## E13 Existing

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	500.66 m	Discharge	0.0160 m <sup>3</sup> /s
Headwater Depth/Height	0.31	Tailwater Elevation	500.56 m
Inlet Control HW Elev.	500.63 m	Control Type	Entrance Control
Outlet Control HW Elev.	500.66 m		

Grades			
Upstream Invert	500.52 m	Downstream Invert	500.29 m
Length	12.49 m	Constructed Slope	0.018415 m/m

Hydraulic Profile			
Profile	CompositeS1S2	Depth, Downstream	0.27 m
Slope Type	Steep	Normal Depth	0.06 m
Flow Regime	N/A	Critical Depth	0.08 m
Velocity Downstream	0.16 m/s	Critical Slope	0.004343 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.012
Section Material	Corrugated HDPE (Smooth Interior)	Span	0.46 m
Section Size	450 mm	Rise	0.46 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	500.66 m	Upstream Velocity Head	0.03 m
Ke	0.90	Entrance Loss	0.03 m

Inlet Control Properties			
Inlet Control HW Elev.	500.63 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° bevels	Area Full	0.2 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## E20 Existing

Peak Discharge Method: User-Specified				
Design Discharge	0.6570 m <sup>3</sup> /s	Check Discharge	0.8350 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	491.45 m	Invert Downstream	490.97 m	
Length	21.54 m	Slope	0.022284 m/m	
Drop	0.48 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	491.45 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-825 mm Circular	0.6570 m <sup>3</sup> /s	492.32 m	2.24 m/s
Trial-2	1-825 mm Circular	0.8350 m <sup>3</sup> /s	492.46 m	2.37 m/s

# Culvert Design Report

## E20 Existing

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	492.32 m	Discharge	0.6570 m <sup>3</sup> /s
Headwater Depth/Height	1.03	Tailwater Elevation	491.45 m
Inlet Control HW Elev.	492.14 m	Control Type	Entrance Control
Outlet Control HW Elev.	492.32 m		

Grades			
Upstream Invert	491.45 m	Downstream Invert	490.97 m
Length	21.54 m	Constructed Slope	0.022284 m/m

Hydraulic Profile			
Profile	S2	Depth, Downstream	0.44 m
Slope Type	Steep	Normal Depth	0.44 m
Flow Regime	Supercritical	Critical Depth	0.49 m
Velocity Downstream	2.24 m/s	Critical Slope	0.016200 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.84 m
Section Size	825 mm	Rise	0.84 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	492.32 m	Upstream Velocity Head	0.20 m
Ke	0.90	Entrance Loss	0.18 m

Inlet Control Properties			
Inlet Control HW Elev.	492.14 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.6 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## E20 Existing

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	492.46 m	Discharge	0.8350 m <sup>3</sup> /s
Headwater Depth/Height	1.20	Tailwater Elevation	491.45 m
Inlet Control HW Elev.	492.26 m	Control Type	Entrance Control
Outlet Control HW Elev.	492.46 m		

Grades			
Upstream Invert	491.45 m	Downstream Invert	490.97 m
Length	21.54 m	Constructed Slope	0.022284 m/m

Hydraulic Profile			
Profile	S2	Depth, Downstream	0.51 m
Slope Type	Steep	Normal Depth	0.51 m
Flow Regime	Supercritical	Critical Depth	0.55 m
Velocity Downstream	2.37 m/s	Critical Slope	0.018010 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.84 m
Section Size	825 mm	Rise	0.84 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	492.46 m	Upstream Velocity Head	0.24 m
Ke	0.90	Entrance Loss	0.22 m

Inlet Control Properties			
Inlet Control HW Elev.	492.26 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.6 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

**C-2 Proposed Conditions**





Dufferin County Road 109 / 2nd Line Amaranth Realignment EA Hydraulic Performance of Proposed Culverts

Culvert Number	Proposed Culvert Size			Inverts		Length	Slope (m/m)	25-yr Peak Flow (m³/s)	100-yr Peak Flow (m³/s)	Spill Elev. (m)	Cover (m)	Headwater Elev. (m)		Velocity (m/s)		Entrance loss coefficient	Energy Grade Line Elev. (m)		Headwater Depth (m)		Headwater Depth / Culv. Height (HW/D)		Freeboard from Energy Grade Line (m)		Freeboard from Hydraulic Grade Line (m)		Meets HW/D-1.5 Criterion: Yes/No	Meets Desirable Freeboard Criterion: Yes/No	Meets Minimum Freeboard Criterion: Yes/No	Meets Highway Overlapping Criterion: Yes/No
												25-yr	100-yr	25-yr	100-yr		25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr				
	Width (mm)	Height (mm)	Type	U/S	D/S	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr	25-yr	100-yr			
C1	825	825	CSP	491.33	491.33	22.0	0.000	0.83	1.18	494.50	2.34	492.45	492.98	2.17	2.55	0.90	492.47	493.01	1.12	1.65	1.36	2.00	2.03	1.49	2.05	1.52	Y	Y	Y	Y
C3	1350	1350	CSP Twin	489.50	488.73	36.1	0.021	1.76	2.34	491.17	0.32	490.33	490.47	0.97	1.29	0.90	490.33	490.48	0.83	0.97	0.61	0.72	0.84	0.69	0.84	0.70	Y	N	N	Y
C6	1200	1200	CSP Twin	495.96	495.96	34.3	0.000	0.95	1.32	497.76	0.60	496.75	496.82	0.66	0.92	0.90	496.75	496.82	0.79	0.86	0.66	0.72	1.01	0.94	1.01	0.94	Y	Y	Y	Y
C7	1350	1350	CSP Twin	486.85	486.85	38.3	0.000	1.94	2.60	488.80	0.60	487.84	487.95	1.07	1.43	0.90	487.85	487.96	0.99	1.10	0.73	0.81	0.95	0.84	0.96	0.85	Y	N	N	Y
E13	600	600	CSP	499.80	499.80	19.1	0.000	0.02	0.02	501.00	0.60	500.16	500.16	0.09	0.12	1.90	500.16	500.16	0.36	0.36	0.60	0.60	0.84	0.84	0.84	0.84	Y	N	N	Y
E13A	600	600	CSP	497.80	497.80	16.0	0.000	0.05	0.06	499.00	0.60	498.17	498.18	0.27	0.36	0.90	498.17	498.18	0.37	0.38	0.62	0.63	0.83	0.82	0.83	0.82	Y	N	N	Y
E20	825	825	CSP Twin	491.45	490.97	21.5	0.022	0.66	0.84	492.64	0.36	492.03	492.11	0.97	1.23	0.90	492.03	492.12	0.58	0.66	0.70	0.80	0.61	0.52	0.61	0.53	Y	N	N	Y

# Culvert Design Report

## C1 Proposed

Peak Discharge Method: User-Specified				
Design Discharge	0.8280 m <sup>3</sup> /s	Check Discharge	1.1780 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	491.33 m	Invert Downstream	491.33 m	
Length	21.96 m	Slope	0.000000 m/m	
Drop	0.00 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	491.83 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-825 mm Circular	0.8280 m <sup>3</sup> /s	492.45 m	2.17 m/s
Trial-2	1-825 mm Circular	1.1780 m <sup>3</sup> /s	492.98 m	2.55 m/s

# Culvert Design Report

## C1 Proposed

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	492.45 m	Discharge	0.8280 m <sup>3</sup> /s
Headwater Depth/Height	1.33	Tailwater Elevation	491.83 m
Inlet Control HW Elev.	492.26 m	Control Type	Outlet Control
Outlet Control HW Elev.	492.45 m		

Grades			
Upstream Invert	491.33 m	Downstream Invert	491.33 m
Length	21.96 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	CompositeH2PressureProfile	Depth, Downstream	0.55 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.55 m
Velocity Downstream	2.17 m/s	Critical Slope	0.017928 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.84 m
Section Size	825 mm	Rise	0.84 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	492.45 m	Upstream Velocity Head	0.11 m
Ke	0.90	Entrance Loss	0.10 m

Inlet Control Properties			
Inlet Control HW Elev.	492.26 m	Flow Control	N/A
Inlet Type	Projecting	Area Full	0.6 m <sup>2</sup>
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

# Culvert Design Report

## C1 Proposed

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	492.98 m	Discharge	1.1780 m <sup>3</sup> /s
Headwater Depth/Height	1.97	Tailwater Elevation	491.83 m
Inlet Control HW Elev.	492.39 m	Control Type	Outlet Control
Outlet Control HW Elev.	492.98 m		

Grades			
Upstream Invert	491.33 m	Downstream Invert	491.33 m
Length	21.96 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	CompositeH2PressureProfile	Depth, Downstream	0.65 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.65 m
Velocity Downstream	2.55 m/s	Critical Slope	0.023269 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.84 m
Section Size	825 mm	Rise	0.84 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	492.98 m	Upstream Velocity Head	0.23 m
Ke	0.90	Entrance Loss	0.21 m

Inlet Control Properties			
Inlet Control HW Elev.	492.39 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.6 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## C3 Proposed

Peak Discharge Method: User-Specified				
Design Discharge	1.7630 m <sup>3</sup> /s	Check Discharge	2.3440 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	489.50 m	Invert Downstream	488.73 m	
Length	36.10 m	Slope	0.021330 m/m	
Drop	0.77 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	489.54 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	2-1350 mm Circular	1.7630 m <sup>3</sup> /s	490.33 m	0.97 m/s
Trial-2	2-1350 mm Circular	2.3440 m <sup>3</sup> /s	490.47 m	1.29 m/s

# Culvert Design Report

## C3 Proposed

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	490.33 m	Discharge	1.7630 m <sup>3</sup> /s
Headwater Depth/Height	0.60	Tailwater Elevation	489.54 m
Inlet Control HW Elev.	490.15 m	Control Type	Entrance Control
Outlet Control HW Elev.	490.33 m		

Grades			
Upstream Invert	489.50 m	Downstream Invert	488.73 m
Length	36.10 m	Constructed Slope	0.021330 m/m

Hydraulic Profile			
Profile	CompositeS1S2	Depth, Downstream	0.81 m
Slope Type	Steep	Normal Depth	0.42 m
Flow Regime	N/A	Critical Depth	0.49 m
Velocity Downstream	0.97 m/s	Critical Slope	0.011679 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.37 m
Section Size	1350 mm	Rise	1.37 m
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	490.33 m	Upstream Velocity Head	0.18 m
Ke	0.90	Entrance Loss	0.16 m

Inlet Control Properties			
Inlet Control HW Elev.	490.15 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	3.0 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## C3 Proposed

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	490.47 m	Discharge	2.3440 m <sup>3</sup> /s
Headwater Depth/Height	0.71	Tailwater Elevation	489.54 m
Inlet Control HW Elev.	490.27 m	Control Type	Entrance Control
Outlet Control HW Elev.	490.47 m		

Grades			
Upstream Invert	489.50 m	Downstream Invert	488.73 m
Length	36.10 m	Constructed Slope	0.021330 m/m

Hydraulic Profile			
Profile	CompositeS1S2	Depth, Downstream	0.81 m
Slope Type	Steep	Normal Depth	0.48 m
Flow Regime	N/A	Critical Depth	0.57 m
Velocity Downstream	1.29 m/s	Critical Slope	0.011944 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.37 m
Section Size	1350 mm	Rise	1.37 m
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	490.47 m	Upstream Velocity Head	0.21 m
Ke	0.90	Entrance Loss	0.19 m

Inlet Control Properties			
Inlet Control HW Elev.	490.27 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	3.0 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## C6 Proposed

Peak Discharge Method: User-Specified				
Design Discharge	0.9490 m <sup>3</sup> /s	Check Discharge	1.3170 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	495.96 m	Invert Downstream	495.96 m	
Length	34.35 m	Slope	0.000000 m/m	
Drop	0.00 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	496.68 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	2-1200 mm Circular	0.9490 m <sup>3</sup> /s	496.75 m	0.66 m/s
Trial-2	2-1200 mm Circular	1.3170 m <sup>3</sup> /s	496.82 m	0.92 m/s



# Culvert Design Report

## C6 Proposed

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	496.75 m	Discharge	0.9490 m <sup>3</sup> /s
Headwater Depth/Height	0.65	Tailwater Elevation	496.68 m
Inlet Control HW Elev.	496.68 m	Control Type	Outlet Control
Outlet Control HW Elev.	496.75 m		

Grades			
Upstream Invert	495.96 m	Downstream Invert	495.96 m
Length	34.35 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.72 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.37 m
Velocity Downstream	0.66 m/s	Critical Slope	0.012053 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.22 m
Section Size	1200 mm	Rise	1.22 m
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	496.75 m	Upstream Velocity Head	0.02 m
Ke	0.90	Entrance Loss	0.02 m

Inlet Control Properties			
Inlet Control HW Elev.	496.68 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	2.3 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## C6 Proposed

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	496.82 m	Discharge	1.3170 m <sup>3</sup> /s
Headwater Depth/Height	0.70	Tailwater Elevation	496.68 m
Inlet Control HW Elev.	496.68 m	Control Type	Outlet Control
Outlet Control HW Elev.	496.82 m		

Grades			
Upstream Invert	495.96 m	Downstream Invert	495.96 m
Length	34.35 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.72 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.43 m
Velocity Downstream	0.92 m/s	Critical Slope	0.012149 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.22 m
Section Size	1200 mm	Rise	1.22 m
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	496.82 m	Upstream Velocity Head	0.03 m
Ke	0.90	Entrance Loss	0.03 m

Inlet Control Properties			
Inlet Control HW Elev.	496.68 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	2.3 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report C7 Proposed

Peak Discharge Method: User-Specified				
Design Discharge	1.9410 m <sup>3</sup> /s	Check Discharge	2.5970 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	486.85 m	Invert Downstream	486.85 m	
Length	38.31 m	Slope	0.000000 m/m	
Drop	0.00 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	487.66 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	2-1350 mm Circular	1.9410 m <sup>3</sup> /s	487.84 m	1.07 m/s
Trial-2	2-1350 mm Circular	2.5970 m <sup>3</sup> /s	487.95 m	1.43 m/s

# Culvert Design Report C7 Proposed

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	487.84 m	Discharge	1.9410 m <sup>3</sup> /s
Headwater Depth/Height	0.72	Tailwater Elevation	487.66 m
Inlet Control HW Elev.	487.66 m	Control Type	Outlet Control
Outlet Control HW Elev.	487.84 m		

Grades			
Upstream Invert	486.85 m	Downstream Invert	486.85 m
Length	38.31 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.81 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.51 m
Velocity Downstream	1.07 m/s	Critical Slope	0.011747 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.37 m
Section Size	1350 mm	Rise	1.37 m
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	487.84 m	Upstream Velocity Head	0.05 m
Ke	0.90	Entrance Loss	0.04 m

Inlet Control Properties			
Inlet Control HW Elev.	487.66 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	3.0 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report C7 Proposed

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	487.95 m	Discharge	2.5970 m <sup>3</sup> /s
Headwater Depth/Height	0.80	Tailwater Elevation	487.66 m
Inlet Control HW Elev.	487.68 m	Control Type	Outlet Control
Outlet Control HW Elev.	487.95 m		

Grades			
Upstream Invert	486.85 m	Downstream Invert	486.85 m
Length	38.31 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.81 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.60 m
Velocity Downstream	1.43 m/s	Critical Slope	0.012088 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.37 m
Section Size	1350 mm	Rise	1.37 m
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	487.95 m	Upstream Velocity Head	0.07 m
Ke	0.90	Entrance Loss	0.06 m

Inlet Control Properties			
Inlet Control HW Elev.	487.68 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	3.0 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## E13 Proposed

Peak Discharge Method: User-Specified				
Design Discharge	0.0160 m <sup>3</sup> /s	Check Discharge	0.0210 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	499.80 m	Invert Downstream	499.80 m	
Length	19.11 m	Slope	0.000000 m/m	
Drop	0.00 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	500.16 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-600 mm Circular	0.0160 m <sup>3</sup> /s	500.16 m	0.09 m/s
Trial-2	1-600 mm Circular	0.0210 m <sup>3</sup> /s	500.16 m	0.12 m/s

# Culvert Design Report

## E13 Proposed

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	500.16 m	Discharge	0.0160 m <sup>3</sup> /s
Headwater Depth/Height	0.59	Tailwater Elevation	500.16 m
Inlet Control HW Elev.	500.16 m	Control Type	Outlet Control
Outlet Control HW Elev.	500.16 m		

Grades			
Upstream Invert	499.80 m	Downstream Invert	499.80 m
Length	19.11 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.36 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.08 m
Velocity Downstream	0.09 m/s	Critical Slope	0.016898 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.61 m
Section Size	600 mm	Rise	0.61 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	500.16 m	Upstream Velocity Head	0.00 m
Ke	0.90	Entrance Loss	0.00 m

Inlet Control Properties			
Inlet Control HW Elev.	500.16 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.3 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## E13 Proposed

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	500.16 m	Discharge	0.0210 m <sup>3</sup> /s
Headwater Depth/Height	0.60	Tailwater Elevation	500.16 m
Inlet Control HW Elev.	500.16 m	Control Type	Outlet Control
Outlet Control HW Elev.	500.16 m		

Grades			
Upstream Invert	499.80 m	Downstream Invert	499.80 m
Length	19.11 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.36 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.09 m
Velocity Downstream	0.12 m/s	Critical Slope	0.016418 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.61 m
Section Size	600 mm	Rise	0.61 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	500.16 m	Upstream Velocity Head	0.00 m
Ke	0.90	Entrance Loss	0.00 m

Inlet Control Properties			
Inlet Control HW Elev.	500.16 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.3 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		



# Culvert Design Report

## E13A Proposed

Peak Discharge Method: User-Specified				
Design Discharge	0.0480 m <sup>3</sup> /s	Check Discharge	0.0640 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	497.80 m	Invert Downstream	497.80 m	
Length	16.01 m	Slope	0.000000 m/m	
Drop	0.00 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	498.16 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	1-600 mm Circular	0.0480 m <sup>3</sup> /s	498.17 m	0.27 m/s
Trial-2	1-600 mm Circular	0.0640 m <sup>3</sup> /s	498.18 m	0.36 m/s

# Culvert Design Report

## E13A Proposed

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	498.17 m	Discharge	0.0480 m <sup>3</sup> /s
Headwater Depth/Height	0.61	Tailwater Elevation	498.16 m
Inlet Control HW Elev.	498.16 m	Control Type	Outlet Control
Outlet Control HW Elev.	498.17 m		

Grades			
Upstream Invert	497.80 m	Downstream Invert	497.80 m
Length	16.01 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.36 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.14 m
Velocity Downstream	0.27 m/s	Critical Slope	0.015412 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.61 m
Section Size	600 mm	Rise	0.61 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	498.17 m	Upstream Velocity Head	0.00 m
Ke	0.90	Entrance Loss	0.00 m

Inlet Control Properties			
Inlet Control HW Elev.	498.16 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.3 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report E13A Proposed

Design: Trial-2

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	498.18 m	Discharge	0.0640 m <sup>3</sup> /s
Headwater Depth/Height	0.63	Tailwater Elevation	498.16 m
Inlet Control HW Elev.	498.16 m	Control Type	Outlet Control
Outlet Control HW Elev.	498.18 m		

Grades			
Upstream Invert	497.80 m	Downstream Invert	497.80 m
Length	16.01 m	Constructed Slope	0.000000 m/m

Hydraulic Profile			
Profile	H2	Depth, Downstream	0.36 m
Slope Type	Horizontal	Normal Depth	N/A m
Flow Regime	Subcritical	Critical Depth	0.16 m
Velocity Downstream	0.36 m/s	Critical Slope	0.015250 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.61 m
Section Size	600 mm	Rise	0.61 m
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	498.18 m	Upstream Velocity Head	0.01 m
Ke	0.90	Entrance Loss	0.01 m

Inlet Control Properties			
Inlet Control HW Elev.	498.16 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	0.3 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## E20 Proposed

Peak Discharge Method: User-Specified				
Design Discharge	0.6570 m <sup>3</sup> /s	Check Discharge	0.8350 m <sup>3</sup> /s	
Grades Model: Inverts				
Invert Upstream	491.45 m	Invert Downstream	490.97 m	
Length	21.54 m	Slope	0.022284 m/m	
Drop	0.48 m			
Headwater Model: Unspecified				
Tailwater Conditions: Constant Tailwater				
Tailwater Elevation	491.46 m			
Name	Description	Discharge	HW Elev.	Velocity
x Trial-1	2-825 mm Circular	0.6570 m <sup>3</sup> /s	492.03 m	0.97 m/s
Trial-2	2-825 mm Circular	0.8350 m <sup>3</sup> /s	492.11 m	1.23 m/s

# Culvert Design Report

## E20 Proposed

Design: Trial-1

Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Design
Computed Headwater Elevation	492.03 m	Discharge	0.6570 m <sup>3</sup> /s
Headwater Depth/Height	0.69	Tailwater Elevation	491.46 m
Inlet Control HW Elev.	491.91 m	Control Type	Entrance Control
Outlet Control HW Elev.	492.03 m		

Grades			
Upstream Invert	491.45 m	Downstream Invert	490.97 m
Length	21.54 m	Constructed Slope	0.022284 m/m

Hydraulic Profile			
Profile	CompositeS1S2	Depth, Downstream	0.49 m
Slope Type	Steep	Normal Depth	0.30 m
Flow Regime	N/A	Critical Depth	0.34 m
Velocity Downstream	0.97 m/s	Critical Slope	0.014015 m/m

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.84 m
Section Size	825 mm	Rise	0.84 m
Number Sections	2		

Outlet Control Properties			
Outlet Control HW Elev.	492.03 m	Upstream Velocity Head	0.13 m
Ke	0.90	Entrance Loss	0.11 m

Inlet Control Properties			
Inlet Control HW Elev.	491.91 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	1.1 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# Culvert Design Report

## E20 Proposed

Design: Trial-2

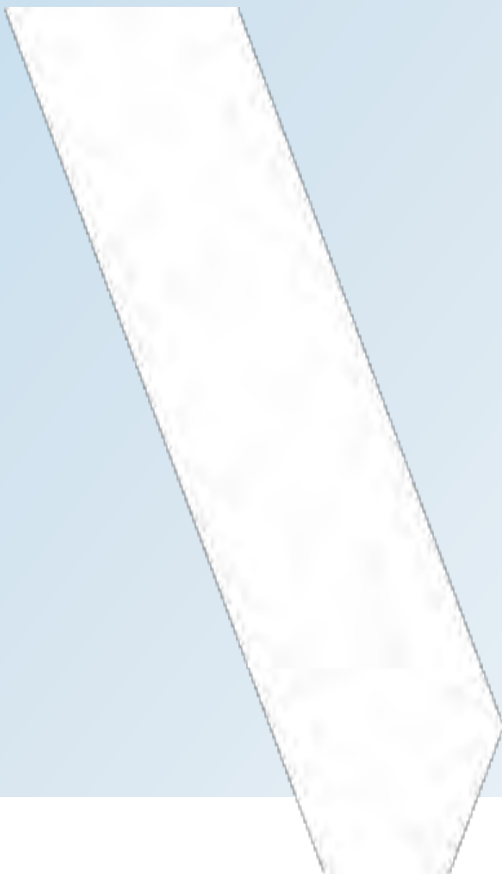
Solve For: Headwater Elevation

Culvert Summary			
Allowable HW Elevation	N/A m	Storm Event	Check
Computed Headwater Elevation	492.11 m	Discharge	0.8350 m <sup>3</sup> /s
Headwater Depth/Height	0.79	Tailwater Elevation	491.46 m
Inlet Control HW Elev.	491.98 m	Control Type	Entrance Control
Outlet Control HW Elev.	492.11 m		
Grades			
Upstream Invert	491.45 m	Downstream Invert	490.97 m
Length	21.54 m	Constructed Slope	0.022284 m/m
Hydraulic Profile			
Profile	CompositeS1S2	Depth, Downstream	0.49 m
Slope Type	Steep	Normal Depth	0.34 m
Flow Regime	N/A	Critical Depth	0.38 m
Velocity Downstream	1.23 m/s	Critical Slope	0.014456 m/m
Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	0.84 m
Section Size	825 mm	Rise	0.84 m
Number Sections	2		
Outlet Control Properties			
Outlet Control HW Elev.	492.11 m	Upstream Velocity Head	0.15 m
Ke	0.90	Entrance Loss	0.13 m
Inlet Control Properties			
Inlet Control HW Elev.	491.98 m	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° (1.5:1) bevels	Area Full	1.1 m <sup>2</sup>
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

# APPENDIX

## D

### Stormwater Management



# APPENDIX

## D-1 ROW Existing Flows – VO Output



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V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

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DATE: 12-12-2023

TIME: 10:38:31

USER:

COMMENTS: \_\_\_\_\_

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\*\* SIMULATION : 12SCS002-2023 \*\*  
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| READ STORM |

Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal= 49.20 mm |

cd87ad65-60ae-475a-9d39-c9c7422f35a4\c0a2541b  
 Comments: 12SCS002-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	1.97	6.33	10.73	9.50	1.48
0.17	1.48	3.33	1.97	6.50	10.73	9.67	1.18
0.33	1.48	3.50	1.97	6.67	4.72	9.83	1.18
0.50	1.48	3.67	1.97	6.83	4.72	10.00	1.18
0.67	0.69	3.83	1.97	7.00	4.72	10.17	1.67
0.83	0.69	4.00	1.97	7.17	3.15	10.33	1.67
1.00	0.69	4.17	2.66	7.33	3.15	10.50	1.67
1.17	1.28	4.33	2.66	7.50	3.15	10.67	1.08
1.33	1.28	4.50	2.66	7.67	2.76	10.83	1.08
1.50	1.28	4.67	3.35	7.83	2.76	11.00	1.08
1.67	1.28	4.83	3.35	8.00	2.76	11.17	0.98
1.83	1.28	5.00	3.35	8.17	2.16	11.33	0.98
2.00	1.28	5.17	5.31	8.33	2.16	11.50	0.98
2.17	1.67	5.33	5.31	8.50	2.16	11.67	0.98
2.33	1.67	5.50	5.31	8.67	2.26	11.83	0.98
2.50	1.67	5.67	42.12	8.83	2.26	12.00	0.98
2.67	1.48	5.83	42.12	9.00	2.26		
2.83	1.48	6.00	42.12	9.17	1.48		
3.00	1.48	6.17	10.73	9.33	1.48		

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 | CALIB |  
 | NASHYD ( 0001) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 1.60 Curve Number (CN)= 72.0  
 Ia (mm)= 10.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.26

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18

1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Unit Hyd Qpeak (cms)= 0.235

PEAK FLOW (cms)= 0.034 (i)  
 TIME TO PEAK (hrs)= 6.333  
 RUNOFF VOLUME (mm)= 11.129  
 TOTAL RAINFALL (mm)= 49.200  
 RUNOFF COEFFICIENT = 0.226

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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 | CALIB |  
 | STANDHYD ( 0002) | Area (ha)= 0.30  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 49.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.15	0.15
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.38	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)=	42.12	6.08
over (min)	5.00	30.00
Storage Coeff. (min)=	2.22 (ii)	28.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	30.00
Unit Hyd. peak (cms)=	0.30	0.04

\*TOTALS\*

PEAK FLOW	(cms)=	0.02	0.00	0.018 (iii)
TIME TO PEAK	(hrs)=	6.08	6.58	6.17
RUNOFF VOLUME	(mm)=	48.20	7.75	27.51
TOTAL RAINFALL	(mm)=	49.20	49.20	49.20
RUNOFF COEFFICIENT	=	0.98	0.16	0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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	Area (ha)=	0.18	
STANDHYD ( 0005)	Total Imp(%)=	44.00	Dir. Conn.(%)= 44.00
ID= 1 DT= 5.0 min			

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.50	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67

1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 1.91 (ii) 28.38 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.32 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
TIME TO PEAK (hrs)= 6.08 6.58 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 25.44  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00  
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IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.70 1.41  
Dep. Storage (mm)= 1.00 4.40

Average Slope (%)= 1.00 2.00  
 Length (m)= 118.60 40.00  
 Mannings n = 0.013 0.320

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max. Eff. Inten. (mm/hr)= 42.12 12.08  
 over (min) 5.00 25.00

Storage Coeff. (min)=	4.00 (ii)	23.06 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.24	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.08	0.03	0.102 (iii)
TIME TO PEAK (hrs)=	6.17	6.42	6.17
RUNOFF VOLUME (mm)=	48.20	12.63	24.36
TOTAL RAINFALL (mm)=	49.20	49.20	49.20
RUNOFF COEFFICIENT =	0.98	0.26	0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.27	1.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67



1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 35.00  
Storage Coeff. (min)= 4.52 (ii) 30.99 (ii)  
Unit Hyd. Tpeak (min)= 5.00 35.00  
Unit Hyd. peak (cms)= 0.23 0.03

\*TOTALS\*

PEAK FLOW (cms)= 0.15 0.02 0.157 (iii)  
TIME TO PEAK (hrs)= 6.17 6.67 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 23.93  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.49

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003):	2.11	0.102	6.17	24.36
+ ID2= 2 ( 0004):	3.17	0.157	6.17	23.93
=====				
ID = 3 ( 0009):	5.28	0.259	6.17	24.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0008)	Area (ha)=	0.16		
ID= 1 DT= 5.0 min	Total Imp(%)=	58.00	Dir. Conn.(%)=	58.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.28	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98

2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 1.83 (ii) 28.31 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.32 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 6.08 6.58 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 31.12  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0007) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0008):	0.16	0.011	6.17	31.12
+ ID2= 2 ( 0009):	5.28	0.259	6.17	24.10
=====				
ID = 3 ( 0007):	5.44	0.270	6.17	24.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

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V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
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
  WV    I   SSSSS  UUUUU  A   A  LLLLL

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000  TTTTT  TTTTT  H   H   Y   Y   M   M   000  TM
0  0  T      T   H   H   Y Y   MM MM  0  0
0  0  T      T   H   H   Y   M   M  0  0
000  T      T   H   H   Y   M   M  000

```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\54fb1e31-f67a-4f6d-ae93-3a7d87677c5f\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\54fb1e31-f67a-4f6d-ae93-3a7d87677c5f\s

DATE: 12-12-2023

TIME: 10:38:31

USER:

COMMENTS: \_\_\_\_\_

```

-----
*****
** SIMULATION : 12SCS005-2023          **
*****

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-----
|   READ STORM   |
|-----|
| Ptotal= 64.80 mm |
|-----|
-----

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```

Filename: C:\Users\caeh076182\AppData\Local\Temp\cd87ad65-60ae-475a-9d39-c9c7422f35a4\b702be5b
Comments: 12SCS005-2023

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	2.59	6.33	14.13	9.50	1.94
0.17	1.94	3.33	2.59	6.50	14.13	9.67	1.56
0.33	1.94	3.50	2.59	6.67	6.22	9.83	1.56
0.50	1.94	3.67	2.59	6.83	6.22	10.00	1.56
0.67	0.91	3.83	2.59	7.00	6.22	10.17	2.20
0.83	0.91	4.00	2.59	7.17	4.15	10.33	2.20
1.00	0.91	4.17	3.50	7.33	4.15	10.50	2.20
1.17	1.68	4.33	3.50	7.50	4.15	10.67	1.43
1.33	1.68	4.50	3.50	7.67	3.63	10.83	1.43
1.50	1.68	4.67	4.41	7.83	3.63	11.00	1.43
1.67	1.68	4.83	4.41	8.00	3.63	11.17	1.30
1.83	1.68	5.00	4.41	8.17	2.85	11.33	1.30
2.00	1.68	5.17	7.00	8.33	2.85	11.50	1.30
2.17	2.20	5.33	7.00	8.50	2.85	11.67	1.30
2.33	2.20	5.50	7.00	8.67	2.98	11.83	1.30
2.50	2.20	5.67	55.47	8.83	2.98	12.00	1.30
2.67	1.94	5.83	55.47	9.00	2.98		
2.83	1.94	6.00	55.47	9.17	1.94		
3.00	1.94	6.17	14.13	9.33	1.94		

-----

CALIB			
NASHYD ( 0001)	Area (ha)=	1.60	Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)=	10.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.26	

-----

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20

1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Unit Hyd Qpeak (cms)= 0.235

PEAK FLOW (cms)= 0.063 (i)

TIME TO PEAK (hrs)= 6.250

RUNOFF VOLUME (mm)= 19.540

TOTAL RAINFALL (mm)= 64.800

RUNOFF COEFFICIENT = 0.302

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0002) | Area (ha)= 0.30  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 49.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.15	0.15
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.38	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 1.99 (ii) 21.77 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.025 (iii)  
 TIME TO PEAK (hrs)= 6.08 6.42 6.17  
 RUNOFF VOLUME (mm)= 63.80 13.36 38.03

TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
 RUNOFF COEFFICIENT = 0.98 0.21 0.59

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.50	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43



1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.71 (ii) 21.50 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.014 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 35.49  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	1.41
Dep. Storage	(mm)=	1.00	4.40
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.320

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)=	55.47	20.21
over (min)	5.00	20.00
Storage Coeff. (min)=	3.58 (ii)	19.10 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.26	0.06

				*TOTALS*
PEAK FLOW	(cms)=	0.11	0.05	0.152 (iii)
TIME TO PEAK	(hrs)=	6.17	6.33	6.17
RUNOFF VOLUME	(mm)=	63.80	20.90	35.05
TOTAL RAINFALL	(mm)=	64.80	64.80	64.80
RUNOFF COEFFICIENT	=	0.98	0.32	0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.27	1.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20

1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 4.05 (ii) 23.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.24 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.20 0.04 0.223 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 33.53  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003):	2.11	0.152	6.17	35.05
+ ID2= 2 ( 0004):	3.17	0.223	6.17	33.53

=====

ID = 3 ( 0009):      5.28   0.375      6.17      34.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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CALIB			
STANDHYD ( 0008)	Area (ha)=	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)=	58.00	Dir. Conn.(%)= 58.00

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.28	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30

2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.64 (ii) 21.43 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.015 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 42.52  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0007) |
| 1 + 2 = 3 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0008):	0.16	0.015	6.17	42.52
+ ID2= 2 ( 0009):	5.28	0.375	6.17	34.14
=====				
ID = 3 ( 0007):	5.44	0.390	6.17	34.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSSS U U A L (v 6.2.2015)
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

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\44889381-96fa-48b4-9565-73d6267093e1\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\44889381-96fa-48b4-9565-73d6267093e1\s

DATE: 12-12-2023

TIME: 10:38:31

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS010-2023 \*\*  
\*\*\*\*\*

-----  
| READ STORM | Filename: C:\Users\caeh076182\AppData  
| | ata\Local\Temp\  
| | cd87ad65-60ae-475a-9d39-c9c7422f35a4\9b81b3b  
| Ptotal= 75.60 mm | Comments: 12SCS010-2023  
-----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.02	6.33	16.48	9.50	2.27

0.17	2.27	3.33	3.02	6.50	16.48	9.67	1.81
0.33	2.27	3.50	3.02	6.67	7.26	9.83	1.81
0.50	2.27	3.67	3.02	6.83	7.26	10.00	1.81
0.67	1.06	3.83	3.02	7.00	7.26	10.17	2.57
0.83	1.06	4.00	3.02	7.17	4.84	10.33	2.57
1.00	1.06	4.17	4.08	7.33	4.84	10.50	2.57
1.17	1.97	4.33	4.08	7.50	4.84	10.67	1.66
1.33	1.97	4.50	4.08	7.67	4.23	10.83	1.66
1.50	1.97	4.67	5.14	7.83	4.23	11.00	1.66
1.67	1.97	4.83	5.14	8.00	4.23	11.17	1.51
1.83	1.97	5.00	5.14	8.17	3.33	11.33	1.51
2.00	1.97	5.17	8.16	8.33	3.33	11.50	1.51
2.17	2.57	5.33	8.16	8.50	3.33	11.67	1.51
2.33	2.57	5.50	8.16	8.67	3.48	11.83	1.51
2.50	2.57	5.67	64.71	8.83	3.48	12.00	1.51
2.67	2.27	5.83	64.71	9.00	3.48		
2.83	2.27	6.00	64.71	9.17	2.27		
3.00	2.27	6.17	16.48	9.33	2.27		

CALIB			
NASHYD ( 0001)	Area (ha)= 1.60	Curve Number (CN)= 72.0	
ID= 1 DT= 5.0 min	Ia (mm)= 10.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.26		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57



1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Unit Hyd Qpeak (cms)= 0.235

PEAK FLOW (cms)= 0.086 (i)  
 TIME TO PEAK (hrs)= 6.250  
 RUNOFF VOLUME (mm)= 26.162  
 TOTAL RAINFALL (mm)= 75.600  
 RUNOFF COEFFICIENT = 0.346

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	
STANDHYD ( 0002)	Area (ha)= 0.30
ID= 1 DT= 5.0 min	Total Imp(%)= 49.00 Dir. Conn.(%)= 49.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.15	0.15
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	44.38	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)=	64.71	16.96
over (min)	5.00	20.00
Storage Coeff. (min)=	1.87 (ii)	19.43 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.03	0.00	0.030 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	74.60	17.90	45.64
TOTAL RAINFALL (mm)=	75.60	75.60	75.60
RUNOFF COEFFICIENT =	0.99	0.24	0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0005)                   | Area   (ha)=   0.18
| ID= 1 DT= 5.0 min                   | Total Imp(%)= 44.00   Dir. Conn.(%)= 44.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.50	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66

2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.61 (ii) 19.17 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.017 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 42.79  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	1.41
Dep. Storage	(mm)=	1.00	4.40
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.320

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 28.01  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.37 (ii) 16.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.13 0.07 0.189 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.33 6.17

RUNOFF VOLUME	(mm)=	74.60	27.36	42.94
TOTAL RAINFALL	(mm)=	75.60	75.60	75.60
RUNOFF COEFFICIENT	=	0.99	0.36	0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 0004) | Area (ha)= 3.17  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.27	1.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66

1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.81 (ii) 21.37 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.25 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.23 0.06 0.268 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 40.58  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003):	2.11	0.189	6.17	42.94
+ ID2= 2 ( 0004):	3.17	0.268	6.17	40.58
=====				
ID = 3 ( 0009):	5.28	0.457	6.17	41.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0008) | Area (ha)= 0.16
| ID= 1 DT= 5.0 min | Total Imp(%)= 58.00 Dir. Conn.(%)= 58.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area   (ha)=          0.09          0.07
Dep. Storage   (mm)=          1.00          5.00
Average Slope  (%)=          1.00          2.00
Length         (m)=         32.28         40.00
Mannings n     =           0.013         0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51



2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.54 (ii) 19.11 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.018 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 50.71  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0007) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0008):	0.16	0.018	6.17	50.71
+ ID2= 2 ( 0009):	5.28	0.457	6.17	41.52
=====				
ID = 3 ( 0007):	5.44	0.475	6.17	41.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
=====
V V I SSSSS U U A L (v 6.2.2015)
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 UUUU A A LLLLL

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      000   TTTT   TTTT   H   H   Y   Y   M   M   000   TM
      0   0   T     T   H   H   Y   Y   MM  MM  0   0
      0   0   T     T   H   H   Y     M   M   0   0
      000   T     T   H   H   Y     M   M   000

```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\1a33aa7-2a3f-4d06-8b1c-2271f59aef5d\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\1a33aa7-2a3f-4d06-8b1c-2271f59aef5d\s

DATE: 12-12-2023

TIME: 10:38:32

USER:

COMMENTS: \_\_\_\_\_

```

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*****
** SIMULATION : 12SCS025-2023          **
*****

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-----
|   READ STORM   |   Filename: C:\Users\caeh076182\AppData
|                 |   ata\Local\Temp\
|                 |   cd87ad65-60ae-475a-9d39-c9c7422f35a4\d87f3d91
| Ptotal= 88.80 mm |   Comments: 12SCS025-2023
|                 |
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.55	6.33	19.36	9.50	2.66
0.17	2.66	3.33	3.55	6.50	19.36	9.67	2.13
0.33	2.66	3.50	3.55	6.67	8.52	9.83	2.13
0.50	2.66	3.67	3.55	6.83	8.52	10.00	2.13

0.67	1.24	3.83	3.55	7.00	8.52	10.17	3.02
0.83	1.24	4.00	3.55	7.17	5.68	10.33	3.02
1.00	1.24	4.17	4.80	7.33	5.68	10.50	3.02
1.17	2.31	4.33	4.80	7.50	5.68	10.67	1.95
1.33	2.31	4.50	4.80	7.67	4.97	10.83	1.95
1.50	2.31	4.67	6.04	7.83	4.97	11.00	1.95
1.67	2.31	4.83	6.04	8.00	4.97	11.17	1.78
1.83	2.31	5.00	6.04	8.17	3.91	11.33	1.78
2.00	2.31	5.17	9.59	8.33	3.91	11.50	1.78
2.17	3.02	5.33	9.59	8.50	3.91	11.67	1.78
2.33	3.02	5.50	9.59	8.67	4.08	11.83	1.78
2.50	3.02	5.67	76.01	8.83	4.08	12.00	1.78
2.67	2.66	5.83	76.01	9.00	4.08		
2.83	2.66	6.00	76.01	9.17	2.66		
3.00	2.66	6.17	19.36	9.33	2.66		

```

-----
| CALIB |
| NASHYD ( 0001) | Area (ha)= 1.60 Curve Number (CN)= 72.0
| ID= 1 DT= 5.0 min | Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
-----
| U.H. Tp(hrs)= 0.26

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95

1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Unit Hyd Qpeak (cms)= 0.235

PEAK FLOW (cms)= 0.117 (i)  
 TIME TO PEAK (hrs)= 6.250  
 RUNOFF VOLUME (mm)= 34.943  
 TOTAL RAINFALL (mm)= 88.800  
 RUNOFF COEFFICIENT = 0.394

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0002) | Area (ha)= 0.30  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 49.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.15	0.15
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.38	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66

0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)=	76.01	22.94
over (min)	5.00	20.00
Storage Coeff. (min)=	1.75 (ii)	17.32 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.03	0.01	0.037 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	87.80	24.08	55.27
TOTAL RAINFALL (mm)=	88.80	88.80	88.80
RUNOFF COEFFICIENT =	0.99	0.27	0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 55.0    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 ( 0005)	Area (ha)= 0.18
ID= 1 DT= 5.0 min	Total Imp(%)= 44.00    Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	34.50	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78

2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.51 (ii) 17.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.021 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 52.05  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.59

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	1.41
Dep. Storage	(mm)=	1.00	4.40
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.320

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 36.76  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.16 (ii) 15.37 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.27 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.15 0.10 0.236 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.33 6.17  
 RUNOFF VOLUME (mm)= 87.80 35.88 53.01  
 TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
 RUNOFF COEFFICIENT = 0.99 0.40 0.60



\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.27	1.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95

1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.57 (ii) 19.13 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.27 0.08 0.336 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 49.56  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0003):	2.11	0.236	6.17	53.01
+ ID2= 2 ( 0004):	3.17	0.336	6.17	49.56
=====				
ID = 3 ( 0009):	5.28	0.571	6.17	50.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |  
 | STANDHYD ( 0008) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.16  
 Total Imp(%)= 58.00 Dir. Conn.(%)= 58.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.28	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78

2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.45 (ii) 17.01 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.022 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 60.97  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0007)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0008):		0.16	0.022	6.17	60.97
+ ID2= 2 ( 0009):		5.28	0.571	6.17	50.94
=====					
ID = 3 ( 0007):		5.44	0.594	6.17	51.24

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 6.2.2015)  
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

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      WV      I      SSSSS  UUUUU  A   A  LLLLL

      000      TTTTT  TTTTT  H   H  Y   Y  M   M   000   TM
      0   0   T      T   H   H  Y  Y   MM MM  0   0
      0   0   T      T   H   H   Y   M   M  0   0
      000      T      T   H   H   Y   M   M  000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:  
 C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\9d5bd3da-bc1f-4a65-af4b-2b6fd996852f\s

Summary filename:  
 C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\9d5bd3da-bc1f-4a65-af4b-2b6fd996852f\s

DATE: 12-12-2023

TIME: 10:38:32

USER:

COMMENTS: \_\_\_\_\_

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*****
** SIMULATION : 12SCS050-2023          **
*****

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| READ STORM |
| Ptotal= 98.40 mm |
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Filename: C:\Users\caeh076182\AppData\Local\Temp\cd87ad65-60ae-475a-9d39-c9c7422f35a4\efc61559  
 Comments: 12SCS050-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.94	6.33	21.45	9.50	2.95
0.17	2.95	3.33	3.94	6.50	21.45	9.67	2.36

0.33	2.95	3.50	3.94	6.67	9.45	9.83	2.36
0.50	2.95	3.67	3.94	6.83	9.45	10.00	2.36
0.67	1.38	3.83	3.94	7.00	9.45	10.17	3.35
0.83	1.38	4.00	3.94	7.17	6.30	10.33	3.35
1.00	1.38	4.17	5.31	7.33	6.30	10.50	3.35
1.17	2.56	4.33	5.31	7.50	6.30	10.67	2.16
1.33	2.56	4.50	5.31	7.67	5.51	10.83	2.16
1.50	2.56	4.67	6.69	7.83	5.51	11.00	2.16
1.67	2.56	4.83	6.69	8.00	5.51	11.17	1.97
1.83	2.56	5.00	6.69	8.17	4.33	11.33	1.97
2.00	2.56	5.17	10.63	8.33	4.33	11.50	1.97
2.17	3.35	5.33	10.63	8.50	4.33	11.67	1.97
2.33	3.35	5.50	10.63	8.67	4.53	11.83	1.97
2.50	3.35	5.67	84.23	8.83	4.53	12.00	1.97
2.67	2.95	5.83	84.23	9.00	4.53		
2.83	2.95	6.00	84.23	9.17	2.95		
3.00	2.95	6.17	21.45	9.33	2.95		

CALIB	
NASHYD ( 0001)	Area (ha)= 1.60 Curve Number (CN)= 72.0
ID= 1 DT= 5.0 min	Ia (mm)= 10.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.26

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16

1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Unit Hyd Qpeak (cms)= 0.235

PEAK FLOW (cms)= 0.141 (i)  
 TIME TO PEAK (hrs)= 6.250  
 RUNOFF VOLUME (mm)= 41.721  
 TOTAL RAINFALL (mm)= 98.400  
 RUNOFF COEFFICIENT = 0.424

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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 | CALIB |  
 | STANDHYD ( 0002) | Area (ha)= 0.30  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 49.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.15	0.15
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.38	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95

0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)=	84.23	29.29
over (min)	5.00	20.00
Storage Coeff. (min)=	1.68 (ii)	15.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.32	0.07

			*TOTALS*
PEAK FLOW (cms)=	0.03	0.01	0.042 (iii)
TIME TO PEAK (hrs)=	6.08	6.33	6.17
RUNOFF VOLUME (mm)=	97.40	28.96	62.46
TOTAL RAINFALL (mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT =	0.99	0.29	0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!



- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0005) | Area (ha)= 0.18
| ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.50	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97

2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.44 (ii) 15.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.023 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 59.03  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	1.41
Dep. Storage	(mm)=	1.00	4.40
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.320

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 43.49  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.03 (ii) 14.45 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.27 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.16 0.13 0.284 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.25 6.17  
 RUNOFF VOLUME (mm)= 97.40 42.46 60.58

TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
 RUNOFF COEFFICIENT = 0.99 0.43 0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.0 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 ( 0004) | Area (ha)= 3.17  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.27	1.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16

1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.42 (ii) 17.54 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.30 0.10 0.383 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 56.33  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0003):	2.11	0.284	6.17	60.58
+ ID2= 2 ( 0004):	3.17	0.383	6.17	56.33
=====				
ID = 3 ( 0009):	5.28	0.667	6.17	58.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0008) | Area (ha)= 0.16
| ID= 1 DT= 5.0 min | Total Imp(%)= 58.00 Dir. Conn.(%)= 58.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=      0.09      0.07
Dep. Storage (mm)=     1.00      5.00
Average Slope (%)=     1.00      2.00
Length (m)=      32.28      40.00
Mannings n      =      0.013      0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97

2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.39 (ii) 15.50 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.025 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 68.59  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0007) |  
| 1 + 2 = 3 |

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0008):	0.16	0.025	6.17	68.59
+ ID2= 2 ( 0009):	5.28	0.667	6.17	58.03
=====				
ID = 3 ( 0007):	5.44	0.692	6.17	58.34

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 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A  L
  VV    I   SSSSS  UUUUU  A   A  LLLLL

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000 TTTTT TTTTT H H Y Y M M 000 TM

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O O T T H H Y Y MM MM O O
O O T T H H Y M M O O
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5  
 dada7ed-ce45-4c09-a101-a6c0868e3c69\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5  
 dada7ed-ce45-4c09-a101-a6c0868e3c69\s

DATE: 12-12-2023

TIME: 10:38:32

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : 12SCS100-2023 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\cd87ad65-60ae-475a-9d39-c9c7422f35a4\4e73243f
Ptotal=108.00 mm	Comments: 12SCS100-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	4.32	6.33	23.54	9.50	3.24
0.17	3.24	3.33	4.32	6.50	23.54	9.67	2.59
0.33	3.24	3.50	4.32	6.67	10.37	9.83	2.59
0.50	3.24	3.67	4.32	6.83	10.37	10.00	2.59
0.67	1.51	3.83	4.32	7.00	10.37	10.17	3.67



0.83	1.51	4.00	4.32	7.17	6.91	10.33	3.67
1.00	1.51	4.17	5.83	7.33	6.91	10.50	3.67
1.17	2.81	4.33	5.83	7.50	6.91	10.67	2.38
1.33	2.81	4.50	5.83	7.67	6.05	10.83	2.38
1.50	2.81	4.67	7.34	7.83	6.05	11.00	2.38
1.67	2.81	4.83	7.34	8.00	6.05	11.17	2.16
1.83	2.81	5.00	7.34	8.17	4.75	11.33	2.16
2.00	2.81	5.17	11.66	8.33	4.75	11.50	2.16
2.17	3.67	5.33	11.66	8.50	4.75	11.67	2.16
2.33	3.67	5.50	11.66	8.67	4.97	11.83	2.16
2.50	3.67	5.67	92.45	8.83	4.97	12.00	2.16
2.67	3.24	5.83	92.45	9.00	4.97		
2.83	3.24	6.00	92.45	9.17	3.24		
3.00	3.24	6.17	23.54	9.33	3.24		

CALIB							
NASHYD ( 0001)		Area (ha)=	1.60	Curve Number (CN)=	72.0		
ID= 1 DT= 5.0 min		Ia (mm)=	10.00	# of Linear Res.(N)=	3.00		
		U.H. Tp(hrs)=	0.26				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38

1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Unit Hyd Qpeak (cms)= 0.235

PEAK FLOW (cms)= 0.166 (i)  
 TIME TO PEAK (hrs)= 6.250  
 RUNOFF VOLUME (mm)= 48.773  
 TOTAL RAINFALL (mm)= 108.000  
 RUNOFF COEFFICIENT = 0.452

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 -----  
 | CALIB |  
 | STANDHYD ( 0002) | Area (ha)= 0.30  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 49.00 Dir. Conn.(%)= 49.00  
 -----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.15	0.15
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.38	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24

0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	34.55
over (min)	5.00	15.00
Storage Coeff. (min)=	1.62 (ii)	14.83 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.04	0.01	0.048 (iii)
TIME TO PEAK (hrs)=	6.08	6.25	6.17
RUNOFF VOLUME (mm)=	107.00	34.13	69.81
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.32	0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18
| ID= 1 DT= 5.0 min | Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	34.50	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16

2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 34.55  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.39 (ii) 14.60 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.027 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 107.00 34.13 66.14  
TOTAL RAINFALL (mm)= 108.00 108.00 108.00  
RUNOFF COEFFICIENT = 0.99 0.32 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 33.00 Dir. Conn.(%)= 33.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.70	1.41
Dep. Storage	(mm)=	1.00	4.40
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.320

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN  
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr

0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	50.48
over (min)	5.00	15.00
Storage Coeff. (min)=	2.92 (ii)	13.68 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.28	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.18	0.15	0.324 (iii)
TIME TO PEAK (hrs)=	6.17	6.25	6.17
RUNOFF VOLUME (mm)=	107.00	49.30	68.34
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.46	0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 40.00 Dir. Conn.(%)= 40.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.27	1.90
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38

2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 34.55  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.30 (ii) 16.51 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.33 0.12 0.432 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 107.00 34.13 63.28  
TOTAL RAINFALL (mm)= 108.00 108.00 108.00  
RUNOFF COEFFICIENT = 0.99 0.32 0.59

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0003):	2.11	0.324	6.17	68.34
+ ID2= 2 ( 0004):	3.17	0.432	6.17	63.28
=====				
ID = 3 ( 0009):	5.28	0.755	6.17	65.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

| CALIB |



| STANDHYD ( 0008) | Area (ha)= 0.16  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 58.00 Dir. Conn.(%)= 58.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.07
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16

2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	34.55	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.34 (ii)	14.55 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.028 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	107.00	34.13	76.34
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.32	0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0007) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0008):  0.16  0.028  6.17  76.34
+ ID2= 2 ( 0009):  5.28  0.755  6.17  65.30
=====
ID = 3 ( 0007):  5.44  0.783  6.17  65.62

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

**APPENDIX**

**D-2 ROW Proposed Flows – VO Output**

=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\14b0a981-fdee-4af6-8fc1-5e2d4bd372aa\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\14b0a981-fdee-4af6-8fc1-5e2d4bd372aa\s

DATE: 12-12-2023

TIME: 10:42:32

USER:

COMMENTS: \_\_\_\_\_

-----

\*\*\*\*\*  
\*\* SIMULATION : 12SCS002-2023 \*\*  
\*\*\*\*\*

-----  
| READ STORM |

Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal= 49.20 mm |

aa67dfa5-5df2-4a01-82cd-e74821e42b56\c0a2541b  
 Comments: 12SCS002-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	1.97	6.33	10.73	9.50	1.48
0.17	1.48	3.33	1.97	6.50	10.73	9.67	1.18
0.33	1.48	3.50	1.97	6.67	4.72	9.83	1.18
0.50	1.48	3.67	1.97	6.83	4.72	10.00	1.18
0.67	0.69	3.83	1.97	7.00	4.72	10.17	1.67
0.83	0.69	4.00	1.97	7.17	3.15	10.33	1.67
1.00	0.69	4.17	2.66	7.33	3.15	10.50	1.67
1.17	1.28	4.33	2.66	7.50	3.15	10.67	1.08
1.33	1.28	4.50	2.66	7.67	2.76	10.83	1.08
1.50	1.28	4.67	3.35	7.83	2.76	11.00	1.08
1.67	1.28	4.83	3.35	8.00	2.76	11.17	0.98
1.83	1.28	5.00	3.35	8.17	2.16	11.33	0.98
2.00	1.28	5.17	5.31	8.33	2.16	11.50	0.98
2.17	1.67	5.33	5.31	8.50	2.16	11.67	0.98
2.33	1.67	5.50	5.31	8.67	2.26	11.83	0.98
2.50	1.67	5.67	42.12	8.83	2.26	12.00	0.98
2.67	1.48	5.83	42.12	9.00	2.26		
2.83	1.48	6.00	42.12	9.17	1.48		
3.00	1.48	6.17	10.73	9.33	1.48		

-----  
 | CALIB |  
 | STANDHYD ( 0002) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.30  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.13	0.17
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	44.72	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48

0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 2.23 (ii) 28.70 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.30 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.016 (iii)  
TIME TO PEAK (hrs)= 6.08 6.58 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 25.49  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area   (ha)=      0.08      0.10
Dep. Storage   (mm)=      1.00      5.00
Average Slope  (%)=      1.00      2.00
Length         (m)=     34.64     40.00
Mannings n     =      0.013     0.350
  
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----
    TIME    RAIN |    TIME    RAIN |    TIME    RAIN |    TIME    RAIN
     hrs    mm/hr |     hrs    mm/hr |     hrs    mm/hr |     hrs    mm/hr
0.083    0.00 | 3.167    1.48 | 6.250    10.73 | 9.33     1.48
0.167    0.00 | 3.250    1.97 | 6.333    10.73 | 9.42     1.48
0.250    1.48 | 3.333    1.97 | 6.417    10.73 | 9.50     1.48
0.333    1.48 | 3.417    1.97 | 6.500    10.73 | 9.58     1.48
0.417    1.48 | 3.500    1.97 | 6.583    10.73 | 9.67     1.48
0.500    1.48 | 3.583    1.97 | 6.667    10.73 | 9.75     1.18
0.583    1.48 | 3.667    1.97 | 6.750     4.72 | 9.83     1.18
0.667    1.48 | 3.750    1.97 | 6.833     4.72 | 9.92     1.18
0.750    0.69 | 3.833    1.97 | 6.917     4.72 | 10.00    1.18
0.833    0.69 | 3.917    1.97 | 7.000     4.72 | 10.08    1.18
0.917    0.69 | 4.000    1.97 | 7.083     4.72 | 10.17    1.18
1.000    0.69 | 4.083    1.97 | 7.167     4.72 | 10.25    1.67
1.083    0.69 | 4.167    1.97 | 7.250     3.15 | 10.33    1.67
1.167    0.69 | 4.250    2.66 | 7.333     3.15 | 10.42    1.67
1.250    1.28 | 4.333    2.66 | 7.417     3.15 | 10.50    1.67
1.333    1.28 | 4.417    2.66 | 7.500     3.15 | 10.58    1.67
1.417    1.28 | 4.500    2.66 | 7.583     3.15 | 10.67    1.67
1.500    1.28 | 4.583    2.66 | 7.667     3.15 | 10.75    1.08
1.583    1.28 | 4.667    2.66 | 7.750     2.76 | 10.83    1.08
1.667    1.28 | 4.750    3.35 | 7.833     2.76 | 10.92    1.08
1.750    1.28 | 4.833    3.35 | 7.917     2.76 | 11.00    1.08
1.833    1.28 | 4.917    3.35 | 8.000     2.76 | 11.08    1.08
1.917    1.28 | 5.000    3.35 | 8.083     2.76 | 11.17    1.08
2.000    1.28 | 5.083    3.35 | 8.167     2.76 | 11.25    0.98
2.083    1.28 | 5.167    3.35 | 8.250     2.16 | 11.33    0.98
2.167    1.28 | 5.250    5.31 | 8.333     2.16 | 11.42    0.98
2.250    1.67 | 5.333    5.31 | 8.417     2.16 | 11.50    0.98
2.333    1.67 | 5.417    5.31 | 8.500     2.16 | 11.58    0.98
  
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2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 1.91 (ii) 28.39 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.31 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
TIME TO PEAK (hrs)= 6.08 6.58 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 26.26  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0001) | Area (ha)= 1.60  
| ID= 1 DT= 5.0 min | Total Imp(%)= 36.00 Dir. Conn.(%)= 36.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.58	1.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48



0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)=	42.12	6.08
over (min)	5.00	35.00
Storage Coeff. (min)=	3.68 (ii)	30.16 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.25	0.04

\*TOTALS\*

PEAK FLOW (cms)=	0.07	0.01	0.072 (iii)
TIME TO PEAK (hrs)=	6.17	6.67	6.17
RUNOFF VOLUME (mm)=	48.20	7.75	22.30
TOTAL RAINFALL (mm)=	49.20	49.20	49.20
RUNOFF COEFFICIENT =	0.98	0.16	0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98

2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 7.94  
over (min) 5.00 30.00  
Storage Coeff. (min)= 4.00 (ii) 27.79 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.24 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.13 0.01 0.140 (iii)  
TIME TO PEAK (hrs)= 6.17 6.50 6.17  
RUNOFF VOLUME (mm)= 48.20 9.15 30.23  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.19 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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 ( 0004) | Area (ha)= 3.17  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
 over (min) 5.00 35.00  
 Storage Coeff. (min)= 4.52 (ii) 30.99 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00  
 Unit Hyd. peak (cms)= 0.23 0.03

\*TOTALS\*

PEAK FLOW (cms)= 0.24 0.01 0.246 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.67 6.17  
 RUNOFF VOLUME (mm)= 48.20 7.75 34.04

TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
 RUNOFF COEFFICIENT = 0.98 0.16 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0003):	2.11	0.140	6.17	30.23
+ ID2= 2 ( 0004):	3.17	0.246	6.17	34.04
=====				
ID = 3 ( 0009):	5.28	0.386	6.17	32.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0008)	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)= 59.00	Dir. Conn.(%)= 59.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.07
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18

0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 1.84 (ii) 28.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.32 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.011 (iii)  
TIME TO PEAK (hrs)= 6.08 6.58 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 31.52  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0010) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	1.60	0.072	6.17	22.30
+ ID2= 2 ( 0008):	0.16	0.011	6.17	31.52
=====				
ID = 3 ( 0010):	1.76	0.084	6.17	23.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0010) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0010):	1.76	0.084	6.17	23.14
+ ID2= 2 ( 0009):	5.28	0.386	6.17	32.51
=====				
ID = 1 ( 0010):	7.04	0.470	6.17	30.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
=====
V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL
000 TTTTT TTTTT H H Y Y M M 000 TM
0 0 T T H H Y Y MM MM 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:  
 C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\1

d8e62f3-486e-4d23-986f-254d5f3cc242\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\1  
d8e62f3-486e-4d23-986f-254d5f3cc242\s

DATE: 12-12-2023

TIME: 10:42:32

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS005-2023 \*\*  
\*\*\*\*\*

-----  
| READ STORM |  
Ptotal= 64.80 mm

Filename: C:\Users\caeh076182\AppData  
ata\Local\Temp\  
aa67dfa5-5df2-4a01-82cd-e74821e42b56\b702be5b  
Comments: 12SCS005-2023

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	2.59		6.33	14.13	9.50	1.94
0.17	1.94	3.33	2.59		6.50	14.13	9.67	1.56
0.33	1.94	3.50	2.59		6.67	6.22	9.83	1.56
0.50	1.94	3.67	2.59		6.83	6.22	10.00	1.56
0.67	0.91	3.83	2.59		7.00	6.22	10.17	2.20
0.83	0.91	4.00	2.59		7.17	4.15	10.33	2.20
1.00	0.91	4.17	3.50		7.33	4.15	10.50	2.20
1.17	1.68	4.33	3.50		7.50	4.15	10.67	1.43
1.33	1.68	4.50	3.50		7.67	3.63	10.83	1.43
1.50	1.68	4.67	4.41		7.83	3.63	11.00	1.43
1.67	1.68	4.83	4.41		8.00	3.63	11.17	1.30
1.83	1.68	5.00	4.41		8.17	2.85	11.33	1.30
2.00	1.68	5.17	7.00		8.33	2.85	11.50	1.30
2.17	2.20	5.33	7.00		8.50	2.85	11.67	1.30
2.33	2.20	5.50	7.00		8.67	2.98	11.83	1.30
2.50	2.20	5.67	55.47		8.83	2.98	12.00	1.30
2.67	1.94	5.83	55.47		9.00	2.98		
2.83	1.94	6.00	55.47		9.17	1.94		
3.00	1.94	6.17	14.13		9.33	1.94		



-----  
 | CALIB |  
 | STANDHYD ( 0002) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.30  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.13	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.72	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30

2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.00 (ii) 21.78 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.023 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 35.51  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18  
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94

0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)=	55.47	12.59
over (min)	5.00	25.00
Storage Coeff. (min)=	1.71 (ii)	21.50 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.32	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.01	0.00	0.014 (iii)
TIME TO PEAK (hrs)=	6.08	6.42	6.17
RUNOFF VOLUME (mm)=	63.80	13.36	36.48
TOTAL RAINFALL (mm)=	64.80	64.80	64.80
RUNOFF COEFFICIENT =	0.98	0.21	0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 55.0    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 ( 0001)	Area (ha)=	1.60	
ID= 1 DT= 5.0 min	Total Imp(%)=	36.00	Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	1.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30

2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.30 (ii) 23.08 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.27 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.09 0.02 0.104 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 31.51  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.49

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 14.83  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.58 (ii) 22.11 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.26 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.18 0.02 0.193 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.42 6.17  
 RUNOFF VOLUME (mm)= 63.80 15.61 41.62  
 TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
 RUNOFF COEFFICIENT = 0.98 0.24 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43

1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 4.05 (ii) 23.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.24 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.32 0.02 0.333 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 46.14  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0003):	2.11	0.193	6.17	41.62
+ ID2= 2 ( 0004):	3.17	0.333	6.17	46.14
=====				
ID = 3 ( 0009):	5.28	0.527	6.17	44.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



CALIB  
 STANDHYD ( 0008)  
 ID= 1 DT= 5.0 min

Area (ha)= 0.16  
 Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.66	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30

2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.65 (ii) 21.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.016 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 43.03  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0010) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	1.60	0.104	6.17	31.51
+ ID2= 2 ( 0008):	0.16	0.016	6.17	43.03
=====				
ID = 3 ( 0010):	1.76	0.119	6.17	32.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0010) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0010):	1.76	0.119	6.17	32.56
+ ID2= 2 ( 0009):	5.28	0.527	6.17	44.34
=====				
ID = 1 ( 0010):	7.04	0.646	6.17	41.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\644155ad-f15d-4118-8cd0-6b76710de407\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\644155ad-f15d-4118-8cd0-6b76710de407\s

DATE: 12-12-2023

TIME: 10:42:32

USER:

COMMENTS: \_\_\_\_\_

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\*\*\*\*\*  
\*\* SIMULATION : 12SCS010-2023 \*\*  
\*\*\*\*\*

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| READ STORM | Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal= 75.60 mm |

aa67dfa5-5df2-4a01-82cd-e74821e42b56\ a9b81b3b  
 Comments: 12SCS010-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.02	6.33	16.48	9.50	2.27
0.17	2.27	3.33	3.02	6.50	16.48	9.67	1.81
0.33	2.27	3.50	3.02	6.67	7.26	9.83	1.81
0.50	2.27	3.67	3.02	6.83	7.26	10.00	1.81
0.67	1.06	3.83	3.02	7.00	7.26	10.17	2.57
0.83	1.06	4.00	3.02	7.17	4.84	10.33	2.57
1.00	1.06	4.17	4.08	7.33	4.84	10.50	2.57
1.17	1.97	4.33	4.08	7.50	4.84	10.67	1.66
1.33	1.97	4.50	4.08	7.67	4.23	10.83	1.66
1.50	1.97	4.67	5.14	7.83	4.23	11.00	1.66
1.67	1.97	4.83	5.14	8.00	4.23	11.17	1.51
1.83	1.97	5.00	5.14	8.17	3.33	11.33	1.51
2.00	1.97	5.17	8.16	8.33	3.33	11.50	1.51
2.17	2.57	5.33	8.16	8.50	3.33	11.67	1.51
2.33	2.57	5.50	8.16	8.67	3.48	11.83	1.51
2.50	2.57	5.67	64.71	8.83	3.48	12.00	1.51
2.67	2.27	5.83	64.71	9.00	3.48		
2.83	2.27	6.00	64.71	9.17	2.27		
3.00	2.27	6.17	16.48	9.33	2.27		

-----  
 | CALIB |  
 | STANDHYD ( 0002) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.30  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.13	0.17
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	44.72	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27

0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.88 (ii) 19.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.028 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 42.81  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005)	Area (ha)=	0.18	
ID= 1 DT= 5.0 min	Total Imp(%)=	46.00	Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51

2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.61 (ii) 19.17 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.017 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 43.93  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.58

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0001) | Area (ha)= 1.60  
| ID= 1 DT= 5.0 min | Total Imp(%)= 36.00 Dir. Conn.(%)= 36.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.58	1.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27

0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)=	64.71	16.96
over (min)	5.00	25.00
Storage Coeff. (min)=	3.10 (ii)	20.66 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.27	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.10	0.03	0.126 (iii)
TIME TO PEAK (hrs)=	6.17	6.42	6.17
RUNOFF VOLUME (mm)=	74.60	17.90	38.31
TOTAL RAINFALL (mm)=	75.60	75.60	75.60
RUNOFF COEFFICIENT =	0.99	0.24	0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!



- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51

2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 19.86  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.37 (ii) 19.86 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.20 0.04 0.234 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 20.77 49.83  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.27 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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 ( 0004) | Area (ha)= 3.17  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.06	1.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	145.37	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.81 (ii) 21.37 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.25 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.37 0.03 0.394 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.42 6.17  
 RUNOFF VOLUME (mm)= 74.60 17.90 54.75

TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
 RUNOFF COEFFICIENT = 0.99 0.24 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0003):	2.11	0.234	6.17	49.83
+ ID2= 2 ( 0004):	3.17	0.394	6.17	54.75
=====				
ID = 3 ( 0009):	5.28	0.628	6.17	52.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0008)	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)= 59.00	Dir. Conn.(%)= 59.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.07
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81

0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.55 (ii) 19.12 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.019 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 51.28  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0010) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	1.60	0.126	6.17	38.31
+ ID2= 2 ( 0008):	0.16	0.019	6.17	51.28
=====				
ID = 3 ( 0010):	1.76	0.144	6.17	39.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0010) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0010):	1.76	0.144	6.17	39.48
+ ID2= 2 ( 0009):	5.28	0.628	6.17	52.79
=====				
ID = 1 ( 0010):	7.04	0.772	6.17	49.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
=====
V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U AAAAA L
V V I SS U U A A L
VV I SSSSS UUUUU A A LLLLL
000 TTTTT TTTTT H H Y Y M M 000 TM
0 0 T T H H Y Y MM MM 0 0
0 0 T T H H Y M M 0 0
000 T T H H Y M M 000

```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:  
 C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\c

39d9457-2b22-47c3-8924-9b0dd4b0bc28\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\c  
39d9457-2b22-47c3-8924-9b0dd4b0bc28\s

DATE: 12-12-2023

TIME: 10:42:32

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS025-2023 \*\*  
\*\*\*\*\*

-----  
| READ STORM |  
Ptotal= 88.80 mm

Filename: C:\Users\caeh076182\AppData  
ata\Local\Temp\  
aa67dfa5-5df2-4a01-82cd-e74821e42b56\d87f3d91  
Comments: 12SCS025-2023

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.55		6.33	19.36	9.50	2.66
0.17	2.66	3.33	3.55		6.50	19.36	9.67	2.13
0.33	2.66	3.50	3.55		6.67	8.52	9.83	2.13
0.50	2.66	3.67	3.55		6.83	8.52	10.00	2.13
0.67	1.24	3.83	3.55		7.00	8.52	10.17	3.02
0.83	1.24	4.00	3.55		7.17	5.68	10.33	3.02
1.00	1.24	4.17	4.80		7.33	5.68	10.50	3.02
1.17	2.31	4.33	4.80		7.50	5.68	10.67	1.95
1.33	2.31	4.50	4.80		7.67	4.97	10.83	1.95
1.50	2.31	4.67	6.04		7.83	4.97	11.00	1.95
1.67	2.31	4.83	6.04		8.00	4.97	11.17	1.78
1.83	2.31	5.00	6.04		8.17	3.91	11.33	1.78
2.00	2.31	5.17	9.59		8.33	3.91	11.50	1.78
2.17	3.02	5.33	9.59		8.50	3.91	11.67	1.78
2.33	3.02	5.50	9.59		8.67	4.08	11.83	1.78
2.50	3.02	5.67	76.01		8.83	4.08	12.00	1.78
2.67	2.66	5.83	76.01		9.00	4.08		
2.83	2.66	6.00	76.01		9.17	2.66		
3.00	2.66	6.17	19.36		9.33	2.66		

-----  
 | CALIB |  
 | STANDHYD ( 0002) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.30  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.13	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.72	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78



2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.76 (ii) 17.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.034 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 52.08  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.59

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18  
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66

0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)=	76.01	22.94
over (min)	5.00	20.00
Storage Coeff. (min)=	1.51 (ii)	17.07 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.33	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.021 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	87.80	24.08	53.33
TOTAL RAINFALL (mm)=	88.80	88.80	88.80
RUNOFF COEFFICIENT =	0.99	0.27	0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 55.0    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 ( 0001)	Area (ha)=	1.60	
ID= 1 DT= 5.0 min	Total Imp(%)=	36.00	Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	1.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78

2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.91 (ii) 18.47 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.12 0.04 0.159 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 47.01  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

```

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 28.19  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.16 (ii) 17.49 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.24 0.05 0.283 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.33 6.17  
 RUNOFF VOLUME (mm)= 87.80 27.74 60.17  
 TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
 RUNOFF COEFFICIENT = 0.99 0.31 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0    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 ( 0004)                   | Area   (ha)=   3.17
| ID= 1 DT= 5.0 min                   | Total Imp(%)= 65.00   Dir. Conn.(%)= 65.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95

1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.57 (ii) 19.13 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.43 0.05 0.475 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 65.49  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0003):	2.11	0.283	6.17	60.17
+ ID2= 2 ( 0004):	3.17	0.475	6.17	65.49
=====				
ID = 3 ( 0009):	5.28	0.758	6.17	63.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |  
 | STANDHYD ( 0008) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.16  
 Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.66	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78



2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.46 (ii) 17.02 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.022 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 61.61  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0010) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0001):  1.60  0.159  6.17  47.01
+ ID2= 2 ( 0008):  0.16  0.022  6.17  61.61
=====
ID = 3 ( 0010):  1.76  0.181  6.17  48.34

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0010) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 0010):  1.76  0.181  6.17  48.34
+ ID2= 2 ( 0009):  5.28  0.758  6.17  63.37
=====
ID = 1 ( 0010):  7.04  0.939  6.17  59.61

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\0eef16e4-bafd-4ad3-985e-2f009df6a793\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\0eef16e4-bafd-4ad3-985e-2f009df6a793\s

DATE: 12-12-2023

TIME: 10:42:33

USER:

COMMENTS: \_\_\_\_\_

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\*\* SIMULATION : 12SCS050-2023 \*\*  
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| READ STORM |

Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal= 98.40 mm |

aa67dfa5-5df2-4a01-82cd-e74821e42b56\efc61559

Comments: 12SCS050-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.94	6.33	21.45	9.50	2.95
0.17	2.95	3.33	3.94	6.50	21.45	9.67	2.36
0.33	2.95	3.50	3.94	6.67	9.45	9.83	2.36
0.50	2.95	3.67	3.94	6.83	9.45	10.00	2.36
0.67	1.38	3.83	3.94	7.00	9.45	10.17	3.35
0.83	1.38	4.00	3.94	7.17	6.30	10.33	3.35
1.00	1.38	4.17	5.31	7.33	6.30	10.50	3.35
1.17	2.56	4.33	5.31	7.50	6.30	10.67	2.16
1.33	2.56	4.50	5.31	7.67	5.51	10.83	2.16
1.50	2.56	4.67	6.69	7.83	5.51	11.00	2.16
1.67	2.56	4.83	6.69	8.00	5.51	11.17	1.97
1.83	2.56	5.00	6.69	8.17	4.33	11.33	1.97
2.00	2.56	5.17	10.63	8.33	4.33	11.50	1.97
2.17	3.35	5.33	10.63	8.50	4.33	11.67	1.97
2.33	3.35	5.50	10.63	8.67	4.53	11.83	1.97
2.50	3.35	5.67	84.23	8.83	4.53	12.00	1.97
2.67	2.95	5.83	84.23	9.00	4.53		
2.83	2.95	6.00	84.23	9.17	2.95		
3.00	2.95	6.17	21.45	9.33	2.95		

| CALIB  
| STANDHYD ( 0002)  
| ID= 1 DT= 5.0 min |

Area (ha)= 0.30  
Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.13	0.17
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	44.72	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95

0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.69 (ii) 15.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.039 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 59.04  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005)	Area (ha)=	0.18	
ID= 1 DT= 5.0 min	Total Imp(%)=	46.00	Dir. Conn.(%)= 46.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97

2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.45 (ii) 15.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.024 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 60.40  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0001) | Area (ha)= 1.60  
| ID= 1 DT= 5.0 min | Total Imp(%)= 36.00 Dir. Conn.(%)= 36.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.58	1.02
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	103.28	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95

0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)=	84.23	29.29
over (min)	5.00	20.00
Storage Coeff. (min)=	2.79 (ii)	16.90 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.28	0.06

\*TOTALS\*

PEAK FLOW (cms)=	0.13	0.06	0.182 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	97.40	28.96	53.59
TOTAL RAINFALL (mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT =	0.99	0.29	0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97



2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 33.78  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.03 (ii) 16.36 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.27 0.06 0.320 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 33.20 67.87  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.34 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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 ( 0004) | Area (ha)= 3.17  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.42 (ii) 17.54 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.48 0.06 0.532 (iii)  
 TIME TO PEAK (hrs)= 6.17 6.33 6.17  
 RUNOFF VOLUME (mm)= 97.40 28.96 73.44

TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
 RUNOFF COEFFICIENT = 0.99 0.29 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 55.0 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0003):	2.11	0.320	6.17	67.87
+ ID2= 2 ( 0004):	3.17	0.532	6.17	73.44
=====				
ID = 3 ( 0009):	5.28	0.852	6.17	71.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	PERVIOUS (i)
STANDHYD ( 0008)	0.16	
ID= 1 DT= 5.0 min	Total Imp(%)= 59.00	Dir. Conn.(%)= 59.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.07
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36

0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.40 (ii) 15.51 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.025 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 69.27  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0010) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	1.60	0.182	6.17	53.59
+ ID2= 2 ( 0008):	0.16	0.025	6.17	69.27
=====				
ID = 3 ( 0010):	1.76	0.207	6.17	55.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0010) |
| 3 + 2 = 1 |
-----

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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0010):	1.76	0.207	6.17	55.02
+ ID2= 2 ( 0009):	5.28	0.852	6.17	71.21
=====				
ID = 1 ( 0010):	7.04	1.060	6.17	67.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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=====
=====
V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A  L
  VV    I   SSSSS  UUUUU  A   A  LLLLL
000  TTTTT  TTTTT  H   H   Y   Y  M   M  000  TM
0  0  T    T    H   H   Y   Y  MM  MM  0  0
0  0  T    T    H   H   Y   M   M  0  0
000  T    T    H   H   Y   M   M  000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:  
 C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\7

b703ea4-5f57-49eb-a25c-6bd784811c1a\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\7  
b703ea4-5f57-49eb-a25c-6bd784811c1a\s

DATE: 12-12-2023

TIME: 10:42:33

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS100-2023 \*\*  
\*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\aa67dfa5-5df2-4a01-82cd-e74821e42b56\4e73243f
Ptotal=108.00 mm	Comments: 12SCS100-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	4.32	6.33	23.54	9.50	3.24
0.17	3.24	3.33	4.32	6.50	23.54	9.67	2.59
0.33	3.24	3.50	4.32	6.67	10.37	9.83	2.59
0.50	3.24	3.67	4.32	6.83	10.37	10.00	2.59
0.67	1.51	3.83	4.32	7.00	10.37	10.17	3.67
0.83	1.51	4.00	4.32	7.17	6.91	10.33	3.67
1.00	1.51	4.17	5.83	7.33	6.91	10.50	3.67
1.17	2.81	4.33	5.83	7.50	6.91	10.67	2.38
1.33	2.81	4.50	5.83	7.67	6.05	10.83	2.38
1.50	2.81	4.67	7.34	7.83	6.05	11.00	2.38
1.67	2.81	4.83	7.34	8.00	6.05	11.17	2.16
1.83	2.81	5.00	7.34	8.17	4.75	11.33	2.16
2.00	2.81	5.17	11.66	8.33	4.75	11.50	2.16
2.17	3.67	5.33	11.66	8.50	4.75	11.67	2.16
2.33	3.67	5.50	11.66	8.67	4.97	11.83	2.16
2.50	3.67	5.67	92.45	8.83	4.97	12.00	2.16
2.67	3.24	5.83	92.45	9.00	4.97		
2.83	3.24	6.00	92.45	9.17	3.24		
3.00	3.24	6.17	23.54	9.33	3.24		

-----  
 | CALIB |  
 | STANDHYD ( 0002) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.30  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.13	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.72	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16

2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 34.55  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.63 (ii) 14.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.045 (iii)  
TIME TO PEAK (hrs)= 6.08 6.25 6.17  
RUNOFF VOLUME (mm)= 107.00 34.13 66.17  
TOTAL RAINFALL (mm)= 108.00 108.00 108.00  
RUNOFF COEFFICIENT = 0.99 0.32 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18  
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24



0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	34.55
over (min)	5.00	15.00
Storage Coeff. (min)=	1.40 (ii)	14.61 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

			*TOTALS*
PEAK FLOW (cms)=	0.02	0.01	0.028 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	107.00	34.13	67.60
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.32	0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 55.0    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 ( 0001)	Area (ha)=	1.60	
ID= 1 DT= 5.0 min	Total Imp(%)=	36.00	Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	1.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16

2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 34.55  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.69 (ii) 15.90 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.15 0.07 0.206 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 107.00 34.13 60.36  
TOTAL RAINFALL (mm)= 108.00 108.00 108.00  
RUNOFF COEFFICIENT = 0.99 0.32 0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	39.66
over (min)	5.00	20.00
Storage Coeff. (min)=	2.92 (ii)	15.42 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.28	0.07

\*TOTALS\*

PEAK FLOW (cms)=	0.29	0.07	0.357 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	107.00	38.96	75.69
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.36	0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38

1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 34.55  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.30 (ii) 16.51 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.53 0.07 0.591 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 107.00 34.13 81.49  
TOTAL RAINFALL (mm)= 108.00 108.00 108.00  
RUNOFF COEFFICIENT = 0.99 0.32 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0003):	2.11	0.357	6.17	75.69
+ ID2= 2 ( 0004):	3.17	0.591	6.17	81.49
=====				
ID = 3 ( 0009):	5.28	0.948	6.17	79.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		
STANDHYD ( 0008)		Area (ha)= 0.16
ID= 1 DT= 5.0 min		Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.66	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16

2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	34.55
over (min)	5.00	15.00
Storage Coeff. (min)=	1.35 (ii)	14.56 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.33	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.02	0.00	0.029 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	107.00	34.13	77.07
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.32	0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0010) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	1.60	0.206	6.17	60.36
+ ID2= 2 ( 0008):	0.16	0.029	6.17	77.07
=====				
ID = 3 ( 0010):	1.76	0.235	6.17	61.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0010) |
| 3 + 2 = 1 |
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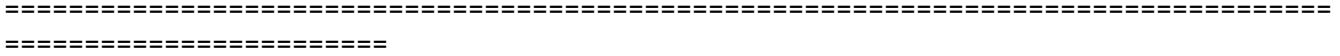
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0010):	1.76	0.235	6.17	61.88
+ ID2= 2 ( 0009):	5.28	0.948	6.17	79.18
=====				
ID = 1 ( 0010):	7.04	1.183	6.17	74.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



FINISH



## APPENDIX

# D-3 VO Outputs for SWM Facilities

=====

V V I SSSSS U U A L (v 6.2.2015)  
V V I SS U U A A L  
V V I SS U U AAAAA L  
V V I SS U U A A L  
VV I SSSSS UUUUU A A LLLLL

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5f7ebba4-2f8b-4f19-aa2b-47aa7dd62ac6\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\5f7ebba4-2f8b-4f19-aa2b-47aa7dd62ac6\s

DATE: 12-12-2023

TIME: 10:46:15

USER:

COMMENTS: \_\_\_\_\_

-----

\*\*\*\*\*  
\*\* SIMULATION : 12SCS002-2023 \*\*  
\*\*\*\*\*

-----

| READ STORM | Filename: C:\Users\caeh076182\AppData\Local\Temp\

| Ptotal= 49.20 mm |

610e0b70-1942-46ed-bafa-e7fe082f6d53\c0a2541b  
 Comments: 12SCS002-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	1.97	6.33	10.73	9.50	1.48
0.17	1.48	3.33	1.97	6.50	10.73	9.67	1.18
0.33	1.48	3.50	1.97	6.67	4.72	9.83	1.18
0.50	1.48	3.67	1.97	6.83	4.72	10.00	1.18
0.67	0.69	3.83	1.97	7.00	4.72	10.17	1.67
0.83	0.69	4.00	1.97	7.17	3.15	10.33	1.67
1.00	0.69	4.17	2.66	7.33	3.15	10.50	1.67
1.17	1.28	4.33	2.66	7.50	3.15	10.67	1.08
1.33	1.28	4.50	2.66	7.67	2.76	10.83	1.08
1.50	1.28	4.67	3.35	7.83	2.76	11.00	1.08
1.67	1.28	4.83	3.35	8.00	2.76	11.17	0.98
1.83	1.28	5.00	3.35	8.17	2.16	11.33	0.98
2.00	1.28	5.17	5.31	8.33	2.16	11.50	0.98
2.17	1.67	5.33	5.31	8.50	2.16	11.67	0.98
2.33	1.67	5.50	5.31	8.67	2.26	11.83	0.98
2.50	1.67	5.67	42.12	8.83	2.26	12.00	0.98
2.67	1.48	5.83	42.12	9.00	2.26		
2.83	1.48	6.00	42.12	9.17	1.48		
3.00	1.48	6.17	10.73	9.33	1.48		

-----  
 | CALIB |  
 | STANDHYD ( 0002) |  
 | ID= 1 DT= 5.0 min |

Area (ha)= 0.30  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.13	0.17
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	44.72	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48

0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 2.23 (ii) 28.70 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.30 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.016 (iii)  
TIME TO PEAK (hrs)= 6.08 6.58 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 25.49  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00
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```

                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=      0.08      0.10
Dep. Storage (mm)=      1.00      5.00
Average Slope (%)=      1.00      2.00
Length (m)=      34.64      40.00
Mannings n =      0.013      0.350
  
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98

2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 30.00  
Storage Coeff. (min)= 1.91 (ii) 28.39 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.31 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.010 (iii)  
TIME TO PEAK (hrs)= 6.08 6.58 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 26.26  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0004) | Area (ha)= 3.17  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48

0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)=	42.12	6.08
over (min)	5.00	35.00
Storage Coeff. (min)=	4.52 (ii)	30.99 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.23	0.03

\*TOTALS\*

PEAK FLOW (cms)=	0.24	0.01	0.246 (iii)
TIME TO PEAK (hrs)=	6.17	6.67	6.17
RUNOFF VOLUME (mm)=	48.20	7.75	34.04
TOTAL RAINFALL (mm)=	49.20	49.20	49.20
RUNOFF COEFFICIENT =	0.98	0.16	0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!



- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98

2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 7.94  
over (min) 5.00 30.00  
Storage Coeff. (min)= 4.00 (ii) 27.79 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.24 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.13 0.01 0.140 (iii)  
TIME TO PEAK (hrs)= 6.17 6.50 6.17  
RUNOFF VOLUME (mm)= 48.20 9.15 30.23  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.19 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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.

-----  
| RESERVOIR( 0007) |  
| IN= 2---> OUT= 1 |  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1216	0.0240
0.0816	0.0180	0.2592	0.0400

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0003)	2.110	0.140	6.17	30.23
OUTFLOW: ID= 1 ( 0007)	2.110	0.079	6.25	30.20

PEAK FLOW REDUCTION [Qout/Qin](%)= 56.10  
TIME SHIFT OF PEAK FLOW (min)= 5.00

MAXIMUM STORAGE USED (ha.m.)= 0.0175

ADD HYD ( 0017)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0004):	3.17	0.246	6.17	34.04
+ ID2= 2 ( 0007):	2.11	0.079	6.25	30.20
=====				
ID = 3 ( 0017):	5.28	0.321	6.17	32.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0001)			
ID= 1 DT= 5.0 min			
Area	(ha)=	1.60	
Total Imp	(%)=	36.00	Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)= 0.58	1.02
Dep. Storage	(mm)= 1.00	5.00
Average Slope	(%)= 1.00	2.00
Length	(m)= 103.28	40.00
Mannings n	= 0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67

1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max.Eff.Inten.(mm/hr)= 42.12 6.08  
over (min) 5.00 35.00  
Storage Coeff. (min)= 3.68 (ii) 30.16 (ii)  
Unit Hyd. Tpeak (min)= 5.00 35.00  
Unit Hyd. peak (cms)= 0.25 0.04

\*TOTALS\*

PEAK FLOW (cms)= 0.07 0.01 0.072 (iii)  
TIME TO PEAK (hrs)= 6.17 6.67 6.17  
RUNOFF VOLUME (mm)= 48.20 7.75 22.30  
TOTAL RAINFALL (mm)= 49.20 49.20 49.20  
RUNOFF COEFFICIENT = 0.98 0.16 0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0008) | Area (ha)= 0.16  
| ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00

Average Slope (%)= 1.00 2.00  
 Length (m)= 32.66 40.00  
 Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	1.48	6.250	10.73	9.33	1.48
0.167	0.00	3.250	1.97	6.333	10.73	9.42	1.48
0.250	1.48	3.333	1.97	6.417	10.73	9.50	1.48
0.333	1.48	3.417	1.97	6.500	10.73	9.58	1.48
0.417	1.48	3.500	1.97	6.583	10.73	9.67	1.48
0.500	1.48	3.583	1.97	6.667	10.73	9.75	1.18
0.583	1.48	3.667	1.97	6.750	4.72	9.83	1.18
0.667	1.48	3.750	1.97	6.833	4.72	9.92	1.18
0.750	0.69	3.833	1.97	6.917	4.72	10.00	1.18
0.833	0.69	3.917	1.97	7.000	4.72	10.08	1.18
0.917	0.69	4.000	1.97	7.083	4.72	10.17	1.18
1.000	0.69	4.083	1.97	7.167	4.72	10.25	1.67
1.083	0.69	4.167	1.97	7.250	3.15	10.33	1.67
1.167	0.69	4.250	2.66	7.333	3.15	10.42	1.67
1.250	1.28	4.333	2.66	7.417	3.15	10.50	1.67
1.333	1.28	4.417	2.66	7.500	3.15	10.58	1.67
1.417	1.28	4.500	2.66	7.583	3.15	10.67	1.67
1.500	1.28	4.583	2.66	7.667	3.15	10.75	1.08
1.583	1.28	4.667	2.66	7.750	2.76	10.83	1.08
1.667	1.28	4.750	3.35	7.833	2.76	10.92	1.08
1.750	1.28	4.833	3.35	7.917	2.76	11.00	1.08
1.833	1.28	4.917	3.35	8.000	2.76	11.08	1.08
1.917	1.28	5.000	3.35	8.083	2.76	11.17	1.08
2.000	1.28	5.083	3.35	8.167	2.76	11.25	0.98
2.083	1.28	5.167	3.35	8.250	2.16	11.33	0.98
2.167	1.28	5.250	5.31	8.333	2.16	11.42	0.98
2.250	1.67	5.333	5.31	8.417	2.16	11.50	0.98
2.333	1.67	5.417	5.31	8.500	2.16	11.58	0.98
2.417	1.67	5.500	5.31	8.583	2.16	11.67	0.98
2.500	1.67	5.583	5.31	8.667	2.16	11.75	0.98
2.583	1.67	5.667	5.31	8.750	2.26	11.83	0.98
2.667	1.67	5.750	42.12	8.833	2.26	11.92	0.98
2.750	1.48	5.833	42.12	8.917	2.26	12.00	0.98
2.833	1.48	5.917	42.12	9.000	2.26	12.08	0.98
2.917	1.48	6.000	42.12	9.083	2.26	12.17	0.98
3.000	1.48	6.083	42.12	9.167	2.26		
3.083	1.48	6.167	42.11	9.250	1.48		

Max. Eff. Inten. (mm/hr)= 42.12 6.08  
 over (min) 5.00 30.00

Storage Coeff. (min)=	1.84 (ii)	28.32 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.32	0.04	
			*TOTALS*
PEAK FLOW (cms)=	0.01	0.00	0.011 (iii)
TIME TO PEAK (hrs)=	6.08	6.58	6.17
RUNOFF VOLUME (mm)=	48.20	7.75	31.52
TOTAL RAINFALL (mm)=	49.20	49.20	49.20
RUNOFF COEFFICIENT =	0.98	0.16	0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0015) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0001):  1.60  0.072  6.17  22.30
+ ID2= 2 ( 0017):  5.28  0.321  6.17  32.51
=====
ID = 3 ( 0015):  6.88  0.393  6.17  30.13

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0015) |
| 3 + 2 = 1 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 3 ( 0015):  6.88  0.393  6.17  30.13
+ ID2= 2 ( 0008):  0.16  0.011  6.17  31.52
=====
ID = 1 ( 0015):  7.04  0.405  6.17  30.16

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0010) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----
          OUTFLOW      STORAGE      OUTFLOW      STORAGE
          (cms)      (ha.m.)      (cms)      (ha.m.)
          0.0000      0.0000      0.1576      0.1290
          0.1032      0.0960      0.3408      0.2230

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0015)	7.040	0.405	6.17	30.16
OUTFLOW: ID= 1 ( 0010)	7.040	0.102	7.00	30.13

PEAK FLOW REDUCTION [Qout/Qin](%)= 25.31  
 TIME SHIFT OF PEAK FLOW (min)= 50.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0953

```

-----
=====
=====
V   V   I   SSSSS  U   U   A   L           (v 6.2.2015)
V   V   I   SS    U   U   A A  L
V   V   I   SS    U   U   AAAAA L
V   V   I   SS    U   U   A   A  L
  VV    I   SSSSS  UUUUU  A   A  LLLLL
  
```

```

000  TTTTT  TTTTT  H   H   Y   Y   M   M   000  TM
0  0  T      T   H   H   Y   Y   MM  MM  0  0
0  0  T      T   H   H   Y   M   M  0  0
000  T      T   H   H   Y   M   M  000
  
```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\b9cefea3-96fe-40c3-bdad-ef97d577e056\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\b9cefea3-96fe-40c3-bdad-ef97d577e056\s

DATE: 12-12-2023

TIME: 10:46:15

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : 12SCS005-2023 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData Local\Temp\ 610e0b70-1942-46ed-bafa-e7fe082f6d53\b702be5b
Ptotal= 64.80 mm	Comments: 12SCS005-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	2.59	6.33	14.13	9.50	1.94
0.17	1.94	3.33	2.59	6.50	14.13	9.67	1.56
0.33	1.94	3.50	2.59	6.67	6.22	9.83	1.56
0.50	1.94	3.67	2.59	6.83	6.22	10.00	1.56
0.67	0.91	3.83	2.59	7.00	6.22	10.17	2.20
0.83	0.91	4.00	2.59	7.17	4.15	10.33	2.20
1.00	0.91	4.17	3.50	7.33	4.15	10.50	2.20
1.17	1.68	4.33	3.50	7.50	4.15	10.67	1.43
1.33	1.68	4.50	3.50	7.67	3.63	10.83	1.43
1.50	1.68	4.67	4.41	7.83	3.63	11.00	1.43
1.67	1.68	4.83	4.41	8.00	3.63	11.17	1.30
1.83	1.68	5.00	4.41	8.17	2.85	11.33	1.30
2.00	1.68	5.17	7.00	8.33	2.85	11.50	1.30
2.17	2.20	5.33	7.00	8.50	2.85	11.67	1.30
2.33	2.20	5.50	7.00	8.67	2.98	11.83	1.30
2.50	2.20	5.67	55.47	8.83	2.98	12.00	1.30
2.67	1.94	5.83	55.47	9.00	2.98		
2.83	1.94	6.00	55.47	9.17	1.94		
3.00	1.94	6.17	14.13	9.33	1.94		

CALIB	
STANDHYD ( 0002)	Area (ha)= 0.30
ID= 1 DT= 5.0 min	Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.13	0.17
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	44.72	40.00
Mannings n =	0.013	0.350



NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)=	55.47	12.59
over (min)	5.00	25.00
Storage Coeff. (min)=	2.00 (ii)	21.78 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.31	0.05

\*TOTALS\*

PEAK FLOW	(cms)=	0.02	0.00	0.023 (iii)
TIME TO PEAK	(hrs)=	6.08	6.42	6.17
RUNOFF VOLUME	(mm)=	63.80	13.36	35.51
TOTAL RAINFALL	(mm)=	64.80	64.80	64.80
RUNOFF COEFFICIENT	=	0.98	0.21	0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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	Area (ha)=	0.18	
STANDHYD ( 0005)	Total Imp(%)=	46.00	Dir. Conn.(%)= 46.00
ID= 1 DT= 5.0 min			

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20

1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.71 (ii) 21.50 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.014 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 36.48  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0004) | Area (ha)= 3.17  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
-----

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 2.06 1.11  
Dep. Storage (mm)= 1.00 5.00

Average Slope (%)= 1.00 2.00  
 Length (m)= 145.37 40.00  
 Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max. Eff. Inten. (mm/hr)= 55.47 12.59  
 over (min) 5.00 25.00

Storage Coeff. (min)=	4.05 (ii)	23.84 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.24	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.32	0.02	0.333 (iii)
TIME TO PEAK (hrs)=	6.17	6.42	6.17
RUNOFF VOLUME (mm)=	63.80	13.36	46.14
TOTAL RAINFALL (mm)=	64.80	64.80	64.80
RUNOFF COEFFICIENT =	0.98	0.21	0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=		1.14	0.97
Dep. Storage (mm)=		1.00	5.00
Average Slope (%)=		1.00	2.00
Length (m)=		118.60	40.00
Mannings n =		0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20

1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 14.83  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.58 (ii) 22.11 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.26 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.18 0.02 0.193 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 15.61 41.62  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.24 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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.

-----  
| RESERVOIR( 0007) | OVERFLOW IS OFF  
| IN= 2---> OUT= 1 |  
| DT= 5.0 min |      OUTFLOW      STORAGE      |      OUTFLOW      STORAGE

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-----
                (cms)      (ha.m.) | (cms)      (ha.m.)
                0.0000    0.0000 | 0.1216    0.0240
                0.0816    0.0180 | 0.2592    0.0400

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                AREA      QPEAK      TPEAK      R.V.
                (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 0003)  2.110    0.193     6.17     41.62
OUTFLOW: ID= 1 ( 0007)  2.110    0.116     6.25     41.60

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PEAK FLOW REDUCTION [Qout/Qin](%)= 60.24
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.0235

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-----
| ADD HYD ( 0017) |
| 1 + 2 = 3 |
-----
                AREA      QPEAK      TPEAK      R.V.
                (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 0004):  3.17    0.333     6.17     46.14
+ ID2= 2 ( 0007):  2.11    0.116     6.25     41.60
=====
ID = 3 ( 0017):  5.28    0.443     6.17     44.33

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 0001) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 1.60
Total Imp(%)= 36.00 Dir. Conn.(%)= 36.00

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                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.58 1.02
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 103.28 40.00
Mannings n = 0.013 0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.00 | 3.167 1.94 | 6.250 14.13 | 9.33 1.94
0.167 0.00 | 3.250 2.59 | 6.333 14.13 | 9.42 1.94
0.250 1.94 | 3.333 2.59 | 6.417 14.13 | 9.50 1.94
0.333 1.94 | 3.417 2.59 | 6.500 14.13 | 9.58 1.94
0.417 1.94 | 3.500 2.59 | 6.583 14.13 | 9.67 1.94
0.500 1.94 | 3.583 2.59 | 6.667 14.13 | 9.75 1.56

```

0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30
2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.30 (ii) 23.08 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.27 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.09 0.02 0.104 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 31.51  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.49

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0008) | Area (ha)= 0.16
| ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00
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                IMPERVIOUS    PERVIOUS (i)
Surface Area    (ha)=         0.09         0.07
Dep. Storage    (mm)=         1.00         5.00
Average Slope   (%)=         1.00         2.00
Length          (m)=        32.66        40.00
Mannings n     =          0.013        0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	1.94	6.250	14.13	9.33	1.94
0.167	0.00	3.250	2.59	6.333	14.13	9.42	1.94
0.250	1.94	3.333	2.59	6.417	14.13	9.50	1.94
0.333	1.94	3.417	2.59	6.500	14.13	9.58	1.94
0.417	1.94	3.500	2.59	6.583	14.13	9.67	1.94
0.500	1.94	3.583	2.59	6.667	14.13	9.75	1.56
0.583	1.94	3.667	2.59	6.750	6.22	9.83	1.56
0.667	1.94	3.750	2.59	6.833	6.22	9.92	1.56
0.750	0.91	3.833	2.59	6.917	6.22	10.00	1.56
0.833	0.91	3.917	2.59	7.000	6.22	10.08	1.56
0.917	0.91	4.000	2.59	7.083	6.22	10.17	1.56
1.000	0.91	4.083	2.59	7.167	6.22	10.25	2.20
1.083	0.91	4.167	2.59	7.250	4.15	10.33	2.20
1.167	0.91	4.250	3.50	7.333	4.15	10.42	2.20
1.250	1.68	4.333	3.50	7.417	4.15	10.50	2.20
1.333	1.68	4.417	3.50	7.500	4.15	10.58	2.20
1.417	1.68	4.500	3.50	7.583	4.15	10.67	2.20
1.500	1.68	4.583	3.50	7.667	4.15	10.75	1.43
1.583	1.68	4.667	3.50	7.750	3.63	10.83	1.43
1.667	1.68	4.750	4.41	7.833	3.63	10.92	1.43
1.750	1.68	4.833	4.41	7.917	3.63	11.00	1.43
1.833	1.68	4.917	4.41	8.000	3.63	11.08	1.43
1.917	1.68	5.000	4.41	8.083	3.63	11.17	1.43
2.000	1.68	5.083	4.41	8.167	3.63	11.25	1.30
2.083	1.68	5.167	4.41	8.250	2.85	11.33	1.30
2.167	1.68	5.250	7.00	8.333	2.85	11.42	1.30
2.250	2.20	5.333	7.00	8.417	2.85	11.50	1.30
2.333	2.20	5.417	7.00	8.500	2.85	11.58	1.30
2.417	2.20	5.500	7.00	8.583	2.85	11.67	1.30

2.500	2.20	5.583	7.00	8.667	2.85	11.75	1.30
2.583	2.20	5.667	7.00	8.750	2.98	11.83	1.30
2.667	2.20	5.750	55.47	8.833	2.98	11.92	1.30
2.750	1.94	5.833	55.47	8.917	2.98	12.00	1.30
2.833	1.94	5.917	55.47	9.000	2.98	12.08	1.30
2.917	1.94	6.000	55.47	9.083	2.98	12.17	1.30
3.000	1.94	6.083	55.47	9.167	2.98		
3.083	1.94	6.167	55.47	9.250	1.94		

Max.Eff.Inten.(mm/hr)= 55.47 12.59  
over (min) 5.00 25.00  
Storage Coeff. (min)= 1.65 (ii) 21.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.32 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.016 (iii)  
TIME TO PEAK (hrs)= 6.08 6.42 6.17  
RUNOFF VOLUME (mm)= 63.80 13.36 43.03  
TOTAL RAINFALL (mm)= 64.80 64.80 64.80  
RUNOFF COEFFICIENT = 0.98 0.21 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0015)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0001):	1.60	0.104	6.17	31.51
+ ID2= 2 ( 0017):	5.28	0.443	6.17	44.33
=====				
ID = 3 ( 0015):	6.88	0.547	6.17	41.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0015)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0015):	6.88	0.547	6.17	41.35
+ ID2= 2 ( 0008):	0.16	0.016	6.17	43.03
=====				

ID = 1 ( 0015): 7.04 0.563 6.17 41.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0010) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----

```

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1576	0.1290
0.1032	0.0960	0.3408	0.2230

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0015)	7.040	0.563	6.17	41.38
OUTFLOW: ID= 1 ( 0010)	7.040	0.156	6.83	41.35

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.76  
 TIME SHIFT OF PEAK FLOW (min)= 40.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1282

```

-----
=====
=====
V  V  I  SSSSS  U  U  A  L  (v 6.2.2015)
V  V  I  SS    U  U  A  A  L
V  V  I  SS    U  U  AAAAA  L
V  V  I  SS    U  U  A  A  L
  VV  I  SSSSS  UUUUU  A  A  LLLLL
000  TTTTT  TTTTT  H  H  Y  Y  M  M  000  TM
O  O  T  T  H  H  Y  Y  MM  MM  O  O
O  O  T  T  H  H  Y  M  M  O  O
000  T  T  H  H  Y  M  M  000

```

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\3c3e23fe-d9fc-4662-b917-9a29e4c620fe\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\3

c3e23fe-d9fc-4662-b917-9a29e4c620fe\s

DATE: 12-12-2023

TIME: 10:46:15

USER:

COMMENTS: \_\_\_\_\_

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\*\*\*\*\*

\*\* SIMULATION : 12SCS010-2023 \*\*

\*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData Local\Temp\ 610e0b70-1942-46ed-bafa-e7fe082f6d53\9b81b3b
Ptotal= 75.60 mm	Comments: 12SCS010-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.02	6.33	16.48	9.50	2.27
0.17	2.27	3.33	3.02	6.50	16.48	9.67	1.81
0.33	2.27	3.50	3.02	6.67	7.26	9.83	1.81
0.50	2.27	3.67	3.02	6.83	7.26	10.00	1.81
0.67	1.06	3.83	3.02	7.00	7.26	10.17	2.57
0.83	1.06	4.00	3.02	7.17	4.84	10.33	2.57
1.00	1.06	4.17	4.08	7.33	4.84	10.50	2.57
1.17	1.97	4.33	4.08	7.50	4.84	10.67	1.66
1.33	1.97	4.50	4.08	7.67	4.23	10.83	1.66
1.50	1.97	4.67	5.14	7.83	4.23	11.00	1.66
1.67	1.97	4.83	5.14	8.00	4.23	11.17	1.51
1.83	1.97	5.00	5.14	8.17	3.33	11.33	1.51
2.00	1.97	5.17	8.16	8.33	3.33	11.50	1.51
2.17	2.57	5.33	8.16	8.50	3.33	11.67	1.51
2.33	2.57	5.50	8.16	8.67	3.48	11.83	1.51
2.50	2.57	5.67	64.71	8.83	3.48	12.00	1.51
2.67	2.27	5.83	64.71	9.00	3.48		
2.83	2.27	6.00	64.71	9.17	2.27		
3.00	2.27	6.17	16.48	9.33	2.27		

CALIB  
 STANDHYD ( 0002)  
 ID= 1 DT= 5.0 min

Area (ha)= 0.30  
 Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.13	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.72	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51

2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.88 (ii) 19.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.028 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 42.81  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18  
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81

0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.61 (ii) 19.17 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.01 0.00 0.017 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 43.93  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.58

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
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                IMPERVIOUS      PERVIOUS (i)
Surface Area   (ha)=          2.06          1.11
Dep. Storage   (mm)=          1.00          5.00
Average Slope  (%)=          1.00          2.00
Length         (m)=        145.37         40.00
Mannings n    =           0.013         0.350

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51



2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.81 (ii) 21.37 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.25 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.37 0.03 0.394 (iii)  
TIME TO PEAK (hrs)= 6.17 6.42 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 54.75  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27

0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 19.86  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.37 (ii) 19.86 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.20 0.04 0.234 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 20.77 49.83  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.27 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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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-----
| RESERVOIR( 0007) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
-----

```

	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1216	0.0240
	0.0816	0.0180	0.2592	0.0400

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0003)	2.110	0.234	6.17	49.83
OUTFLOW: ID= 1 ( 0007)	2.110	0.149	6.25	49.81

PEAK FLOW REDUCTION [Qout/Qin](%)= 63.74  
 TIME SHIFT OF PEAK FLOW (min)= 5.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0276

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-----
| ADD HYD ( 0017) |
| 1 + 2 = 3      |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0004):	3.17	0.394	6.17	54.75
+ ID2= 2 ( 0007):	2.11	0.149	6.25	49.81
=====				
ID = 3 ( 0017):	5.28	0.535	6.17	52.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB          |
| STANDHYD ( 0001) |
| ID= 1 DT= 5.0 min |
-----

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Area (ha)=	1.60		
Total Imp(%)=	36.00	Dir. Conn.(%)=	36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	1.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	'	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	'	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	'	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	'	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	'	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	'	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	'	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	'	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	'	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	'	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	'	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	'	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	'	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	'	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	'	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	'	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	'	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	'	7.667	4.84	10.75	1.66
1.583	1.97	4.667	4.08	'	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	'	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	'	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	'	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	'	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	'	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	'	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	'	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	'	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	'	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	'	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	'	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	'	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	'	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	'	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	'	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	'	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	'	9.167	3.48		
3.083	2.27	6.167	64.71	'	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.10 (ii) 20.66 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.27 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.10 0.03 0.126 (iii)

TIME TO PEAK	(hrs)=	6.17	6.42	6.17
RUNOFF VOLUME	(mm)=	74.60	17.90	38.31
TOTAL RAINFALL	(mm)=	75.60	75.60	75.60
RUNOFF COEFFICIENT	=	0.99	0.24	0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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	Area	(ha)=	0.16	
STANDHYD ( 0008)	Total Imp(%)=	59.00	Dir. Conn.(%)=	59.00
ID= 1 DT= 5.0 min				

-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.66	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.27	6.250	16.48	9.33	2.27
0.167	0.00	3.250	3.02	6.333	16.48	9.42	2.27
0.250	2.27	3.333	3.02	6.417	16.48	9.50	2.27
0.333	2.27	3.417	3.02	6.500	16.48	9.58	2.27
0.417	2.27	3.500	3.02	6.583	16.48	9.67	2.27
0.500	2.27	3.583	3.02	6.667	16.48	9.75	1.81
0.583	2.27	3.667	3.02	6.750	7.26	9.83	1.81
0.667	2.27	3.750	3.02	6.833	7.26	9.92	1.81
0.750	1.06	3.833	3.02	6.917	7.26	10.00	1.81
0.833	1.06	3.917	3.02	7.000	7.26	10.08	1.81
0.917	1.06	4.000	3.02	7.083	7.26	10.17	1.81
1.000	1.06	4.083	3.02	7.167	7.26	10.25	2.57
1.083	1.06	4.167	3.02	7.250	4.84	10.33	2.57
1.167	1.06	4.250	4.08	7.333	4.84	10.42	2.57
1.250	1.97	4.333	4.08	7.417	4.84	10.50	2.57
1.333	1.97	4.417	4.08	7.500	4.84	10.58	2.57
1.417	1.97	4.500	4.08	7.583	4.84	10.67	2.57
1.500	1.97	4.583	4.08	7.667	4.84	10.75	1.66

1.583	1.97	4.667	4.08	7.750	4.23	10.83	1.66
1.667	1.97	4.750	5.14	7.833	4.23	10.92	1.66
1.750	1.97	4.833	5.14	7.917	4.23	11.00	1.66
1.833	1.97	4.917	5.14	8.000	4.23	11.08	1.66
1.917	1.97	5.000	5.14	8.083	4.23	11.17	1.66
2.000	1.97	5.083	5.14	8.167	4.23	11.25	1.51
2.083	1.97	5.167	5.14	8.250	3.33	11.33	1.51
2.167	1.97	5.250	8.16	8.333	3.33	11.42	1.51
2.250	2.57	5.333	8.16	8.417	3.33	11.50	1.51
2.333	2.57	5.417	8.16	8.500	3.33	11.58	1.51
2.417	2.57	5.500	8.16	8.583	3.33	11.67	1.51
2.500	2.57	5.583	8.16	8.667	3.33	11.75	1.51
2.583	2.57	5.667	8.17	8.750	3.48	11.83	1.51
2.667	2.57	5.750	64.71	8.833	3.48	11.92	1.51
2.750	2.27	5.833	64.71	8.917	3.48	12.00	1.51
2.833	2.27	5.917	64.71	9.000	3.48	12.08	1.51
2.917	2.27	6.000	64.71	9.083	3.48	12.17	1.51
3.000	2.27	6.083	64.71	9.167	3.48		
3.083	2.27	6.167	64.71	9.250	2.27		

Max.Eff.Inten.(mm/hr)= 64.71 16.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.55 (ii) 19.12 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.019 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 74.60 17.90 51.28  
TOTAL RAINFALL (mm)= 75.60 75.60 75.60  
RUNOFF COEFFICIENT = 0.99 0.24 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0015) |
| 1 + 2 = 3 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0001):	1.60	0.126	6.17	38.31
+ ID2= 2 ( 0017):	5.28	0.535	6.17	52.78
=====				
ID = 3 ( 0015):	6.88	0.660	6.17	49.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0015) |
| 3 + 2 = 1 |
-----

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0015):	6.88	0.660	6.17	49.41
+ ID2= 2 ( 0008):	0.16	0.019	6.17	51.28
=====				
ID = 1 ( 0015):	7.04	0.679	6.17	49.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0010) |
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----

```

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1576	0.1290
0.1032	0.0960	0.3408	0.2230

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0015)	7.040	0.679	6.17	49.45
OUTFLOW: ID= 1 ( 0010)	7.040	0.200	6.83	49.42

PEAK FLOW REDUCTION [Qout/Qin](%)= 29.51  
 TIME SHIFT OF PEAK FLOW (min)= 40.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1511

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-----
=====
=====
V V I SSSSS U U A L (v 6.2.2015)
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 UUUU A A LLLLL
OOO TTTT TTTT 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

```

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\6119c177-6f33-42e6-84e9-32e9274ce365\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\6119c177-6f33-42e6-84e9-32e9274ce365\s

DATE: 12-12-2023

TIME: 10:46:16

USER:

COMMENTS: \_\_\_\_\_

-----  
 \*\*\*\*\*  
 \*\* SIMULATION : 12SCS025-2023 \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\caeh076182\AppData\Local\Temp\610e0b70-1942-46ed-bafa-e7fe082f6d53\d87f3d91
Ptotal= 88.80 mm	Comments: 12SCS025-2023

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.55	6.33	19.36	9.50	2.66
0.17	2.66	3.33	3.55	6.50	19.36	9.67	2.13
0.33	2.66	3.50	3.55	6.67	8.52	9.83	2.13
0.50	2.66	3.67	3.55	6.83	8.52	10.00	2.13
0.67	1.24	3.83	3.55	7.00	8.52	10.17	3.02
0.83	1.24	4.00	3.55	7.17	5.68	10.33	3.02
1.00	1.24	4.17	4.80	7.33	5.68	10.50	3.02
1.17	2.31	4.33	4.80	7.50	5.68	10.67	1.95
1.33	2.31	4.50	4.80	7.67	4.97	10.83	1.95
1.50	2.31	4.67	6.04	7.83	4.97	11.00	1.95
1.67	2.31	4.83	6.04	8.00	4.97	11.17	1.78
1.83	2.31	5.00	6.04	8.17	3.91	11.33	1.78



2.00	2.31	5.17	9.59	8.33	3.91	11.50	1.78
2.17	3.02	5.33	9.59	8.50	3.91	11.67	1.78
2.33	3.02	5.50	9.59	8.67	4.08	11.83	1.78
2.50	3.02	5.67	76.01	8.83	4.08	12.00	1.78
2.67	2.66	5.83	76.01	9.00	4.08		
2.83	2.66	6.00	76.01	9.17	2.66		
3.00	2.66	6.17	19.36	9.33	2.66		

-----  
| CALIB |  
| STANDHYD ( 0002) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.30  
Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.13	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.72	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95

1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.76 (ii) 17.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.034 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 52.08  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.59

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18  
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00  
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	34.64	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	'	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	'	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	'	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	'	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	'	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	'	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	'	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	'	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	'	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	'	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	'	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	'	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	'	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	'	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	'	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	'	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	'	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	'	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	'	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	'	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	'	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	'	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	'	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	'	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	'	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	'	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	'	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	'	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	'	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	'	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	'	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	'	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	'	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	'	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	'	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	'	9.167	4.08		
3.083	2.66	6.167	76.01	'	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.51 (ii) 17.07 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.021 (iii)

TIME TO PEAK	(hrs)=	6.00	6.33	6.17
RUNOFF VOLUME	(mm)=	87.80	24.08	53.33
TOTAL RAINFALL	(mm)=	88.80	88.80	88.80
RUNOFF COEFFICIENT	=	0.99	0.27	0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95

1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.57 (ii) 19.13 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.43 0.05 0.475 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 65.49  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) | Area (ha)= 2.11  
| ID= 1 DT= 5.0 min | Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00  
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00

Length (m)= 118.60 40.00  
 Mannings n = 0.013 0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 28.19  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.16 (ii) 17.49 (ii)

Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.27	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.24	0.05	0.283 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	87.80	27.74	60.17
TOTAL RAINFALL (mm)=	88.80	88.80	88.80
RUNOFF COEFFICIENT =	0.99	0.31	0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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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| RESERVOIR( 0007) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
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	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1216	0.0240
	0.0816	0.0180	0.2592	0.0400

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0003)	2.110	0.283	6.17	60.17
OUTFLOW: ID= 1 ( 0007)	2.110	0.188	6.25	60.14

PEAK FLOW REDUCTION [Qout/Qin](%)= 66.32  
 TIME SHIFT OF PEAK FLOW (min)= 5.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0323

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| ADD HYD ( 0017) |
| 1 + 2 = 3      |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0004):	3.17	0.475	6.17	65.49
+ ID2= 2 ( 0007):	2.11	0.188	6.25	60.14
=====				
ID = 3 ( 0017):	5.28	0.654	6.17	63.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB          |
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| STANDHYD ( 0001) | Area (ha)= 1.60  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 36.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	1.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13
0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78



2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)=	76.01	22.94	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.91 (ii)	18.47 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.28	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.12	0.04	0.159 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	87.80	24.08	47.01
TOTAL RAINFALL (mm)=	88.80	88.80	88.80
RUNOFF COEFFICIENT =	0.99	0.27	0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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	Area (ha)=	0.16	
STANDHYD ( 0008)	Total Imp(%)=	59.00	Dir. Conn.(%)= 59.00
ID= 1 DT= 5.0 min			

-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.09	0.07
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	32.66	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.66	6.250	19.36	9.33	2.66
0.167	0.00	3.250	3.55	6.333	19.36	9.42	2.66
0.250	2.66	3.333	3.55	6.417	19.36	9.50	2.66
0.333	2.66	3.417	3.55	6.500	19.36	9.58	2.66
0.417	2.66	3.500	3.55	6.583	19.36	9.67	2.66
0.500	2.66	3.583	3.55	6.667	19.36	9.75	2.13
0.583	2.66	3.667	3.55	6.750	8.52	9.83	2.13

0.667	2.66	3.750	3.55	6.833	8.52	9.92	2.13
0.750	1.24	3.833	3.55	6.917	8.52	10.00	2.13
0.833	1.24	3.917	3.55	7.000	8.52	10.08	2.13
0.917	1.24	4.000	3.55	7.083	8.52	10.17	2.13
1.000	1.24	4.083	3.55	7.167	8.52	10.25	3.02
1.083	1.24	4.167	3.55	7.250	5.68	10.33	3.02
1.167	1.24	4.250	4.80	7.333	5.68	10.42	3.02
1.250	2.31	4.333	4.80	7.417	5.68	10.50	3.02
1.333	2.31	4.417	4.80	7.500	5.68	10.58	3.02
1.417	2.31	4.500	4.80	7.583	5.68	10.67	3.02
1.500	2.31	4.583	4.80	7.667	5.68	10.75	1.95
1.583	2.31	4.667	4.80	7.750	4.97	10.83	1.95
1.667	2.31	4.750	6.04	7.833	4.97	10.92	1.95
1.750	2.31	4.833	6.04	7.917	4.97	11.00	1.95
1.833	2.31	4.917	6.04	8.000	4.97	11.08	1.95
1.917	2.31	5.000	6.04	8.083	4.97	11.17	1.95
2.000	2.31	5.083	6.04	8.167	4.97	11.25	1.78
2.083	2.31	5.167	6.04	8.250	3.91	11.33	1.78
2.167	2.31	5.250	9.59	8.333	3.91	11.42	1.78
2.250	3.02	5.333	9.59	8.417	3.91	11.50	1.78
2.333	3.02	5.417	9.59	8.500	3.91	11.58	1.78
2.417	3.02	5.500	9.59	8.583	3.91	11.67	1.78
2.500	3.02	5.583	9.59	8.667	3.91	11.75	1.78
2.583	3.02	5.667	9.59	8.750	4.08	11.83	1.78
2.667	3.02	5.750	76.01	8.833	4.08	11.92	1.78
2.750	2.66	5.833	76.01	8.917	4.08	12.00	1.78
2.833	2.66	5.917	76.01	9.000	4.08	12.08	1.78
2.917	2.66	6.000	76.01	9.083	4.08	12.17	1.78
3.000	2.66	6.083	76.01	9.167	4.08		
3.083	2.66	6.167	76.01	9.250	2.66		

Max.Eff.Inten.(mm/hr)= 76.01 22.94  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.46 (ii) 17.02 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.022 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17  
RUNOFF VOLUME (mm)= 87.80 24.08 61.61  
TOTAL RAINFALL (mm)= 88.80 88.80 88.80  
RUNOFF COEFFICIENT = 0.99 0.27 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0015) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0001):  1.60    0.159    6.17    47.01
+ ID2= 2 ( 0017):  5.28    0.654    6.17    63.36
=====
ID = 3 ( 0015):  6.88    0.813    6.17    59.56

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0015) |
| 3 + 2 = 1 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 3 ( 0015):  6.88    0.813    6.17    59.56
+ ID2= 2 ( 0008):  0.16    0.022    6.17    61.61
=====
ID = 1 ( 0015):  7.04    0.836    6.17    59.60

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| RESERVOIR( 0010) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----
          OUTFLOW    STORAGE    | OUTFLOW    STORAGE
          (cms)    (ha.m.)    | (cms)    (ha.m.)
          0.0000    0.0000    | 0.1576    0.1290
          0.1032    0.0960    | 0.3408    0.2230

```

```

          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
INFLOW : ID= 2 ( 0015)  7.040    0.836    6.17    59.60
OUTFLOW: ID= 1 ( 0010)  7.040    0.256    6.75    59.57

```

```

          PEAK FLOW REDUCTION [Qout/Qin](%)= 30.69
          TIME SHIFT OF PEAK FLOW (min)= 35.00
          MAXIMUM STORAGE USED (ha.m.)= 0.1798

```

```

=====
=====
V V I SSSSS U U A L (v 6.2.2015)
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

000 TTTTT TTTTT H H Y Y M M 000 TM  
O O T T H H Y Y MM MM O O  
O O T T H H Y M M O O  
000 T T H H Y M M 000

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\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\21495010-1026-4015-9a89-d2b0707075a3\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\21495010-1026-4015-9a89-d2b0707075a3\s

DATE: 12-12-2023

TIME: 10:46:15

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
\*\* SIMULATION : 12SCS050-2023 \*\*  
\*\*\*\*\*

-----  
| READ STORM | Filename: C:\Users\caeh076182\AppData  
| | ata\Local\Temp\  
| | 610e0b70-1942-46ed-bafa-e7fe082f6d53\efc61559  
| Ptotal= 98.40 mm | Comments: 12SCS050-2023  
-----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.00	3.17	3.94	6.33	21.45	9.50	2.95

0.17	2.95	3.33	3.94	6.50	21.45	9.67	2.36
0.33	2.95	3.50	3.94	6.67	9.45	9.83	2.36
0.50	2.95	3.67	3.94	6.83	9.45	10.00	2.36
0.67	1.38	3.83	3.94	7.00	9.45	10.17	3.35
0.83	1.38	4.00	3.94	7.17	6.30	10.33	3.35
1.00	1.38	4.17	5.31	7.33	6.30	10.50	3.35
1.17	2.56	4.33	5.31	7.50	6.30	10.67	2.16
1.33	2.56	4.50	5.31	7.67	5.51	10.83	2.16
1.50	2.56	4.67	6.69	7.83	5.51	11.00	2.16
1.67	2.56	4.83	6.69	8.00	5.51	11.17	1.97
1.83	2.56	5.00	6.69	8.17	4.33	11.33	1.97
2.00	2.56	5.17	10.63	8.33	4.33	11.50	1.97
2.17	3.35	5.33	10.63	8.50	4.33	11.67	1.97
2.33	3.35	5.50	10.63	8.67	4.53	11.83	1.97
2.50	3.35	5.67	84.23	8.83	4.53	12.00	1.97
2.67	2.95	5.83	84.23	9.00	4.53		
2.83	2.95	6.00	84.23	9.17	2.95		
3.00	2.95	6.17	21.45	9.33	2.95		

-----  
| CALIB |  
| STANDHYD ( 0002) |  
ID= 1 DT= 5.0 min

Area (ha)= 0.30  
Total Imp(%)= 44.00 Dir. Conn.(%)= 44.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.13	0.17
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	44.72	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36

1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.69 (ii) 15.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.03 0.01 0.039 (iii)  
TIME TO PEAK (hrs)= 6.08 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 59.04  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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.

| STANDHYD ( 0005) | Area (ha)= 0.18  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.08	0.10
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	34.64	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97

2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)=	84.23	29.29	
over (min)	5.00	20.00	
Storage Coeff. (min)=	1.45 (ii)	15.56 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.33	0.07	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.01	0.024 (iii)
TIME TO PEAK (hrs)=	6.00	6.33	6.17
RUNOFF VOLUME (mm)=	97.40	28.96	60.40
TOTAL RAINFALL (mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT =	0.99	0.29	0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0004) | Area (ha)= 3.17
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.06	1.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	145.37	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

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TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36



0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.42 (ii) 17.54 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.48 0.06 0.532 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 73.44  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0003) |  
ID= 1 DT= 5.0 min

Area (ha)= 2.11  
 Total Imp(%)= 54.00 Dir. Conn.(%)= 54.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97

2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 33.78  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.03 (ii) 16.36 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.27 0.06 0.320 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 33.20 67.87  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.34 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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.

-----  
| RESERVOIR( 0007) |  
| IN= 2---> OUT= 1 |  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1216	0.0240
0.0816	0.0180	0.2592	0.0400

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0003)	2.110	0.320	6.17	67.87
OUTFLOW: ID= 1 ( 0007)	2.110	0.215	6.25	67.84

PEAK FLOW REDUCTION [Qout/Qin](%)= 67.37  
TIME SHIFT OF PEAK FLOW (min)= 5.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0357

-----  
| ADD HYD ( 0017) |

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0004):	3.17	0.532	6.17	73.44
+ ID2= 2 ( 0007):	2.11	0.215	6.25	67.84
=====				
ID = 3 ( 0017):	5.28	0.740	6.17	71.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD ( 0001)	ID= 1 DT= 5.0 min
Area (ha)=	1.60	
Total Imp(%)=	36.00	Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	1.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16

2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97
3.000	2.95	6.083	84.23	9.167	4.53		
3.083	2.95	6.167	84.23	9.250	2.95		

Max.Eff.Inten.(mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.79 (ii) 16.90 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.13 0.06 0.182 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 97.40 28.96 53.59  
TOTAL RAINFALL (mm)= 98.40 98.40 98.40  
RUNOFF COEFFICIENT = 0.99 0.29 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0008) | Area (ha)= 0.16  
| ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.66	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	2.95	6.250	21.45	9.33	2.95	
0.167	0.00	3.250	3.94	6.333	21.45	9.42	2.95	
0.250	2.95	3.333	3.94	6.417	21.45	9.50	2.95	
0.333	2.95	3.417	3.94	6.500	21.45	9.58	2.95	
0.417	2.95	3.500	3.94	6.583	21.45	9.67	2.95	
0.500	2.95	3.583	3.94	6.667	21.45	9.75	2.36	
0.583	2.95	3.667	3.94	6.750	9.45	9.83	2.36	
0.667	2.95	3.750	3.94	6.833	9.45	9.92	2.36	
0.750	1.38	3.833	3.94	6.917	9.45	10.00	2.36	
0.833	1.38	3.917	3.94	7.000	9.45	10.08	2.36	
0.917	1.38	4.000	3.94	7.083	9.45	10.17	2.36	
1.000	1.38	4.083	3.94	7.167	9.45	10.25	3.35	
1.083	1.38	4.167	3.94	7.250	6.30	10.33	3.35	
1.167	1.38	4.250	5.31	7.333	6.30	10.42	3.35	
1.250	2.56	4.333	5.31	7.417	6.30	10.50	3.35	
1.333	2.56	4.417	5.31	7.500	6.30	10.58	3.35	
1.417	2.56	4.500	5.31	7.583	6.30	10.67	3.35	
1.500	2.56	4.583	5.31	7.667	6.30	10.75	2.16	
1.583	2.56	4.667	5.31	7.750	5.51	10.83	2.16	
1.667	2.56	4.750	6.69	7.833	5.51	10.92	2.16	
1.750	2.56	4.833	6.69	7.917	5.51	11.00	2.16	
1.833	2.56	4.917	6.69	8.000	5.51	11.08	2.16	
1.917	2.56	5.000	6.69	8.083	5.51	11.17	2.16	
2.000	2.56	5.083	6.69	8.167	5.51	11.25	1.97	
2.083	2.56	5.167	6.69	8.250	4.33	11.33	1.97	
2.167	2.56	5.250	10.63	8.333	4.33	11.42	1.97	
2.250	3.35	5.333	10.63	8.417	4.33	11.50	1.97	
2.333	3.35	5.417	10.63	8.500	4.33	11.58	1.97	
2.417	3.35	5.500	10.63	8.583	4.33	11.67	1.97	
2.500	3.35	5.583	10.63	8.667	4.33	11.75	1.97	
2.583	3.35	5.667	10.63	8.750	4.53	11.83	1.97	
2.667	3.35	5.750	84.23	8.833	4.53	11.92	1.97	
2.750	2.95	5.833	84.23	8.917	4.53	12.00	1.97	
2.833	2.95	5.917	84.23	9.000	4.53	12.08	1.97	
2.917	2.95	6.000	84.23	9.083	4.53	12.17	1.97	
3.000	2.95	6.083	84.23	9.167	4.53			
3.083	2.95	6.167	84.23	9.250	2.95			

Max. Eff. Inten. (mm/hr)= 84.23 29.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.40 (ii) 15.51 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.33 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.00 0.025 (iii)  
TIME TO PEAK (hrs)= 6.00 6.33 6.17

RUNOFF VOLUME	(mm)=	97.40	28.96	69.27
TOTAL RAINFALL	(mm)=	98.40	98.40	98.40
RUNOFF COEFFICIENT	=	0.99	0.29	0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0015) |
| 1 + 2 = 3 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0001):  1.60  0.182  6.17  53.59
+ ID2= 2 ( 0017):  5.28  0.740  6.17  71.20
=====
ID = 3 ( 0015):  6.88  0.922  6.17  67.11

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0015) |
| 3 + 2 = 1 |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 3 ( 0015):  6.88  0.922  6.17  67.11
+ ID2= 2 ( 0008):  0.16  0.025  6.17  69.27
=====
ID = 1 ( 0015):  7.04  0.947  6.17  67.16

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| RESERVOIR( 0010) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min |
-----
          OUTFLOW    STORAGE    OUTFLOW    STORAGE
          (cms)    (ha.m.)    (cms)    (ha.m.)
          0.0000    0.0000    0.1576    0.1290
          0.1032    0.0960    0.3408    0.2230

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0015)	7.040	0.947	6.17	67.16
OUTFLOW: ID= 1 ( 0010)	7.040	0.298	6.75	67.13

PEAK FLOW REDUCTION [Qout/Qin](%)= 31.47  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.2011

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=====

V V I SSSSS U U A L (v 6.2.2015)  
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 UUUU 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 6.2\V02\voin.dat

Output filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d  
2a923f3-803f-468b-a154-586978079505\s

Summary filename:

C:\Users\caeh076182\AppData\Local\Civica\XH5\4df4d59c-ac18-4a59-8677-b6c88e53e310\d  
2a923f3-803f-468b-a154-586978079505\s

DATE: 12-12-2023

TIME: 10:46:16

USER:

COMMENTS: \_\_\_\_\_

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\*\*\*\*\*  
\*\* SIMULATION : 12SCS100-2023 \*\*  
\*\*\*\*\*





0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	34.55
over (min)	5.00	15.00
Storage Coeff. (min)=	1.63 (ii)	14.84 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.03	0.01	0.045 (iii)
TIME TO PEAK (hrs)=	6.08	6.25	6.17
RUNOFF VOLUME (mm)=	107.00	34.13	66.17
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.32	0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0005) | Area (ha)= 0.18
| ID= 1 DT= 5.0 min | Total Imp(%)= 46.00 Dir. Conn.(%)= 46.00
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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.08	0.10
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	34.64	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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----- TRANSFORMED HYETOGRAPH -----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38

2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 34.55  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.40 (ii) 14.61 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.02 0.01 0.028 (iii)  
TIME TO PEAK (hrs)= 6.00 6.25 6.17  
RUNOFF VOLUME (mm)= 107.00 34.13 67.60  
TOTAL RAINFALL (mm)= 108.00 108.00 108.00  
RUNOFF COEFFICIENT = 0.99 0.32 0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0004) | Area (ha)= 3.17  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
-----

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.06	1.11
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	145.37	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24		6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32		6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32		6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32		6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32		6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32		6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32		6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32		6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32		6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32		7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32		7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32		7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32		7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83		7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83		7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83		7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83		7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83		7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83		7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34		7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34		7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34		8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34		8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34		8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34		8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66		8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66		8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66		8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66		8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66		8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66		8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45		8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45		8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45		9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45		9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45		9.167	4.97		
3.083	3.24	6.167	92.45		9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 34.55  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.30 (ii) 16.51 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.53 0.07 0.591 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17

RUNOFF VOLUME	(mm)=	107.00	34.13	81.49
TOTAL RAINFALL	(mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT	=	0.99	0.32	0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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	Area	(ha)=	2.11	
STANDHYD ( 0003)	Total Imp(%)=	54.00	Dir. Conn.(%)=	54.00
ID= 1 DT= 5.0 min				

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		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.14	0.97
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	118.60	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38

1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)= 92.45 39.66  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.92 (ii) 15.42 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.29 0.07 0.357 (iii)  
TIME TO PEAK (hrs)= 6.17 6.33 6.17  
RUNOFF VOLUME (mm)= 107.00 38.96 75.69  
TOTAL RAINFALL (mm)= 108.00 108.00 108.00  
RUNOFF COEFFICIENT = 0.99 0.36 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 60.0 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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| RESERVOIR( 0007) | OVERFLOW IS OFF
| IN= 2---> OUT= 1 |
| DT= 5.0 min      |
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OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1216	0.0240
0.0816	0.0180	0.2592	0.0400

AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)

INFLOW : ID= 2 ( 0003)      2.110      0.357      6.17      75.69  
 OUTFLOW: ID= 1 ( 0007)      2.110      0.244      6.25      75.67

PEAK FLOW REDUCTION [Qout/Qin](%)= 68.14  
 TIME SHIFT OF PEAK FLOW (min)= 5.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0390

ADD HYD ( 0017)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0004):	3.17	0.591	6.17	81.49
+ ID2= 2 ( 0007):	2.11	0.244	6.25	75.67
=====				
ID = 3 ( 0017):	5.28	0.826	6.17	79.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0001)			
ID= 1 DT= 5.0 min	Area (ha)=	1.60	Total Imp(%)= 36.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	1.02
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	103.28	40.00
Mannings n =	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67



1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16
3.000	3.24	6.083	92.45	9.167	4.97		
3.083	3.24	6.167	92.45	9.250	3.24		

Max.Eff.Inten.(mm/hr)=	92.45	34.55
over (min)	5.00	20.00
Storage Coeff. (min)=	2.69 (ii)	15.90 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.29	0.07

\*TOTALS\*

PEAK FLOW (cms)=	0.15	0.07	0.206 (iii)
TIME TO PEAK (hrs)=	6.17	6.33	6.17
RUNOFF VOLUME (mm)=	107.00	34.13	60.36
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.32	0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0 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 ( 0008) | Area (ha)= 0.16

|ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 59.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.09	0.07
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	32.66	40.00
Mannings n	=	0.013	0.350

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.00	3.167	3.24	6.250	23.54	9.33	3.24
0.167	0.00	3.250	4.32	6.333	23.54	9.42	3.24
0.250	3.24	3.333	4.32	6.417	23.54	9.50	3.24
0.333	3.24	3.417	4.32	6.500	23.54	9.58	3.24
0.417	3.24	3.500	4.32	6.583	23.54	9.67	3.24
0.500	3.24	3.583	4.32	6.667	23.54	9.75	2.59
0.583	3.24	3.667	4.32	6.750	10.37	9.83	2.59
0.667	3.24	3.750	4.32	6.833	10.37	9.92	2.59
0.750	1.51	3.833	4.32	6.917	10.37	10.00	2.59
0.833	1.51	3.917	4.32	7.000	10.37	10.08	2.59
0.917	1.51	4.000	4.32	7.083	10.37	10.17	2.59
1.000	1.51	4.083	4.32	7.167	10.37	10.25	3.67
1.083	1.51	4.167	4.32	7.250	6.91	10.33	3.67
1.167	1.51	4.250	5.83	7.333	6.91	10.42	3.67
1.250	2.81	4.333	5.83	7.417	6.91	10.50	3.67
1.333	2.81	4.417	5.83	7.500	6.91	10.58	3.67
1.417	2.81	4.500	5.83	7.583	6.91	10.67	3.67
1.500	2.81	4.583	5.83	7.667	6.91	10.75	2.38
1.583	2.81	4.667	5.83	7.750	6.05	10.83	2.38
1.667	2.81	4.750	7.34	7.833	6.05	10.92	2.38
1.750	2.81	4.833	7.34	7.917	6.05	11.00	2.38
1.833	2.81	4.917	7.34	8.000	6.05	11.08	2.38
1.917	2.81	5.000	7.34	8.083	6.05	11.17	2.38
2.000	2.81	5.083	7.34	8.167	6.05	11.25	2.16
2.083	2.81	5.167	7.34	8.250	4.75	11.33	2.16
2.167	2.81	5.250	11.66	8.333	4.75	11.42	2.16
2.250	3.67	5.333	11.66	8.417	4.75	11.50	2.16
2.333	3.67	5.417	11.66	8.500	4.75	11.58	2.16
2.417	3.67	5.500	11.66	8.583	4.75	11.67	2.16
2.500	3.67	5.583	11.66	8.667	4.75	11.75	2.16
2.583	3.67	5.667	11.66	8.750	4.97	11.83	2.16
2.667	3.67	5.750	92.45	8.833	4.97	11.92	2.16
2.750	3.24	5.833	92.45	8.917	4.97	12.00	2.16
2.833	3.24	5.917	92.45	9.000	4.97	12.08	2.16
2.917	3.24	6.000	92.45	9.083	4.97	12.17	2.16

3.000	3.24	6.083	92.45	9.167	4.97
3.083	3.24	6.167	92.45	9.250	3.24

Max.Eff.Inten.(mm/hr)=	92.45	34.55	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.35 (ii)	14.56 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.33	0.08	
			*TOTALS*
PEAK FLOW (cms)=	0.02	0.00	0.029 (iii)
TIME TO PEAK (hrs)=	6.00	6.25	6.17
RUNOFF VOLUME (mm)=	107.00	34.13	77.07
TOTAL RAINFALL (mm)=	108.00	108.00	108.00
RUNOFF COEFFICIENT =	0.99	0.32	0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 55.0    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 ( 0015) |
| 1 + 2 = 3      |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0001):  1.60  0.206  6.17  60.36
+ ID2= 2 ( 0017):  5.28  0.826  6.17  79.17
=====
ID = 3 ( 0015):  6.88  1.032  6.17  74.79

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 0015) |
| 3 + 2 = 1      |
-----
          AREA    QPEAK    TPEAK    R.V.
          (ha)    (cms)    (hrs)    (mm)
ID1= 3 ( 0015):  6.88  1.032  6.17  74.79
+ ID2= 2 ( 0008):  0.16  0.029  6.17  77.07
=====
ID = 1 ( 0015):  7.04  1.061  6.17  74.84

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| RESERVOIR( 0010) | OVERFLOW IS OFF

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| IN= 2---> OUT= 1 |  
 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1576	0.1290
0.1032	0.0960	0.3408	0.2230

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0015)	7.040	1.061	6.17	74.84
OUTFLOW: ID= 1 ( 0010)	7.040	0.340	6.75	74.81

PEAK FLOW REDUCTION [Qout/Qin](%)= 32.08  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.2228

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 FINISH  
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