



FULTON RURAL EMPLOYMENT LANDS MASTER DRAINAG AND STORMWATER MANAGEMENT REPORT

MAY 2026



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1 Introduction

1.1 Purpose

WSP Canada Inc. (WSP) has been retained by Township of West Lincoln to prepare a Master Drainage and Stormwater Management Plan (MDSWMP) for lands in the Hamlet of Fulton known as the Fulton Hamlet Rural Employment Study Area (the “Study Area”). The Study Area was added to the West Lincoln settlement area boundary through the Region of Niagara Official Plan (ROP) and Township Official Plan Amendment No. 62 (OPA 62).

The project will deliver an Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBLA) to establish land use designations, policies and zoning regulations for a designated Rural Employment Area on the subject lands.

This Master Drainage and Stormwater Management Plan (MDSWMP) was prepared to provide a high-level concept for drainage for the Study Area and develop a stormwater management strategy to address the development impacts on water balance, water quality, erosion and water quantity.

1.2 Site Location

The Study Area is bound on the south by Regional Road 20, and on the West by South Grimsby Road 19. To the north of the Study Area are wetlands and farmlands. Directly to the east of the Study Area is a row of residential dwellings that front onto South Grimsby Road 18. **Figure 1** presents the location of the Study Area.

The Study Area is located within Twenty Mile Creek Watershed and is within the jurisdiction of the Niagara Peninsula Conservation Authority (NPCA).

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Figure 1: Site Location and Study Area

1.3 Scope of Work

The scope of work of the SWM plan are as follows:

- Determine specific SWM requirements to ensure that the proposed development is in conformance with the City and Region's standards.
- Evaluate various SWM practices that meet the requirements of the City and the Region and recommend a preferred strategy.
- Prepare an SWM report documenting the strategy along with the technical information necessary for the sizing of the proposed SWM practices.
- Perform a hydrology study to establish a basis for design of facilities and recommendations for other measures,
- Apply physical constraints as well as those imposed by planning regulations, policies and guidelines in proposing a strategy for maintaining watershed protection,

2 Policy and Technical Direction

2.1 Background Documents

The following documents have been reviewed in preparing this Master Stormwater Drainage and Management Plan:

- Twenty Mile Creek Watershed Plan (NPCA, 2006).
 - Township of West Lincoln Official Plan, consolidated November 2019.
 - Township of West Lincoln Municipal Engineering Standards.
 - Stormwater Management Planning and Design Manual (MECP, March 2003).
 - Low Impact Development Stormwater Management Guidance Manual (MECP, January 2022).
 - Niagara Peninsula Conservation Authority Stormwater Management Guidelines (NPCA, March 2010).
 - The Soils of the Regional Municipality of Niagara, volume 1 and map 1 (OMAFRA, 1989).
-

2.2 Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) provides direction for the long-term protection, restoration and improvement of the diversity and connectivity of natural features, the ecological function and biodiversity of natural systems, and the quality and quantity of water at a watershed scale. Stormwater related items in the PPS include:

Policy 1.6.6.7 Planning for stormwater management shall:

- a) be integrated with planning for sewage and water services and ensure that systems are optimized, feasible and financially viable over the long term.
- b) minimize, or, where possible, prevent increases in contaminant loads.
- c) minimize changes in water balance and erosion.
- d) not increase risks to human health and safety and property damage.
- e) maximize the extent and function of vegetative and pervious surfaces; and
- f) promote stormwater management best practices, including stormwater attenuation and re-use, and low impact development.

Policy 2.2.1h Planning authorities shall protect, improve or restore the quality and quantity of water by ensuring stormwater management practices minimize stormwater volumes and contaminant loads and maintain or increase the extent of vegetative and pervious surfaces.

2.3 Stormwater Management Planning and Design Manual (MECP, 2003)

The Stormwater Management Planning and Design Manual (MECP, 2003) provides technical and procedural guidance for the planning, design, and review of stormwater management practices. The key components of the SWM Planning and Design Manual include overview of impacts of urbanization on the hydrologic cycle and stream ecosystems; general SWM design criteria; design guidance, examples, operation and maintenance requirements of SWM practices.

2.4 Low Impact Development Stormwater Management Guidance Manual (MECP, 2022)

The Low Impact Development (LID) Guidance Manual is developed to complement the 2003 Stormwater Management Design Manual. The LID Guidance Manual provides performance guidance for stormwater runoff volume control. The overall approach is to manage rain where it falls and where snow melts in order to maintain or restore the natural hydrologic cycle to the greatest extent possible through the use of source (lot level) and conveyance measures in combination with end-of-pipe controls using what is referred to as a “treatment train” approach.

2.5 Niagara Peninsula Conservation Authority Stormwater Management Guidelines (NPCA, 2010)

The NPCA Stormwater Management Guidelines provide policies and guidance on water quality and water quantity which apply to all SWM measures in areas regulated by the NPCA.

- In the absence of a sub-watershed plan and where suitable soils exist, the NPCA will require that best efforts be made to maintain the pre-development water balance by including measures discussed above at the lot-level, in the conveyance system, and at the end-of-pipe.
- The NPCA will typically require that a Normal level of stormwater quality control be implemented as the minimum acceptable standard regardless of the condition of the receiving watercourse.
- Other than the Twelve Mile Creek, the majority of the watercourses within the NPCA’s jurisdiction are warm-water systems, the elevated temperature by conventional SWM facilities do not pose a problem. As such, no special measures are required to cool the water discharging out of the stormwater management facilities into these warm-water systems.
- Typically, the NPCA will require that post-development runoff flows from a site are controlled to a level that matches or is below the pre-development flows for the 2, 5, 25, and 100-year design storm events, to mitigate the flood risk due to proposed development.

2.6 Niagara Region Stormwater Management Guidelines (2022)

Niagara Region provides guidelines to be applied to development within its jurisdiction:

- **Water Balance**

Proponents are required to maintain a water budget based on the use of either infiltration, evapotranspiration or reuse, in accordance with the specified level of control outlined within a Subwatershed Study (SWS), Master Drainage Plan (MDP), or Master Environmental Servicing Plan (MESP) that encompasses the proponent's site.

Where a SWS, MDP, or MESP does not exist, proponents are required to ensure that pre-development infiltration, or evapotranspiration volumes calculated on a site basis are maintained under post-development conditions.

At a minimum, Niagara Region requires that the proponent ensure that the first 5 mm of rainfall which lands on the site is retained, reused, evapotranspired, and/or infiltrated on site (i.e. zero runoff for the first 5 mm of rainfall).

- **Water Quality**

The Region's required water quality target for the entire Region is 80% average annual removal of Total Suspended Solids (TSS) removal, equivalent to the MECP "Enhanced" criteria.

- **Erosion Control**

Provide erosion control in accordance with the specified level of control outlined within a SWS, MDP, or MSP that encompasses the proponent's site.

Where a SWS, MDP, or MESP does not exist, and proponents are proposing a wet or dry SWM facility to service their development, proponents should provide extended detention control (detention of the runoff generated from the developed site for a 4-hour, 25 mm storm event over at least 24 hours, with a preference for 48 hours)

- **Quantity Control**

Where a site discharges to a watercourse system, control the post-development peak flow to pre-development levels for the 2 through 100-year return period events.

For sites with multiple outlets, all of the outlets are to be assessed for the need for quantity controls.

2.7 Township of West Lincoln Official Plan

As per Policy 2.2.18 (f) in OPA 62, the Study Area is now designated as 'Hamlet Settlement Area' in the Township of West Lincoln Official Plan.

2.8 Township of West Lincoln Engineering Standards (2022)

Section 5 of the Township of West Lincoln Engineering Standards (2022) provides design requirements for the storm sewer system and stormwater management facilities.

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- The minor system shall be designed to accommodate the 5-year storm when flowing full, while the major overland system is to be designed for the 100-year event.
- In most situations, stormwater retention/detention ponds shall be required for the control quantity and quality stormwater.

The Developer shall make provisions for the required area within the development for the design and installation of stormwater management facilities. The stormwater facilities must be designed to accommodate the maximum flow as per approved stormwater management standards. Design consideration must be given to both maintenance and accessibility requirements.

2.9 SWM Design Criteria

The following SWM design criteria are applicable to the Study Area:

2.9.1 Water Balance

The development is required to ensure that the pre-development infiltration be maintained under post-development conditions.

At a minimum, the first 5 mm of rainfall should be retained on-site for infiltration, evaporation, and reuse, etc.

2.9.2 Water Quality

The development is required to provide an Enhanced Level of Protection or 80% TSS removal on an annual loading basis as defined in the Stormwater Management Planning and Design Manual (MECP, 2003).

2.9.3 Erosion Control

Erosion control in terms of extended detention is not required, provided that the minimum 5 mm retention is achieved under water balance.

2.9.4 Water Quantity

The development is required to control the post-development peak flow rates to pre-development levels for the 2 through 100-year return period events for all storm outlets.

3 Hydrologic Modelling

3.1 Hydrologic Model

The Visual OTTHYMO (VO) hydrologic model has been used to simulate the pre-development and post-development flow rates from the Study Area, and to size the proposed SWM facilities.

3.2 Data Requirements

The data required for hydrologic modelling includes rainfall data, catchment parameters and/or reservoir data. The rainfall data, presented in the form of “Design Storms”, are developed using local rainfall intensity – duration – frequency (IDF) curves for selected duration and return periods.

The catchment parameters includes drainage area and imperviousness, length and slope, soil data and land use, etc. Sub-catchments are delineated in a process known as “Catchment Discretization” using GIS tool.

Reservoir data include the locations of all SWM facilities in the network and the stage – storage – discharge (SSD) relationship for each SWM facility.

3.3 Modelling Scenarios

Hydrologic modelling is carried out for three development conditions, 1) pre-development (2025) conditions, 2) post-development conditions (uncontrolled) , and 3) post-development conditions with stormwater management measures in place.

3.4 Precipitation Data

Township of West Lincoln Municipal Engineering Standards (2022) provides formulas to calculate the rainfall intensity to be used in the design of minor system (5-year) and major (100-year) system. However, the rainfall intensity – duration – frequency (IDF) curves are not available for storm events with other return periods (2-year, 10-year, 25-year and 50-year).

Niagara Peninsula Conservation Authority Stormwater Guidelines presents standard IDF coefficients (a, b, c) for three locations in the Niagara Region, i.e. St. Catherines, Welland, and Niagara Falls. The IDF coefficients for City of Welland, presented in **Table 3.1**, shall be used in the hydrologic modelling.

The rainfall intensity is calculated by the following formula.

$$I = \frac{a}{(T+b)^c}$$

Where, T = Rainfall durations in minutes.

I = Rainfall intensity in mm/hour.

a, b, c = Constant Coefficient for various return periods.

Table 3-1 Rainfall Data Used in Hydrologic Analysis

Return Periods (Years)	a	b	c	Rainfall Amount (mm)	
				4-hour	24-hour
2	755.0	8.0	0.789	39.0	58.1
5	830.0	7.3	0.777	45.9	69.7
10	860.0	6.5	0.763	51.5	80.1
25	900.0	5.2	0.745	59.7	95.6
50	960.0	5.1	0.736	67.0	108.8
100	1020.0	4.7	0.731	73.2	120.0

3.5 Design Storms

Various design storm events shall be used in the hydrologic modelling, including 2-year up to 100-year design storm with 4-hour Chicago distributions, and 2-year up to 100-year design storm with 24-hour SCS Type II distributions.

3.5.1 4-hour Chicago Storm

The Chicago storm has a shorter duration but a higher peak intensity. The Chicago storm is derived directly from local IDF curves and is a widely used synthetic rainfall event designed to simulate critical conditions for sizing urban drainage systems.

3.5.2 24-hour SCS Storm

The SCS developed four dimensionless rainfall distributions to account for different climate patterns, of which the type II distribution curve applies in the majority of the United States and Canada.

A SCS design storm is created by selecting the return period and duration, then applying the corresponding rainfall volume over the mass distribution curve to obtain the incremental rainfall volumes and intensities over the selected duration.

The 24-hour storm is the standard timeframe for the SCS design storm, which is long enough to capture the full runoff response of most small to medium catchments. The 24-hour SCS Type II design storm is appropriate for modelling rural catchments and size the stormwater detention facilities.

4 Pre-Development conditions

4.1 General

The Study Area consists primarily of agricultural files with commercial businesses and scattered low density (rural) residential units fronting onto Highway 20. The existing or pre-development conditions for the Study Area are presented in **Figure 2**.

4.2 Soil Information

The Soil of The Municipality of Niagara (OMAF, 1989) provides general soil characteristics for the Study Area. As per the soil map for the West Lincoln, the native soil is Haldimand (HIM) for the Study Area.

The Haldimand soil consists of a topsoil underlain with silty clay or clay. Haldimand soil is imperfectly drained and slowly permeable. In addition to high seasonal groundwater levels, there is usually some temporary perching of groundwater in the upper horizons of Haldimand soil every year. Haldimand soil has medium to high water-holding capacities but can be droughty during dry periods because of water retention by the clayey soil materials. Surface runoff is usually rapid, except where the surface is dry and occupied by numerous soil cracks.

4.3 Topography and Surface Drainage

4.3.1 Site Topography

Contours at 0.50 m intervals are generated for the Study Area and adjacent lands using the Digital Elevation Model (DEM). It is noted that there is a 4.0 m tall berm stretching in south – north direction along the western property line of 9127 Highway 20. This berm is manmade and was created when a significant amount of fill was brought to the property.

The remaining area is flat with elevations varies from approximately 200 m at the toe of the berm to 198.0 at the southwest (SW) drainage outlet, 199.0 m at northeast (NE) outlet, and 199.0 m at the south outlet. As shown in **Figure 2**, surface runoff drains toward three outlets as sheet flow or via small drainage swales or ditches.

Runoff from the southwest and south portion of the site shall be conveyed via roadside ditches towards culverts underneath Regional Road 20 (RR 20), and then south side of the RR 20, and ultimately to the Twenty Mile Creek.

Runoff from the northeast portion of the site discharges into Fulton Road Drain, which is a Class F agricultural drain characterized by intermittent flow. Refer to Twenty Mile Creek Watershed Plan (NPCA, 2006). Fulton Road Drain generally runs eastwards and ultimately joins the Twenty Mile Creek on the south side of RR 20.

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Legend

-  Study Area
-  Catchment Boundary
-  Catchment ID
Catchment Area (ha)
-  Drainage Direction
-  Provincially Significant Wetland (PSW)
-  30m Vegetation Protection Zone from PSW
-  120m Adjacent Lands from PSW (EIS may apply)
-  Wetland (Non-Provincially Significant)
-  Watercourse Identified by NPCA (Approximate Location)
-  15m buffer from watercourse identified by NPCA
-  30m buffer from watercourse identified by NPCA

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FIGURE 2: PRE-DEVELOPMENT DRAINAGE PLAN



4.3.2 Drainage Delineation

As shown on **Figure 2**, the Study Area is delineated into ten (10) sub-catchments under pre-development conditions based on available topographic information from the DEM.

4.3.3 Catchment Parameters

For catchments 101, 102, 201, and 305 with existing residential units and commercial business properties, the impervious area is estimated based on google image. The catchments with imperviousness greater than or equal to 20%, such as catchment 102 and 305, shall be modelled using STANDHYD in the VO model and catchments with imperviousness less than 20% shall be modelled using the NASHYD command.

The site is generally underlain by clayey silt, with a hydraulic soil group (HSG) C. A SCS curve number (CN) of 84 is assigned to the site pervious area. A lumped CN value is calculated for the catchment with an imperviousness less than 20% with a value of 92 assigned to the impervious area.

An initial abstraction (IA) of 5.0 mm is assigned to the pervious area within catchment 102 and 305, while IA of 7.5 mm is assigned to pervious area within other catchments.

Time of concentrations (Tc) are calculated using the Upland Method, then converted to time to peak (Tp) using Equation $T_p = 2/3 * T_c$. With the Upland Method, the average overland flow velocity is determined for a catchment based on the catchment slope and ground type. Once the velocity has been determined, then the time of concentration is determined by dividing the catchment length by the overland flow velocity.

Table 4-1 presents pre-development condition catchment parameters used in the Visual OTTHYMO model.

4.3.4 Predevelopment Peak Flow Rates

VO model is simulated for the 2-year up to the 100 year 4-hour Chicago storm and 24-hour SCS storm to estimate the pre-development peak flow rates from the study area. The results from the hydrologic model are summarized in **Table 4.2**. The VO model output is included in **Appendix B1**.

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Table 4-1 Pre-Development Condition Catchment Parameters

Drainage Outlet and Catchment ID		Area (ha)	IMP (%)	SCS CN	IA (mm)	Tp (hrs)	Command
Southwest (SW) Outlet	101	3.43	15.1	85.2	7.5	0.19	NASHYD
	102	1.78	27.5	84.0	7.5	---	STANDHYD
	Sub-total	5.21	19.3				
South (S) Outlet	201	5.41	15.0	85.2	7.5	0.35	NASHYD
	202	2.79	1.3	84.1	7.5	0.15	NASHYD
	203	3.26	1.5	84.1	7.5	0.31	NASHYD
	Sub-total	11.45	7.9				
Northeast (NE) Outlet	301	4.20	0.0	84.0	7.5	0.33	NASHYD
	302	3.84	0.0	84.0	7.5	0.57	NASHYD
	303	8.53	0.0	84.0	7.5	0.66	NASHYD
	304	2.79	0.0	84.0	7.5	0.47	NASHYD
	305	2.15	25.0	84.0	5.0	---	STANDHYD
	Sub-total	21.52	2.5				
Total		38.18	6.4				

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Table 4-2 Pre-Development Peak Flow Rates

Return Periods (years)	Pre-Development Peak Flow Rates (m ³ /s)		
	Southwest (SW)	South (S)	Northeast (NE)
4-hour Chicago Storm			
2	0.20	0.30	0.40
5	0.28	0.42	0.54
10	0.35	0.51	0.67
25	0.45	0.68	0.87
50	0.54	0.82	1.05
100	0.63	0.96	1.22
24-hour SCS Storm			
2	0.39	0.58	0.69
5	0.52	0.79	0.94
10	0.64	0.98	1.18
25	0.83	1.29	1.54
50	1.03	1.55	1.83
100	1.18	1.78	2.09

4.4 Natural Heritage

Natural Heritage features have been identified for the Study Area and documented in the document “Fulton Lands Constraints Report (WSP, December 2025)”.

4.4.1 Provincially Significant Wetlands (PSW)

Significant wetlands are mapped and identified by the Ministry of Natural Resources (MNR) using the Ontario Wetland Evaluation System (OWES). the northeast portion of the Study Area contains a Provincially Significant Wetland (PSW). This provincial designation is also reflected in the Region’s natural heritage mapping, and in the Town’s Official Plan which designates these lands as “Environmental Protection Area”.

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Provincial Planning Statement (PPS, 2023) provides policy direction on matters of provincial interest related to land use planning and development in Ontario including growth management, protection of natural heritage features and areas, areas of employment, and land use compatibility.

The PPS prohibits any development and site alteration in significant wetlands.

4.4.2 Regulated Watercourse

A regulated watercourse has been identified in the Study Area which has the potential to influence future development scenarios. This feature needs to be confirmed through field investigations undertaken by NPCA, or by an independent environmental consultant whose conclusions must be reviewed and approved by NPCA.

4.5 Constraints and Opportunities

Both the Provincially Significant Wetland (PSW) and the regulated watercourse would provide constraints to the development within the Study Area. As per Fulton Lands Constraints Report (WSP, December 2025), the Provincially Significant Wetland (PSW) and 30 m vegetation protection zone (VPZ), watercourse identified by NPCA and associated 30 m buffer shall be preserved.

A 3.61 ha existing residential properties – Catchment 1102 and 1103 on Figure 3, shall be maintained as well, leaving total 26.62 ha lands available for development.

5 Post-Development Conditions

5.1 Planned Development

The Study Area is added to Hamlet Settle Area and is designated as Rural Employment lands. **Figure 3.** presents the post-development conditions of the Study Area. Note that:

- The Provincially Significant Wetland (PSW) and 30 m vegetation protection zone (VPZ) shall be preserved.
- The watercourse identified by NPCA and associated 30 m buffer shall be preserved.
- The existing residential properties shall be maintained.
- It is assumed that the berm / hill be removed to facilitate the site development.
- An internal road (20.0 m ROW) layout is developed with access from Regional Road 20 to the south and existing access road to the west.
- The remaining lands are severed into seven (7) development blocks.

The internal road layout and development plan are conceptual and subject to change.

5.2 Potential Impacts

The largest influencing factor pertaining to commercial / industrial development is the increase in impervious area given that these land use types typically include large parking lot areas and building footprints as well as internal roads. Surface water run-off from these surfaces tends to be high, which results in less water available for evapotranspiration and no water available for infiltration if all water captured on impervious surfaces is directed off-site.

Stormwater Management Practices (SWMPs) are to be proposed to address the development impacts on water balance, water quality, erosion and water quantity.

5.3 Drainage Catchment Delineation

The subject site and external area are delineated into twelve (12) sub-catchments under proposed development conditions. Generally, the drainage areas to all three outlets are to be maintained as much as possible.

- Catchments 1102 and 1203 represent existing residential lots to be maintained.
- Catchment 1101, 1201 and 1202, 1301 ~ 1304 represent the development blocks
- Catchment 1305 represent the watercourse and associated buffer.
- Catchment 304 represents the Provincially Significant Wetland (PSW) and associated buffer.
- Catchment 305 represents the external area to the east.

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Legend

- Study Area
- Catchment Boundary
- Catchment ID
Catchment Area (ha)
- Drainage Direction
- 20m ROW
- Provincially Significant Wetland (PSW)
- 30m Vegetation Protection Zone from PSW
- 120m Adjacent Lands from PSW (EIS may apply)
- Wetland (Non-Provincially Significant)
- Watercourse Identified by NPCA (Approximate Location)
- 15m buffer from watercourse identified by NPCA
- 30m buffer from watercourse identified by NPCA

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FIGURE 3: POST-DEVELOPMENT DRAINAGE PLAN



5.4 Catchment Parameters

Table 5-1 presents the typical imperviousness / runoff coefficient for various land uses. A lumped imperviousness is calculated for catchment with mixed land uses. Note that:

- Imperviousness for existing residential units (catchment are estimated based on the Google image.t
- The watercourse (catchment 1305) and PSW (catchment 304) has an imperviousness of 0.0% or a runoff coefficient of 0.20, which is consistent with the Municipal Engineering Standards (2019).
- An imperviousness of 90.0% is assigned to development blocks. The corresponding runoff coefficient (0.83) is compatible to the values in Town standard - 0.75 for industrial site and 0.90 for commercial site.
- Township of West Lincoln does not have standard road drawings. The imperviousness for ROW with 20.0 m allowance is estimated as 55%, based on the City of Hamilton standard road drawing.

Table 5-1 Typical Imperviousness / Runoff Coefficient

Land Use	Impervious -ness (%)	Runoff Coefficient	Notes
Existing Residential	24.5 ~ 28.1%	0.37 ~ 0.40	The imperviousness is estimated based on Google Image.
Watercourse and PSW	0.0%	0.20	Consistent with Town Standard – a runoff coefficient of 0.20 for parks / open space.
Development Blocks	90.0%	0.83	A runoff coefficient of 0.83 is compatible to the values in Town Standard – 0.75 for industrial site and 0.90 for commercial site.
Right-of-Way (ROW)	55.0%	0.59	Imperviousness estimated per City of Hamilton standard road drawing for 20.0 m ROW.

The catchments with imperviousness greater than or equal to 20% shall be modelled using STANDHYD in the VO model and catchments with imperviousness less than 20% shall be modelled using the NASHYD command.

A lumped CN value is calculated for the catchment with an imperviousness less than 20%. SCS curve number (CN) of 84 and 92 are assigned to the site pervious area and impervious area.

An initial abstraction (IA) of 7.5 mm is assigned to the pervious area within catchment 1305 and 304, while IA of 5.0 mm is assigned to pervious area within other catchments.

Time of concentration (T_c) is calculated using the Upland Method for all catchments with imperviousness less than 20%. Time to Peak (T_P) used in the VO model is calculated using the equation $T_P = 2/3 * T_C$.

Table 5.2 presents the catchment parameters under proposed development conditions. Detailed calculations are included in **Appendix A**.

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Table 5-2 Post-Development Condition Catchment Parameters

Drainage Outlet and Catchment ID		Area (ha)	IMP (%)	SCS CN	IA (mm)	Tp (hrs)	Command
Southwest (SW) Outlet	1101	3.22	90.0	84	5.0	---	STANDHYD
	1102	2.07	24.5	84	5.0	---	STANDHYD
	Sub-total	5.29	64.3				
South (S) Outlet	1201	5.38	87.0	84	5.0	---	STANDHYD
	1202	4.07	81.2	84	5.0	---	STANDHYD
	1203	1.54	28.1	84	5.0	---	STANDHYD
	Sub-total	11.00	76.6				
Northeast (NE) Outlet	1301	3.68	85.3	84	5.0	---	STANDHYD
	1302	2.86	86.1	84	5.0	---	STANDHYD
	1303	3.47	86.3	84	5.0	---	STANDHYD
	1304	3.93	90.0	84	5.0	---	STANDHYD
	1305	3.00	0.0	84	7.5	0.75	NASHYD
	304	2.79	0.0	84	7.5	0.47	NASHYD
	305	2.15	25.0	84	5.0	---	STANDHYD
	Sub-total	21.89	57.9				
Total		38.18	64.2				

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Table 5-3 presents a comparison of pre- and post- drainage to three storm outlets. As shown, drainage to existing outlets are maintained as much as possible.

Table 5-3 Pre- and Post-Development Drainage Areas to Storm Outlets

Storm Outlets	Pre-Development Drainage Area (ha)	Post-Development Drainage Area (ha)	Change	
			(ha)	(%)
Southwest (SW)	5.21	5.29	+0.08	+1.54
South (S)	11.45	11.00	-0.45	-3.90
Northeast (NE)	21.52	21.89	+0.37	+1.72
Total	38.18	38.18	0.00	0.00

5.5 Uncontrolled Post-Development Peak Flow Rates

The Visual OTTHYMO (VO) model was setup for the post-development condition without SWM facilities. The resulting post-development peak flow rates at three drainage outlets are presented in **Table 5.4**, **Table 5.5**, and **Table 5.6**, respectively. Refer to **Appendix B2** for VO model output.

As shown, the proposed development shall result in a significant increase in the peak flow rates at all three drainage outlets. Therefore, quantity control is required to ensure that there is no increase in the peak flow rates from the Study Area.

Table 5-4 Pre- and Post-Development (Uncontrolled) Peak Flow Rates to SW Outlet

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)		Uncontrolled Post-Development Peak Flow Rates (m ³ /s)	
	4-hour Chicago	24-hour SCS	4-hour Chicago	24-hour SCS
2	0.196	0.390	0.727	0.714
5	0.281	0.524	0.879	0.885
10	0.346	0.644	0.998	1.036
25	0.453	0.835	1.193	1.271
50	0.544	1.035	1.331	1.515
100	0.632	1.181	1.480	1.694

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Table 5-5 Pre- and Post-Development (Uncontrolled) Peak Flow Rates to South Outlet

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)		Uncontrolled Post-Development Peak Flow Rates (m ³ /s)	
	4-hour Chicago	24-hour SCS	4-hour Chicago	24-hour SCS
2	0.298	0.577	1.760	1.652
5	0.415	0.791	2.112	2.028
10	0.514	0.984	2.393	2.359
25	0.676	1.289	2.851	2.870
50	0.820	1.553	3.171	3.336
100	0.958	1.779	3.519	3.712

Table 5-6 Pre- and Post-Development (Uncontrolled) Peak Flow Rates to NE Outlet

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)		Uncontrolled Post-Development Peak Flow Rates (m ³ /s)	
	4-hour Chicago	24-hour SCS	4-hour Chicago	24-hour SCS
2	0.397	0.690	2.679	2.550
5	0.544	0.944	3.211	3.139
10	0.670	1.177	3.636	3.659
25	0.868	1.545	4.327	4.462
50	1.049	1.825	4.812	5.192
100	1.217	2.092	5.338	5.783

6 Stormwater Management Plan

6.1 Stormwater Management Approach

As indicated in Stormwater Management Planning and Design Manual (MECP, 2003), a hierarchical approach or treatment train approach shall be implemented, to address SWM requirements, with preference for source control at the lot level, followed by conveyance system control, with less reliance on end-of-pipe control.

Low Impact Development Stormwater Management Guidance Manual (MECP, January 2022) indicates that LID BMPs used together with conventional stormwater measures as part of an overall holistic treatment train approach have been shown to better meet SWM targets and objectives, provide better performance, are more cost effective, have lower maintenance burdens, and are more protective during extreme storms than conventional stormwater practices alone.

6.2 Stormwater Management Alternatives

A comprehensive list of current available SWMPs associated with each of these levels are presented in Table 4.1 of Stormwater Management Planning and Design Manual (MECP, 2003).

The long list of SWMPs shall be evaluated through various screening factors with respect to physical constraints, municipal standards and maintenance concerns, concerns for groundwater contamination and site planning requirements.

The evaluation of alternative SWMPs shall be carried out using the relevant guidelines in the Stormwater Management Planning and Design Manual (MECP, 2003), the Low Impact Development Stormwater Management Planning and Design Guide (CVC and TRCA, 2010), and Low Impact Development Stormwater Management Guidance Manual (MECP, January 2022).

6.2.1 Lot Level and Conveyance Controls

Lot level and conveyance controls include those that are applied at the individual lot level, those which form part of the conveyance system, and controls which typically serve multiple lots but are only suitable for small drainage areas (< 2 ha). They can be divided into two categories according to their primary function: storage controls and infiltration controls.

Storage controls include:

- Rooftop storage – restricting the discharge rate from roof drains to provide rooftop detention of stormwater.
- Parking lot storage – implementing catchbasin restrictors or orifices in the storm sewer to detain stormwater on parking lots.
- Superpipe storage – oversizing storm sewers and implementing orifices in the sewer to create pipe storage.

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- Rear yard storage – implementing catchbasin restrictors in rear yard catchbasins to create rear yard storage.

All of these measures were designed to detain stormwater to reduce peak runoff rates. In some cases, there may be increased opportunity for evapotranspiration. However, detention times are typically short, and these measures are not intended to reduce the volume of stormwater runoff. Further, they do not address water balance, erosion, or water quality issues. In addition, there are devices such as oil/grit separators which are suitable as lot level controls, but which are also potentially suitable as end-of-pipe controls for small drainage areas with physical constraints.

Infiltration-based controls include:

- Reduced grading to allow greater ponding of stormwater and natural infiltration.
- Directing roof leaders to rear yard ponding areas, soakaway pits, or to cisterns or rain barrels.
- Sump pumping foundation drains to rear yard ponding areas.
- Infiltration trenches.
- Grassed swales.
- Pervious pipe systems.
- Vegetated filter strips.
- Stream and valley corridor buffer strips.

The primary function of infiltration controls is to mitigate the impacts that urbanization normally has on the water balance (i.e., increased surface runoff, reduced soil moisture replenishment and groundwater recharge). Infiltration is also effective for reducing runoff temperature increases and removing sediment, heavy metals, and nutrients from runoff.

Concentrated infiltration of stormwater collected from larger areas (e.g., infiltration basins, an end-of-pipe infiltration type control) will not match the characteristics of distributed infiltration which occurred under pre-development conditions. The natural hydrologic cycle can be maintained to the greatest extent possible by lot level infiltration controls.

Infiltration control measures dependent on the soil type and groundwater table on the site and are feasible in areas where the minimum infiltration rate is equal to or greater than 15 mm/hr and the seasonal high groundwater table is at least 1.0 m below the bottom of the infiltration facilities.

6.2.2 End-of-Pipe Controls

End-of-pipe stormwater management facilities receive stormwater from a conveyance system (ditches, sewers) and discharge the treated water to the receiving waters. The purpose of end-of-pipe SWMPs is to control the impacts of urbanization which remain after lot level and conveyance controls have been applied. In most cases, new urban developments (unless they are small or of very low density) will require some sort of end-of-pipe SWMP. Some SWMPs that have been applied as end-of-pipe SWM facilities include wet ponds, wetlands, dry ponds, and infiltration basins. Other SWMPs applied in some cases as end-of-pipe facilities for smaller areas include filters and oil/grit separator (OGS) units.

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To date the township does not endorse SWM wet ponds, wetlands, and dry ponds on the employment lands.

6.3 Proposed Stormwater Management Plan

The objective of the SWM plan is to provide satisfactory storm drainage from the site and external areas, and to ensure the long-term sustainability of the receiving waterbodies.

6.3.1 Water Balance

The proposed development would increase the site imperviousness by converting pervious surface to impervious surface, resulting in less infiltration, less evaporation, and much more runoff from the site. NPCA requires that best efforts be made to maintain the pre-development water balance.

To limit potential impacts on water balance, mitigation measures must be implemented, which include but not limited to underground infiltration trenches / chamber systems, bio-retention areas / infiltration basins. Key considerations include:

- Minimum 1.0 m separation from the bottom of the infiltration facilities to the seasonal high groundwater table and/or the bedrock.
- The infiltration facilities should have a minimum 4.0 m setback from the building foundations.
- Typical ratio of impervious drainage area to the infiltration facilities is 5:1 to 20:1.
- Pre-treatment is required if runoff from the parking lot instead of the rooftop of the building, is directed to the infiltration facilities.
- The infiltration facilities should be configured with a maximum drawdown time of 48 hours.

Existing site conditions may propose limitations and feasibility of infiltration facilities should be evaluated at the Site Plan Application (SPA) stage.

6.3.2 Water Quality

The development is required to provide an Enhanced Level of Protection or 80% TSS removal on an annual loading basis. Water Quality shall be addressed through treatment train approach with combination of OGS units and LID infiltration measures.

6.3.3 Erosion Control Storage

Erosion control in terms of extended detention is not required, provided that the minimum 5 mm retention is achieved under water balance.

6.3.4 Quantity Control

Water quantity shall be addressed through on-site storage volume within catchment 1101, 1201, 1202, 1301 ~ 1304, including rooftop storage, surface storage and underground storage at the parking lots.

The required quantity control storage volume are estimated using VO model and summarized in **Table 6.1**. Refer to **Section 4.4, 4.5, and 4.6 of Appendix A** for detailed calculations and **Appendix B3** for VO model output.

Table 6-1 Post-Development Condition Catchment Parameters

Drainage Outlet and Catchment ID		Area (ha)	IMP (%)	Required Volume (m ³)	Unitary Volume (m ³ / imp. ha)
Southwest (SW) Outlet	1101	3.22	90.0	1,400	483
South (S) Outlet	1201	5.38	87.0	2,500	534
	1202	4.07	81.2	1,820	550
Northeast (NE) Outlet	1301	3.68	85.3	1,860	592
	1302	2.86	86.1	1,450	589
	1303	3.47	86.3	1,760	588
	1304	3.93	90.0	2,040	577

6.4 Post-Development Peak Flow Rates

The post-development peak flow rates, with quantity control storage in place, are summarized and compared to the pre-development peak flow rates at three storm outlets.

6.4.1 Southwest (SW) Outlet

Under proposed development conditions, runoff from catchment 1101 and 1102 shall drain to the southwest (SW) outlet. On-site quantity control shall be provided within catchment 1101 to ensure the total flow to SW outlet be controlled to pre-development levels for 2-year up to 100-year storm events. **Table 6.2** presents a comparison of pre- and post-development peak flow rates at SW Outlet.

Table 6-2 Pre- and Post-development Peak Flow Rates at SW Outlet

Return Periods (years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
4-hour Chicago Storm		
2	0.20	0.16
5	0.28	0.21
10	0.35	0.27
25	0.45	0.39
50	0.54	0.49
100	0.63	0.58
24-hour SCS Storm		
2	0.39	0.25
5	0.52	0.36
10	0.64	0.48
25	0.83	0.68
50	1.03	0.91
100	1.18	1.08

6.4.2 South (S) Outlet

Under proposed development conditions, runoff from catchment 1201, 1202 and 1203 shall drain to the south (S) outlet. On-site quantity control shall be provided within catchment 1201 and 1202 to ensure the total flow to south outlet be controlled to pre-development levels for 2-year up to 100-year storm events. **Table 6.3** presents a comparison of pre- and post-development peak flow rates at south outlet.

Table 6-3 Pre- and Post-development Peak Flow Rates at South Outlet

Return Periods (years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
4-hour Chicago Storm		
2	0.30	0.23
5	0.42	0.32
10	0.51	0.41
25	0.68	0.56
50	0.82	0.70
100	0.96	0.83
24-hour SCS Storm		
2	0.58	0.32
5	0.79	0.50
10	0.98	0.68
25	1.29	1.01
50	1.55	1.34
100	1.78	1.61

6.4.3 Northeast (NE) Outlet

Under proposed development conditions, runoff from catchment 1301 ~ 1305, 304 and 305 shall drain to the northeast (NE) outlet. On-site quantity control shall be provided within catchment 1301 ~ 1304 to ensure the total flow to NE outlet be controlled to pre-development levels for 2-year up to 100-year storm events. **Table 6.4** presents a comparison of pre- and post-development peak flow rates at NE outlet.

Table 6-4 Pre- and Post-development Peak Flow Rates at NE Outlet

Return Periods (years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
4-hour Chicago Storm		
2	0.40	0.39
5	0.54	0.54
10	0.67	0.66
25	0.87	0.86
50	1.05	1.04
100	1.22	1.21
24-hour SCS Storm		
2	0.69	0.57
5	0.94	0.82
10	1.18	1.06
25	1.54	1.43
50	1.83	1.72
100	2.09	1.99

7 Conclusions

A Master Drainage and Stormwater Management Plan has been prepared for the Fulton Rural Employment land.

- Policy and technical directions have been reviewed to identify the stormwater drainage and management design criteria.
- Existing characteristic of the Study Area has been examined, drainage catchments are delineated, and hydrologic modelling is carried out for the pre-development conditions to establish the target flow rates.
- Proposed drainage concepts are developed, and hydrologic modelling is carried out for the post-development conditions.
- Stormwater management approach and alternative SWM practices are evaluated, and preferred SWM strategies with on-site LID measures and quantity control facilities are proposed.
- Development impacts on water balance, water quality and water quantity have been addressed and thus there are no adverse impacts to the downstream properties and receiving drains and watercourses.

To sum up, the Master Drainage and Stormwater Management Plan is consistent with relevant guidelines. Approvals from the Township, the Region, and NPCA are required for developments within the Fulton Rural Employment land.

Respectfully Submitted



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Water Resources / Land Development

WSP Canada Inc.

A STORMWATER MANAGEMENT CALCULATIONS



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Subject

Background Information & SWM Design Criteria

1. Design Criteria and SWM Strategies

1.1 Jurisdictions

- 1). The Township - Township of West Lincoln
- 2). The Region - Niagara Region
- 3). MECP - (Ontario) Ministry of Environment, Conservation and Parks
- 4). NPCA - Niagara Peninsula Conservation Authority

1.2 Background Information

- 1). Stormwater Management Planning and Design Manual (MECP, March 2003)
- 2). Low Impact Development Stormwater Management Planning and Design Guide (CVC & TRCA, 2010).
- 3). Low Impact Development Stormwater Management Guidance Manual (MECP, January 2022).
- 4). Niagara Region Stormwater Management Guidelines (December 2022)
- 5). Township of West Lincoln Engineering Standards (2022).
- 6). Niagara Peninsula Conservation Authority Stormwater Management Guidelines (March 2010)
- 7). The Soil of The Regional Municipality of Niagara (MAFA, 1989)

1.3 SWM Design Criteria

Various design guidelines, manuals, and studies are reviewed to determine the SWM design criteria, including but not limited to: Township of West Lincoln Engineering Standards (2022), Niagara Region Stormwater Management Guidelines (2022), Niagara Peninsula Conservation Authority Stormwater Management Guidelines (2010) MECP's Stormwater Management Planning and Design Manual (2003), and Low Impact Development Stormwater Management Guidance Manual (MECP, 2022).

1.3.1 Water Balance

The site is required to provide water balance to match pre-development groundwater recharge rates
At a minimum, the first 5 mm of rainfall should be retained on-site for infiltration, evaporation, and reuse, etc.

1.3.2 Water Quality

Enhanced Level Protection or 80% TSS removal is required, as per SWM Planning and Design Manual (MECP, 2003).

1.3.3 Erosion Control

Erosion control in terms of extended detention is not required, provided that the minimum 5 mm retention is achieved under water balance.

1.3.4 Quantity Control

The subject development is required to control the post-development peak flow rates from the 2-year through 100-year storm events to the pre-development levels



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Subject	Hydrologic Model and Design Rainfall Event
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2. Hydrologic Analysis

2.1. Hydrologic Model

Visual OTTHYMO (VO) model shall be used to simulate the pre- and post-development peak flows from the contributing areas and to support the design of the proposed SWM facilities.

2.2. IDF Curves

Source: Niagara Region Stormwater Management Guidelines (December 2022)
Niagara Peninsula Conservation Authority Stormwater Management Guidelines (March 2010)

Equation:

$$I = \frac{a}{(T + b)^c}$$

Where,

I = Rainfall Intensity (cm/hr)
 T = Rainfall Duration (minutes), minimum 10 mins
 a, b, c = Constant Parameters for Given Return Period.

Return Period (Years)	Rainfall Parameters			10 Minutes Rainfall Intensity (mm/hr)	Rainfall Amount (mm)	
	a	b	c		4-hour	24-hour
2-yr	755.0	8.0	0.789	77.2	39.0	58.1
5-yr	830.0	7.3	0.777	90.6	45.9	69.7
10-yr	860.0	6.5	0.763	101.3	51.5	80.1
25-yr	900.0	5.2	0.745	118.5	59.7	95.6
50-yr	960.0	5.1	0.736	130.2	67.0	108.8
100-yr	1020.0	4.7	0.731	143.0	73.2	120.0

2.3. Design Rainfall Event

2.3.1 25 mm Rainfall with 4 hour Chicago Distribution

The 25 mm rainfall event with 4-hour Chicago distribution shall be modelled to determine the required extended detention volume and to size the low flow control device to achieve a preferred detention time.

2.3.2 2-year up to 100-year Storm with 4 hour Chicago Distribution

The Chicago storm has a shorter duration but a higher peak intensity. The Chicago storm is widely used synthetic rainfall event designed to simulate critical conditions for sizing urban drainage systems.

2.3.3 2-year up to 100-year Storm with 24 hour SCS Type II Distribution

The 24-hour SCS Type II design storm is appropriate for modelling rural catchments and size the stormwater detention facilities.



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Subject

Hydrologic Model and Design Rainfall Event

The 24-hour SCS Type II Distribution storms are developed using MTO Hydrotechnical Design Chart 1.05.

Design Chart 1.05: SCS Type II Distribution

6 hour			12 hour			24 hour		
Time end' g, hour	F _{inc} (%)	F _{cum} (%)	Time end' g, hour	F _{inc} (%)	F _{cum} (%)	Time end' g, hour	F _{inc} (%)	F _{cum} (%)
0	0	0	0	0	0	0	0	0
0.5	2	2	2	5	5	2	2.2	2.2
1	3	5	3	3	8	4	2.6	4.8
1.5	3	8	3.5	2	10	6	3.2	8.0
2	5	13	4	2	12	7	-	-
2.5	6	19	4.5	3	15	8	4.0	12.0
2.75	15	34	5	4	19	8.5	-	-
3	39	73	5.5	6	25	9	2.7	14.7
3.5	11	84	5.75	12	37	9.5	1.6	16.3
4	5	89	6	33	70	9.75	-	-
4.5	4	93	6.5	9	79	10	1.8	18.1
5	3	96	7	4	83	10.5	2.3	20.4
6	4	100	7.5	3	86	11	3.1	23.5
			8	3	89	11.5	4.8	28.3
			10	7	96	11.75	10.4	38.7
			12	4	100	12	27.6	66.3
						12.5	7.2	73.5
						13	3.7	77.2
						13.5	0.7	77.9
						14	4.1	82.0
						16	6.0	88.0
						20	7.2	95.2
						24	4.8	100



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Subject

Pre-Development Conditions & Allowable Flow Rates

3. Pre-Development Conditions

The Study Area consists primarily of agricultural files with commercial businesses and scattered low density (rural) residential units fronting onto Highway 20.

The subject site has a total area of 36.0 ha.

3.1. Pre-Development Drainage Plan

The subject site and external drainage areas are delineated into eight (8) sub-catchments.

The catchment parameters are summarized as below.

Drainage	Catchment ID	Area (ha)	TIMP (%)	SCS CN	IA (mm)	Tp (hrs)	No. of IUH *	Commend
Southwest (SW)	101	3.43	15.1	85.2	7.5	0.19	3	NASHYD
	102	1.78	27.5	84.0	5.0	---	---	STANDHYD
	Sub-Total	5.21	19.3					
South (S)	201	5.41	15.0	85.2	7.5	0.35	3	NASHYD
	202	2.79	1.3	84.1	7.5	0.15	3	NASHYD
	203	3.26	1.5	84.1	7.5	0.31	3	NASHYD
	Sub-Total	11.45	7.9					
Northeast (NE)	301	4.20	0.0	84.0	7.5	0.33	3	NASHYD
	302	3.84	0.0	84.0	7.5	0.57	3	NASHYD
	303	8.53	0.0	84.0	7.5	0.66	3	NASHYD
	304	2.79	0.0	84.0	7.5	0.47	3	NASHYD
	305	2.15	25.0	84.0	5.0	---	---	STANDHYD
	Sub-Total	21.52	2.5					
Total		38.18	6.4					

3.1.1 Imperviousness

For catchment 101, 102, 201, and 305, the impervious area is estimated based on google image.

Other catchments have an imperviousness of 0.0%.

3.1.2 Initial Abstraction (IA) and Depression Storage (DPSI).

Initial abstraction (IA) is 7.5 mm for agricultural lands and wooded area and 5.0 mm for urban lawn.

The depression storage for impervious surfaces (DPSI) is 1.0 mm.



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Pre-Development Conditions & Allowable Flow Rates

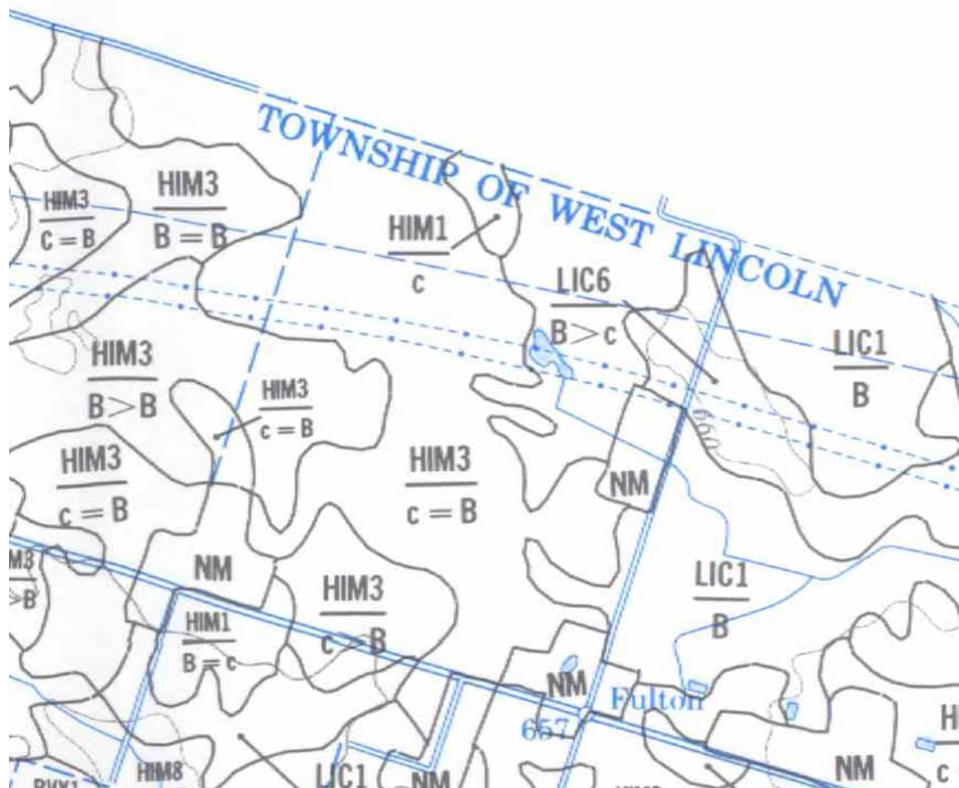
3.1.2 Soil and SCS CN

The site is generally underlain by clay, with HSG = C.

SCS CN = 84 for pervious area.

3.1.2.1 Soil

As per soil map, the site soil is HIM3 _ Haldimand Clay with Imperfect Drainage



HIM - Haldimand						
HIM 1	HIM	None	Mainly lacustrine heavy clay		Imperfect	
HIM 3	HIM	LIC	See HIM 1	See LIC 1	Imperfect	Poor
HIM 5	HIM	SHV	See HIM 1	See SHV 1	Imperfect	Moderately well
HIM 8	HIM	1-ALU	See HIM 1	See ALU 1	Imperfect	Variable
HIM 10	HIM.L	None	15-40 cm loamy textures over lacustrine heavy clay		Imperfect	
HIM 20	HIM.L	LIC	See HIM 10	See LIC 1	Imperfect	Poor
LIC - Lincoln						
LIC 1	LIC	None	Mainly lacustrine heavy clay		Poor	
LIC 5	LIC	SHV	See LIC 1	See SHV 1	Poor	Moderately well
LIC 6	LIC	HIM	See LIC 1	See HIM 1	Poor	Imperfect
LIC 13	LIC	HIM.L	See LIC 1	See HIM 10	Poor	Imperfect



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Subject Pre-Development Conditions & Allowable Flow Rates

3.1.2.2 HSG

Design Chart 1.08: Hydrologic Soil Groups

- Based on Surficial Geology Maps

Map Ref.No.	Soil Type or Texture	Hydrologic Soil Group (Tentative)
	<u>Ground Moraine</u>	
1a	Usually sandy till, stony, varying depth. (Most widespread type in Shield).	Usually B (shallow); may be A or AB
1b	Clayey till, varying depth.	BC-C
	<u>End or Interlobate Moraine</u>	
2a	Sand & stones, deep. (May be rough topography).	A
2b	Sand & stones capped by till, deep.	A-C depending on type of till.
2c	Sand & stones, deep. (Smoother topography).	A
	<u>Kames & Eskers</u>	
3a	Sand & stones, deep. (May be rough topography).	A
3b	Sand & stones capped by till, deep.	A-C depending on type of till.
3c	Sand & stones, deep. (Smoother topography).	A
	<u>Lacustrine</u>	
4a	Clay & silt, in lowlands.	BC-C
4b	Fine sand, in lowlands.	AB-B
4c	Sand, in lowlands.	AB
4d	Sand (deltas & valley trains).	A-AB
	<u>Outwash</u>	
5	Sand, some gravel, deep.	A
	<u>Aeolian</u>	
6	Very fine sand & silt, shallow. (Loess)	B
	<u>Bedrock</u>	
7	Bare bedrock (normally negligible areas).	Varies according to rock type.

Source: Ministry of Natural Resources – MNR



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3.1.2.3 SCS CN Number

Design Chart 1.09: Soil/Land Use Curve Numbers

Land Use	Treatment or Practice	Hydrologic Condition ⁴	Hydrologic Soil Group			
			A	B	C	D
Fallow	Straight row	---	77	86	91	94
Row crops	"	Poor	72	81	88	91
	"	Good	67	78	85	89
	Contoured	Poor	70	79	84	88
	"	Good	65	75	82	86
	" and terraced	Poor	66	74	8	82
	" " "	Good	62	71	78	81
Small grain	Straight row	Poor	65	76	84	88
		Good	63	75	83	87
	Contoured	Poor	63	74	82	85
		Good	61	73	81	84
	" and terraced	Poor	61	72	79	82
		Good	59	70	78	81
Close-seeded legumes ² or rotation meadow	Straight row	Poor	66	77	85	89
	" "	Good	58	72	81	85
	Contoured	Poor	64	75	83	85
	"	Good	55	69	78	83
	" and terraced	Poor	63	73	80	83
	" and terraced	Good	51	67	76	80
Pasture or range		Poor	68	79	86	89
		Fair	49	69	79	84
	Contoured	Good	39	61	74	80
	"	Poor	47	67	81	88
	"	Fair	25	59	75	83
		Good	6	35	70	79
Meadow		Good	30	58	71	78
Woods		Poor	45	66	77	83
		Fair	36	60	73	79
		Good	25	55	70	77
Farmsteads		---	59	74	82	86
		---	72	82	87	89
		---	74	84	90	92

For average antecedent soil moisture condition (AMC II)

² Close-drilled or broadcast.

⁴ The hydrologic condition of cropland is good if a good crop rotation practice is used; it is poor if one crop is grown continuously.

Source: U.S. Department of Agriculture (1972)



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3.1.4 Time of Concentration (T_C) and Time to Peak (T_P)

Time of concentration (T_C) was calculated using Upland Method, then time to peak (T_P) was determined using Equation $T_P = 2/3 * T_C$. With Upland Method, the average overland flow velocity is determined for a catchment based on the catchment slope and ground type. Once the velocity has been determined, then the time of concentration is determined by dividing the catchment length by the overland flow velocity.

The velocity can be either read from a figure for Velocity vs. Slope or calculated from the following equation:

$$V = K\sqrt{S}$$

where,

V = Average overland flow velocity (m/s)

S = Slope in percentage (%)

K = Intercept Coefficient (m/s)

Flow Type	K
Overland Flow: Forest with Heavy Litter; Hay Meadow	0.80
Overland Flow: Woodland; Fallow or Minimum Tillage Cultivation, Contour or Strip Crop	1.50
Overland Flow: Pasture	2.10
Overland Flow: Cultivated Straight Row	2.70
Overland Flow: Nearly Bare Soil, Untilled	3.10
	4.60

The Time of Concentration (T_C) and Time to Peak (T_P) are calculated using the following equations.

$$T_C = \frac{L}{V} \quad \text{and} \quad T_P = \frac{2}{3} T_C$$

Where, T_C = Time of Concentration (minutes), minimum 10 minutes.

V = Average overland flow velocity (m/s)

L = Watershed Length (m)

T_P = Time to Peak (hours)

ID	Flow Pattern & Ground Cover	L (m)	EL ₁ (m)	EL ₂ (m)	Sw (%)	K	V (m/s)	T _C (min)	T _P hr
101	Overland Flow, Pasture	315.0	202.50	198.50	1.27%	2.7	0.30	17.3	0.19
201	Overland Flow, Pasture	508.0	204.00	199.00	0.98%	2.7	0.27	31.6	0.35
202	Overland Flow, Pasture	197.0	200.50	199.00	0.76%	2.7	0.24	13.9	0.15
203	Overland Flow, Pasture	271.0	199.50	198.50	0.37%	2.7	0.16	27.5	0.31
301	Overland Flow, Pasture	284.0	200.00	199.00	0.35%	2.7	0.16	29.5	0.33
302	Overland Flow, Pasture	327.0	199.50	199.00	0.15%	2.7	0.11	51.6	0.57
303	Overland Flow, Pasture	571.0	201.00	199.00	0.35%	2.7	0.16	59.6	0.66
304	Overland Flow, Pasture	287.0	199.50	199.00	0.17%	2.7	0.11	42.4	0.47



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3.2. Pre-Development Peak Flow Rates

The Visual OTTHYMO model is simulated for the 2-year up to 100-year 4 hour Chicago storms and 24 hour SCS Type II Storms

Refer to Appendix B for VO model output.

Return Periods (Years)	Southwest (SW) Outlet, Catchment 101 and 102	
	4-hour Chicago	24-hour SCS
2-year	0.20	0.39
5-year	0.28	0.52
10-year	0.35	0.64
25-year	0.45	0.83
50-year	0.54	1.03
100-year	0.63	1.18

Return Periods (Years)	South (S) Culvert, Catchment 201 ~ 203	
	4-hour Chicago	24-hour SCS
2-year	0.30	0.58
5-year	0.42	0.79
10-year	0.51	0.98
25-year	0.68	1.29
50-year	0.82	1.55
100-year	0.96	1.78

Return Periods (Years)	Northeast (NE) Corner, Catchment 301 ~ 304	
	4-hour Chicago	24-hour SCS
2-year	0.40	0.69
5-year	0.54	0.94
10-year	0.67	1.18
25-year	0.87	1.54
50-year	1.05	1.83
100-year	1.22	2.09



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4. Proposed Development

The Study Area is added to Hamlet Settle Area and is designated as Rural Employment lands. The Provincially Significant Wetland (PSW) and 30 m vegetation protection zone (VPZ), watercourse identified by NPCA and associated 30 m buffer shall be preserved.

4.1 Proposed Drainage Plan

The subject site and external area are delineated into twelve (12) sub-catchments under proposed development conditions. The catchment parameters are summarized in the following table.

Drainage	Catchment ID	Area (ha)	TIMP (%)	SCS CN	IA (mm)	Tp (hrs)	No. of IUH *	Comment
Southwest (SW)	1101	3.22	90.0	84	5.0	---	---	STANDHYD
	1102	2.07	24.5	84	5.0	---	---	STANDHYD
	Sub-Total	5.29	64.3					
South (S)	1201	5.38	87.0	84	5.0	---	---	STANDHYD
	1202	4.07	81.2	84	5.0	---	---	STANDHYD
	1203	1.54	28.1					
	Sub-Total	11.00	76.6					
Northeast (NE)	1301	3.68	85.3	84	5.0	---	---	STANDHYD
	1302	2.86	86.1	84	5.0	---	---	STANDHYD
	1303	3.47	86.3	84	5.0	---	---	STANDHYD
	1304	3.93	90.0	84	5.0	---	---	STANDHYD
	1305	3.00	0.0	84	7.5	0.75	3	NASHYD
	304	2.79	0.0	84	7.5	0.47	3	NASHYD
	305	2.15	25.0	84.0	5.0	---	---	STANDHYD
	Sub-Total	21.89	57.9					
Total		38.18	64.2					

4.1.1 Imperviousness

4.1.1.1 Existing Residential.

For catchment 1102, 1203, and 305, the impervious area is estimated based on google image.

4.1.1.2 Watercourse, PSW, and associated Buffers.

Catchments 1305 and 304 have an imperviousness of 0.0%.

4.1.1.3 Development Blocks

It is assumed that the development blocks have an imperviousness (I) of 90%.

The corresponding runoff coefficient (RC) is 0.83, as calculated using the formula $RC = 0.90 * I + 0.20 * (1 - I)$.

Development Blocks	Land Use	Imperviousness (%)	Runoff Coefficient
#1 ~ #7	Rural Employment	90%	0.83

This is comparable to typical runoff coefficient included in Section 5.5 of the Municipal Engineering Standards.

Land Use	Runoff Coefficient
Industrial	0.75
Commercial	0.90



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4.2 Post-Development (Uncontrolled) Peak Flow Rates

VO model was simulated for the 2-year up to the 100 year 3-hour Chicago storms to determine the uncontrolled post-development peak flow rates from the study site. Refer to Appendix B for VO model output.

4.2.1 Peak Flow Rate to Southwest (SW) Outlet

Return Period (Years)	Pre-Development Peak Flow Rates (m ³ /s)		Post-Development Peak Flow Rates (m ³ /s)	
	3-hour Chicago	24-hour SCS	3-hour Chicago	24-hour SCS
2-yr	0.196	0.390	0.727	0.714
5-yr	0.281	0.524	0.879	0.885
10-yr	0.346	0.644	0.998	1.036
25-yr	0.453	0.835	1.193	1.271
50-yr	0.544	1.035	1.331	1.515
100-yr	0.632	1.181	1.480	1.694

4.2.2 Peak Flow Rate to South (S) Outlet

Return Period (Years)	Pre-Development Peak Flow Rates (m ³ /s)		Post-Development Peak Flow Rates (m ³ /s)	
	3-hour Chicago	24-hour SCS	3-hour Chicago	24-hour SCS
2-yr	0.298	0.577	1.760	1.652
5-yr	0.415	0.791	2.112	2.028
10-yr	0.514	0.984	2.393	2.359
25-yr	0.676	1.289	2.851	2.870
50-yr	0.820	1.553	3.171	3.336
100-yr	0.958	1.779	3.519	3.712

4.2.3 Peak Flow Rate to Northeast (NE) Outlet

Return Period (Years)	Pre-Development Peak Flow Rates (m ³ /s)		Post-Development Peak Flow Rates (m ³ /s)	
	3-hour Chicago	24-hour SCS	3-hour Chicago	24-hour SCS
2-yr	0.397	0.690	2.679	2.550
5-yr	0.544	0.944	3.211	3.139
10-yr	0.670	1.177	3.636	3.659
25-yr	0.868	1.545	4.327	4.462
50-yr	1.049	1.825	4.812	5.192
100-yr	1.217	2.092	5.338	5.783



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4.3 SWM Strategies

4.3.1 Water Balance

Water balance shall be addressed through implementation of LID measures.

Feasibility of LID measures shall be evaluated in terms of soil infiltration rate, groundwater table depth, and bedrock depth in Site Plan Application (SPA) stage.

4.3.2 Water Quality

Water Quality shall be addressed through treatment train approach with combination of OGS units and LID infiltration measures

4.3.3 Erosion Control

Erosion control in terms of extended detention is not required, provided that the minimum 5 mm retention is achieved under water balance.

4.3.4 Water Quantity Control

Water Quantity shall be addressed through on-site quantity control storage such as rooftop storage, surface storage on the parking lot, and underground storage.



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4.4 Southwest Outlet _ On-site Quantity Control

4.4.1 Drainage Plan

Drainage	Catchment ID	Area (ha)	TIMP (%)	Drainage and SWM
SW	1101	3.22	90.0%	Proposed Development, On-Site Quantity Control
	1102	2.07	24.5%	Existing Residential, Uncontrolled.
	Sub-Total	5.29		

4.4.2 Target Flow Rates from Catchment 1101

Design Storm	Pre-Development Peak Flow Rates (m ³ /s)	Post- Uncontrolled Peak Flow Rates from Catchment 1102 (m ³ /s)	Target Flow Rates for Catchment 1101 (m ³ /s)
3 hour Chicago			
2-year	0.196	0.120	0.076
5-year	0.281	0.158	0.123
10-year	0.346	0.185	0.161
25-year	0.453	0.232	0.221
50-year	0.544	0.268	0.276
100-year	0.632	0.305	0.327
24 hour SCS			
2-year	0.390	0.177	0.213
5-year	0.524	0.233	0.291
10-year	0.644	0.284	0.361
25-year	0.835	0.365	0.470
50-year	1.035	0.478	0.557
100-year	1.181	0.545	0.636



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4.4.3 Quantity Control Storage Requirements for Catchment 1101

Design Storm	Target Flows (m ³ /s)	Storage (m ³)	Unitary Flow Rate (m ³ /s/ha)	Unitary Storage (m ³ / Imp. ha)
	0.000	0	0.000	0
2yr 3hr Chicago	0.076	700	0.024	242
5yr 3hr Chicago	0.123	800	0.038	276
10yr 3hr Chicago	0.161	860	0.050	297
25yr 3hr Chicago	0.221	950	0.069	328
50yr 3hr Chicago	0.276	1030	0.086	355
100yr 3hr Chicago	0.327	1100	0.102	380
100yr 24hr SCS	0.636	1400	0.198	483

4.4.4 Quantity Control Performance

4.4.4.1 Quantity Control Performance - 3 hour Chicago Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.606	0.0759	699
5-year	0.721	0.1191	792
10-year	0.812	0.1576	858
25-year	0.961	0.2171	946
50-year	1.063	0.2711	1025
100-year	1.174	0.3208	1098

4.4.4.2 Quantity Control Performance - 24 hour SCS Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.537	0.107	767
5-year	0.652	0.182	899
10-year	0.753	0.256	1004
25-year	0.907	0.386	1167
50-year	1.038	0.503	1294
100-year	1.149	0.598	1397



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4.4.5 Post-Development Peak Flow Rates at Southwest (SW) Outlet

4.4.5.1 Peak Flow Rates at Southwest (SW) Outlet - 3 hour Chicago Storm

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
2-year	0.20	0.16
5-year	0.28	0.21
10-year	0.35	0.27
25-year	0.45	0.39
50-year	0.54	0.49
100-year	0.63	0.58

4.4.5.2 Peak Flow Rates at Southwest (SW) Outlet - 24 hour SCS Storm

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
2-year	0.39	0.25
5-year	0.52	0.36
10-year	0.64	0.48
25-year	0.83	0.68
50-year	1.03	0.91
100-year	1.18	1.08



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4.5 South Outlet _ On-Site Quantity Control

4.5.1 Drainage Plan

Drainage	Catchment ID	Area (ha)	TIMP (%)	Drainage and SWM
South	1201	5.38	87.0%	Proposed Development, On-Site Quantity Control
	1202	4.07	81.2%	Proposed Development, On-Site Quantity Control
	1203	1.54	28.1%	Existing Residential, Uncontrolled.
	Sub-Total	11.00		

4.5.2 Target Flow Rates

Design Storm	Pre-Development Peak Flow Rates (m³/s)	Post- Uncontrolled Peak Flow Rates from Catchment 1203 (m³/s)	Target Flow Rates (m³/s)		
			Total	1201	1202
			9.46	5.38	4.07
3 hour Chicago					
2-year	0.298	0.113	0.185	0.105	0.080
5-year	0.415	0.144	0.271	0.154	0.117
10-year	0.514	0.167	0.347	0.197	0.149
25-year	0.676	0.206	0.470	0.268	0.203
50-year	0.820	0.235	0.586	0.333	0.252
100-year	0.958	0.265	0.692	0.394	0.298
24 hour SCS					
2-year	0.577	0.146	0.431	0.246	0.186
5-year	0.791	0.189	0.602	0.342	0.259
10-year	0.984	0.228	0.756	0.430	0.326
25-year	1.289	0.290	0.999	0.569	0.430
50-year	1.553	0.373	1.180	0.672	0.508
100-year	1.779	0.423	1.356	0.772	0.584



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4.5.3 Quantity Control - Catchment 1201

4.5.3.1 Quantity Control Storage Requirements - Catchment 1201

Design Storm	Target Flows (m ³ /s)	Storage (m ³)	Unitary Flow Rate (m ³ /s/ha)	Unitary Storage (m ³ / Imp. ha)
	0.000	0	0.000	0
2yr 3hr Chicago	0.105	1200	0.020	256
5yr 3hr Chicago	0.154	1380	0.029	295
10yr 3hr Chicago	0.197	1510	0.037	322
25yr 3hr Chicago	0.268	1680	0.050	359
50yr 3hr Chicago	0.333	1830	0.062	391
100yr 3hr Chicago	0.394	1960	0.073	419
100yr 24hr SCS	0.772	2500	0.143	534

4.5.3.2 Quantity Control Performance - 3 hour Chicago Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.962	0.105	1197
5-year	1.148	0.152	1374
10-year	1.297	0.194	1502
25-year	1.540	0.266	1676
50-year	1.708	0.329	1828
100-year	1.891	0.391	1956

4.5.3.3 Quantity Control Performance - 24 hour SCS Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.873	0.141	1334
5-year	1.063	0.222	1573
10-year	1.230	0.308	1775
25-year	1.487	0.460	2075
50-year	1.706	0.626	2297
100-year	1.891	0.763	2493



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4.5.4 Quantity Control - Catchment 1202

4.5.4.1 Quantity Control Storage Requirements - Catchment 1202

Design Storm	Target Flows (m ³ /s)	Storage (m ³)	Unitary Flow Rate (m ³ /s/ha)	Unitary Storage (m ³ / Imp. ha)
	0.000	0	0.000	0
2yr 3hr Chicago	0.080	860	0.020	260
5yr 3hr Chicago	0.117	990	0.029	299
10yr 3hr Chicago	0.149	1080	0.037	326
25yr 3hr Chicago	0.203	1210	0.050	366
50yr 3hr Chicago	0.252	1320	0.062	399
100yr 3hr Chicago	0.298	1420	0.073	429
100yr 24hr SCS	0.584	1820	0.143	550

4.5.4.2 Quantity Control Performance - 3 hour Chicago Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.697	0.079	855
5-year	0.833	0.115	985
10-year	0.943	0.147	1076
25-year	1.121	0.201	1205
50-year	1.246	0.248	1316
100-year	1.381	0.293	1412

4.5.4.3 Quantity Control Performance - 24 hour SCS Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.641	0.108	958
5-year	0.783	0.170	1133
10-year	0.909	0.234	1283
25-year	1.102	0.348	1504
50-year	1.266	0.473	1668
100-year	1.406	0.576	1814



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4.5.5 Post-Development Peak Flow Rates at South Outlet

4.5.5.1 Peak Flow Rates at South Outlet - 3 hour Chicago Storm

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
2-year	0.30	0.23
5-year	0.42	0.32
10-year	0.51	0.41
25-year	0.68	0.56
50-year	0.82	0.70
100-year	0.96	0.83

4.5.5.2 Peak Flow Rates at South Outlet - 24 hour SCS Storm

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
2-year	0.58	0.32
5-year	0.79	0.50
10-year	0.98	0.68
25-year	1.29	1.01
50-year	1.55	1.34
100-year	1.78	1.61



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4.6 Northeast Outlet _ On-Site Quantity Control

4.6.1 Drainage Plan

Drainage	Catchment ID	Area (ha)	TIMP (%)	Drainage and SWM
NE	1301	3.68	85.3%	Proposed Development, On-Site Quantity Control
	1302	2.86	86.1%	Proposed Development, On-Site Quantity Control
	1303	3.47	86.3%	Proposed Development, On-Site Quantity Control
	1304	3.93	90.0%	Proposed Development, On-Site Quantity Control
	1305	3.00	0.0%	Watercourse and buffer, Uncontrolled.
	304	2.79	0.0%	PSW and buffer, Uncontrolled.
	305	2.15	25.0%	Existing Residential, Uncontrolled.
	Sub-Total	21.89		

4.6.2 Target Flow Rates

Design Storm	Pre-Dev. Peak Flow Rates (m³/s)	Post- Uncontrolled Peak Flow Rates from Catchments 1305, 304, 305 (m³/s)	Target Flow Rates (m³/s)				
			Total	1301	1302	1303	1304
			13.940	3.680	2.860	3.470	3.930
3 hour Chicago							
2-year	0.397	0.148	0.249	0.066	0.051	0.062	0.070
5-year	0.544	0.198	0.346	0.091	0.071	0.086	0.097
10-year	0.670	0.242	0.428	0.113	0.088	0.106	0.121
25-year	0.868	0.312	0.556	0.147	0.114	0.138	0.157
50-year	1.049	0.375	0.674	0.178	0.138	0.168	0.190
100-year	1.217	0.434	0.783	0.207	0.161	0.195	0.221
24 hour SCS							
2-year	0.690	0.268	0.422	0.111	0.087	0.105	0.119
5-year	0.944	0.362	0.582	0.154	0.119	0.145	0.164
10-year	1.177	0.449	0.728	0.192	0.149	0.181	0.205
25-year	1.545	0.587	0.958	0.253	0.197	0.238	0.270
50-year	1.825	0.751	1.074	0.284	0.220	0.267	0.303
100-year	2.092	0.862	1.230	0.325	0.252	0.306	0.347



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4.6.3 Quantity Control - Catchment 1301

4.6.3.1 Quantity Control Storage Requirements - Catchment 1301

Design Storm	Target Flows (m ³ /s)	Storage (m ³)	Unitary Flow Rate (m ³ /s/ha)	Unitary Storage (m ³ / Imp. ha)
	0.000	0	0.000	0
2yr 3hr Chicago	0.066	830	0.018	264
5yr 3hr Chicago	0.091	960	0.025	306
10yr 3hr Chicago	0.113	1060	0.031	338
25yr 3hr Chicago	0.147	1190	0.040	379
50yr 3hr Chicago	0.178	1310	0.048	417
100yr 3hr Chicago	0.207	1410	0.056	449
100yr 24hr SCS	0.325	1860	0.088	592

4.6.3.2 Quantity Control Performance - 3 hour Chicago Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.659	0.066	825
5-year	0.786	0.090	956
10-year	0.888	0.111	1052
25-year	1.053	0.146	1188
50-year	1.168	0.177	1305
100-year	1.293	0.206	1407

4.6.3.3 Quantity Control Performance - 24 hour SCS Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.596	0.085	930
5-year	0.726	0.125	1105
10-year	0.840	0.164	1257
25-year	1.015	0.227	1489
50-year	1.164	0.278	1685
100-year	1.291	0.320	1852



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Proposed Drainage Plan and SWM Strategies

4.6.4 Quantity Control - Catchment 1302

4.6.4.1 Quantity Control Storage Requirements - Catchment 1302

Design Storm	Target Flows (m ³ /s)	Storage (m ³)	Unitary Flow Rate (m ³ /s/ha)	Unitary Storage (m ³ / Imp. ha)
	0.000	0	0.000	0
2yr 3hr Chicago	0.051	650	0.018	264
5yr 3hr Chicago	0.071	750	0.025	305
10yr 3hr Chicago	0.088	830	0.031	337
25yr 3hr Chicago	0.114	930	0.040	378
50yr 3hr Chicago	0.138	1020	0.048	414
100yr 3hr Chicago	0.161	1100	0.056	447
100yr 24hr SCS	0.252	1450	0.088	589

4.6.4.2 Quantity Control Performance - 3 hour Chicago Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.522	0.051	647
5-year	0.621	0.071	748
10-year	0.701	0.087	823
25-year	0.830	0.114	930
50-year	0.920	0.138	1020
100-year	1.017	0.161	1099

4.6.4.3 Quantity Control Performance - 24 hour SCS Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.467	0.067	728
5-year	0.569	0.097	866
10-year	0.657	0.128	984
25-year	0.794	0.178	1167
50-year	0.910	0.217	1320
100-year	1.008	0.250	1450



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4.6.5 Quantity Control - Catchment 1303

4.6.5.1 Quantity Control Storage Requirements - Catchment 1303

Design Storm	Target Flows (m ³ /s)	Storage (m ³)	Unitary Flow Rate (m ³ /s/ha)	Unitary Storage (m ³ / Imp. ha)
	0.000	0	0.000	0
2yr 3hr Chicago	0.062	790	0.018	264
5yr 3hr Chicago	0.086	910	0.025	304
10yr 3hr Chicago	0.106	1010	0.031	337
25yr 3hr Chicago	0.138	1130	0.040	377
50yr 3hr Chicago	0.168	1240	0.048	414
100yr 3hr Chicago	0.195	1340	0.056	448
100yr 24hr SCS	0.306	1760	0.088	588

4.6.5.2 Quantity Control Performance - 3 hour Chicago Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.629	0.062	786
5-year	0.750	0.086	909
10-year	0.846	0.104	1001
25-year	1.003	0.138	1130
50-year	1.112	0.168	1239
100-year	1.230	0.194	1336

4.6.5.3 Quantity Control Performance - 24 hour SCS Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.566	0.081	885
5-year	0.689	0.117	1052
10-year	0.797	0.155	1195
25-year	0.962	0.214	1416
50-year	1.103	0.262	1601
100-year	1.222	0.303	1759



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Proposed Drainage Plan and SWM Strategies

4.6.6 Quantity Control - Catchment 1304

4.6.6.1 Quantity Control Storage Requirements - Catchment 1304

Design Storm	Target Flows (m ³ /s)	Storage (m ³)	Unitary Flow Rate (m ³ /s/ha)	Unitary Storage (m ³ / Imp. ha)
	0.000	0	0.000	0
2yr 3hr Chicago	0.070	930	0.018	263
5yr 3hr Chicago	0.097	1070	0.025	303
10yr 3hr Chicago	0.121	1170	0.031	331
25yr 3hr Chicago	0.157	1320	0.040	373
50yr 3hr Chicago	0.190	1450	0.048	410
100yr 3hr Chicago	0.221	1560	0.056	441
100yr 24hr SCS	0.347	2040	0.088	577

4.6.6.2 Quantity Control Performance - 3 hour Chicago Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.734	0.070	923
5-year	0.873	0.096	1066
10-year	0.985	0.121	1168
25-year	1.165	0.156	1318
50-year	1.290	0.189	1445
100-year	1.426	0.220	1557

4.6.6.3 Quantity Control Performance - 24 hour SCS Storm

Return Periods (Years)	Inflow Rate (m ³ /s)	Controlled Flow (m ³ /s)	Used Storage (m ³)
2-year	0.654	0.091	1036
5-year	0.794	0.134	1226
10-year	0.916	0.175	1392
25-year	1.104	0.243	1646
50-year	1.264	0.297	1859
100-year	1.400	0.344	2039



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Proposed Drainage Plan and SWM Strategies

4.6.7 Post-Development Peak Flow Rates at Northeast (NE) Outlet

4.6.7.1 Peak Flow Rates at Northeast (NE) Outlet - 3 hour Chicago Storm

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
2-year	0.40	0.39
5-year	0.54	0.54
10-year	0.67	0.66
25-year	0.87	0.86
50-year	1.05	1.04
100-year	1.22	1.21

4.6.7.2 Peak Flow Rates at Northeast (NE) Outlet - 24 hour SCS Storm

Return Periods (Years)	Pre-Development Peak Flow Rates (m ³ /s)	Post-Development Peak Flow Rates (m ³ /s)
2-year	0.69	0.57
5-year	0.94	0.82
10-year	1.18	1.06
25-year	1.54	1.43
50-year	1.83	1.72
100-year	2.09	1.99

B VISUAL OTTHYMO MODEL OUTPUT

B-1 PRE-DEVELOPMENT CONDITIONS

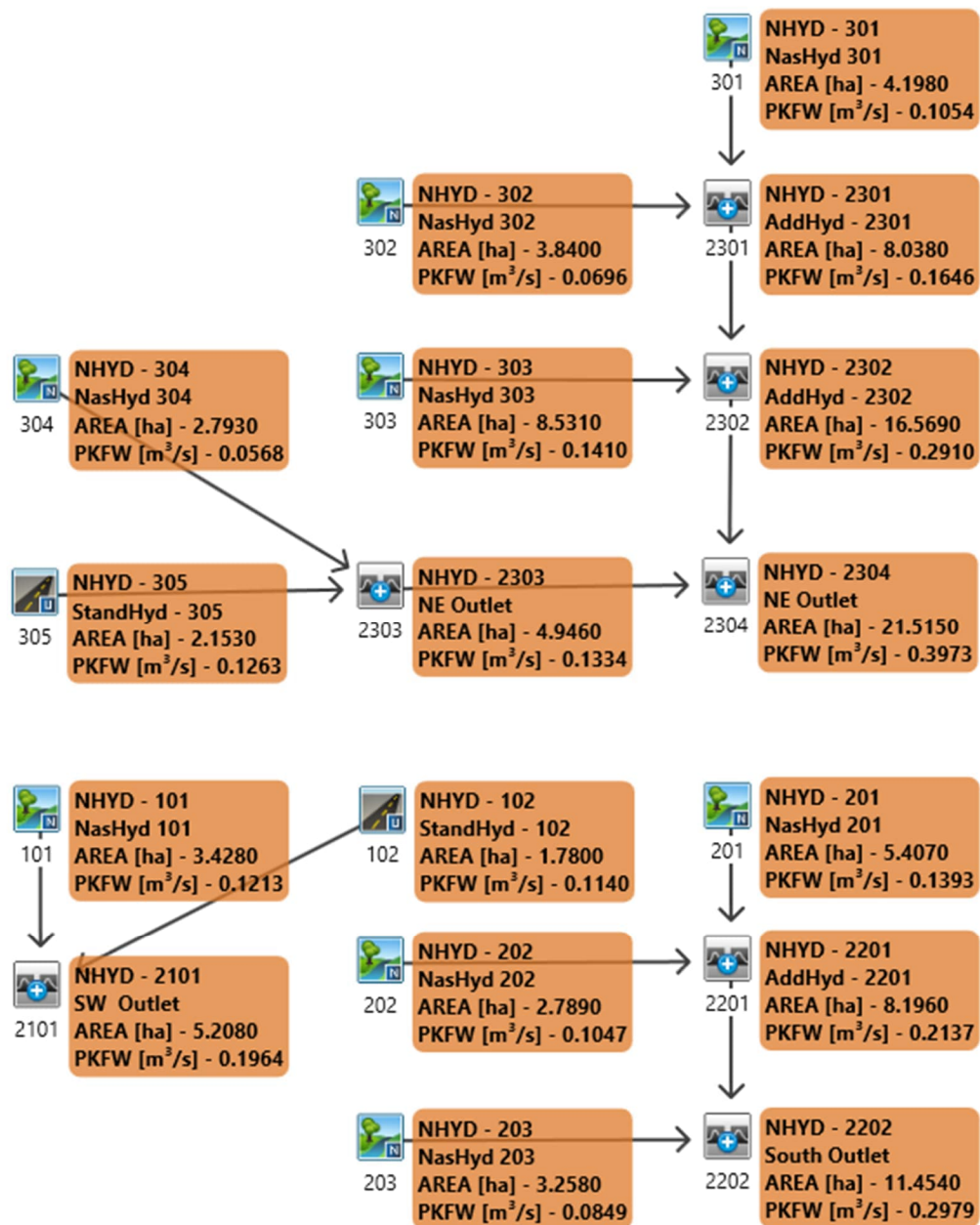


Figure B1 – VO Model Schematic _ Pre-development Conditions

```

=====
V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y M M 0 0
0 0 T T H H Y Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\79532d
 0c-b6f4-40f4-aa8e-5ef9df92adef\scenar
 Summary filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\79532d
 0c-b6f4-40f4-aa8e-5ef9df92adef\scenar

DATE: 05-27-2026

TIME: 11:27:54

USER:

COMMENTS: _____

 ** SIMULATION : Run1.1 2-yr 4 hr Chicago (Wel) **

```

| CHICAGO STORM | IDf curve parameters: A= 755.000
| Ptotal= 38.96 mm | B= 8.000
| | C= 0.789

```

-1-

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.65	1.00	21.73	2.00	6.45	3.00	3.16
0.17	3.04	1.17	77.19	2.17	5.45	3.17	2.93
0.33	3.61	1.33	28.29	2.33	4.74	3.33	2.73
0.50	4.46	1.50	15.20	2.50	4.20	3.50	2.56
0.67	5.95	1.67	10.40	2.67	3.78	3.67	2.42
0.83	9.16	1.83	7.94	2.83	3.44	3.83	2.28

```

| CALIB |
| NASHYD ( 0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| | U.H. Tp(hrs)= 0.19

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.121 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 13.065
 TOTAL RAINFALL (mm)= 38.961
 RUNOFF COEFFICIENT = 0.335

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

```

| CALIB |
| STANDHYD ( 0102) | Area (ha)= 1.78
| ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.49 1.29
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 108.93 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Max. Eff. Inten. (mm/hr)= 77.19 19.85
 over (min)= 5.00 20.00
 Storage Coeff. (min)= 2.98 (ii) 16.46 (ii)
 Unit Hyd. Tpeak (min)= 5.00 20.00
 Unit Hyd. peak (cms)= 0.28 0.06

PEAK FLOW (cms)= 0.10 0.04
 TIME TO PEAK (hrs)= 1.33 1.58
 RUNOFF VOLUME (mm)= 31.46 14.01
 TOTAL RAINFALL (mm)= 38.96 38.96
 RUNOFF COEFFICIENT = 0.81 0.36

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. Storage (Above)

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(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| ADD HYD ( 2101) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0101): 3.43 0.121 1.50 13.06
+ ID2= 2 ( 0102): 1.78 0.114 1.33 18.80
=====
ID = 3 ( 2101): 5.21 0.196 1.50 15.03

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| NASHYD ( 0202) | Area (ha)= 2.79 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| | U.H. Tp(hrs)= 0.15

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.105 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 12.381
 TOTAL RAINFALL (mm)= 38.961
 RUNOFF COEFFICIENT = 0.318

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

```

-----
| CALIB |
| NASHYD ( 0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.35

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.590

```

PEAK FLOW (cms)= 0.139 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 13.093
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.336

```

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

```

-----
| ADD HYD ( 2202) |
| 1 + 2 = 3 |
|-----|
ID1= 1 ( 0201): AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
+ ID2= 2 ( 0202): 5.41 0.139 1.75 13.09
+ ID2= 2 ( 0202): 2.79 0.105 1.50 12.38
=====
ID = 3 ( 2201): 8.20 0.214 1.67 12.85

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

-----
| CALIB |
| NASHYD ( 0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.401

```

PEAK FLOW (cms)= 0.085 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 12.449
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.320

```

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

```

-----
| ADD HYD ( 2202) |
| 1 + 2 = 3 |
|-----|
ID1= 1 ( 0203): AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
+ ID2= 2 ( 2201): 3.26 0.085 1.75 12.45
+ ID2= 2 ( 2201): 8.20 0.214 1.67 12.85
=====
ID = 3 ( 2202): 11.45 0.298 1.67 12.74

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

-----
| CALIB |
| NASHYD ( 0303) | Area (ha)= 8.53 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.66

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.494

```

PEAK FLOW (cms)= 0.141 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 12.396
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.318

```

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

```

-----
| CALIB |
| NASHYD ( 0301) | Area (ha)= 4.20 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.33

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93

```

-7-

```

0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.486

```

PEAK FLOW (cms)= 0.105 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 12.393
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.318

```

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

```

-----
| CALIB |
| NASHYD ( 0302) | Area (ha)= 3.84 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.57

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.257

```

PEAK FLOW (cms)= 0.070 (i)
TIME TO PEAK (hrs)= 2.083

```

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RUNOFF VOLUME (mm)= 12.396
 TOTAL RAINFALL (mm)= 38.961
 RUNOFF COEFFICIENT = 0.318

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

```

| ADD HYD ( 2301) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 0301): | AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm) |
| + ID2= 2 ( 0302): | 4.20 | 0.105 | 1.75 | 12.39 |
|-----|
| ID = 3 ( 2301): | 3.84 | 0.070 | 2.08 | 12.40 |
|-----|
| ID = 3 ( 2301): | 8.04 | 0.165 | 1.83 | 12.39 |
|-----|

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2302) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2301): | AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm) |
| + ID2= 2 ( 0303): | 8.04 | 0.165 | 1.83 | 12.39 |
|-----|
| ID = 3 ( 2302): | 8.53 | 0.141 | 2.25 | 12.40 |
|-----|
| ID = 3 ( 2302): | 16.57 | 0.291 | 2.00 | 12.40 |
|-----|

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.47
|-----|

```

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

```

      ---- TRANSFORMED HYETOGRAPH ----
      TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56

```

0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
 0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
 0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
 0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
 1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.057 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 12.396
 TOTAL RAINFALL (mm)= 38.961
 RUNOFF COEFFICIENT = 0.318

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

```

| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
|-----|
| IMPERVIOUS (i) |
| Surface Area (ha)= 0.54 |
| Dep. Storage (mm)= 7.50 |
| Average Slope (%)= 1.00 |
| Length (m)= 119.81 |
| Mannings n = 0.013 |
|-----|

```

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

```

      ---- TRANSFORMED HYETOGRAPH ----
      TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

Max. Eff. Inten. (mm/hr)= 77.19 19.85
 over (min) 5.00 20.00

Storage Coeff. (min)= 3.16 (ii) 16.63 (ii)
 Unit Hyd. Tpeak (min)= 5.00 20.00
 Unit Hyd. peak (cms)= 0.27 0.06
 TOTALS
 PEAK FLOW (cms)= 0.11 0.05 0.126 (iii)
 TIME TO PEAK (hrs)= 1.33 1.58 1.33
 RUNOFF VOLUME (mm)= 31.46 14.01 18.37
 TOTAL RAINFALL (mm)= 38.96 38.96 38.96
 RUNOFF COEFFICIENT = 0.81 0.36 0.47

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 2303) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 0304): | AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm) |
| + ID2= 2 ( 0305): | 2.79 | 0.057 | 1.92 | 12.40 |
|-----|
| ID = 3 ( 2303): | 2.15 | 0.126 | 1.33 | 18.37 |
|-----|
| ID = 3 ( 2303): | 4.95 | 0.133 | 1.33 | 14.99 |
|-----|

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2304) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2302): | AREA (ha) | QPEAK (cms) | TPEAK (hrs) | R.V. (mm) |
| + ID2= 2 ( 2303): | 16.57 | 0.291 | 2.00 | 12.40 |
|-----|
| ID = 3 ( 2304): | 4.95 | 0.133 | 1.33 | 14.99 |
|-----|
| ID = 3 ( 2304): | 21.51 | 0.397 | 1.92 | 12.99 |
|-----|

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L

```

VV I SSSS 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 Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\07924f
 e7-0b5e-470f-9ebb-523051eaeac5\scenar
 Summary filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\07924f
 e7-0b5e-470f-9ebb-523051eaeac5\scenar

DATE: 05-27-2026 TIME: 11:27:50

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run1.2 5-yr 4 hr Chicago (Wel **
*****

```

```

| CHICAGO STORM | IDF curve parameters: A= 830.000
| Ptotal= 45.86 mm | B= 7.300
|-----| C= 0.777
| used in: INTENSITY = A / (t + B)^C

```

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

TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN

hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.00	3.23	1.00	25.08	2.00	7.66	3.00	3.84	
0.17	3.70	1.17	90.60	2.17	6.51	3.17	3.57	
0.33	4.36	1.33	32.56	2.33	5.68	3.33	3.33	
0.50	5.36	1.50	17.63	2.50	5.06	3.50	3.13	
0.67	7.08	1.67	12.18	2.67	4.56	3.67	2.95	
0.83	10.76	1.83	9.37	2.83	4.17	3.83	2.80	

```

| CALIB |
| NASHYD ( 0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.19

```

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84	
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84	
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57	
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57	
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33	
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33	
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13	
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13	
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95	
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95	
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80	
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80	

Unit Hyd Qpeak (cms)= 0.689

```

PEAK FLOW (cms)= 0.172 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 17.799
TOTAL RAINFALL (mm)= 45.861
RUNOFF COEFFICIENT = 0.388

```

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

```

| CALIB |
| STANDHYD ( 0102) | Area (ha)= 1.78
| ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.49	1.29
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	108.93	40.00
Mannings n =	0.013	0.250

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84	
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84	
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57	
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57	
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33	
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33	
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13	
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13	
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95	
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95	
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80	
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80	

```

Max.Eff.Inten.(mm/hr)= 90.60 27.26
over (min) 5.00 15.00
Storage Coeff. (min)= 2.80 (ii) 14.67 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.08

```

```

PEAK FLOW (cms)= 0.12 0.06 0.149 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 38.36 18.71 24.11
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.84 0.41 0.53

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 2101) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
ID1= 1 ( 0101): 3.43 0.172 1.50 17.80
+ ID2= 2 ( 0102): 1.78 0.149 1.33 24.11
=====
ID = 3 ( 2101): 5.21 0.281 1.50 19.96

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| NASHYD ( 0202) | Area (ha)= 2.79 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.15

```

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84	
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84	
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57	
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57	
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33	
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33	
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13	
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13	
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95	
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95	
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80	
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80	

Unit Hyd Qpeak (cms)= 0.710

```

PEAK FLOW (cms)= 0.147 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 16.937
TOTAL RAINFALL (mm)= 45.861
RUNOFF COEFFICIENT = 0.369

```

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

```

| CALIB |
| NASHYD ( 0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

```

U.H. Tp(hrs)= 0.35

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84	
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84	
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57	
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57	
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33	
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33	
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13	
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13	
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95	
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95	
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80	
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80	

Unit Hyd Qpeak (cms)= 0.590

```

PEAK FLOW (cms)= 0.194 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 17.837
TOTAL RAINFALL (mm)= 45.861
RUNOFF COEFFICIENT = 0.389

```

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

```

| ADD HYD ( 2201) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
ID1= 1 ( 0201): 5.41 0.194 1.75 17.84
+ ID2= 2 ( 0202): 2.79 0.147 1.50 16.94
=====
ID = 3 ( 2201): 8.20 0.299 1.58 17.53

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| NASHYD ( 0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.119 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 17.030
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.371

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

ADD HYD (2202)				
1	2	3		
ID1= 1 (0203):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (2201):	8.20	0.299	1.58	17.53
ID = 3 (2202):	11.45	0.415	1.67	17.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0303)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 1 DT= 5.0 min	Ia (mm)= 7.50	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.66			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.195 (i)
 TIME TO PEAK (hrs)= 2.167
 RUNOFF VOLUME (mm)= 16.965
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

CALIB				
NASHYD (0301)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 1 DT= 5.0 min	Ia (mm)= 7.50	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.33			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95

0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.486

PEAK FLOW (cms)= 0.147 (i)
 TIME TO PEAK (hrs)= 1.750
 RUNOFF VOLUME (mm)= 16.960
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

CALIB				
NASHYD (0302)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 1 DT= 5.0 min	Ia (mm)= 7.50	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.57			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.096 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 16.964
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

ADD HYD (2301)				
1	2	3		
ID1= 1 (0301):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0302):	4.20	0.147	1.75	16.96
	3.84	0.096	2.08	16.96
ID = 3 (2301):	8.04	0.230	1.83	16.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2302)				
1	2	3		
ID1= 1 (2301):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0303):	8.04	0.230	1.83	16.96
	8.53	0.195	2.17	16.96
ID = 3 (2302):	16.57	0.404	2.00	16.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0304)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID= 1 DT= 5.0 min	Ia (mm)= 7.50	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.47			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.079 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 16.964
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

 | CALIB |
 | STANDHYD (0305) | Area (ha)= 2.15
 | ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.54 1.61
 Dep. Storage (mm)= 7.50 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 119.81 40.00
 Mannings n = 0.013 0.250

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	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max. Eff. Inten. (mm/hr)= 90.60 27.26
 over (min)= 5.00 15.00
 Storage Coeff. (min)= 2.96 (ii) 14.83 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.28 0.08

PEAK FLOW (cms)= 0.13 0.08
 TIME TO PEAK (hrs)= 1.33 1.50
 RUNOFF VOLUME (mm)= 38.36 18.71 23.62

TOTALS

0.167 (iii)

TOTAL RAINFALL (mm)= 45.86 45.86 45.86
 RUNOFF COEFFICIENT = 0.84 0.41 0.51

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2303) |
 | 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)

 ID1= 1 (0304): 2.79 0.079 1.92 16.96
 + ID2= 2 (0305): 2.15 0.167 1.33 23.62
 =====
 ID = 3 (2303): 4.95 0.178 1.33 19.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | ADD HYD (2304) |
 | 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)

 ID1= 1 (2302): 16.57 0.404 2.00 16.96
 + ID2= 2 (2303): 4.95 0.178 1.33 19.86
 =====
 ID = 3 (2304): 21.51 0.544 1.92 17.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 V V I SSSS U U A L (v 6.2.2015)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 VV I SSSS UUUU A A LLLL
 000 TTTT TTTT H H Y Y M M 000 TM
 0 0 T T H H Y Y M M 0 0
 0 0 T T H H Y Y M M 0 0
 000 T T H H Y 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\voind.dat

Output filename:
 C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\4f4f40
 63-0a7f-46b1-8c6f-316189a93177\scenar
 Summary filename:
 C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\4f4f40
 63-0a7f-46b1-8c6f-316189a93177\scenar

DATE: 05-27-2026 TIME: 11:27:51

USER:

COMMENTS: _____

 ** SIMULATION : Run1.3 10-yr 4 hr Chicago (We **

 | CHICAGO STORM | IDF curve parameters: A= 860.000
 | Ptotal= 51.46 mm | B= 6.500
 C= 0.763
 used in: INTENSITY = A / (t + B)^C

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.77	1.00	27.48	2.00	8.69	3.00	4.46
0.17	4.30	1.17	101.29	2.17	7.43	3.17	4.15
0.33	5.04	1.33	35.55	2.33	6.51	3.33	3.89
0.50	6.16	1.50	19.45	2.50	5.82	3.50	3.66
0.67	8.05	1.67	13.59	2.67	5.27	3.67	3.46
0.83	12.06	1.83	10.55	2.83	4.83	3.83	3.28

 | CALIB |
 | NASHYD (0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

 U.H. Tp(hrs)= 0.19

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	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.216 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 21.886
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.425

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

 | CALIB |
 | STANDHYD (0102) | Area (ha)= 1.78
 | ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

 IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.49 1.29
 Dep. Storage (mm)= 7.50 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 108.93 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Max.Eff.Inten.(mm/hr)= 101.29 33.56
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.68 (ii) 13.60 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.29 0.08

PEAK FLOW (cms)= 0.14 0.08 0.173 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 43.96 22.76 28.58
 TOTAL RAINFALL (mm)= 51.46 51.46 51.46
 RUNOFF COEFFICIENT = 0.85 0.44 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2101) -----				
1	2	3	AREA	QPEAK
			(ha)	(cms)
ID1= 1 (0101):	3.43	0.216	1.50	21.89
+ ID2= 2 (0102):	1.78	0.173	1.33	28.58
=====				
ID = 3 (2101):	5.21	0.346	1.50	24.17

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- CALIB -----			
NASHYD (0202)	Area (ha)=	Curve Number (CN)=	84.1
ID= 1 DT= 5.0 min	Ia (mm)=	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.15	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.183 (i)
 TIME TO PEAK (hrs)= 1.417
 RUNOFF VOLUME (mm)= 20.886
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.406

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

----- CALIB -----			
NASHYD (0201)	Area (ha)=	Curve Number (CN)=	85.2
ID= 1 DT= 5.0 min	Ia (mm)=	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.35	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

-26-

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.590

PEAK FLOW (cms)= 0.241 (i)
 TIME TO PEAK (hrs)= 1.750
 RUNOFF VOLUME (mm)= 21.932
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.426

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

----- ADD HYD (2201) -----				
1	2	3	AREA	QPEAK
			(ha)	(cms)
ID1= 1 (0201):	5.41	0.241	1.75	21.93
+ ID2= 2 (0202):	2.79	0.183	1.42	20.89
=====				
ID = 3 (2201):	8.20	0.373	1.58	21.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- CALIB -----			
NASHYD (0203)	Area (ha)=	Curve Number (CN)=	84.1
ID= 1 DT= 5.0 min	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	3.77	1.083	27.48	2.083	8.69	3.08	4.46

-27-

0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.148 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 21.000
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.408

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

----- ADD HYD (2202) -----				
1	2	3	AREA	QPEAK
			(ha)	(cms)
ID1= 1 (0203):	3.26	0.148	1.67	21.00
+ ID2= 2 (2201):	8.20	0.373	1.58	21.58
=====				
ID = 3 (2202):	11.45	0.514	1.67	21.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- CALIB -----			
NASHYD (0303)	Area (ha)=	Curve Number (CN)=	84.0
ID= 1 DT= 5.0 min	Ia (mm)=	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.66	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15

-28-

0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.241 (i)
 TIME TO PEAK (hrs)= 2.167
 RUNOFF VOLUME (mm)= 20.925
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.407

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

CALIB							
NASHYD (0301)	Area	(ha)=	4.20	Curve Number	(CN)=	84.0	
ID= 1 DT= 5.0 min	Ia	(mm)=	7.50	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.33					

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.486

PEAK FLOW (cms)= 0.182 (i)
 TIME TO PEAK (hrs)= 1.750

RUNOFF VOLUME (mm)= 20.920
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.407

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

CALIB							
NASHYD (0302)	Area	(ha)=	3.84	Curve Number	(CN)=	84.0	
ID= 1 DT= 5.0 min	Ia	(mm)=	7.50	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.57					

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.119 (i)
 TIME TO PEAK (hrs)= 2.083
 RUNOFF VOLUME (mm)= 20.924
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.407

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

ADD HYD (2301)							
1 + 2 = 3	AREA	(ha)	QPEAK	(cms)	TPEAK	(hrs)	R.V.
							(mm)
ID1= 1 (0301):	4.20	0.182	1.75	20.92			
+ ID2= 2 (0302):	3.84	0.119	2.08	20.92			

=====

ID = 3 (2301): 8.04 0.284 1.83 20.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2302)							
1 + 2 = 3	AREA	(ha)	QPEAK	(cms)	TPEAK	(hrs)	R.V.
							(mm)
ID1= 1 (2301):	8.04	0.284	1.83	20.92			
+ ID2= 2 (0303):	8.53	0.241	2.17	20.92			
ID = 3 (2302):	16.57	0.498	2.00	20.92			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
NASHYD (0304)	Area	(ha)=	2.79	Curve Number	(CN)=	84.0	
ID= 1 DT= 5.0 min	Ia	(mm)=	7.50	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.47					

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.098 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 20.924
 TOTAL RAINFALL (mm)= 51.457
 RUNOFF COEFFICIENT = 0.407

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

CALIB							
STANDHYD (0305)	Area	(ha)=	2.15				
ID= 1 DT= 5.0 min	Total Imp(%)=	25.00	Dir. Conn.(%)=	25.00			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.81	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Max. Eff. Inten. (mm/hr)= 101.29 33.56
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.83 (ii) 13.76 (iii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.28 0.08

PEAK FLOW (cms)= 0.15 0.10 *TOTALS*
 TIME TO PEAK (hrs)= 1.33 1.50 0.195 (iii)
 RUNOFF VOLUME (mm)= 43.96 22.76 28.05
 TOTAL RAINFALL (mm)= 51.46 51.46 51.46
 RUNOFF COEFFICIENT = 0.85 0.44 0.55

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 2303) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0304):   AREA   QPEAK   TPEAK   R.V.
+ ID2= 2 ( 0305):   (ha)   (cms)   (hrs)   (mm)
=====
ID = 3 ( 2303):   4.95  0.211  1.33  24.03

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2304) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2302):   AREA   QPEAK   TPEAK   R.V.
+ ID2= 2 ( 2303):   (ha)   (cms)   (hrs)   (mm)
=====
ID = 3 ( 2304):   21.51  0.670  1.92  21.64

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLL

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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\VO2\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\67fe709-6b28-4175-8afc-bd306d6d118d\641800
35-e0f5-4354-842b-668e19a5dc44\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\67fe709-6b28-4175-8afc-bd306d6d118d\641800
35-e0f5-4354-842b-668e19a5dc44\scenar

DATE: 05-27-2026

TIME: 11:27:52

USER:

COMMENTS:

** SIMULATION : Run1.4 25-yr 4 hr Chicago (We **

```

| CHICAGO STORM | IDF curve parameters: A= 900.000
| Ptotal= 59.70 mm | B= 5.200
| C= 0.745
used in: INTENSITY = A / (t + B)^C

```

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.58	1.00	30.64	2.00	10.16	3.00	5.38
0.17	5.20	1.17	118.51	2.17	8.75	3.17	5.03
0.33	6.05	1.33	39.43	2.33	7.72	3.33	4.72
0.50	7.32	1.50	21.89	2.50	6.94	3.50	4.45
0.67	9.44	1.67	15.53	2.67	6.31	3.67	4.22
0.83	13.86	1.83	12.21	2.83	5.80	3.83	4.01

```

| CALIB |
| NASHYD ( 0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

```

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U.H. Tp(hrs)= 0.19

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.285 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 28.220
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.473

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

```

| CALIB |
| STANDHYD ( 0102) | Area (ha)= 1.78
| ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.49 1.29
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 108.93 40.00
Mannings n = 0.013 0.250

```

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

```

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

```

-35-

0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min)= 5.00 15.00
Storage Coeff. (min)= 2.51 (ii) 11.57 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

TOTALS
PEAK FLOW (cms)= 0.16 0.11 0.216 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 52.20 29.02 35.39
TOTAL RAINFALL (mm)= 59.70 59.70 59.70
RUNOFF COEFFICIENT = 0.87 0.49 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2101) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0101):   AREA   QPEAK   TPEAK   R.V.
+ ID2= 2 ( 0102):   (ha)   (cms)   (hrs)   (mm)
=====
ID = 3 ( 2101):   5.21  0.453  1.50  30.67

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| NASHYD ( 0202) | Area (ha)= 2.79 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

```

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U.H. Tp(hrs)= 0.15

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.29	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.29	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.247 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 27.029
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.453

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

CALIB
NASHYD (0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.35

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.29	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.29	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72

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0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.590

PEAK FLOW (cms)= 0.313 (i)
TIME TO PEAK (hrs)= 1.750
RUNOFF VOLUME (mm)= 28.280
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.474

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

ADD HYD (2201) |
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0201): 5.41 0.313 1.75 28.28
+ ID2= 2 (0202): 2.79 0.247 1.42 27.03
ID = 3 (2201): 8.20 0.488 1.58 27.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.29	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.29	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45

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0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.194 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 27.176
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.455

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

ADD HYD (2202) |
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 (0203): 3.26 0.194 1.67 27.18
+ ID2= 2 (2201): 8.20 0.488 1.58 27.85
ID = 3 (2202): 11.45 0.676 1.58 27.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD (0303) | Area (ha)= 8.53 Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.66

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.29	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.29	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22

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0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.312 (i)
TIME TO PEAK (hrs)= 2.167
RUNOFF VOLUME (mm)= 27.088
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.454

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

CALIB
NASHYD (0301) | Area (ha)= 4.20 Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.33

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.29	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.29	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.486

PEAK FLOW (cms)= 0.239 (i)
TIME TO PEAK (hrs)= 1.667
RUNOFF VOLUME (mm)= 27.081
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.454

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

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```

-----
| CALIB |
| NASHYD ( 0302) | Area (ha)= 3.84 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.57

```

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

```

-----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN |
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr |
|-----|-----|-----|-----|
| 0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38 |
| 0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38 |
| 0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03 |
| 0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03 |
| 0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72 |
| 0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72 |
| 0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45 |
| 0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45 |
| 0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22 |
| 0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22 |
| 0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01 |
| 1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01 |

```

Unit Hyd Qpeak (cms)= 0.257

```

PEAK FLOW (cms)= 0.155 (i)
TIME TO PEAK (hrs)= 2.000
RUNOFF VOLUME (mm)= 27.087
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.454

```

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

```

-----
| ADD HYD ( 2301) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 0301): 4.20 0.239 1.67 27.08
| + ID2= 2 ( 0302): 3.84 0.155 2.00 27.09
|-----|
| ID = 3 ( 2301): 8.04 0.370 1.83 27.08

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

| ADD HYD ( 2302) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2301): 8.04 0.370 1.83 27.08
| + ID2= 2 ( 0303): 8.53 0.312 2.17 27.09
|-----|
| ID = 3 ( 2302): 16.57 0.648 1.92 27.09

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.47

```

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

```

-----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN |
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr |
|-----|-----|-----|-----|
| 0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38 |
| 0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38 |
| 0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03 |
| 0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03 |
| 0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72 |
| 0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72 |
| 0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45 |
| 0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45 |
| 0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22 |
| 0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22 |
| 0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01 |
| 1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01 |

```

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW (cms)= 0.128 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 27.086
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.454

```

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

```

-----
| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

```

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```

-----
| IMPERVIOUS PERVIOUS (i) |
| Surface Area (ha)= 0.54 1.61 |
| Dep. Storage (mm)= 7.50 5.00 |
| Average Slope (%)= 1.00 2.00 |
| Length (m)= 119.81 40.00 |
| Mannings n = 0.013 0.250 |

```

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

```

-----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN |
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr |
|-----|-----|-----|-----|
| 0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38 |
| 0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38 |
| 0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03 |
| 0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03 |
| 0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72 |
| 0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72 |
| 0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45 |
| 0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45 |
| 0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22 |
| 0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22 |
| 0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01 |
| 1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01 |

```

```

Max. Eff. Inten. (mm/hr)= 118.51 53.59
over (min)= 5.00 15.00
Storage Coeff. (min)= 2.66 (ii) 11.72 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

```

```

*TOTALS*
PEAK FLOW (cms)= 0.17 0.14 0.244 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 52.20 29.02 34.81
TOTAL RAINFALL (mm)= 59.70 59.70 59.70
RUNOFF COEFFICIENT = 0.87 0.49 0.58

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2303) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 0304): 2.79 0.128 1.92 27.09
| + ID2= 2 ( 0305): 2.15 0.244 1.33 34.81
|-----|
| ID = 3 ( 2303): 4.95 0.274 1.50 30.45

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2304) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2302): 16.57 0.648 1.92 27.09
| + ID2= 2 ( 2303): 4.95 0.274 1.50 30.45
|-----|
| ID = 3 ( 2304): 21.51 0.868 1.83 27.86

```

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 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 Y M M 0 0
000 T T H H Y 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\voindat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\4e5df9
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Summary filename:
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-44-

27-d773-4c7b-98b5-4335b65cac04\scenar

DATE: 05-27-2026

TIME: 11:27:56

USER:

COMMENTS: _____

 ** SIMULATION : Run1.5 50-yr 4 hr Chicago (We **

CHICAGO STORM | IDf curve parameters: A= 960.000
 Ptotal= 66.93 mm | B= 5.100
 C= 0.736
 used in: INTENSITY = A / (t + B)^C
 Duration of storm = 4.00 hrs
 Storm time step = 10.00 min
 Time to peak ratio = 0.33

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	'	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	5.29	1.00	34.17	2.00	11.57	3.00	6.20	
0.17	5.99	1.17	130.18	2.17	9.99	3.17	5.79	
0.33	6.95	1.33	43.81	2.33	8.84	3.33	5.44	
0.50	8.38	1.50	24.58	2.50	7.95	3.50	5.14	
0.67	10.77	1.67	17.55	2.67	7.25	3.67	4.88	
0.83	15.69	1.83	13.86	2.83	6.67	3.83	4.64	

CALIB |
 NASHYD (0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
 ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.19

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

----- TRANSFORMED HYETOGRAPH -----
 TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN

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hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20	
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20	
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79	
0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79	
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44	
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44	
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14	
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14	
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88	
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88	
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64	
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64	

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.345 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 34.027
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.508

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

CALIB |
 STANDHYD (0102) | Area (ha)= 1.78
 ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.49 1.29
 Dep. Storage (mm)= 7.50 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 108.93 40.00
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----
 TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
 hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
 0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
 0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
 0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
 0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
 0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
 0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
 0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14

-46-

0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max. Eff. Inten. (mm/hr)= 130.18 64.10
 over (min)= 5.00 15.00
 Storage Coeff. (min)= 2.42 (ii) 10.85 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.17 0.14
 TIME TO PEAK (hrs)= 1.33 1.50
 RUNOFF VOLUME (mm)= 59.43 34.77
 TOTAL RAINFALL (mm)= 66.93 66.93
 RUNOFF COEFFICIENT = 0.89 0.52

TOTALS

0.247 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2101) |
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 ID1= 1 (0101): 3.43 0.345 1.50 34.03
 + ID2= 2 (0102): 1.78 0.247 1.33 41.55
 ID = 3 (2101): 5.21 0.544 1.50 36.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |
 NASHYD (0202) | Area (ha)= 2.79 Curve Number (CN)= 84.1
 ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.15

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

----- TRANSFORMED HYETOGRAPH -----
 TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN

-47-

hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20	
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20	
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79	
0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79	
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44	
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44	
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14	
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14	
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88	
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88	
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64	
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64	

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.301 (i)
 TIME TO PEAK (hrs)= 1.417
 RUNOFF VOLUME (mm)= 32.679
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.488

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

CALIB |
 NASHYD (0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
 ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.35

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

----- TRANSFORMED HYETOGRAPH -----
 TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
 hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
 0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
 0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
 0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
 0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
 0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
 0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
 0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
 0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
 0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
 0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
 0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
 1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

-48-

Unit Hyd Qpeak (cms)= 0.590

PEAK FLOW (cms)= 0.378 (i)
 TIME TO PEAK (hrs)= 1.750
 RUNOFF VOLUME (mm)= 34.099
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.509

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

```

-----
| ADD HYD ( 2201)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 0201):      AREA   QPEAK   TPEAK   R.V.
              (ha)   (cms)   (hrs)   (mm)
+ ID2= 2 ( 0202):      5.41   0.378   1.75   34.10
              2.79   0.301   1.42   32.68
=====
ID = 3 ( 2201):      8.20   0.591   1.58   33.62
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| NASHYD ( 0203)|
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.26   Curve Number (CN)= 84.1
Ia (mm)= 7.50   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.31
  
```

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

```

-----
|          |          |          |          |          |          |
| TIME RAIN | 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 | hrs mm/hr |
-----
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20 |
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20 |
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79 |
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79 |
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44 |
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44 |
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14 |
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14 |
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88 |
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88 |
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64 |
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64 |
  
```

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.236 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 32.857
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.491

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

```

-----
| ADD HYD ( 2202)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 0203):      AREA   QPEAK   TPEAK   R.V.
              (ha)   (cms)   (hrs)   (mm)
+ ID2= 2 ( 2201):      8.20   0.591   1.58   33.62
              8.20   0.591   1.58   33.62
=====
ID = 3 ( 2202):      11.45   0.820   1.58   33.40
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| NASHYD ( 0303)|
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 8.53   Curve Number (CN)= 84.0
Ia (mm)= 7.50   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.66
  
```

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

```

-----
|          |          |          |          |          |          |
| TIME RAIN | 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 | hrs mm/hr |
-----
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20 |
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20 |
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79 |
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79 |
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44 |
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44 |
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14 |
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14 |
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88 |
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88 |
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64 |
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64 |
  
```

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.378 (i)
 TIME TO PEAK (hrs)= 2.167

RUNOFF VOLUME (mm)= 32.758
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.489

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

```

-----
| CALIB
| NASHYD ( 0301)|
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 4.20   Curve Number (CN)= 84.0
Ia (mm)= 7.50   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.33
  
```

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

```

-----
|          |          |          |          |          |          |
| TIME RAIN | 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 | hrs mm/hr |
-----
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20 |
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20 |
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79 |
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79 |
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44 |
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44 |
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14 |
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14 |
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88 |
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88 |
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64 |
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64 |
  
```

Unit Hyd Qpeak (cms)= 0.486

PEAK FLOW (cms)= 0.291 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 32.750
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.489

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

```

-----
| CALIB
| NASHYD ( 0302)|
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.84   Curve Number (CN)= 84.0
Ia (mm)= 7.50   # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.57
  
```

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

```

-----
|          |          |          |          |          |          |
| TIME RAIN | 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 | hrs mm/hr |
-----
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20 |
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20 |
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79 |
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79 |
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44 |
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44 |
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14 |
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14 |
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88 |
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88 |
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64 |
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64 |
  
```

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.188 (i)
 TIME TO PEAK (hrs)= 2.000
 RUNOFF VOLUME (mm)= 32.758
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.489

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

```

-----
| ADD HYD ( 2301)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 0301):      AREA   QPEAK   TPEAK   R.V.
              (ha)   (cms)   (hrs)   (mm)
+ ID2= 2 ( 0302):      4.20   0.291   1.67   32.75
              3.84   0.188   2.00   32.76
=====
ID = 3 ( 2301):      8.04   0.449   1.75   32.75
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2302)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 2301):      AREA   QPEAK   TPEAK   R.V.
              (ha)   (cms)   (hrs)   (mm)
+ ID2= 2 ( 0303):      8.04   0.449   1.75   32.75
              8.53   0.378   2.17   32.76
=====
ID = 3 ( 2302):      16.57   0.786   1.92   32.76
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.47

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW (cms)= 0.155 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 32.757
TOTAL RAINFALL (mm)= 66.928
RUNOFF COEFFICIENT = 0.489

```

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

```

-----
| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.54 1.61
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 119.81 40.00
Mannings n = 0.013 0.250

```

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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 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min)= 5.00 15.00
Storage Coeff. (min)= 2.56 (ii) 10.99 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

*TOTALS*
PEAK FLOW (cms)= 0.19 0.17 0.282 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 59.43 34.77 40.93
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.89 0.52 0.61

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2303) |
| 1 + 2 = 3 |
|-----|
ID1= 1 ( 0304): 2.79 0.155 1.92 32.76
+ ID2= 2 ( 0305): 2.15 0.282 1.33 40.93
=====
ID = 3 ( 2303): 4.95 0.330 1.50 36.31

```

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2304) |
| 1 + 2 = 3 |
|-----|
ID1= 1 ( 2302): 16.57 0.786 1.92 32.76
+ ID2= 2 ( 2303): 4.95 0.330 1.50 36.31
=====
ID = 3 ( 2304): 21.51 1.049 1.83 33.57

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V V I SSSS 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 SSSS UUUU A A LLLL

```

```

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\VO2\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\66fd65
f4-79e1-4a44-8ee1-dde4d6a13ad2\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\66fd65
f4-79e1-4a44-8ee1-dde4d6a13ad2\scenar

DATE: 05-27-2026

TIME: 11:27:53

USER:

-55-

COMMENTS: _____

```

*****
** SIMULATION : Run1.6 100-yr 4 hr Chicago (W **
*****

```

```

| CHICAGO STORM | IDF curve parameters: A=1020.000
| Ptotal= 73.18 mm | B= 4.700
|-----| C= 0.731
used in: INTENSITY = A / (t + B)^C

```

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

```

TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.00 5.85 | 1.00 36.88 | 2.00 12.66 | 3.00 6.84
0.17 6.62 | 1.17 142.99 | 2.17 10.96 | 3.17 6.40
0.33 7.67 | 1.33 47.20 | 2.33 9.71 | 3.33 6.02
0.50 9.22 | 1.50 26.61 | 2.50 8.75 | 3.50 5.69
0.67 11.80 | 1.67 19.09 | 2.67 7.99 | 3.67 5.40
0.83 17.10 | 1.83 15.13 | 2.83 7.36 | 3.83 5.14

```

```

-----
| CALIB |
| NASHYD ( 0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.19

```

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 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84
0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02

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-56-

0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.402 (i)
 TIME TO PEAK (hrs)= 1.500
 RUNOFF VOLUME (mm)= 39.198
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.536

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

CALIB	
STANDHYD (0102)	Area (ha)= 1.78
ID= 1 DT= 5.0 min	Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.49	1.29
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	108.93	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max. Eff. Inten. (mm/hr)= 142.99 74.97

over (min)	5.00	15.00
Storage Coeff. (min)=	2.33 (ii)	10.25 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.30	0.09
TOTALS		
PEAK FLOW (cms)=	0.19	0.16
TIME TO PEAK (hrs)=	1.33	1.50
RUNOFF VOLUME (mm)=	65.68	39.88
TOTAL RAINFALL (mm)=	73.18	73.18
RUNOFF COEFFICIENT =	0.90	0.54
		0.64

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2101)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0101):	3.43	0.402	1.50	39.20
+ ID2= 2 (0102):	1.78	0.281	1.33	46.97
ID = 3 (2101):	5.21	0.632	1.50	41.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
NASHYD (0202)	Area (ha)= 2.79 Curve Number (CN)= 84.1
ID= 1 DT= 5.0 min	Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.15

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02

0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.354 (i)
 TIME TO PEAK (hrs)= 1.417
 RUNOFF VOLUME (mm)= 37.723
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.515

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

CALIB	
NASHYD (0201)	Area (ha)= 5.41 Curve Number (CN)= 85.2
ID= 1 DT= 5.0 min	Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.35

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.590

PEAK FLOW (cms)= 0.439 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 39.281
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.537

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

ADD HYD (2201)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0201):	5.41	0.439	1.67	39.28
+ ID2= 2 (0202):	2.79	0.354	1.42	37.72
ID = 3 (2201):	8.20	0.689	1.58	38.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
NASHYD (0203)	Area (ha)= 3.26 Curve Number (CN)= 84.1
ID= 1 DT= 5.0 min	Ia (mm)= 7.50 # 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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.275 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 37.929
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.518

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

ADD HYD (2202)				
1	2	3		
ID1= 1 (0203):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (2201):	3.26	0.275	1.67	37.93
	8.20	0.689	1.58	38.75
ID = 3 (2202):	11.45	0.957	1.58	38.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0303)				
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	Curve Number (CN)	# of Linear Res.(N)
	8.53	7.50	84.0	3.00
	U.H. Tp(hrs)=	0.66		

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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.439 (i)
 TIME TO PEAK (hrs)= 2.167
 RUNOFF VOLUME (mm)= 37.822
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.517

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

CALIB				
NASHYD (0301)				
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	Curve Number (CN)	# of Linear Res.(N)
	4.20	7.50	84.0	3.00
	U.H. Tp(hrs)=	0.33		

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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.486

PEAK FLOW (cms)= 0.340 (i)
 TIME TO PEAK (hrs)= 1.667
 RUNOFF VOLUME (mm)= 37.812
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.517

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

CALIB				
NASHYD (0302)				
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	Curve Number (CN)	# of Linear Res.(N)
	3.84	7.50	84.0	3.00
	U.H. Tp(hrs)=	0.57		

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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84

0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.218 (i)
 TIME TO PEAK (hrs)= 2.000
 RUNOFF VOLUME (mm)= 37.821
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.517

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

ADD HYD (2301)				
1	2	3		
ID1= 1 (0301):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0302):	4.20	0.340	1.67	37.81
	3.84	0.218	2.00	37.82
ID = 3 (2301):	8.04	0.524	1.75	37.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2302)				
1	2	3		
ID1= 1 (2301):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (0303):	8.04	0.524	1.75	37.82
	8.53	0.439	2.17	37.82
ID = 3 (2302):	16.57	0.915	1.92	37.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0304)				
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	Curve Number (CN)	# of Linear Res.(N)
	2.79	7.50	84.0	3.00

U.H. Tp(hrs)= 0.47

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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.180 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 37.820
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.517

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

CALIB				
STANDHYD (0305)				
ID= 1 DT= 5.0 min	Area (ha)	Total Imp(%)	Dir. Conn.(%)	
	2.15	25.00	25.00	
	IMPERVIOUS			
Surface Area	(ha)=	0.54	1.61	
Dep. Storage	(mm)=	7.50	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	119.81	40.00	
Mannings n	=	0.013	0.250	

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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max. Eff. Inten. (mm/hr)= 142.99
over (min)= 5.00
Storage Coeff. (min)= 2.47 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.30

TOTALS

PEAK FLOW (cms)= 0.21
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 65.68
TOTAL RAINFALL (mm)= 73.18
RUNOFF COEFFICIENT = 0.90

0.321 (iii)

1.50

46.33

73.18

0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0304):	2.79	0.180	1.92	37.82
+ ID2= 2 (0305):	2.15	0.321	1.33	46.33
ID = 3 (2303):	4.95	0.385	1.50	41.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

	AREA	QPEAK	TPEAK	R.V.
ID1= 1 (2304):				
+ ID2= 2 (2304):				
ID = 3 (2304):				

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2302):	16.57	0.915	1.92	37.82
+ ID2= 2 (2303):	4.95	0.385	1.50	41.52
ID = 3 (2304):	21.51	1.217	1.83	38.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V	V	I	SSSS	U	U	A	L	(v 6.2.2015)
V	V	I	SS	U	U	A	L	
V	V	I	SS	U	U	AAAA	L	
V	V	I	SS	U	U	A	L	
VV	I	SSSS	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	T	T	H	H	Y	Y	M	M	0
000	T	T	H	H	Y	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\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67FE709-6B28-4175-8AFC-BD306D6D118D\A3A662
2a-394e-4fb0-939a-3004a0ff9220\scenar

Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67FE709-6B28-4175-8AFC-BD306D6D118D\A3A662
2a-394e-4fb0-939a-3004a0ff9220\scenar

DATE: 05-27-2026

TIME: 11:27:55

USER:

COMMENTS: _____

** SIMULATION : Run2.1 2-yr 24-hr SCS (Wellan) **

READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\37bb4998-8c3c-4c08-a339-698a2e98bc35\4b1fefde
Ptotal= 58.13 mm | Comments: 2-yr 24-hr SCS (Wellan)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	' hrs	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.64	6.00	1.16	12.00	8.37	18.00	1.05	
0.25	0.64	6.25	1.16	12.25	8.37	18.25	1.05	
0.50	0.64	6.50	1.16	12.50	4.30	18.50	1.05	
0.75	0.64	6.75	1.16	12.75	4.30	18.75	1.05	
1.00	0.64	7.00	1.16	13.00	0.81	19.00	1.05	
1.25	0.64	7.25	1.16	13.25	0.81	19.25	1.05	
1.50	0.64	7.50	1.16	13.50	4.76	19.50	1.05	
1.75	0.64	7.75	1.16	13.75	4.76	19.75	1.05	
2.00	0.76	8.00	1.57	14.00	1.74	20.00	0.70	
2.25	0.76	8.25	1.57	14.25	1.74	20.25	0.70	
2.50	0.76	8.50	1.57	14.50	1.74	20.50	0.70	
2.75	0.76	8.75	1.57	14.75	1.74	20.75	0.70	
3.00	0.76	9.00	1.86	15.00	1.74	21.00	0.70	
3.25	0.76	9.25	1.86	15.25	1.74	21.25	0.70	
3.50	0.76	9.50	2.09	15.50	1.74	21.50	0.70	
3.75	0.76	9.75	2.09	15.75	1.74	21.75	0.70	
4.00	0.93	10.00	2.67	16.00	1.05	22.00	0.70	
4.25	0.93	10.25	2.67	16.25	1.05	22.25	0.70	
4.50	0.93	10.50	3.60	16.50	1.05	22.50	0.70	
4.75	0.93	10.75	3.60	16.75	1.05	22.75	0.70	
5.00	0.93	11.00	5.58	17.00	1.05	23.00	0.70	
5.25	0.93	11.25	5.58	17.25	1.05	23.25	0.70	
5.50	0.93	11.50	24.17	17.50	1.05	23.50	0.70	
5.75	0.93	11.75	64.14	17.75	1.05	23.75	0.70	

CALIB |
NASHYD (0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res. (N)= 3.00
U.H. Tp(hrs)= 0.19

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	' hrs	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05	
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05	
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05	
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05	
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05	
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05	
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05	
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05	
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05	
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05	
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05	
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05	
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05	
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05	
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05	
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05	
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05	
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05	
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05	
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05	
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05	
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05	
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05	
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05	
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70	
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70	
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70	
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70	
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70	
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70	
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70	
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70	
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70	
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70	
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70	
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70	
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70	
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70	
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70	
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70	
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70	
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70	
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70	
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70	
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70	
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70	
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70	
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70	

4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.240 (i)
 TIME TO PEAK (hrs)= 12.083
 RUNOFF VOLUME (mm)= 26.989
 TOTAL RAINFALL (mm)= 58.128
 RUNOFF COEFFICIENT = 0.464

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

CALIB	Area (ha)= 1.78	Dir. Conn.(%)= 27.50
STANDHYD (0102)	Total Imp(%)= 27.50	
ID= 1 DT= 5.0 min		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.49	1.29
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	108.93	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70

3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max. Eff. Inten. (mm/hr)= 64.14 36.31
 over (min) 5.00 15.00
 Storage Coeff. (min)= 3.21 (ii) 13.80 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.27 0.08

TOTALS
 PEAK FLOW (cms)= 0.09 0.08 0.159 (iii)
 TIME TO PEAK (hrs)= 12.00 12.08 12.00
 RUNOFF VOLUME (mm)= 50.63 27.81 34.08
 TOTAL RAINFALL (mm)= 58.13 58.13 58.13
 RUNOFF COEFFICIENT = 0.87 0.48 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2101)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	3.43	0.240	12.08	26.99
+ ID2= 2 (0102):	1.78	0.159	12.00	34.08
ID = 3 (2101):	5.21	0.390	12.00	29.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)= 2.79	Curve Number (CN)= 84.1
NASHYD (0202)	Ia (mm)= 7.50	# of Linear Res. (N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.15	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70

2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.215 (i)
 TIME TO PEAK (hrs)= 12.000
 RUNOFF VOLUME (mm)= 25.833

TOTAL RAINFALL (mm)= 58.128
 RUNOFF COEFFICIENT = 0.444

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

 | CALIB |
 | NASHYD (0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

 U.H. Tp(hrs)= 0.35

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70

2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.590

PEAK FLOW (cms)= 0.254 (i)
 TIME TO PEAK (hrs)= 12.250
 RUNOFF VOLUME (mm)= 27.046
 TOTAL RAINFALL (mm)= 58.128
 RUNOFF COEFFICIENT = 0.465

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

 | ADD HYD (2201) |
1 + 2 = 3
 ID1= 1 (0201): 5.41 0.254 12.25 27.05
 + ID2= 2 (0202): 2.79 0.215 12.00 25.83
 =====
 ID = 3 (2201): 8.20 0.426 12.08 26.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | NASHYD (0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05

2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.161 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 25.974
 TOTAL RAINFALL (mm)= 58.128
 RUNOFF COEFFICIENT = 0.447

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

ADD HYD (2202)					
1 + 2 = 3					
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0203):		3.26	0.161	12.17	25.97
+ ID2= 2 (2201):		8.20	0.426	12.08	26.63
=====					
ID = 3 (2202):		11.45	0.577	12.08	26.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD (0303)				Curve Number (CN)= 84.0	
ID= 1 DT= 5.0 min		Area	(ha)=	8.53	# of Linear Res.(N)= 3.00
-----		Ia	(mm)=	7.50	
		U.H. Tp	(hrs)=	0.66	

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	0.64	6.083	1.16	12.083	8.38	18.08	1.05				
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05				
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05				
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05				
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05				
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05				
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05				
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05				
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05				
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05				
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05				
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05				
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05				
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05				
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05				
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05				

1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70

5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

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1.750 0.64 | 7.750 1.16 | 13.750 4.76 | 19.75 1.05
1.833 0.64 | 7.833 1.16 | 13.833 4.76 | 19.83 1.05
1.917 0.64 | 7.917 1.16 | 13.917 4.76 | 19.92 1.05
2.000 0.64 | 8.000 1.16 | 14.000 4.76 | 20.00 1.05
2.083 0.76 | 8.083 1.57 | 14.083 1.74 | 20.08 0.70
2.167 0.76 | 8.167 1.57 | 14.167 1.74 | 20.17 0.70
2.250 0.76 | 8.250 1.57 | 14.250 1.74 | 20.25 0.70
2.333 0.76 | 8.333 1.57 | 14.333 1.74 | 20.33 0.70
2.417 0.76 | 8.417 1.57 | 14.417 1.74 | 20.42 0.70
2.500 0.76 | 8.500 1.57 | 14.500 1.74 | 20.50 0.70
2.583 0.76 | 8.583 1.57 | 14.583 1.74 | 20.58 0.70
2.667 0.76 | 8.667 1.57 | 14.667 1.74 | 20.67 0.70
2.750 0.76 | 8.750 1.57 | 14.750 1.74 | 20.75 0.70
2.833 0.76 | 8.833 1.57 | 14.833 1.74 | 20.83 0.70
2.917 0.76 | 8.917 1.57 | 14.917 1.74 | 20.92 0.70
3.000 0.76 | 9.000 1.57 | 15.000 1.74 | 21.00 0.70
3.083 0.76 | 9.083 1.86 | 15.083 1.74 | 21.08 0.70
3.167 0.76 | 9.167 1.86 | 15.167 1.74 | 21.17 0.70
3.250 0.76 | 9.250 1.86 | 15.250 1.74 | 21.25 0.70
3.333 0.76 | 9.333 1.86 | 15.333 1.74 | 21.33 0.70
3.417 0.76 | 9.417 1.86 | 15.417 1.74 | 21.42 0.70
3.500 0.76 | 9.500 1.86 | 15.500 1.74 | 21.50 0.70
3.583 0.76 | 9.583 2.09 | 15.583 1.74 | 21.58 0.70
3.667 0.76 | 9.667 2.09 | 15.667 1.74 | 21.67 0.70
3.750 0.76 | 9.750 2.09 | 15.750 1.74 | 21.75 0.70
3.833 0.76 | 9.833 2.09 | 15.833 1.74 | 21.83 0.70
3.917 0.76 | 9.917 2.09 | 15.917 1.74 | 21.92 0.70
4.000 0.76 | 10.000 2.09 | 16.000 1.74 | 22.00 0.70
4.083 0.93 | 10.083 2.67 | 16.083 1.05 | 22.08 0.70
4.167 0.93 | 10.167 2.67 | 16.167 1.05 | 22.17 0.70
4.250 0.93 | 10.250 2.67 | 16.250 1.05 | 22.25 0.70
4.333 0.93 | 10.333 2.67 | 16.333 1.05 | 22.33 0.70
4.417 0.93 | 10.417 2.67 | 16.417 1.05 | 22.42 0.70
4.500 0.93 | 10.500 2.67 | 16.500 1.05 | 22.50 0.70
4.583 0.93 | 10.583 3.60 | 16.583 1.05 | 22.58 0.70
4.667 0.93 | 10.667 3.60 | 16.667 1.05 | 22.67 0.70
4.750 0.93 | 10.750 3.60 | 16.750 1.05 | 22.75 0.70
4.833 0.93 | 10.833 3.60 | 16.833 1.05 | 22.83 0.70
4.917 0.93 | 10.917 3.60 | 16.917 1.05 | 22.92 0.70
5.000 0.93 | 11.000 3.60 | 17.000 1.05 | 23.00 0.70
5.083 0.93 | 11.083 5.58 | 17.083 1.05 | 23.08 0.70
5.167 0.93 | 11.167 5.58 | 17.167 1.05 | 23.17 0.70
5.250 0.93 | 11.250 5.58 | 17.250 1.05 | 23.25 0.70
5.333 0.93 | 11.333 5.58 | 17.333 1.05 | 23.33 0.70
5.417 0.93 | 11.417 5.58 | 17.417 1.05 | 23.42 0.70
5.500 0.93 | 11.500 5.58 | 17.500 1.05 | 23.50 0.70
5.583 0.93 | 11.583 24.17 | 17.583 1.05 | 23.58 0.70
5.667 0.93 | 11.667 24.17 | 17.667 1.05 | 23.67 0.70
5.750 0.93 | 11.750 24.17 | 17.750 1.05 | 23.75 0.70
5.833 0.93 | 11.833 64.14 | 17.833 1.05 | 23.83 0.70

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5.917 0.93 | 11.917 64.14 | 17.917 1.05 | 23.92 0.70
6.000 0.93 | 12.000 64.14 | 18.000 1.05 | 24.00 0.70

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Unit Hyd Qpeak (cms)= 0.486

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PEAK FLOW (cms)= 0.197 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 25.881
TOTAL RAINFALL (mm)= 58.128
RUNOFF COEFFICIENT = 0.445

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

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-----
| CALIB |
| NASHYD ( 0302) | Area (ha)= 3.84 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
-----
U.H. Tp(hrs)= 0.57

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.64 | 6.083 1.16 | 12.083 8.38 | 18.08 1.05
0.167 0.64 | 6.167 1.16 | 12.167 8.37 | 18.17 1.05
0.250 0.64 | 6.250 1.16 | 12.250 8.37 | 18.25 1.05
0.333 0.64 | 6.333 1.16 | 12.333 8.37 | 18.33 1.05
0.417 0.64 | 6.417 1.16 | 12.417 8.37 | 18.42 1.05
0.500 0.64 | 6.500 1.16 | 12.500 8.37 | 18.50 1.05
0.583 0.64 | 6.583 1.16 | 12.583 4.30 | 18.58 1.05
0.667 0.64 | 6.667 1.16 | 12.667 4.30 | 18.67 1.05
0.750 0.64 | 6.750 1.16 | 12.750 4.30 | 18.75 1.05
0.833 0.64 | 6.833 1.16 | 12.833 4.30 | 18.83 1.05
0.917 0.64 | 6.917 1.16 | 12.917 4.30 | 18.92 1.05
1.000 0.64 | 7.000 1.16 | 13.000 4.30 | 19.00 1.05
1.083 0.64 | 7.083 1.16 | 13.083 0.81 | 19.08 1.05
1.167 0.64 | 7.167 1.16 | 13.167 0.81 | 19.17 1.05
1.250 0.64 | 7.250 1.16 | 13.250 0.81 | 19.25 1.05
1.333 0.64 | 7.333 1.16 | 13.333 0.81 | 19.33 1.05
1.417 0.64 | 7.417 1.16 | 13.417 0.81 | 19.42 1.05
1.500 0.64 | 7.500 1.16 | 13.500 0.81 | 19.50 1.05
1.583 0.64 | 7.583 1.16 | 13.583 4.76 | 19.58 1.05
1.667 0.64 | 7.667 1.16 | 13.667 4.76 | 19.67 1.05
1.750 0.64 | 7.750 1.16 | 13.750 4.76 | 19.75 1.05
1.833 0.64 | 7.833 1.16 | 13.833 4.76 | 19.83 1.05
1.917 0.64 | 7.917 1.16 | 13.917 4.76 | 19.92 1.05
2.000 0.64 | 8.000 1.16 | 14.000 4.76 | 20.00 1.05

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2.083 0.76 | 8.083 1.57 | 14.083 1.74 | 20.08 0.70
2.167 0.76 | 8.167 1.57 | 14.167 1.74 | 20.17 0.70
2.250 0.76 | 8.250 1.57 | 14.250 1.74 | 20.25 0.70
2.333 0.76 | 8.333 1.57 | 14.333 1.74 | 20.33 0.70
2.417 0.76 | 8.417 1.57 | 14.417 1.74 | 20.42 0.70
2.500 0.76 | 8.500 1.57 | 14.500 1.74 | 20.50 0.70
2.583 0.76 | 8.583 1.57 | 14.583 1.74 | 20.58 0.70
2.667 0.76 | 8.667 1.57 | 14.667 1.74 | 20.67 0.70
2.750 0.76 | 8.750 1.57 | 14.750 1.74 | 20.75 0.70
2.833 0.76 | 8.833 1.57 | 14.833 1.74 | 20.83 0.70
2.917 0.76 | 8.917 1.57 | 14.917 1.74 | 20.92 0.70
3.000 0.76 | 9.000 1.57 | 15.000 1.74 | 21.00 0.70
3.083 0.76 | 9.083 1.86 | 15.083 1.74 | 21.08 0.70
3.167 0.76 | 9.167 1.86 | 15.167 1.74 | 21.17 0.70
3.250 0.76 | 9.250 1.86 | 15.250 1.74 | 21.25 0.70
3.333 0.76 | 9.333 1.86 | 15.333 1.74 | 21.33 0.70
3.417 0.76 | 9.417 1.86 | 15.417 1.74 | 21.42 0.70
3.500 0.76 | 9.500 1.86 | 15.500 1.74 | 21.50 0.70
3.583 0.76 | 9.583 2.09 | 15.583 1.74 | 21.58 0.70
3.667 0.76 | 9.667 2.09 | 15.667 1.74 | 21.67 0.70
3.750 0.76 | 9.750 2.09 | 15.750 1.74 | 21.75 0.70
3.833 0.76 | 9.833 2.09 | 15.833 1.74 | 21.83 0.70
3.917 0.76 | 9.917 2.09 | 15.917 1.74 | 21.92 0.70
4.000 0.76 | 10.000 2.09 | 16.000 1.74 | 22.00 0.70
4.083 0.93 | 10.083 2.67 | 16.083 1.05 | 22.08 0.70
4.167 0.93 | 10.167 2.67 | 16.167 1.05 | 22.17 0.70
4.250 0.93 | 10.250 2.67 | 16.250 1.05 | 22.25 0.70
4.333 0.93 | 10.333 2.67 | 16.333 1.05 | 22.33 0.70
4.417 0.93 | 10.417 2.67 | 16.417 1.05 | 22.42 0.70
4.500 0.93 | 10.500 2.67 | 16.500 1.05 | 22.50 0.70
4.583 0.93 | 10.583 3.60 | 16.583 1.05 | 22.58 0.70
4.667 0.93 | 10.667 3.60 | 16.667 1.05 | 22.67 0.70
4.750 0.93 | 10.750 3.60 | 16.750 1.05 | 22.75 0.70
4.833 0.93 | 10.833 3.60 | 16.833 1.05 | 22.83 0.70
4.917 0.93 | 10.917 3.60 | 16.917 1.05 | 22.92 0.70
5.000 0.93 | 11.000 3.60 | 17.000 1.05 | 23.00 0.70
5.083 0.93 | 11.083 5.58 | 17.083 1.05 | 23.08 0.70
5.167 0.93 | 11.167 5.58 | 17.167 1.05 | 23.17 0.70
5.250 0.93 | 11.250 5.58 | 17.250 1.05 | 23.25 0.70
5.333 0.93 | 11.333 5.58 | 17.333 1.05 | 23.33 0.70
5.417 0.93 | 11.417 5.58 | 17.417 1.05 | 23.42 0.70
5.500 0.93 | 11.500 5.58 | 17.500 1.05 | 23.50 0.70
5.583 0.93 | 11.583 24.17 | 17.583 1.05 | 23.58 0.70
5.667 0.93 | 11.667 24.17 | 17.667 1.05 | 23.67 0.70
5.750 0.93 | 11.750 24.17 | 17.750 1.05 | 23.75 0.70
5.833 0.93 | 11.833 64.14 | 17.833 1.05 | 23.83 0.70
5.917 0.93 | 11.917 64.14 | 17.917 1.05 | 23.92 0.70
6.000 0.93 | 12.000 64.14 | 18.000 1.05 | 24.00 0.70

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Unit Hyd Qpeak (cms)= 0.257

```

PEAK FLOW (cms)= 0.122 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 25.887
TOTAL RAINFALL (mm)= 58.128
RUNOFF COEFFICIENT = 0.445

```

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

```

-----
| ADD HYD ( 2301) |
| 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
-----
ID1= 1 ( 0301): 4.20 0.197 12.17 25.88
+ ID2= 2 ( 0302): 3.84 0.122 12.50 25.89
=====
ID = 3 ( 2301): 8.04 0.302 12.25 25.88

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2302) |
| 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
-----
ID1= 1 ( 2301): 8.04 0.302 12.25 25.88
+ ID2= 2 ( 0303): 8.53 0.243 12.58 25.89
=====
ID = 3 ( 2302): 16.57 0.514 12.33 25.89

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
-----
U.H. Tp(hrs)= 0.47

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.64 | 6.083 1.16 | 12.083 8.38 | 18.08 1.05
0.167 0.64 | 6.167 1.16 | 12.167 8.37 | 18.17 1.05
0.250 0.64 | 6.250 1.16 | 12.250 8.37 | 18.25 1.05
0.333 0.64 | 6.333 1.16 | 12.333 8.37 | 18.33 1.05

```

0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70

4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.102 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 25.886
 TOTAL RAINFALL (mm)= 58.128
 RUNOFF COEFFICIENT = 0.445

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

 | CALIB |
 | STANDHYD (0305) | Area (ha)= 2.15
 | ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.81	40.00
Mannings n =	0.013	0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05

0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70

4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

ID = 3 (2303): 4.95 0.241 12.00 29.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD ( 2304) |
| 1 + 2 = 3 |
=====
ID1= 1 ( 2302): 16.57 0.514 12.33 25.89
+ ID2= 2 ( 2303): 4.95 0.241 12.00 29.20
=====
ID = 3 ( 2304): 21.51 0.690 12.33 26.65
=====

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A L
V V I SS U U A A L
V I SSSS UUUU A A LLLL

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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\VO2\voind.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\64fec7
ad-b867-44c0-91ea-f00350cd8279\scenar

Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\64fec7
ad-b867-44c0-91ea-f00350cd8279\scenar

DATE: 05-27-2026

TIME: 11:27:53

USER:

-89-

COMMENTS:

** SIMULATION : Run2.2 5-yr 24-hr SCS (Wellan **

Filename: C:\Users\ZhouJ\AppData\Local\Temp\
37bb4998-8c3c-4c08-a339-698a2e98bc35\655ef187
Comments: 5-yr 24-hr SCS (Welland)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.77	6.00	1.40	12.00	10.05	18.00	1.26
0.25	0.77	6.25	1.40	12.25	10.05	18.25	1.26
0.50	0.77	6.50	1.40	12.50	5.17	18.50	1.26
0.75	0.77	6.75	1.40	12.75	5.17	18.75	1.26
1.00	0.77	7.00	1.40	13.00	0.98	19.00	1.26
1.25	0.77	7.25	1.40	13.25	0.98	19.25	1.26
1.50	0.77	7.50	1.40	13.50	5.72	19.50	1.26
1.75	0.77	7.75	1.40	13.75	5.72	19.75	1.26
2.00	0.91	8.00	1.88	14.00	2.09	20.00	0.84
2.25	0.91	8.25	1.88	14.25	2.09	20.25	0.84
2.50	0.91	8.50	1.88	14.50	2.09	20.50	0.84
2.75	0.91	8.75	1.88	14.75	2.09	20.75	0.84
3.00	0.91	9.00	2.23	15.00	2.09	21.00	0.84
3.25	0.91	9.25	2.23	15.25	2.09	21.25	0.84
3.50	0.91	9.50	2.51	15.50	2.09	21.50	0.84
3.75	0.91	9.75	2.51	15.75	2.09	21.75	0.84
4.00	1.12	10.00	3.21	16.00	1.26	22.00	0.84
4.25	1.12	10.25	3.21	16.25	1.26	22.25	0.84
4.50	1.12	10.50	4.33	16.50	1.26	22.50	0.84
4.75	1.12	10.75	4.33	16.75	1.26	22.75	0.84
5.00	1.12	11.00	6.70	17.00	1.26	23.00	0.84
5.25	1.12	11.25	6.70	17.25	1.26	23.25	0.84
5.50	1.12	11.50	29.04	17.50	1.26	23.50	0.84
5.75	1.12	11.75	77.06	17.75	1.26	23.75	0.84

| CALIB |

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| NASHYD ( 0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.19

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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 0.77 6.083 1.40 12.083 10.06 18.08 1.26
0.167 0.77 6.167 1.40 12.167 10.05 18.17 1.26
0.250 0.77 6.250 1.40 12.250 10.05 18.25 1.26
0.333 0.77 6.333 1.40 12.333 10.05 18.33 1.26
0.417 0.77 6.417 1.40 12.417 10.05 18.42 1.26
0.500 0.77 6.500 1.40 12.500 10.05 18.50 1.26
0.583 0.77 6.583 1.40 12.583 5.17 18.58 1.26
0.667 0.77 6.667 1.40 12.667 5.17 18.67 1.26
0.750 0.77 6.750 1.40 12.750 5.17 18.75 1.26
0.833 0.77 6.833 1.40 12.833 5.17 18.83 1.26
0.917 0.77 6.917 1.40 12.917 5.17 18.92 1.26
1.000 0.77 7.000 1.40 13.000 5.17 19.00 1.26
1.083 0.77 7.083 1.40 13.083 0.98 19.08 1.26
1.167 0.77 7.167 1.40 13.167 0.98 19.17 1.26
1.250 0.77 7.250 1.40 13.250 0.98 19.25 1.26
1.333 0.77 7.333 1.40 13.333 0.98 19.33 1.26
1.417 0.77 7.417 1.40 13.417 0.98 19.42 1.26
1.500 0.77 7.500 1.40 13.500 0.98 19.50 1.26
1.583 0.77 7.583 1.40 13.583 5.72 19.58 1.26
1.667 0.77 7.667 1.40 13.667 5.72 19.67 1.26
1.750 0.77 7.750 1.40 13.750 5.72 19.75 1.26
1.833 0.77 7.833 1.40 13.833 5.72 19.83 1.26
1.917 0.77 7.917 1.40 13.917 5.72 19.92 1.26
2.000 0.77 8.000 1.40 14.000 5.72 20.00 1.26
2.083 0.91 8.083 1.88 14.083 2.09 20.08 0.84
2.167 0.91 8.167 1.88 14.167 2.09 20.17 0.84
2.250 0.91 8.250 1.88 14.250 2.09 20.25 0.84
2.333 0.91 8.333 1.88 14.333 2.09 20.33 0.84
2.417 0.91 8.417 1.88 14.417 2.09 20.42 0.84
2.500 0.91 8.500 1.88 14.500 2.09 20.50 0.84
2.583 0.91 8.583 1.88 14.583 2.09 20.58 0.84
2.667 0.91 8.667 1.88 14.667 2.09 20.67 0.84
2.750 0.91 8.750 1.88 14.750 2.09 20.75 0.84
2.833 0.91 8.833 1.88 14.833 2.09 20.83 0.84
2.917 0.91 8.917 1.88 14.917 2.09 20.92 0.84
3.000 0.91 9.000 1.88 15.000 2.09 21.00 0.84
3.083 0.91 9.083 2.23 15.083 2.09 21.08 0.84
3.167 0.91 9.167 2.23 15.167 2.09 21.17 0.84
3.250 0.91 9.250 2.23 15.250 2.09 21.25 0.84
3.333 0.91 9.333 2.23 15.333 2.09 21.33 0.84

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3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.325 (i)

TIME TO PEAK (hrs)= 12.083

RUNOFF VOLUME (mm)= 36.415

TOTAL RAINFALL (mm)= 69.835

RUNOFF COEFFICIENT = 0.521

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

| CALIB |
| STANDHYD (0102) | Area (ha)= 1.78
| ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

IMPERVIOUS PERVIOUS (i)

-91-

-92-

Surface Area (ha)= 0.49 1.29
 Dep. Storage (mm)= 7.50 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 108.93 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84

3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max. Eff. Inten. (mm/hr)= 77.06 50.88
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.98 (ii) 12.23 (iii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.28 0.09

TOTALS
 PEAK FLOW (cms)= 0.10 0.12 0.208 (iii)
 TIME TO PEAK (hrs)= 12.00 12.08 12.00
 RUNOFF VOLUME (mm)= 62.33 37.13 44.06
 TOTAL RAINFALL (mm)= 69.84 69.84 69.84
 RUNOFF COEFFICIENT = 0.89 0.53 0.63

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 84.0 Ia = Dep. 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 (2101)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	3.43	0.325	12.08	36.41
+ ID2= 2 (0102):	1.78	0.208	12.00	44.06
=====				
ID = 3 (2101):	5.21	0.524	12.00	39.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0202)			
ID= 1 DT= 5.0 min	Area	(ha)=	Curve Number (CN)= 84.1
	Ia	(mm)=	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.15	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26

1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84

5.917 1.12 |11.917 77.06 |17.917 1.26 |23.92 0.84
6.000 1.12 |12.000 77.06 |18.000 1.26 |24.00 0.84

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.293 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 35.007
TOTAL RAINFALL (mm)= 69.835
RUNOFF COEFFICIENT = 0.501

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

| CALIB |
| NASHYD (0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.35

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 0.77 | 6.083 1.40 |12.083 10.06 |18.08 1.26
0.167 0.77 | 6.167 1.40 |12.167 10.05 |18.17 1.26
0.250 0.77 | 6.250 1.40 |12.250 10.05 |18.25 1.26
0.333 0.77 | 6.333 1.40 |12.333 10.05 |18.33 1.26
0.417 0.77 | 6.417 1.40 |12.417 10.05 |18.42 1.26
0.500 0.77 | 6.500 1.40 |12.500 10.05 |18.50 1.26
0.583 0.77 | 6.583 1.40 |12.583 5.17 |18.58 1.26
0.667 0.77 | 6.667 1.40 |12.667 5.17 |18.67 1.26
0.750 0.77 | 6.750 1.40 |12.750 5.17 |18.75 1.26
0.833 0.77 | 6.833 1.40 |12.833 5.17 |18.83 1.26
0.917 0.77 | 6.917 1.40 |12.917 5.17 |18.92 1.26
1.000 0.77 | 7.000 1.40 |13.000 5.17 |19.00 1.26
1.083 0.77 | 7.083 1.40 |13.083 0.98 |19.08 1.26
1.167 0.77 | 7.167 1.40 |13.167 0.98 |19.17 1.26
1.250 0.77 | 7.250 1.40 |13.250 0.98 |19.25 1.26
1.333 0.77 | 7.333 1.40 |13.333 0.98 |19.33 1.26
1.417 0.77 | 7.417 1.40 |13.417 0.98 |19.42 1.26
1.500 0.77 | 7.500 1.40 |13.500 0.98 |19.50 1.26
1.583 0.77 | 7.583 1.40 |13.583 5.72 |19.58 1.26
1.667 0.77 | 7.667 1.40 |13.667 5.72 |19.67 1.26
1.750 0.77 | 7.750 1.40 |13.750 5.72 |19.75 1.26
1.833 0.77 | 7.833 1.40 |13.833 5.72 |19.83 1.26
1.917 0.77 | 7.917 1.40 |13.917 5.72 |19.92 1.26
2.000 0.77 | 8.000 1.40 |14.000 5.72 |20.00 1.26

Unit Hyd Qpeak (cms)= 0.590

2.083 0.91 | 8.083 1.88 |14.083 2.09 |20.08 0.84
2.167 0.91 | 8.167 1.88 |14.167 2.09 |20.17 0.84
2.250 0.91 | 8.250 1.88 |14.250 2.09 |20.25 0.84
2.333 0.91 | 8.333 1.88 |14.333 2.09 |20.33 0.84
2.417 0.91 | 8.417 1.88 |14.417 2.09 |20.42 0.84
2.500 0.91 | 8.500 1.88 |14.500 2.09 |20.50 0.84
2.583 0.91 | 8.583 1.88 |14.583 2.09 |20.58 0.84
2.667 0.91 | 8.667 1.88 |14.667 2.09 |20.67 0.84
2.750 0.91 | 8.750 1.88 |14.750 2.09 |20.75 0.84
2.833 0.91 | 8.833 1.88 |14.833 2.09 |20.83 0.84
2.917 0.91 | 8.917 1.88 |14.917 2.09 |20.92 0.84
3.000 0.91 | 9.000 1.88 |15.000 2.09 |21.00 0.84
3.083 0.91 | 9.083 2.23 |15.083 2.09 |21.08 0.84
3.167 0.91 | 9.167 2.23 |15.167 2.09 |21.17 0.84
3.250 0.91 | 9.250 2.23 |15.250 2.09 |21.25 0.84
3.333 0.91 | 9.333 2.23 |15.333 2.09 |21.33 0.84
3.417 0.91 | 9.417 2.23 |15.417 2.09 |21.42 0.84
3.500 0.91 | 9.500 2.23 |15.500 2.09 |21.50 0.84
3.583 0.91 | 9.583 2.51 |15.583 2.09 |21.58 0.84
3.667 0.91 | 9.667 2.51 |15.667 2.09 |21.67 0.84
3.750 0.91 | 9.750 2.51 |15.750 2.09 |21.75 0.84
3.833 0.91 | 9.833 2.51 |15.833 2.09 |21.83 0.84
3.917 0.91 | 9.917 2.51 |15.917 2.09 |21.92 0.84
4.000 0.91 |10.000 2.51 |16.000 2.09 |22.00 0.84
4.083 1.12 |10.083 3.21 |16.083 1.26 |22.08 0.84
4.167 1.12 |10.167 3.21 |16.167 1.26 |22.17 0.84
4.250 1.12 |10.250 3.21 |16.250 1.26 |22.25 0.84
4.333 1.12 |10.333 3.21 |16.333 1.26 |22.33 0.84
4.417 1.12 |10.417 3.21 |16.417 1.26 |22.42 0.84
4.500 1.12 |10.500 3.21 |16.500 1.26 |22.50 0.84
4.583 1.12 |10.583 4.33 |16.583 1.26 |22.58 0.84
4.667 1.12 |10.667 4.33 |16.667 1.26 |22.67 0.84
4.750 1.12 |10.750 4.33 |16.750 1.26 |22.75 0.84
4.833 1.12 |10.833 4.33 |16.833 1.26 |22.83 0.84
4.917 1.12 |10.917 4.33 |16.917 1.26 |22.92 0.84
5.000 1.12 |11.000 4.33 |17.000 1.26 |23.00 0.84
5.083 1.12 |11.083 6.70 |17.083 1.26 |23.08 0.84
5.167 1.12 |11.167 6.70 |17.167 1.26 |23.17 0.84
5.250 1.12 |11.250 6.70 |17.250 1.26 |23.25 0.84
5.333 1.12 |11.333 6.70 |17.333 1.26 |23.33 0.84
5.417 1.12 |11.417 6.70 |17.417 1.26 |23.42 0.84
5.500 1.12 |11.500 6.70 |17.500 1.26 |23.50 0.84
5.583 1.12 |11.583 29.04 |17.583 1.26 |23.58 0.84
5.667 1.12 |11.667 29.04 |17.667 1.26 |23.67 0.84
5.750 1.12 |11.750 29.04 |17.750 1.26 |23.75 0.84
5.833 1.12 |11.833 77.05 |17.833 1.26 |23.83 0.84
5.917 1.12 |11.917 77.06 |17.917 1.26 |23.92 0.84
6.000 1.12 |12.000 77.06 |18.000 1.26 |24.00 0.84

PEAK FLOW (cms)= 0.347 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 36.492
TOTAL RAINFALL (mm)= 69.835
RUNOFF COEFFICIENT = 0.523

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

| ADD HYD (2201) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
|-----| (ha) (cms) (hrs) (mm)
ID1= 1 (0201): 5.41 0.347 12.17 36.49
+ ID2= 2 (0202): 2.79 0.293 12.00 35.01
=====

ID = 3 (2201): 8.20 0.582 12.08 35.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |
| NASHYD (0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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 0.77 | 6.083 1.40 |12.083 10.06 |18.08 1.26
0.167 0.77 | 6.167 1.40 |12.167 10.05 |18.17 1.26
0.250 0.77 | 6.250 1.40 |12.250 10.05 |18.25 1.26
0.333 0.77 | 6.333 1.40 |12.333 10.05 |18.33 1.26
0.417 0.77 | 6.417 1.40 |12.417 10.05 |18.42 1.26
0.500 0.77 | 6.500 1.40 |12.500 10.05 |18.50 1.26
0.583 0.77 | 6.583 1.40 |12.583 5.17 |18.58 1.26
0.667 0.77 | 6.667 1.40 |12.667 5.17 |18.67 1.26
0.750 0.77 | 6.750 1.40 |12.750 5.17 |18.75 1.26
0.833 0.77 | 6.833 1.40 |12.833 5.17 |18.83 1.26
0.917 0.77 | 6.917 1.40 |12.917 5.17 |18.92 1.26
1.000 0.77 | 7.000 1.40 |13.000 5.17 |19.00 1.26
1.083 0.77 | 7.083 1.40 |13.083 0.98 |19.08 1.26
1.167 0.77 | 7.167 1.40 |13.167 0.98 |19.17 1.26
1.250 0.77 | 7.250 1.40 |13.250 0.98 |19.25 1.26
1.333 0.77 | 7.333 1.40 |13.333 0.98 |19.33 1.26

1.417 0.77 | 7.417 1.40 |13.417 0.98 |19.42 1.26
1.500 0.77 | 7.500 1.40 |13.500 0.98 |19.50 1.26
1.583 0.77 | 7.583 1.40 |13.583 5.72 |19.58 1.26
1.667 0.77 | 7.667 1.40 |13.667 5.72 |19.67 1.26
1.750 0.77 | 7.750 1.40 |13.750 5.72 |19.75 1.26
1.833 0.77 | 7.833 1.40 |13.833 5.72 |19.83 1.26
1.917 0.77 | 7.917 1.40 |13.917 5.72 |19.92 1.26
2.000 0.77 | 8.000 1.40 |14.000 5.72 |20.00 1.26
2.083 0.91 | 8.083 1.88 |14.083 2.09 |20.08 0.84
2.167 0.91 | 8.167 1.88 |14.167 2.09 |20.17 0.84
2.250 0.91 | 8.250 1.88 |14.250 2.09 |20.25 0.84
2.333 0.91 | 8.333 1.88 |14.333 2.09 |20.33 0.84
2.417 0.91 | 8.417 1.88 |14.417 2.09 |20.42 0.84
2.500 0.91 | 8.500 1.88 |14.500 2.09 |20.50 0.84
2.583 0.91 | 8.583 1.88 |14.583 2.09 |20.58 0.84
2.667 0.91 | 8.667 1.88 |14.667 2.09 |20.67 0.84
2.750 0.91 | 8.750 1.88 |14.750 2.09 |20.75 0.84
2.833 0.91 | 8.833 1.88 |14.833 2.09 |20.83 0.84
2.917 0.91 | 8.917 1.88 |14.917 2.09 |20.92 0.84
3.000 0.91 | 9.000 1.88 |15.000 2.09 |21.00 0.84
3.083 0.91 | 9.083 2.23 |15.083 2.09 |21.08 0.84
3.167 0.91 | 9.167 2.23 |15.167 2.09 |21.17 0.84
3.250 0.91 | 9.250 2.23 |15.250 2.09 |21.25 0.84
3.333 0.91 | 9.333 2.23 |15.333 2.09 |21.33 0.84
3.417 0.91 | 9.417 2.23 |15.417 2.09 |21.42 0.84
3.500 0.91 | 9.500 2.23 |15.500 2.09 |21.50 0.84
3.583 0.91 | 9.583 2.51 |15.583 2.09 |21.58 0.84
3.667 0.91 | 9.667 2.51 |15.667 2.09 |21.67 0.84
3.750 0.91 | 9.750 2.51 |15.750 2.09 |21.75 0.84
3.833 0.91 | 9.833 2.51 |15.833 2.09 |21.83 0.84
3.917 0.91 | 9.917 2.51 |15.917 2.09 |21.92 0.84
4.000 0.91 |10.000 2.51 |16.000 2.09 |22.00 0.84
4.083 1.12 |10.083 3.21 |16.083 1.26 |22.08 0.84
4.167 1.12 |10.167 3.21 |16.167 1.26 |22.17 0.84
4.250 1.12 |10.250 3.21 |16.250 1.26 |22.25 0.84
4.333 1.12 |10.333 3.21 |16.333 1.26 |22.33 0.84
4.417 1.12 |10.417 3.21 |16.417 1.26 |22.42 0.84
4.500 1.12 |10.500 3.21 |16.500 1.26 |22.50 0.84
4.583 1.12 |10.583 4.33 |16.583 1.26 |22.58 0.84
4.667 1.12 |10.667 4.33 |16.667 1.26 |22.67 0.84
4.750 1.12 |10.750 4.33 |16.750 1.26 |22.75 0.84
4.833 1.12 |10.833 4.33 |16.833 1.26 |22.83 0.84
4.917 1.12 |10.917 4.33 |16.917 1.26 |22.92 0.84
5.000 1.12 |11.000 4.33 |17.000 1.26 |23.00 0.84
5.083 1.12 |11.083 6.70 |17.083 1.26 |23.08 0.84
5.167 1.12 |11.167 6.70 |17.167 1.26 |23.17 0.84
5.250 1.12 |11.250 6.70 |17.250 1.26 |23.25 0.84
5.333 1.12 |11.333 6.70 |17.333 1.26 |23.33 0.84
5.417 1.12 |11.417 6.70 |17.417 1.26 |23.42 0.84
5.500 1.12 |11.500 6.70 |17.500 1.26 |23.50 0.84

5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	29.04	17.833	1.26	23.83	0.84
5.917	1.12	11.917	29.04	17.917	1.26	23.92	0.84
6.000	1.12	12.000	29.04	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.220 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 35.198
 TOTAL RAINFALL (mm)= 69.835
 RUNOFF COEFFICIENT = 0.504

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

ADD HYD (2202)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0203):	3.26	0.220	12.17	35.20
+ ID2= 2 (2201):	8.20	0.582	12.08	35.99
ID = 3 (2202):	11.45	0.791	12.08	35.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD (0303)	8.53	84.0
ID= 1 DT= 5.0 min	7.50	3.00
U.H. Tp(hrs)=	0.66	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	10.05	18.58	1.26
0.667	0.77	6.667	1.40	12.667	10.05	18.67	1.26

0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84

4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	29.04	17.833	1.26	23.83	0.84
5.917	1.12	11.917	29.04	17.917	1.26	23.92	0.84
6.000	1.12	12.000	29.04	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.334 (i)
 TIME TO PEAK (hrs)= 12.583
 RUNOFF VOLUME (mm)= 35.095
 TOTAL RAINFALL (mm)= 69.835
 RUNOFF COEFFICIENT = 0.503

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

CALIB	Area (ha)	Curve Number (CN)
NASHYD (0301)	4.20	84.0
ID= 1 DT= 5.0 min	7.50	3.00
U.H. Tp(hrs)=	0.33	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26

1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09		

5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.486

PEAK FLOW (cms)= 0.270 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 35.086
 TOTAL RAINFALL (mm)= 69.835
 RUNOFF COEFFICIENT = 0.502

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

CALIB				
NASHYD (0302)	Area (ha)=	3.84	Curve Number (CN)=	84.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.50	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.57		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26

1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84

5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.167 (i)
 TIME TO PEAK (hrs)= 12.500
 RUNOFF VOLUME (mm)= 35.094
 TOTAL RAINFALL (mm)= 69.835
 RUNOFF COEFFICIENT = 0.503

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

ADD HYD (2301)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0301):	4.20	0.270	12.17	35.09
+ ID2= 2 (0302):	3.84	0.167	12.50	35.09
ID = 3 (2301):	8.04	0.415	12.25	35.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2302)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2301):	8.04	0.415	12.25	35.09
+ ID2= 2 (0303):	8.53	0.334	12.58	35.10
ID = 3 (2302):	16.57	0.709	12.33	35.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0304)	Area (ha)=	2.79	Curve Number (CN)=	84.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.50	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.47		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.

3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.140 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 35.093
 TOTAL RAINFALL (mm)= 69.835
 RUNOFF COEFFICIENT = 0.503

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

CALIB		STANDHYD (0305)		ID= 1 DT= 5.0 min	
Area	(ha)=	2.15			
Total Imp	(%)=	25.00	Dir. Conn.(%)=	25.00	
IMPERVIOUS PERVIOUS (i)					
Surface Area	(ha)=	0.54	1.61		
Dep. Storage	(mm)=	7.50	5.00		
Average Slope	(%)=	1.00	2.00		
Length	(m)=	119.81	40.00		
Mannings n	=	0.013	0.250		

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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	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84

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3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
 over (min) 5.00 15.00
 Storage Coeff. (min)= 3.16 (ii) 12.41 (iii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.27 0.08

PEAK FLOW (cms)= 0.11 0.15
 TIME TO PEAK (hrs)= 12.00 12.08
 RUNOFF VOLUME (mm)= 62.33 37.13
 TOTAL RAINFALL (mm)= 69.84 69.84
 RUNOFF COEFFICIENT = 0.89 0.53

TOTALS

0.243 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2303)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0304):	2.79	0.140	12.33	35.09
+ ID2= 2 (0305):	2.15	0.243	12.00	43.43
ID = 3 (2303):	4.95	0.323	12.00	38.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2304)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2302):	16.57	0.709	12.33	35.09
+ ID2= 2 (2303):	4.95	0.323	12.00	38.72
ID = 3 (2304):	21.51	0.944	12.25	35.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS U U A L (v 6.2.2015)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 VV I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
 0 0 T T H H Y Y M M 0 0
 0 0 T T H H Y Y M M 0 0
 000 T T H H Y 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\vo.in.dat

Output filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\dc9e88
 0b-8e00-41d4-8d76-e9caf1262207\scenar

-112-

Summary filename:
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DATE: 05-27-2026

TIME: 11:27:55

USER:

COMMENTS: _____

** SIMULATION : Run2.3 10-yr 24-hr SCS (Wella) **

| READ STORM | | Filename: C:\Users\ZhouJ\AppData
| | | ata\Local\Temp\
| | | 37bb4998-8c3c-4c08-a339-698a2e98bc35\56b76213
| Ptotal= 80.00 mm | | Comments: 10-yr 24-hr SCS (Wella) |

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	' TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.88	6.00	1.60	12.00	11.52	18.00	1.44
0.25	0.88	6.25	1.60	12.25	11.52	18.25	1.44
0.50	0.88	6.50	1.60	12.50	5.92	18.50	1.44
0.75	0.88	6.75	1.60	12.75	5.92	18.75	1.44
1.00	0.88	7.00	1.60	13.00	1.12	19.00	1.44
1.25	0.88	7.25	1.60	13.25	1.12	19.25	1.44
1.50	0.88	7.50	1.60	13.50	6.56	19.50	1.44
1.75	0.88	7.75	1.60	13.75	6.56	19.75	1.44
2.00	1.04	8.00	2.16	14.00	2.40	20.00	0.96
2.25	1.04	8.25	2.16	14.25	2.40	20.25	0.96
2.50	1.04	8.50	2.16	14.50	2.40	20.50	0.96
2.75	1.04	8.75	2.16	14.75	2.40	20.75	0.96
3.00	1.04	9.00	2.56	15.00	2.40	21.00	0.96
3.25	1.04	9.25	2.56	15.25	2.40	21.25	0.96
3.50	1.04	9.50	2.88	15.50	2.40	21.50	0.96
3.75	1.04	9.75	2.88	15.75	2.40	21.75	0.96
4.00	1.28	10.00	3.68	16.00	1.44	22.00	0.96
4.25	1.28	10.25	3.68	16.25	1.44	22.25	0.96
4.50	1.28	10.50	4.96	16.50	1.44	22.50	0.96
4.75	1.28	10.75	4.96	16.75	1.44	22.75	0.96
5.00	1.28	11.00	7.68	17.00	1.44	23.00	0.96

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5.25	1.28	11.25	7.68	17.25	1.44	23.25	0.96
5.50	1.28	11.50	33.28	17.50	1.44	23.50	0.96
5.75	1.28	11.75	88.32	17.75	1.44	23.75	0.96

| CALIB |
| NASHYD (0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.19

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	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96

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2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.401 (i)
TIME TO PEAK (hrs)= 12.083
RUNOFF VOLUME (mm)= 44.966
TOTAL RAINFALL (mm)= 80.000
RUNOFF COEFFICIENT = 0.562

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

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| CALIB |
| STANDHYD (0102) | Area (ha)= 1.78
| ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50
|-----|

	IMPERVIOUS (i)	PERVIOUS (i)
Surface Area (ha)=	0.49	1.29
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	108.93	40.00
Mannings n =	0.013	0.250

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	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2		

2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96
Max.Eff.Inten.(mm/hr)=	88.32		62.08				
over (min)	5.00		15.00				
Storage Coeff. (min)=	2.83 (ii)		11.37 (ii)				
Unit Hyd. Tpeak (min)=	5.00		15.00				
Unit Hyd. peak (cms)=	0.28		0.09				
PEAK FLOW	(cms)= 0.12		0.15		*TOTALS*		
					0.252 (iii)		

TIME TO PEAK (hrs)=	12.00	12.08	12.00
RUNOFF VOLUME (mm)=	72.50	45.59	52.99
TOTAL RAINFALL (mm)=	80.00	80.00	80.00
RUNOFF COEFFICIENT =	0.91	0.57	0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2101)				
1 + 2 = 3				

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0101):	3.43	0.401	12.08	44.97
+ ID2= 2 (0102):	1.78	0.252	12.00	52.99
=====				
ID = 3 (2101):	5.21	0.644	12.00	47.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD (0202)				
ID= 1 DT= 5.0 min				

	Area	(ha)=	2.79	Curve Number (CN)= 84.1
	Ia	(mm)=	7.50	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.15		

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	0.88	6.083	1.60	12.083	11.53	18.08	1.44	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44	19.00	1.44

1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96

5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

```

1.417 0.88 | 7.417 1.60 |13.417 1.12 |19.42 1.44
1.500 0.88 | 7.500 1.60 |13.500 1.12 |19.50 1.44
1.583 0.88 | 7.583 1.60 |13.583 6.56 |19.58 1.44
1.667 0.88 | 7.667 1.60 |13.667 6.56 |19.67 1.44
1.750 0.88 | 7.750 1.60 |13.750 6.56 |19.75 1.44
1.833 0.88 | 7.833 1.60 |13.833 6.56 |19.83 1.44
1.917 0.88 | 7.917 1.60 |13.917 6.56 |19.92 1.44
2.000 0.88 | 8.000 1.60 |14.000 6.56 |20.00 1.44
2.083 1.04 | 8.083 2.16 |14.083 2.40 |20.08 0.96
2.167 1.04 | 8.167 2.16 |14.167 2.40 |20.17 0.96
2.250 1.04 | 8.250 2.16 |14.250 2.40 |20.25 0.96
2.333 1.04 | 8.333 2.16 |14.333 2.40 |20.33 0.96
2.417 1.04 | 8.417 2.16 |14.417 2.40 |20.42 0.96
2.500 1.04 | 8.500 2.16 |14.500 2.40 |20.50 0.96
2.583 1.04 | 8.583 2.16 |14.583 2.40 |20.58 0.96
2.667 1.04 | 8.667 2.16 |14.667 2.40 |20.67 0.96
2.750 1.04 | 8.750 2.16 |14.750 2.40 |20.75 0.96
2.833 1.04 | 8.833 2.16 |14.833 2.40 |20.83 0.96
2.917 1.04 | 8.917 2.16 |14.917 2.40 |20.92 0.96
3.000 1.04 | 9.000 2.16 |15.000 2.40 |21.00 0.96
3.083 1.04 | 9.083 2.56 |15.083 2.40 |21.08 0.96
3.167 1.04 | 9.167 2.56 |15.167 2.40 |21.17 0.96
3.250 1.04 | 9.250 2.56 |15.250 2.40 |21.25 0.96
3.333 1.04 | 9.333 2.56 |15.333 2.40 |21.33 0.96
3.417 1.04 | 9.417 2.56 |15.417 2.40 |21.42 0.96
3.500 1.04 | 9.500 2.56 |15.500 2.40 |21.50 0.96
3.583 1.04 | 9.583 2.88 |15.583 2.40 |21.58 0.96
3.667 1.04 | 9.667 2.88 |15.667 2.40 |21.67 0.96
3.750 1.04 | 9.750 2.88 |15.750 2.40 |21.75 0.96
3.833 1.04 | 9.833 2.88 |15.833 2.40 |21.83 0.96
3.917 1.04 | 9.917 2.88 |15.917 2.40 |21.92 0.96
4.000 1.04 |10.000 2.88 |16.000 2.40 |22.00 0.96
4.083 1.28 |10.083 3.68 |16.083 1.44 |22.08 0.96
4.167 1.28 |10.167 3.68 |16.167 1.44 |22.17 0.96
4.250 1.28 |10.250 3.68 |16.250 1.44 |22.25 0.96
4.333 1.28 |10.333 3.68 |16.333 1.44 |22.33 0.96
4.417 1.28 |10.417 3.68 |16.417 1.44 |22.42 0.96
4.500 1.28 |10.500 3.68 |16.500 1.44 |22.50 0.96
4.583 1.28 |10.583 4.96 |16.583 1.44 |22.58 0.96
4.667 1.28 |10.667 4.96 |16.667 1.44 |22.67 0.96
4.750 1.28 |10.750 4.96 |16.750 1.44 |22.75 0.96
4.833 1.28 |10.833 4.96 |16.833 1.44 |22.83 0.96
4.917 1.28 |10.917 4.96 |16.917 1.44 |22.92 0.96
5.000 1.28 |11.000 4.96 |17.000 1.44 |23.00 0.96
5.083 1.28 |11.083 7.68 |17.083 1.44 |23.08 0.96
5.167 1.28 |11.167 7.68 |17.167 1.44 |23.17 0.96
5.250 1.28 |11.250 7.68 |17.250 1.44 |23.25 0.96
5.333 1.28 |11.333 7.68 |17.333 1.44 |23.33 0.96
5.417 1.28 |11.417 7.68 |17.417 1.44 |23.42 0.96
5.500 1.28 |11.500 7.68 |17.500 1.44 |23.50 0.96

```

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5.583 1.28 |11.583 33.28 |17.583 1.44 |23.58 0.96
5.667 1.28 |11.667 33.28 |17.667 1.44 |23.67 0.96
5.750 1.28 |11.750 33.28 |17.750 1.44 |23.75 0.96
5.833 1.28 |11.833 88.31 |17.833 1.44 |23.83 0.96
5.917 1.28 |11.917 88.32 |17.917 1.44 |23.92 0.96
6.000 1.28 |12.000 88.32 |18.000 1.44 |24.00 0.96

```

Unit Hyd Qpeak (cms)= 0.590

```

PEAK FLOW (cms)= 0.431 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 45.061
TOTAL RAINFALL (mm)= 80.000
RUNOFF COEFFICIENT = 0.563

```

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

```

-----
| ADD HYD ( 2201) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0201): AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
+ ID2= 2 ( 0202): 5.41 0.431 12.17 45.06
2.79 0.364 12.00 43.36
=====
ID = 3 ( 2201): 8.20 0.723 12.08 44.48

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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 0.88 | 6.083 1.60 |12.083 11.53 |18.08 1.44
0.167 0.88 | 6.167 1.60 |12.167 11.52 |18.17 1.44
0.250 0.88 | 6.250 1.60 |12.250 11.52 |18.25 1.44
0.333 0.88 | 6.333 1.60 |12.333 11.52 |18.33 1.44
0.417 0.88 | 6.417 1.60 |12.417 11.52 |18.42 1.44
0.500 0.88 | 6.500 1.60 |12.500 11.52 |18.50 1.44
0.583 0.88 | 6.583 1.60 |12.583 5.92 |18.58 1.44
0.667 0.88 | 6.667 1.60 |12.667 5.92 |18.67 1.44

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```

0.750 0.88 | 6.750 1.60 |12.750 5.92 |18.75 1.44
0.833 0.88 | 6.833 1.60 |12.833 5.92 |18.83 1.44
0.917 0.88 | 6.917 1.60 |12.917 5.92 |18.92 1.44
1.000 0.88 | 7.000 1.60 |13.000 5.92 |19.00 1.44
1.083 0.88 | 7.083 1.60 |13.083 1.12 |19.08 1.44
1.167 0.88 | 7.167 1.60 |13.167 1.12 |19.17 1.44
1.250 0.88 | 7.250 1.60 |13.250 1.12 |19.25 1.44
1.333 0.88 | 7.333 1.60 |13.333 1.12 |19.33 1.44
1.417 0.88 | 7.417 1.60 |13.417 1.12 |19.42 1.44
1.500 0.88 | 7.500 1.60 |13.500 1.12 |19.50 1.44
1.583 0.88 | 7.583 1.60 |13.583 6.56 |19.58 1.44
1.667 0.88 | 7.667 1.60 |13.667 6.56 |19.67 1.44
1.750 0.88 | 7.750 1.60 |13.750 6.56 |19.75 1.44
1.833 0.88 | 7.833 1.60 |13.833 6.56 |19.83 1.44
1.917 0.88 | 7.917 1.60 |13.917 6.56 |19.92 1.44
2.000 0.88 | 8.000 1.60 |14.000 6.56 |20.00 1.44
2.083 1.04 | 8.083 2.16 |14.083 2.40 |20.08 0.96
2.167 1.04 | 8.167 2.16 |14.167 2.40 |20.17 0.96
2.250 1.04 | 8.250 2.16 |14.250 2.40 |20.25 0.96
2.333 1.04 | 8.333 2.16 |14.333 2.40 |20.33 0.96
2.417 1.04 | 8.417 2.16 |14.417 2.40 |20.42 0.96
2.500 1.04 | 8.500 2.16 |14.500 2.40 |20.50 0.96
2.583 1.04 | 8.583 2.16 |14.583 2.40 |20.58 0.96
2.667 1.04 | 8.667 2.16 |14.667 2.40 |20.67 0.96
2.750 1.04 | 8.750 2.16 |14.750 2.40 |20.75 0.96
2.833 1.04 | 8.833 2.16 |14.833 2.40 |20.83 0.96
2.917 1.04 | 8.917 2.16 |14.917 2.40 |20.92 0.96
3.000 1.04 | 9.000 2.16 |15.000 2.40 |21.00 0.96
3.083 1.04 | 9.083 2.56 |15.083 2.40 |21.08 0.96
3.167 1.04 | 9.167 2.56 |15.167 2.40 |21.17 0.96
3.250 1.04 | 9.250 2.56 |15.250 2.40 |21.25 0.96
3.333 1.04 | 9.333 2.56 |15.333 2.40 |21.33 0.96
3.417 1.04 | 9.417 2.56 |15.417 2.40 |21.42 0.96
3.500 1.04 | 9.500 2.56 |15.500 2.40 |21.50 0.96
3.583 1.04 | 9.583 2.88 |15.583 2.40 |21.58 0.96
3.667 1.04 | 9.667 2.88 |15.667 2.40 |21.67 0.96
3.750 1.04 | 9.750 2.88 |15.750 2.40 |21.75 0.96
3.833 1.04 | 9.833 2.88 |15.833 2.40 |21.83 0.96
3.917 1.04 | 9.917 2.88 |15.917 2.40 |21.92 0.96
4.000 1.04 |10.000 2.88 |16.000 2.40 |22.00 0.96
4.083 1.28 |10.083 3.68 |16.083 1.44 |22.08 0.96
4.167 1.28 |10.167 3.68 |16.167 1.44 |22.17 0.96
4.250 1.28 |10.250 3.68 |16.250 1.44 |22.25 0.96
4.333 1.28 |10.333 3.68 |16.333 1.44 |22.33 0.96
4.417 1.28 |10.417 3.68 |16.417 1.44 |22.42 0.96
4.500 1.28 |10.500 3.68 |16.500 1.44 |22.50 0.96
4.583 1.28 |10.583 4.96 |16.583 1.44 |22.58 0.96
4.667 1.28 |10.667 4.96 |16.667 1.44 |22.67 0.96
4.750 1.28 |10.750 4.96 |16.750 1.44 |22.75 0.96
4.833 1.28 |10.833 4.96 |16.833 1.44 |22.83 0.96

```

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4.917 1.28 |10.917 4.96 |16.917 1.44 |22.92 0.96
5.000 1.28 |11.000 4.96 |17.000 1.44 |23.00 0.96
5.083 1.28 |11.083 7.68 |17.083 1.44 |23.08 0.96
5.167 1.28 |11.167 7.68 |17.167 1.44 |23.17 0.96
5.250 1.28 |11.250 7.68 |17.250 1.44 |23.25 0.96
5.333 1.28 |11.333 7.68 |17.333 1.44 |23.33 0.96
5.417 1.28 |11.417 7.68 |17.417 1.44 |23.42 0.96
5.500 1.28 |11.500 7.68 |17.500 1.44 |23.50 0.96
5.583 1.28 |11.583 33.28 |17.583 1.44 |23.58 0.96
5.667 1.28 |11.667 33.28 |17.667 1.44 |23.67 0.96
5.750 1.28 |11.750 33.28 |17.750 1.44 |23.75 0.96
5.833 1.28 |11.833 88.31 |17.833 1.44 |23.83 0.96
5.917 1.28 |11.917 88.32 |17.917 1.44 |23.92 0.96
6.000 1.28 |12.000 88.32 |18.000 1.44 |24.00 0.96

```

Unit Hyd Qpeak (cms)= 0.401

```

PEAK FLOW (cms)= 0.274 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 43.598
TOTAL RAINFALL (mm)= 80.000
RUNOFF COEFFICIENT = 0.545

```

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

```

-----
| ADD HYD ( 2202) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0203): AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
+ ID2= 2 ( 2201): 3.26 0.274 12.17 43.60
8.20 0.723 12.08 44.48
=====
ID = 3 ( 2202): 11.45 0.984 12.08 44.23

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| NASHYD ( 0303) | Area (ha)= 8.53 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.66
-----

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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	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96

4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.417 (i)

TIME TO PEAK (hrs)= 12.583

RUNOFF VOLUME (mm)= 43.482

TOTAL RAINFALL (mm)= 80.000

RUNOFF COEFFICIENT = 0.544

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

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-----
| CALIB |
| NASHYD ( 0301) | Area (ha)= 4.20 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.33

```

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44

0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96

4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96

4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.208 (i)

TIME TO PEAK (hrs)= 12.417

RUNOFF VOLUME (mm)= 43.481

TOTAL RAINFALL (mm)= 80.000

RUNOFF COEFFICIENT = 0.544

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

ADD HYD (2301)							
1 + 2 = 3							
				AREA	QPEAK	TPEAK	R.V.
				(ha)	(cms)	(hrs)	(mm)
ID1= 1 (0301):				4.20	0.337	12.17	43.47
+ ID2= 2 (0302):				3.84	0.208	12.42	43.48
=====							
ID = 3 (2301):				8.04	0.518	12.25	43.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2302)							
1 + 2 = 3							
				AREA	QPEAK	TPEAK	R.V.
				(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2301):				8.04	0.518	12.25	43.48
+ ID2= 2 (0303):				8.53	0.417	12.58	43.48
=====							
ID = 3 (2302):				16.57	0.885	12.33	43.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0304)			
ID= 1 DT= 5.0 min			

Area	(ha)=	2.79	Curve Number (CN)= 84.0
Ia	(mm)=	7.50	# of Linear Res.(N)= 3.00
U.H. Tp(hrs)=	0.47		

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96

3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

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IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.54      1.61
Dep. Storage (mm)= 7.50      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 119.81      40.00
Mannings n = 0.013      0.250

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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 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44
1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44
1.917 0.88 | 7.917 1.60 | 13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 | 14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 | 14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 | 14.167 2.40 | 20.17 0.96
2.250 1.04 | 8.250 2.16 | 14.250 2.40 | 20.25 0.96
2.333 1.04 | 8.333 2.16 | 14.333 2.40 | 20.33 0.96
2.417 1.04 | 8.417 2.16 | 14.417 2.40 | 20.42 0.96
2.500 1.04 | 8.500 2.16 | 14.500 2.40 | 20.50 0.96
2.583 1.04 | 8.583 2.16 | 14.583 2.40 | 20.58 0.96
2.667 1.04 | 8.667 2.16 | 14.667 2.40 | 20.67 0.96
2.750 1.04 | 8.750 2.16 | 14.750 2.40 | 20.75 0.96
2.833 1.04 | 8.833 2.16 | 14.833 2.40 | 20.83 0.96
2.917 1.04 | 8.917 2.16 | 14.917 2.40 | 20.92 0.96
3.000 1.04 | 9.000 2.16 | 15.000 2.40 | 21.00 0.96

```

```

3.083 1.04 | 9.083 2.56 | 15.083 2.40 | 21.08 0.96
3.167 1.04 | 9.167 2.56 | 15.167 2.40 | 21.17 0.96
3.250 1.04 | 9.250 2.56 | 15.250 2.40 | 21.25 0.96
3.333 1.04 | 9.333 2.56 | 15.333 2.40 | 21.33 0.96
3.417 1.04 | 9.417 2.56 | 15.417 2.40 | 21.42 0.96
3.500 1.04 | 9.500 2.56 | 15.500 2.40 | 21.50 0.96
3.583 1.04 | 9.583 2.88 | 15.583 2.40 | 21.58 0.96
3.667 1.04 | 9.667 2.88 | 15.667 2.40 | 21.67 0.96
3.750 1.04 | 9.750 2.88 | 15.750 2.40 | 21.75 0.96
3.833 1.04 | 9.833 2.88 | 15.833 2.40 | 21.83 0.96
3.917 1.04 | 9.917 2.88 | 15.917 2.40 | 21.92 0.96
4.000 1.04 | 10.000 2.88 | 16.000 2.40 | 22.00 0.96
4.083 1.28 | 10.083 3.68 | 16.083 1.44 | 22.08 0.96
4.167 1.28 | 10.167 3.68 | 16.167 1.44 | 22.17 0.96
4.250 1.28 | 10.250 3.68 | 16.250 1.44 | 22.25 0.96
4.333 1.28 | 10.333 3.68 | 16.333 1.44 | 22.33 0.96
4.417 1.28 | 10.417 3.68 | 16.417 1.44 | 22.42 0.96
4.500 1.28 | 10.500 3.68 | 16.500 1.44 | 22.50 0.96
4.583 1.28 | 10.583 4.96 | 16.583 1.44 | 22.58 0.96
4.667 1.28 | 10.667 4.96 | 16.667 1.44 | 22.67 0.96
4.750 1.28 | 10.750 4.96 | 16.750 1.44 | 22.75 0.96
4.833 1.28 | 10.833 4.96 | 16.833 1.44 | 22.83 0.96
4.917 1.28 | 10.917 4.96 | 16.917 1.44 | 22.92 0.96
5.000 1.28 | 11.000 4.96 | 17.000 1.44 | 23.00 0.96
5.083 1.28 | 11.083 7.68 | 17.083 1.44 | 23.08 0.96
5.167 1.28 | 11.167 7.68 | 17.167 1.44 | 23.17 0.96
5.250 1.28 | 11.250 7.68 | 17.250 1.44 | 23.25 0.96
5.333 1.28 | 11.333 7.68 | 17.333 1.44 | 23.33 0.96
5.417 1.28 | 11.417 7.68 | 17.417 1.44 | 23.42 0.96
5.500 1.28 | 11.500 7.68 | 17.500 1.44 | 23.50 0.96
5.583 1.28 | 11.583 33.28 | 17.583 1.44 | 23.58 0.96
5.667 1.28 | 11.667 33.28 | 17.667 1.44 | 23.67 0.96
5.750 1.28 | 11.750 33.28 | 17.750 1.44 | 23.75 0.96
5.833 1.28 | 11.833 88.31 | 17.833 1.44 | 23.83 0.96
5.917 1.28 | 11.917 88.32 | 17.917 1.44 | 23.92 0.96
6.000 1.28 | 12.000 88.32 | 18.000 1.44 | 24.00 0.96

```

```

Max. Eff. Inten. (mm/hr)= 88.32      62.08
over (min) = 5.00      15.00
Storage Coeff. (min)= 2.99 (ii)      11.53 (ii)
Unit Hyd. Tpeak (min)= 5.00      15.00
Unit Hyd. peak (cms)= 0.28      0.09

```

```

*TOTALS*
PEAK FLOW (cms)= 0.13      0.18      0.296 (iii)
TIME TO PEAK (hrs)= 12.00      12.08      12.00
RUNOFF VOLUME (mm)= 72.50      45.59      52.31
TOTAL RAINFALL (mm)= 80.00      80.00      80.00
RUNOFF COEFFICIENT = 0.91      0.57      0.65

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2303) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0304): 2.79 0.174 12.33 43.48
+ ID2= 2 ( 0305): 2.15 0.296 12.00 52.31
=====
ID = 3 ( 2303): 4.95 0.398 12.00 47.33

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2304) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2302): 16.57 0.885 12.33 43.48
+ ID2= 2 ( 2303): 4.95 0.398 12.00 47.33
=====
ID = 3 ( 2304): 21.51 1.177 12.25 44.36

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU 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\VO2\vo.in.dat

```

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\F3130e
15-83eb-4b32-a37c-8514faac60ee\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\F3130e
15-83eb-4b32-a37c-8514faac60ee\scenar

```

DATE: 05-27-2026

TIME: 11:27:56

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run2.4 25-yr 24-hr SCS (Wella **
*****

```

```

-----
| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
| 37bb4998-8c3c-4c08-a339-698a2e98bc35\F54576b6
| Ptotal= 95.60 mm | Comments: 25-yr 24-hr SCS (Welland)
-----

```

```

TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.00 1.05 | 6.00 1.91 | 12.00 13.77 | 18.00 1.72
0.25 1.05 | 6.25 1.91 | 12.25 13.77 | 18.25 1.72
0.50 1.05 | 6.50 1.91 | 12.50 7.07 | 18.50 1.72
0.75 1.05 | 6.75 1.91 | 12.75 7.07 | 18.75 1.72
1.00 1.05 | 7.00 1.91 | 13.00 1.34 | 19.00 1.72
1.25 1.05 | 7.25 1.91 | 13.25 1.34 | 19.25 1.72
1.50 1.05 | 7.50 1.91 | 13.50 7.84 | 19.50 1.72
1.75 1.05 | 7.75 1.91 | 13.75 7.84 | 19.75 1.72
2.00 1.24 | 8.00 2.58 | 14.00 2.87 | 20.00 1.15
2.25 1.24 | 8.25 2.58 | 14.25 2.87 | 20.25 1.15
2.50 1.24 | 8.50 2.58 | 14.50 2.87 | 20.50 1.15
2.75 1.24 | 8.75 2.58 | 14.75 2.87 | 20.75 1.15
3.00 1.24 | 9.00 3.06 | 15.00 2.87 | 21.00 1.15

```

3.25	1.24	9.25	3.06	15.25	2.87	21.25	1.15
3.50	1.24	9.50	3.44	15.50	2.87	21.50	1.15
3.75	1.24	9.75	3.44	15.75	2.87	21.75	1.15
4.00	1.53	10.00	4.40	16.00	1.72	22.00	1.15
4.25	1.53	10.25	4.40	16.25	1.72	22.25	1.15
4.50	1.53	10.50	5.93	16.50	1.72	22.50	1.15
4.75	1.53	10.75	5.93	16.75	1.72	22.75	1.15
5.00	1.53	11.00	9.18	17.00	1.72	23.00	1.15
5.25	1.53	11.25	9.18	17.25	1.72	23.25	1.15
5.50	1.53	11.50	39.77	17.50	1.72	23.50	1.15
5.75	1.53	11.75	105.54	17.75	1.72	23.75	1.15

 | CALIB |
 | NASHYD (0101) |
ID= 1 DT= 5.0 min

Area (ha)= 3.43 Curve Number (CN)= 85.2
 Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.19

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	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72

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2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.689

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PEAK FLOW (cms)= 0.520 (i)
 TIME TO PEAK (hrs)= 12.083
 RUNOFF VOLUME (mm)= 58.567
 TOTAL RAINFALL (mm)= 95.603
 RUNOFF COEFFICIENT = 0.613

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

 | CALIB |
 | STANDHYD (0102) |
ID= 1 DT= 5.0 min

Area (ha)= 1.78
 Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.49 1.29
 Dep. Storage (mm)= 7.50 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 108.93 40.00
 Mannings n = 0.013 0.250

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	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72

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1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	2	

```

Max.Eff.Inten.(mm/hr)= 105.54      79.59
                        over (min)    5.00      15.00
Storage Coeff. (min)= 2.63 (ii)    10.36 (ii)
Unit Hyd. Tpeak (min)= 5.00      15.00
Unit Hyd. peak (cms)= 0.29      0.09

PEAK FLOW (cms)= 0.14      0.20      *TOTALS*
TIME TO PEAK (hrs)= 12.00      12.08      0.323 (iii)
RUNOFF VOLUME (mm)= 88.10      59.06      67.05
TOTAL RAINFALL (mm)= 95.60      95.60      95.60
RUNOFF COEFFICIENT = 0.92      0.62      0.70

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 2101) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0101): 3.43 0.520 12.08 58.57
+ ID2= 2 ( 0102): 1.78 0.323 12.00 67.05
=====
ID = 3 ( 2101): 5.21 0.835 12.00 61.46

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0202) | Area (ha)= 2.79 Curve Number (CN)= 84.1
|ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.15

```

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

```

-----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 1.05 | 6.083 1.91 | 12.083 13.78 | 18.08 1.72
0.167 1.05 | 6.167 1.91 | 12.167 13.77 | 18.17 1.72
0.250 1.05 | 6.250 1.91 | 12.250 13.77 | 18.25 1.72
0.333 1.05 | 6.333 1.91 | 12.333 13.77 | 18.33 1.72

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0.417 1.05 | 6.417 1.91 | 12.417 13.77 | 18.42 1.72
0.500 1.05 | 6.500 1.91 | 12.500 13.77 | 18.50 1.72
0.583 1.05 | 6.583 1.91 | 12.583 7.07 | 18.58 1.72
0.667 1.05 | 6.667 1.91 | 12.667 7.07 | 18.67 1.72
0.750 1.05 | 6.750 1.91 | 12.750 7.07 | 18.75 1.72
0.833 1.05 | 6.833 1.91 | 12.833 7.07 | 18.83 1.72
0.917 1.05 | 6.917 1.91 | 12.917 7.07 | 18.92 1.72
1.000 1.05 | 7.000 1.91 | 13.000 7.07 | 19.00 1.72
1.083 1.05 | 7.083 1.91 | 13.083 1.34 | 19.08 1.72
1.167 1.05 | 7.167 1.91 | 13.167 1.34 | 19.17 1.72
1.250 1.05 | 7.250 1.91 | 13.250 1.34 | 19.25 1.72
1.333 1.05 | 7.333 1.91 | 13.333 1.34 | 19.33 1.72
1.417 1.05 | 7.417 1.91 | 13.417 1.34 | 19.42 1.72
1.500 1.05 | 7.500 1.91 | 13.500 1.34 | 19.50 1.72
1.583 1.05 | 7.583 1.91 | 13.583 7.84 | 19.58 1.72
1.667 1.05 | 7.667 1.91 | 13.667 7.84 | 19.67 1.72
1.750 1.05 | 7.750 1.91 | 13.750 7.84 | 19.75 1.72
1.833 1.05 | 7.833 1.91 | 13.833 7.84 | 19.83 1.72
1.917 1.05 | 7.917 1.91 | 13.917 7.84 | 19.92 1.72
2.000 1.05 | 8.000 1.91 | 14.000 7.84 | 20.00 1.72
2.083 1.24 | 8.083 2.58 | 14.083 2.87 | 20.08 1.15
2.167 1.24 | 8.167 2.58 | 14.167 2.87 | 20.17 1.15
2.250 1.24 | 8.250 2.58 | 14.250 2.87 | 20.25 1.15
2.333 1.24 | 8.333 2.58 | 14.333 2.87 | 20.33 1.15
2.417 1.24 | 8.417 2.58 | 14.417 2.87 | 20.42 1.15
2.500 1.24 | 8.500 2.58 | 14.500 2.87 | 20.50 1.15
2.583 1.24 | 8.583 2.58 | 14.583 2.87 | 20.58 1.15
2.667 1.24 | 8.667 2.58 | 14.667 2.87 | 20.67 1.15
2.750 1.24 | 8.750 2.58 | 14.750 2.87 | 20.75 1.15
2.833 1.24 | 8.833 2.58 | 14.833 2.87 | 20.83 1.15
2.917 1.24 | 8.917 2.58 | 14.917 2.87 | 20.92 1.15
3.000 1.24 | 9.000 2.58 | 15.000 2.87 | 21.00 1.15
3.083 1.24 | 9.083 3.06 | 15.083 2.87 | 21.08 1.15
3.167 1.24 | 9.167 3.06 | 15.167 2.87 | 21.17 1.15
3.250 1.24 | 9.250 3.06 | 15.250 2.87 | 21.25 1.15
3.333 1.24 | 9.333 3.06 | 15.333 2.87 | 21.33 1.15
3.417 1.24 | 9.417 3.06 | 15.417 2.87 | 21.42 1.15
3.500 1.24 | 9.500 3.06 | 15.500 2.87 | 21.50 1.15
3.583 1.24 | 9.583 3.44 | 15.583 2.87 | 21.58 1.15
3.667 1.24 | 9.667 3.44 | 15.667 2.87 | 21.67 1.15
3.750 1.24 | 9.750 3.44 | 15.750 2.87 | 21.75 1.15
3.833 1.24 | 9.833 3.44 | 15.833 2.87 | 21.83 1.15
3.917 1.24 | 9.917 3.44 | 15.917 2.87 | 21.92 1.15
4.000 1.24 | 10.000 3.44 | 16.000 2.87 | 22.00 1.15
4.083 1.53 | 10.083 4.40 | 16.083 1.72 | 22.08 1.15
4.167 1.53 | 10.167 4.40 | 16.167 1.72 | 22.17 1.15
4.250 1.53 | 10.250 4.40 | 16.250 1.72 | 22.25 1.15
4.333 1.53 | 10.333 4.40 | 16.333 1.72 | 22.33 1.15
4.417 1.53 | 10.417 4.40 | 16.417 1.72 | 22.42 1.15
4.500 1.53 | 10.500 4.40 | 16.500 1.72 | 22.50 1.15

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4.583 1.53 | 10.583 5.93 | 16.583 1.72 | 22.58 1.15
4.667 1.53 | 10.667 5.93 | 16.667 1.72 | 22.67 1.15
4.750 1.53 | 10.750 5.93 | 16.750 1.72 | 22.75 1.15
4.833 1.53 | 10.833 5.93 | 16.833 1.72 | 22.83 1.15
4.917 1.53 | 10.917 5.93 | 16.917 1.72 | 22.92 1.15
5.000 1.53 | 11.000 5.93 | 17.000 1.72 | 23.00 1.15
5.083 1.53 | 11.083 9.18 | 17.083 1.72 | 23.08 1.15
5.167 1.53 | 11.167 9.18 | 17.167 1.72 | 23.17 1.15
5.250 1.53 | 11.250 9.18 | 17.250 1.72 | 23.25 1.15
5.333 1.53 | 11.333 9.18 | 17.333 1.72 | 23.33 1.15
5.417 1.53 | 11.417 9.18 | 17.417 1.72 | 23.42 1.15
5.500 1.53 | 11.500 9.18 | 17.500 1.72 | 23.50 1.15
5.583 1.53 | 11.583 39.77 | 17.583 1.72 | 23.58 1.15
5.667 1.53 | 11.667 39.77 | 17.667 1.72 | 23.67 1.15
5.750 1.53 | 11.750 39.77 | 17.750 1.72 | 23.75 1.15
5.833 1.53 | 11.833 105.53 | 17.833 1.72 | 23.83 1.15
5.917 1.53 | 11.917 105.54 | 17.917 1.72 | 23.92 1.15
6.000 1.53 | 12.000 105.54 | 18.000 1.72 | 24.00 1.15

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Unit Hyd Qpeak (cms)= 0.710

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PEAK FLOW (cms)= 0.475 (i)
TIME TO PEAK (hrs)= 12.000
RUNOFF VOLUME (mm)= 56.693
TOTAL RAINFALL (mm)= 95.603
RUNOFF COEFFICIENT = 0.593

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

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-----
| CALIB |
| NASHYD ( 0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
|ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.35

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

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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 1.05 | 6.083 1.91 | 12.083 13.78 | 18.08 1.72
0.167 1.05 | 6.167 1.91 | 12.167 13.77 | 18.17 1.72
0.250 1.05 | 6.250 1.91 | 12.250 13.77 | 18.25 1.72
0.333 1.05 | 6.333 1.91 | 12.333 13.77 | 18.33 1.72
0.417 1.05 | 6.417 1.91 | 12.417 13.77 | 18.42 1.72
0.500 1.05 | 6.500 1.91 | 12.500 13.77 | 18.50 1.72
0.583 1.05 | 6.583 1.91 | 12.583 7.07 | 18.58 1.72
0.667 1.05 | 6.667 1.91 | 12.667 7.07 | 18.67 1.72

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0.750 1.05 | 6.750 1.91 | 12.750 7.07 | 18.75 1.72
0.833 1.05 | 6.833 1.91 | 12.833 7.07 | 18.83 1.72
0.917 1.05 | 6.917 1.91 | 12.917 7.07 | 18.92 1.72
1.000 1.05 | 7.000 1.91 | 13.000 7.07 | 19.00 1.72
1.083 1.05 | 7.083 1.91 | 13.083 1.34 | 19.08 1.72
1.167 1.05 | 7.167 1.91 | 13.167 1.34 | 19.17 1.72
1.250 1.05 | 7.250 1.91 | 13.250 1.34 | 19.25 1.72
1.333 1.05 | 7.333 1.91 | 13.333 1.34 | 19.33 1.72
1.417 1.05 | 7.417 1.91 | 13.417 1.34 | 19.42 1.72
1.500 1.05 | 7.500 1.91 | 13.500 1.34 | 19.50 1.72
1.583 1.05 | 7.583 1.91 | 13.583 7.84 | 19.58 1.72
1.667 1.05 | 7.667 1.91 | 13.667 7.84 | 19.67 1.72
1.750 1.05 | 7.750 1.91 | 13.750 7.84 | 19.75 1.72
1.833 1.05 | 7.833 1.91 | 13.833 7.84 | 19.83 1.72
1.917 1.05 | 7.917 1.91 | 13.917 7.84 | 19.92 1.72
2.000 1.05 | 8.000 1.91 | 14.000 7.84 | 20.00 1.72
2.083 1.24 | 8.083 2.58 | 14.083 2.87 | 20.08 1.15
2.167 1.24 | 8.167 2.58 | 14.167 2.87 | 20.17 1.15
2.250 1.24 | 8.250 2.58 | 14.250 2.87 | 20.25 1.15
2.333 1.24 | 8.333 2.58 | 14.333 2.87 | 20.33 1.15
2.417 1.24 | 8.417 2.58 | 14.417 2.87 | 20.42 1.15
2.500 1.24 | 8.500 2.58 | 14.500 2.87 | 20.50 1.15
2.583 1.24 | 8.583 2.58 | 14.583 2.87 | 20.58 1.15
2.667 1.24 | 8.667 2.58 | 14.667 2.87 | 20.67 1.15
2.750 1.24 | 8.750 2.58 | 14.750 2.87 | 20.75 1.15
2.833 1.24 | 8.833 2.58 | 14.833 2.87 | 20.83 1.15
2.917 1.24 | 8.917 2.58 | 14.917 2.87 | 20.92 1.15
3.000 1.24 | 9.000 2.58 | 15.000 2.87 | 21.00 1.15
3.083 1.24 | 9.083 3.06 | 15.083 2.87 | 21.08 1.15
3.167 1.24 | 9.167 3.06 | 15.167 2.87 | 21.17 1.15
3.250 1.24 | 9.250 3.06 | 15.250 2.87 | 21.25 1.15
3.333 1.24 | 9.333 3.06 | 15.333 2.87 | 21.33 1.15
3.417 1.24 | 9.417 3.06 | 15.417 2.87 | 21.42 1.15
3.500 1.24 | 9.500 3.06 | 15.500 2.87 | 21.50 1.15
3.583 1.24 | 9.583 3.44 | 15.583 2.87 | 21.58 1.15
3.667 1.24 | 9.667 3.44 | 15.667 2.87 | 21.67 1.15
3.750 1.24 | 9.750 3.44 | 15.750 2.87 | 21.75 1.15
3.833 1.24 | 9.833 3.44 | 15.833 2.87 | 21.83 1.15
3.917 1.24 | 9.917 3.44 | 15.917 2.87 | 21.92 1.15
4.000 1.24 | 10.000 3.44 | 16.000 2.87 | 22.00 1.15
4.083 1.53 | 10.083 4.40 | 16.083 1.72 | 22.08 1.15
4.167 1.53 | 10.167 4.40 | 16.167 1.72 | 22.17 1.15
4.250 1.53 | 10.250 4.40 | 16.250 1.72 | 22.25 1.15
4.333 1.53 | 10.333 4.40 | 16.333 1.72 | 22.33 1.15
4.417 1.53 | 10.417 4.40 | 16.417 1.72 | 22.42 1.15
4.500 1.53 | 10.500 4.40 | 16.500 1.72 | 22.50 1.15
4.583 1.53 | 10.583 5.93 | 16.583 1.72 | 22.58 1.15
4.667 1.53 | 10.667 5.93 | 16.667 1.72 | 22.67 1.15
4.750 1.53 | 10.750 5.93 | 16.750 1.72 | 22.75 1.15
4.833 1.53 | 10.833 5.93 | 16.833 1.72 | 22.83 1.15

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4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.590

PEAK FLOW (cms)= 0.564 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 58.691
 TOTAL RAINFALL (mm)= 95.603
 RUNOFF COEFFICIENT = 0.614

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

ADD HYD (2201)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0201):	5.41	0.564	12.17	58.69
+ ID2= 2 (0202):	2.79	0.475	12.00	56.69
ID = 3 (2201):	8.20	0.944	12.08	58.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD (0203):	3.26	84.1
ID= 1 DT= 5.0 min	7.50	3.00
U.H. Tp(hrs)=	0.31	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
4.000	1.53	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15

0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15

4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.360 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 57.003
 TOTAL RAINFALL (mm)= 95.603
 RUNOFF COEFFICIENT = 0.596

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

ADD HYD (2202)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0203):	3.26	0.360	12.17	57.00
+ ID2= 2 (2201):	8.20	0.944	12.08	58.01
ID = 3 (2202):	11.45	1.289	12.08	57.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD (0303):	8.53	84.0
ID= 1 DT= 5.0 min	7.50	3.00

U.H. Tp(hrs)= 0.66

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667			

3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.547 (i)
 TIME TO PEAK (hrs)= 12.583
 RUNOFF VOLUME (mm)= 56.871
 TOTAL RAINFALL (mm)= 95.603
 RUNOFF COEFFICIENT = 0.595

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

 | CALIB |
 | NASHYD (0301) | Area (ha)= 4.20 Curve Number (CN)= 84.0
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

 U.H. Tp(hrs)= 0.33

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15

3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.486

PEAK FLOW (cms)= 0.443 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 56.857
 TOTAL RAINFALL (mm)= 95.603
 RUNOFF COEFFICIENT = 0.595

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

 | CALIB |
 | NASHYD (0302) | Area (ha)= 3.84 Curve Number (CN)= 84.0
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

 U.H. Tp(hrs)= 0.57

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

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

0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15

4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.274 (i)
 TIME TO PEAK (hrs)= 12.417
 RUNOFF VOLUME (mm)= 56.870
 TOTAL RAINFALL (mm)= 95.603
 RUNOFF COEFFICIENT = 0.595

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

ADD HYD (2301)					
1 + 2 = 3					

ID1= 1 (0301):		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
+ ID2= 2 (0302):		4.20	0.443	12.17	56.86
		3.84	0.274	12.42	56.87
=====					
ID = 3 (2301):		8.04	0.680	12.25	56.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2302)							
1 + 2 = 3							

		AREA	QPEAK	TPEAK	R.V.		
		(ha)	(cms)	(hrs)	(mm)		

-----		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2301):		8.04	0.680	12.25	56.86
+ ID2= 2 (0303):		8.53	0.547	12.58	56.87
=====					
ID = 3 (2302):		16.57	1.166	12.33	56.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD (0304)			
ID= 1 DT= 5.0 min		Area (ha)=	2.79
		Ia (mm)=	7.50
		U.H. Tp(hrs)=	0.47

Curve Number (CN)=	84.0
# of Linear Res.(N)=	3.00

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

TIME RAIN							
hrs mm/hr							
0.083 1.05 6.083 1.91 12.083 13.78 18.08 1.72							
0.167 1.05 6.167 1.91 12.167 13.77 18.17 1.72							
0.250 1.05 6.250 1.91 12.250 13.77 18.25 1.72							
0.333 1.05 6.333 1.91 12.333 13.77 18.33 1.72							
0.417 1.05 6.417 1.91 12.417 13.77 18.42 1.72							
0.500 1.05 6.500 1.91 12.500 13.77 18.50 1.72							
0.583 1.05 6.583 1.91 12.583 7.07 18.58 1.72							
0.667 1.05 6.667 1.91 12.667 7.07 18.67 1.72							
0.750 1.05 6.750 1.91 12.750 7.07 18.75 1.72							
0.833 1.05 6.833 1.91 12.833 7.07 18.83 1.72							
0.917 1.05 6.917 1.91 12.917 7.07 18.92 1.72							
1.000 1.05 7.000 1.91 13.000 7.07 19.00 1.72							
1.083 1.05 7.083 1.91 13.083 1.34 19.08 1.72							
1.167 1.05 7.167 1.91 13.167 1.34 19.17 1.72							
1.250 1.05 7.250 1.91 13.250 1.34 19.25 1.72							
1.333 1.05 7.333 1.91 13.333 1.34 19.33 1.72							
1.417 1.05 7.417 1.91 13.417 1.34 19.42 1.72							
1.500 1.05 7.500 1.91 13.500 1.34 19.50 1.72							
1.583 1.05 7.583 1.91 13.583 7.84 19.58 1.72							
1.667 1.05 7.667 1.91 13.667 7.84 19.67 1.72							
1.750 1.05 7.750 1.91 13.750 7.84 19.75 1.72							
1.833 1.05 7.833 1.91 13.833 7.84 19.83 1.72							
1.917 1.05 7.917 1.91 13.917 7.84 19.92 1.72							
2.000 1.05 8.000 1.91 14.000 7.84 20.00 1.72							
2.083 1.24 8.083 2.58 14.083 2.87 20.08 1.15							
2.167 1.24 8.167 2.58 14.167 2.87 20.17 1.15							
2.250 1.24 8.250 2.58 14.250 2.87 20.25 1.15							
2.333 1.24 8.333 2.58 14.333 2.87 20.33 1.15							
2.417 1.24 8.417 2.58 14.417 2.87 20.42 1.15							
2.500 1.24 8.500 2.58 14.500 2.87 20.50 1.15							

2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15

```

2.417 1.24 | 8.417 2.58 |14.417 2.87 | 20.42 1.15
2.500 1.24 | 8.500 2.58 |14.500 2.87 | 20.50 1.15
2.583 1.24 | 8.583 2.58 |14.583 2.87 | 20.58 1.15
2.667 1.24 | 8.667 2.58 |14.667 2.87 | 20.67 1.15
2.750 1.24 | 8.750 2.58 |14.750 2.87 | 20.75 1.15
2.833 1.24 | 8.833 2.58 |14.833 2.87 | 20.83 1.15
2.917 1.24 | 8.917 2.58 |14.917 2.87 | 20.92 1.15
3.000 1.24 | 9.000 2.58 |15.000 2.87 | 21.00 1.15
3.083 1.24 | 9.083 3.06 |15.083 2.87 | 21.08 1.15
3.167 1.24 | 9.167 3.06 |15.167 2.87 | 21.17 1.15
3.250 1.24 | 9.250 3.06 |15.250 2.87 | 21.25 1.15
3.333 1.24 | 9.333 3.06 |15.333 2.87 | 21.33 1.15
3.417 1.24 | 9.417 3.06 |15.417 2.87 | 21.42 1.15
3.500 1.24 | 9.500 3.06 |15.500 2.87 | 21.50 1.15
3.583 1.24 | 9.583 3.44 |15.583 2.87 | 21.58 1.15
3.667 1.24 | 9.667 3.44 |15.667 2.87 | 21.67 1.15
3.750 1.24 | 9.750 3.44 |15.750 2.87 | 21.75 1.15
3.833 1.24 | 9.833 3.44 |15.833 2.87 | 21.83 1.15
3.917 1.24 | 9.917 3.44 |15.917 2.87 | 21.92 1.15
4.000 1.24 |10.000 3.44 |16.000 2.87 | 22.00 1.15
4.083 1.53 |10.083 4.40 |16.083 1.72 | 22.08 1.15
4.167 1.53 |10.167 4.40 |16.167 1.72 | 22.17 1.15
4.250 1.53 |10.250 4.40 |16.250 1.72 | 22.25 1.15
4.333 1.53 |10.333 4.40 |16.333 1.72 | 22.33 1.15
4.417 1.53 |10.417 4.40 |16.417 1.72 | 22.42 1.15
4.500 1.53 |10.500 4.40 |16.500 1.72 | 22.50 1.15
4.583 1.53 |10.583 5.93 |16.583 1.72 | 22.58 1.15
4.667 1.53 |10.667 5.93 |16.667 1.72 | 22.67 1.15
4.750 1.53 |10.750 5.93 |16.750 1.72 | 22.75 1.15
4.833 1.53 |10.833 5.93 |16.833 1.72 | 22.83 1.15
4.917 1.53 |10.917 5.93 |16.917 1.72 | 22.92 1.15
5.000 1.53 |11.000 5.93 |17.000 1.72 | 23.00 1.15
5.083 1.53 |11.083 9.18 |17.083 1.72 | 23.08 1.15
5.167 1.53 |11.167 9.18 |17.167 1.72 | 23.17 1.15
5.250 1.53 |11.250 9.18 |17.250 1.72 | 23.25 1.15
5.333 1.53 |11.333 9.18 |17.333 1.72 | 23.33 1.15
5.417 1.53 |11.417 9.18 |17.417 1.72 | 23.42 1.15
5.500 1.53 |11.500 9.18 |17.500 1.72 | 23.50 1.15
5.583 1.53 |11.583 39.77 |17.583 1.72 | 23.58 1.15
5.667 1.53 |11.667 39.77 |17.667 1.72 | 23.67 1.15
5.750 1.53 |11.750 39.77 |17.750 1.72 | 23.75 1.15
5.833 1.53 |11.833 105.53 |17.833 1.72 | 23.83 1.15
5.917 1.53 |11.917 105.54 |17.917 1.72 | 23.92 1.15
6.000 1.53 |12.000 105.54 |18.000 1.72 | 24.00 1.15

Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 15.00
Storage Coeff. (min)= 2.79 (ii) 10.52 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.09

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*TOTALS*
PEAK FLOW (cms)= 0.16 0.25 0.381 (iii)
TIME TO PEAK (hrs)= 12.00 12.08 12.00
RUNOFF VOLUME (mm)= 88.10 59.06 66.32
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.92 0.62 0.69

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

```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 2303) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0304): 2.79 0.229 12.33 56.87
+ ID2= 2 ( 0305): 2.15 0.381 12.00 66.32
-----
ID = 3 ( 2303): 4.95 0.517 12.00 60.98

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2304) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2302): 16.57 1.166 12.33 56.87
+ ID2= 2 ( 2303): 4.95 0.517 12.00 60.98
-----
ID = 3 ( 2304): 21.51 1.544 12.25 57.81

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

```

V V I SSSSS U U A L (v 6.2.2015)
V V I SS U U A A L

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

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\VO2\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\8ea469
84-74e6-4b5f-b09f-56adbe1795e4\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\8ea469
84-74e6-4b5f-b09f-56adbe1795e4\scenar

```

DATE: 05-27-2026 TIME: 11:27:54

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run2.5 50-yr 24-hr SCS (Wella) **
*****

-----
| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
| | 37bb4998-8c3c-4c08-a339-698a2e98bc35\da728ef3
| Ptotal=108.82 mm | Comments: 50-yr 24-hr SCS (Wella)
-----

TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr

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```

0.00 1.20 | 6.00 2.18 | 12.00 15.67 | 18.00 1.96
0.25 1.20 | 6.25 2.18 | 12.25 15.67 | 18.25 1.96
0.50 1.20 | 6.50 2.18 | 12.50 8.05 | 18.50 1.96
0.75 1.20 | 6.75 2.18 | 12.75 8.05 | 18.75 1.96
1.00 1.20 | 7.00 2.18 | 13.00 1.52 | 19.00 1.96
1.25 1.20 | 7.25 2.18 | 13.25 1.52 | 19.25 1.96
1.50 1.20 | 7.50 2.18 | 13.50 8.92 | 19.50 1.96
1.75 1.20 | 7.75 2.18 | 13.75 8.92 | 19.75 1.96
2.00 1.41 | 8.00 2.94 | 14.00 3.26 | 20.00 1.31
2.25 1.41 | 8.25 2.94 | 14.25 3.26 | 20.25 1.31
2.50 1.41 | 8.50 2.94 | 14.50 3.26 | 20.50 1.31
2.75 1.41 | 8.75 2.94 | 14.75 3.26 | 20.75 1.31
3.00 1.41 | 9.00 3.48 | 15.00 3.26 | 21.00 1.31
3.25 1.41 | 9.25 3.48 | 15.25 3.26 | 21.25 1.31
3.50 1.41 | 9.50 3.92 | 15.50 3.26 | 21.50 1.31
3.75 1.41 | 9.75 3.92 | 15.75 3.26 | 21.75 1.31
4.00 1.74 | 10.00 5.00 | 16.00 1.96 | 22.00 1.31
4.25 1.74 | 10.25 5.00 | 16.25 1.96 | 22.25 1.31
4.50 1.74 | 10.50 6.75 | 16.50 1.96 | 22.50 1.31
4.75 1.74 | 10.75 6.75 | 16.75 1.96 | 22.75 1.31
5.00 1.74 | 11.00 10.44 | 17.00 1.96 | 23.00 1.31
5.25 1.74 | 11.25 10.44 | 17.25 1.96 | 23.25 1.31
5.50 1.74 | 11.50 45.26 | 17.50 1.96 | 23.50 1.31
5.75 1.74 | 11.75 120.12 | 17.75 1.96 | 23.75 1.31

```

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-----
| CALIB |
| NASHYD ( 0101) | Area (ha)= 3.43 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.19

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 1.20 | 6.083 2.18 | 12.083 15.68 | 18.08 1.96
0.167 1.20 | 6.167 2.18 | 12.167 15.67 | 18.17 1.96
0.250 1.20 | 6.250 2.18 | 12.250 15.67 | 18.25 1.96
0.333 1.20 | 6.333 2.18 | 12.333 15.67 | 18.33 1.96
0.417 1.20 | 6.417 2.18 | 12.417 15.67 | 18.42 1.96
0.500 1.20 | 6.500 2.18 | 12.500 15.67 | 18.50 1.96
0.583 1.20 | 6.583 2.18 | 12.583 8.05 | 18.58 1.96
0.667 1.20 | 6.667 2.18 | 12.667 8.05 | 18.67 1.96
0.750 1.20 | 6.750 2.18 | 12.750 8.05 | 18.75 1.96
0.833 1.20 | 6.833 2.18 | 12.833 8.05 | 18.83 1.96
0.917 1.20 | 6.917 2.18 | 12.917 8.05 | 18.92 1.96

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1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31

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5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.623 (i)
TIME TO PEAK (hrs)= 12.083
RUNOFF VOLUME (mm)= 70.419
TOTAL RAINFALL (mm)= 108.820
RUNOFF COEFFICIENT = 0.647

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

| CALIB |
| STANDHYD (0102) | Area (ha)= 1.78
| ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.49	1.29
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	108.93	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96

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0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31

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5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 2.50

|ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 ----- U.H. Tp(hrs)= 0.15

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.29	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.29	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.29	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.29	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.29	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.29	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.29	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.29	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.29	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.29	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.29	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.29	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.29	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.29	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.29	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.29	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.29	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.29	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.29	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.29	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.29	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.29	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.29	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.29	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31

3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.572 (i)
 TIME TO PEAK (hrs)= 12.000
 RUNOFF VOLUME (mm)= 68.343
 TOTAL RAINFALL (mm)= 108.820
 RUNOFF COEFFICIENT = 0.628

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

 | CALIB |
 | NASHYD (0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
 |ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 ----- U.H. Tp(hrs)= 0.35

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.29	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.29	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.29	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.29	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.29	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.29	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.29	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.29	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.29	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.29	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.29	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.29	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.29	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.29	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.29	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.29	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.29	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.29	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.29	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.29	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.29	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.29	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.29	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.29	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31

3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.12	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

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| CALIB |
| NASHYD ( 0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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.

---- TRANSFORMED HYETOGRAPH ----							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31

3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.401

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PEAK FLOW (cms)= 0.434 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 68.716
TOTAL RAINFALL (mm)= 108.820
RUNOFF COEFFICIENT = 0.631

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

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| ADD HYD ( 2202) |

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| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 0203): | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
| ID2= 2 ( 2201): | 3.26 0.434 12.17 68.72
| ID3= 3 ( 2202): | 8.20 1.136 12.08 69.81
|-----|
| ID= 3 ( 2202): | 11.45 1.553 12.08 69.50

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| NASHYD ( 0303) | Area (ha)= 8.53 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.66

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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	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31

2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.12	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

RUNOFF COEFFICIENT = 0.630

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

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| CALIB |
| NASHYD ( 0301) | Area (ha)= 4.20 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.33

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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	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31

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2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.486

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PEAK FLOW (cms)= 0.534 (i)
TIME TO PEAK (hrs)= 12.167
RUNOFF VOLUME (mm)= 68.556
TOTAL RAINFALL (mm)= 108.820
RUNOFF COEFFICIENT = 0.630

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

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| CALIB |
| NASHYD ( 0302) | Area (ha)= 3.84 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.57

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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	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31

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3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.12	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0301):	4.20	0.534	12.17	68.56
+ ID2= 2 (0302):	3.84	0.331	12.42	68.57
ID = 3 (2301):	8.04	0.822	12.25	68.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2302)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (2301):	8.04	0.822	12.25	68.56
+ ID2= 2 (0303):	8.53	0.661	12.58	68.57
ID = 3 (2302):	16.57	1.409	12.33	68.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	2.79	Curve Number (CN)=	84.0
NASHYD (0304)	Ia (mm)=	7.50	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.47		

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	1.20	6.083	2.18	12.083	15.68	18.08	1.96		
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96		
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96		
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96		
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96		
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96		
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96		
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96		
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96		
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96		
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96		
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96		
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96		
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96		
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96		
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96		
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96		

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1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31

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5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.277 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 68.570
 TOTAL RAINFALL (mm)= 108.820
 RUNOFF COEFFICIENT = 0.630

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

CALIB	Area (ha)=	2.15		
STANDHYD (0305)	Total Imp(%)=	25.00	Dir. Conn.(%)=	25.00
ID= 1 DT= 5.0 min				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	0.54	1.61		
Dep. Storage (mm)=	7.50	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	119.81	40.00		
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96		
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96		
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96		
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96		
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96		
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96		
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96		
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96		
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96		
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96		
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96		
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96		
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96		
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96		
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96		

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1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31

5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max. Eff. Inten. (mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 2.65 (ii) 9.86 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.29 0.11

PEAK FLOW (cms)= 0.18 0.32 0.498 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 101.32 70.82 78.44
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.93 0.65 0.72

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2303)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0304):	2.79	0.277	12.33	68.57
+ ID2= 2 (0305):	2.15	0.498	12.00	78.44
ID = 3 (2303):	4.95	0.665	12.00	72.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2304)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2302):	16.57	1.409	12.33	68.57
+ ID2= 2 (2303):	4.95	0.665	12.00	72.87
ID = 3 (2304):	21.51	1.825	12.25	69.56

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V	V	I	SSSS	U	U	A	L	(v 6.2.2015)
V	V	I	SS	U	U	A	A	L
V	V	I	SS	U	U	AAAA	L	
V	V	I	SS	U	U	A	A	L
V	V	I	SSSS	UUUU	A	A	LLLL	

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	Y	M	M	0	0
000	T	T	H	H	Y	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\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\5137cd
59-bc61-4873-b013-803773aec60d\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\5137cd
59-bc61-4873-b013-803773aec60d\scenar

DATE: 05-27-2026

TIME: 11:27:51

USER:

COMMENTS:

** SIMULATION : Run2.6 100-yr 24-hr SCS (well) **

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READ STORM	Filename: C:\Users\ZhouJ\AppData\Local\Temp\37bb4998-8c3c-4c08-a339-698a2e98bc35\9a6d5800
Ptotal=120.00 mm	Comments: 100-yr 24-hr SCS (Welland)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	1.32	6.00	2.40	12.00	17.28	18.00	2.16
0.25	1.32	6.25	2.40	12.25	17.28	18.25	2.16
0.50	1.32	6.50	2.40	12.50	8.88	18.50	2.16
0.75	1.32	6.75	2.40	12.75	8.88	18.75	2.16
1.00	1.32	7.00	2.40	13.00	1.68	19.00	2.16
1.25	1.32	7.25	2.40	13.25	1.68	19.25	2.16
1.50	1.32	7.50	2.40	13.50	9.84	19.50	2.16
1.75	1.32	7.75	2.40	13.75	9.84	19.75	2.16
2.00	1.56	8.00	3.24	14.00	3.60	20.00	1.44
2.25	1.56	8.25	3.24	14.25	3.60	20.25	1.44
2.50	1.56	8.50	3.24	14.50	3.60	20.50	1.44
2.75	1.56	8.75	3.24	14.75	3.60	20.75	1.44
3.00	1.56	9.00	3.84	15.00	3.60	21.00	1.44
3.25	1.56	9.25	3.84	15.25	3.60	21.25	1.44
3.50	1.56	9.50	4.32	15.50	3.60	21.50	1.44
3.75	1.56	9.75	4.32	15.75	3.60	21.75	1.44
4.00	1.92	10.00	5.52	16.00	2.16	22.00	1.44
4.25	1.92	10.25	5.52	16.25	2.16	22.25	1.44
4.50	1.92	10.50	7.44	16.50	2.16	22.50	1.44
4.75	1.92	10.75	7.44	16.75	2.16	22.75	1.44
5.00	1.92	11.00	11.52	17.00	2.16	23.00	1.44
5.25	1.92	11.25	11.52	17.25	2.16	23.25	1.44
5.50	1.92	11.50	49.92	17.50	2.16	23.50	1.44
5.75	1.92	11.75	132.48	17.75	2.16	23.75	1.44

CALIB	Area (ha)= 3.43	Curve Number (CN)= 85.2
NASHYD (0101)	Ia (mm)= 7.50	# of Linear Res. (N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.19	

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16

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0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44

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4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.689

PEAK FLOW (cms)= 0.711 (i)
 TIME TO PEAK (hrs)= 12.083
 RUNOFF VOLUME (mm)= 80.620
 TOTAL RAINFALL (mm)= 120.000
 RUNOFF COEFFICIENT = 0.672

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

 | CALIB |
 | STANDHYD (0102) | Area (ha)= 1.78
 | ID= 1 DT= 5.0 min | Total Imp(%)= 27.50 Dir. Conn.(%)= 27.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.49	1.29
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	108.93	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16

0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44

4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max. Eff. Inten. (mm/hr)= 132.48 107.47
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.40 (ii) 9.26 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.30 0.12

PEAK FLOW (cms)= 0.18 0.30 0.477 (iii)
 TIME TO PEAK (hrs)= 12.00 12.00
 RUNOFF VOLUME (mm)= 112.50 80.95 89.62
 TOTAL RAINFALL (mm)= 120.00 120.00 120.00
 RUNOFF COEFFICIENT = 0.94 0.67 0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2101) |
1 + 2 = 3
 ID1= 1 (0101): 3.43 0.711 12.08 80.62
 + ID2= 2 (0102): 1.78 0.477 12.00 89.62

=====

ID = 3 (2101): 5.21 1.181 12.00 83.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | NASHYD (0202) | Area (ha)= 2.79 Curve Number (CN)= 84.1
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res. (N)= 3.00

 U.H. Tp(hrs)= 0.15

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44

2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.710

PEAK FLOW (cms)= 0.654 (i)
 TIME TO PEAK (hrs)= 12.000
 RUNOFF VOLUME (mm)= 78.390
 TOTAL RAINFALL (mm)= 120.000
 RUNOFF COEFFICIENT = 0.653

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

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| CALIB |
| NASHYD ( 0201) | Area (ha)= 5.41 Curve Number (CN)= 85.2
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.35

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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	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44

3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.590

PEAK FLOW (cms)= 0.777 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 80.791
 TOTAL RAINFALL (mm)= 120.000
 RUNOFF COEFFICIENT = 0.673

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

| ADD HYD (2201) |

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| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
|-----| (ha) (cms) (hrs) (mm)
ID1= 1 ( 0201): 5.41 0.777 12.17 80.79
+ ID2= 2 ( 0202): 2.79 0.654 12.00 78.39
=====
ID = 3 ( 2201): 8.20 1.300 12.08 79.97

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| NASHYD ( 0203) | Area (ha)= 3.26 Curve Number (CN)= 84.1
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # 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.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44

2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.401

PEAK FLOW (cms)= 0.497 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 78.818
 TOTAL RAINFALL (mm)= 120.000

RUNOFF COEFFICIENT = 0.657

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

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| ADD HYD ( 2202) |
| 1 + 2 = 3 |
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	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (0203):	3.26	0.497	12.17	78.82
+ ID2= 2 (2201):	8.20	1.300	12.08	79.97
=====				
ID = 3 (2202):	11.45	1.779	12.08	79.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| NASHYD ( 0303) | Area (ha)= 8.53 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.66

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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 hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16

1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44

6.000 1.92 12.000 132.48 18.000 2.16 24.00 1.44

Unit Hyd Qpeak (cms)= 0.494

PEAK FLOW (cms)= 0.758 (i)
 TIME TO PEAK (hrs)= 12.500
 RUNOFF VOLUME (mm)= 78.667
 TOTAL RAINFALL (mm)= 120.000
 RUNOFF COEFFICIENT = 0.656

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

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| CALIB |
| NASHYD ( 0301) | Area (ha)= 4.20 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.33

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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 hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40</				

2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.486

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PEAK FLOW (cms)= 0.613 (i)
 TIME TO PEAK (hrs)= 12.167
 RUNOFF VOLUME (mm)= 78.648
 TOTAL RAINFALL (mm)= 120.000
 RUNOFF COEFFICIENT = 0.655

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

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| CALIB |
| NASHYD ( 0302) | Area (ha)= 3.84 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
-----
U.H. Tp(hrs)= 0.57

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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	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44

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2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.257

PEAK FLOW (cms)= 0.380 (i)
 TIME TO PEAK (hrs)= 12.417
 RUNOFF VOLUME (mm)= 78.666
 TOTAL RAINFALL (mm)= 120.000

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RUNOFF COEFFICIENT = 0.656

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

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-----
| ADD HYD ( 2301) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0301): 4.20 0.613 12.17 78.65
+ ID2= 2 ( 0302): 3.84 0.380 12.42 78.67
-----
ID = 3 ( 2301): 8.04 0.943 12.25 78.66

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 2302) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2301): 8.04 0.943 12.25 78.66
+ ID2= 2 ( 0303): 8.53 0.758 12.50 78.67
-----
ID = 3 ( 2302): 16.57 1.618 12.33 78.66

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
-----
U.H. Tp(hrs)= 0.47

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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	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16

0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44

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5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.317 (i)

TIME TO PEAK (hrs)= 12.333

RUNOFF VOLUME (mm)= 78.663

TOTAL RAINFALL (mm)= 120.000

RUNOFF COEFFICIENT = 0.656

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

CALIB			
STANDHYD (0305)			
ID= 1 DT= 5.0 min			

		IMPERVIOUS		PERVIOUS (i)	
Surface Area	(ha)=	0.54		1.61	
Dep. Storage	(mm)=	7.50		5.00	
Average Slope	(%)=	1.00		2.00	
Length	(m)=	119.81		40.00	
Mannings n	=	0.013		0.250	

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16

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0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44

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4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

	ADD	HYD	(	2304)
	1	+	2	= 3

		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
				R.V.
				(mm)
	ID1=	1	(	2302):
		16.57	1.618	12.33
				78.66
	+	ID2=	2	(
		4.95	0.762	12.00
				83.09
=====				
	ID	=	3	(
		21.51	2.092	12.25
				79.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

B-2 POST-EVELOPMENT CONDITIONS, UNCONTROLLED

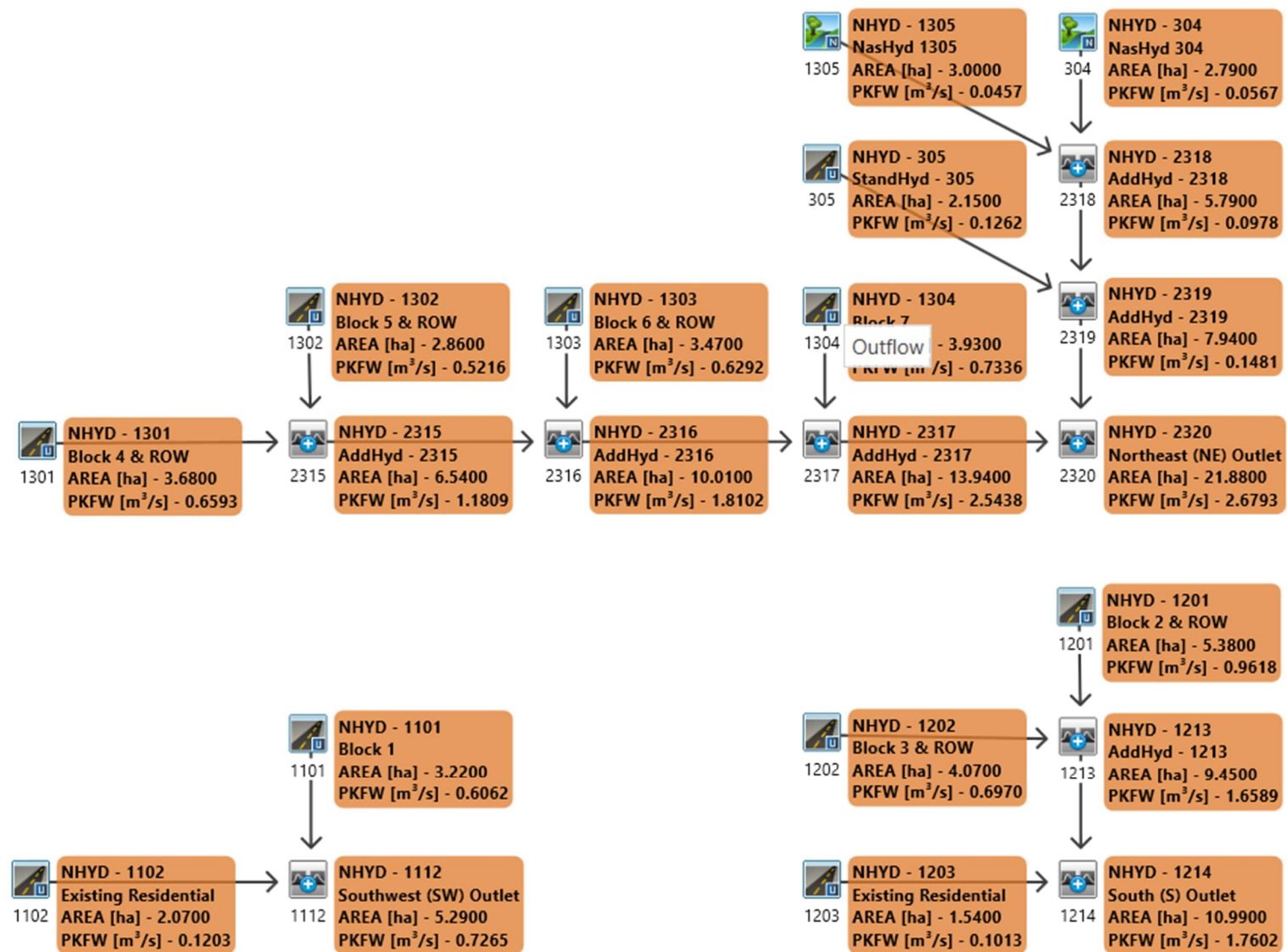


Figure B2 – VO Model Schematic _ Post-development Conditions, Uncontrolled

```

=====
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
V   V   I   SSSSS   UUUUU   A   A   LLLL

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\voain.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\4ef9d6
c6-14e7-4f9a-90ed-f233160e2ce1\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\4ef9d6
c6-14e7-4f9a-90ed-f233160e2ce1\scenar

DATE: 05-28-2026

TIME: 11:03:23

USER:

COMMENTS: _____

** SIMULATION : Run1.1 2-yr 4 hr Chicago (Wel **

```

| CHICAGO STORM | ID# curve parameters: A= 755.000
| Ptotal= 38.96 mm | B= 8.000
|                   | C= 0.789

```

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.65	1.00	21.73	2.00	6.45	3.00	3.16
0.17	3.04	1.17	77.19	2.17	5.45	3.17	2.93
0.33	3.61	1.33	28.29	2.33	4.74	3.33	2.73
0.50	4.46	1.50	15.20	2.50	4.20	3.50	2.56
0.67	5.95	1.67	10.40	2.67	3.78	3.67	2.42
0.83	9.16	1.83	7.94	2.83	3.44	3.83	2.28

```

| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.75

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.046 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 12.396
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.318

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

```

| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.47

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.057 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 12.396
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.318

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

```

| ADD HYD ( 2318) |
| 1 + 2 = 3 |
| ID1= 1 ( 1305): 3.00 0.046 2.33 12.40
+ ID2= 2 ( 0304): 2.79 0.057 1.92 12.40
| ID = 3 ( 2318): 5.79 0.098 2.08 12.40

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n	0.013	0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Max.Eff.Inten.(mm/hr)= 77.19 19.85
over (min)= 5.00 20.00
Storage Coeff. (min)= 3.16 (ii) 16.63 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.27 0.06

TOTALS
PEAK FLOW (cms)= 0.11 0.05 0.126 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 31.46 14.01 18.37
TOTAL RAINFALL (mm)= 38.96 38.96 38.96
RUNOFF COEFFICIENT = 0.81 0.36 0.47

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

ADD HYD (2319) 1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2318):	5.79	0.098	2.08	12.40
+ ID2= 2 (0305):	2.15	0.126	1.33	18.37
=====				
ID = 3 (2319):	7.94	0.148	1.83	14.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (1302) ID= 1 DT= 5.0 min				
	Area (ha)=	2.86		
	Total Imp(%)=	86.10	Dir. Conn.(%)=	86.10
=====				
	IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	2.46		0.40	
Dep. Storage (mm)=	1.00		5.00	
Average Slope (%)=	1.00		2.00	
Length (m)=	138.08		40.00	
Mannings n =	0.013		0.250	

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	TIME hrs	RAIN mm/hr
0.083	2.65	1.083	21.73	2.083	6.45	3.08	3.16		
0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16		
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93		
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93		
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73		
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73		
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56		
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56		
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42		
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42		
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28		
1.000	9.16	2.000	7.94	3.000	3.44	4.00	2.28		
Max.Eff.Inten.(mm/hr)=	77.19		23.27						
over (min)	5.00		10.00						
Storage Coeff. (min)=	3.44 (ii)		7.21 (ii)						
Unit Hyd. Tpeak (min)=	5.00		10.00						

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Unit Hyd. peak (cms)=	0.26	0.14	*TOTALS*
PEAK FLOW (cms)=	0.51	0.02	0.522 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	37.96	14.01	34.63
TOTAL RAINFALL (mm)=	38.96	38.96	38.96
RUNOFF COEFFICIENT =	0.97	0.36	0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1301) ID= 1 DT= 5.0 min				
	Area (ha)=	3.68		
	Total Imp(%)=	85.30	Dir. Conn.(%)=	85.30
=====				
	IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	3.14		0.54	
Dep. Storage (mm)=	1.00		5.00	
Average Slope (%)=	1.00		2.00	
Length (m)=	156.63		40.00	
Mannings n =	0.013		0.250	

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	TIME hrs	RAIN mm/hr
0.083	2.65	1.083	21.73	2.083	6.45	3.08	3.16		
0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16		
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93		
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93		
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73		
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73		
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56		
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56		
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42		
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42		
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28		
1.000	9.16	2.000	7.94	3.000	3.44	4.00	2.28		
Max.Eff.Inten.(mm/hr)=	77.19		23.27						
over (min)	5.00		10.00						

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Storage Coeff. (min)=	3.71 (ii)	7.58 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.25	0.13	
=====			
PEAK FLOW (cms)=	0.64	0.03	0.659 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	37.96	14.01	34.44
TOTAL RAINFALL (mm)=	38.96	38.96	38.96
RUNOFF COEFFICIENT =	0.97	0.36	0.88

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2315) 1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1301):	3.68	0.659	1.33	34.44
+ ID2= 2 (1302):	2.86	0.522	1.33	34.63
=====				
ID = 3 (2315):	6.54	1.181	1.33	34.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (1303) ID= 1 DT= 5.0 min				
	Area (ha)=	3.47		
	Total Imp(%)=	86.30	Dir. Conn.(%)=	86.30
=====				
	IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	2.99		0.48	
Dep. Storage (mm)=	1.00		5.00	
Average Slope (%)=	1.00		2.00	
Length (m)=	152.10		40.00	
Mannings n =	0.013		0.250	

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	TIME hrs	RAIN mm/hr
0.083	2.65	1.083	21.73	2.083	6.45	3.08	3.16		

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0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16		
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93		
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93		
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73		
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73		
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56		
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56		
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42		
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42		
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28		
1.000	9.16	2.000	7.94	3.000	3.44	4.00	2.28		

Max.Eff.Inten.(mm/hr)=	77.19	23.27
over (min)	5.00	10.00
Storage Coeff. (min)=	3.64 (ii)	7.39 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.25	0.13

PEAK FLOW (cms)=	0.61	0.02	0.629 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	37.96	14.01	34.68
TOTAL RAINFALL (mm)=	38.96	38.96	38.96
RUNOFF COEFFICIENT =	0.97	0.36	0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2316) 1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1303):	3.47	0.629	1.33	34.68
+ ID2= 2 (2315):	6.54	1.181	1.33	34.52
=====				
ID = 3 (2316):	10.01	1.810	1.33	34.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD (1304) ID= 1 DT= 5.0 min				
	Area (ha)=	3.93		
	Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00

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```

IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 3.54      0.39
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 161.86      40.00
Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

```

Max.Eff.Inten.(mm/hr)= 77.19      23.27
over (min) = 5.00      10.00
Storage Coeff. (min)= 3.78 (ii) 7.03 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.25      0.14

```

```

PEAK FLOW (cms)= 0.72      0.02      0.734 (iii)
TIME TO PEAK (hrs)= 1.33      1.42      1.33
RUNOFF VOLUME (mm)= 37.96      14.01      35.56
TOTAL RAINFALL (mm)= 38.96      38.96      38.96
RUNOFF COEFFICIENT = 0.97      0.36      0.91

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2317) |

```

```

| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2304): 3.93 0.734 1.33 35.56
+ ID2= 2 ( 2316): 10.01 1.810 1.33 34.58
=====
ID = 3 ( 2317): 13.94 2.544 1.33 34.85

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2317): 13.94 2.544 1.33 34.85
+ ID2= 2 ( 2319): 7.94 0.148 1.83 14.01
=====
ID = 3 ( 2320): 21.88 2.679 1.33 27.29

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1101) | Area (ha)= 3.22
|ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

```

```

IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 2.90      0.32
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 146.52      40.00
Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28

```

```

1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

```

Max.Eff.Inten.(mm/hr)= 77.19      23.27
over (min) = 5.00      10.00
Storage Coeff. (min)= 3.56 (ii) 6.81 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.26      0.14

```

```

PEAK FLOW (cms)= 0.59      0.02      0.606 (iii)
TIME TO PEAK (hrs)= 1.33      1.42      1.33
RUNOFF VOLUME (mm)= 37.96      14.01      35.56
TOTAL RAINFALL (mm)= 38.96      38.96      38.96
RUNOFF COEFFICIENT = 0.97      0.36      0.91

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) | Area (ha)= 2.07
|ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

```

```

IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.51      1.56
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 117.47      40.00
Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42

```

```

0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

```

Max.Eff.Inten.(mm/hr)= 77.19      19.85
over (min) = 5.00      20.00
Storage Coeff. (min)= 3.12 (ii) 16.60 (ii)
Unit Hyd. Tpeak (min)= 5.00      20.00
Unit Hyd. peak (cms)= 0.27      0.06

```

```

PEAK FLOW (cms)= 0.11      0.05      0.120 (iii)
TIME TO PEAK (hrs)= 1.33      1.58      1.33
RUNOFF VOLUME (mm)= 37.96      14.01      19.87
TOTAL RAINFALL (mm)= 38.96      38.96      38.96
RUNOFF COEFFICIENT = 0.97      0.36      0.51

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1101): 3.22 0.606 1.33 35.56
+ ID2= 2 ( 1102): 2.07 0.120 1.33 19.87
=====
ID = 3 ( 1112): 5.29 0.727 1.33 29.42

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1201) | Area (ha)= 5.38
|ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

```

```

IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 4.68      0.70
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 189.38      40.00
Mannings n = 0.013      0.250

```

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

```

      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

Max.Eff.Inten.(mm/hr)= 77.19 23.27
over (min) 5.00 10.00
Storage Coeff. (min)= 4.16 (ii) 7.82 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

*TOTALS*
PEAK FLOW (cms)= 0.94 0.03 0.962 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 37.96 14.01 34.85
TOTAL RAINFALL (mm)= 38.96 38.96 38.96
RUNOFF COEFFICIENT = 0.97 0.36 0.89

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.30 0.77
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 164.72 40.00
Mannings n = 0.013 0.250

```

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

```

      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

Max.Eff.Inten.(mm/hr)= 77.19 23.27
over (min) 5.00 10.00
Storage Coeff. (min)= 3.82 (ii) 8.18 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13

*TOTALS*
PEAK FLOW (cms)= 0.67 0.04 0.697 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 37.96 14.01 33.46
TOTAL RAINFALL (mm)= 38.96 38.96 38.96
RUNOFF COEFFICIENT = 0.97 0.36 0.86

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1213) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1201): 5.38 0.962 1.33 34.85
+ ID2= 2 ( 1202): 4.07 0.697 1.33 33.46
=====
ID = 3 ( 1213): 9.45 1.659 1.33 34.25

```

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| STANDHYD ( 1203) | Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.43 1.11
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 101.32 40.00
Mannings n = 0.013 0.250

```

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

```

      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

```

```

Max.Eff.Inten.(mm/hr)= 77.19 19.85
over (min) 5.00 20.00
Storage Coeff. (min)= 2.86 (ii) 16.33 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.28 0.06

```

```

*TOTALS*
PEAK FLOW (cms)= 0.09 0.04 0.101 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 37.96 14.01 20.73
TOTAL RAINFALL (mm)= 38.96 38.96 38.96
RUNOFF COEFFICIENT = 0.97 0.36 0.53

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. Storage (Above)

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- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| ADD HYD ( 1214) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1203): 1.54 0.101 1.33 20.73
+ ID2= 2 ( 1213): 9.45 1.659 1.33 34.25
=====
ID = 3 ( 1214): 10.99 1.760 1.33 32.35

```

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 A A A A L
V V I SS U U A A L
V V I SSSSS UUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y M M 0 0
0 0 T T H H Y Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\2e8878
60-38aa-4fdc-a973-bdbbcf3ed8fc\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\2e8878
60-38aa-4fdc-a973-bdbbcf3ed8fc\scenar

DATE: 05-28-2026

TIME: 11:03:21

-16-

USER:

COMMENTS: _____

 ** SIMULATION : Run1.2 5-yr 4 hr Chicago (Wel **

CHICAGO STORM | IDF curve parameters: A= 830.000
 Ptotal= 45.86 mm | B= 7.300
 | C= 0.777
 used in: INTENSITY = A / (t + B)^C

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.23	1.00	25.08	2.00	7.66	3.00	3.84
0.17	3.70	1.17	90.60	2.17	6.51	3.17	3.57
0.33	4.36	1.33	32.56	2.33	5.68	3.33	3.33
0.50	5.36	1.50	17.63	2.50	5.06	3.50	3.13
0.67	7.08	1.67	12.18	2.67	4.56	3.67	2.95
0.83	10.76	1.83	9.37	2.83	4.17	3.83	2.80

CALIB |
 NASHYD (1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
 ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.75

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57

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0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.063 (i)
 TIME TO PEAK (hrs)= 2.333
 RUNOFF VOLUME (mm)= 16.964
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

CALIB |
 NASHYD (0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
 ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 U.H. Tp(hrs)= 0.47

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.079 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 16.964

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TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

ADD HYD (2318) |
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 ID1= 1 (1305): 3.00 0.063 2.33 16.96
 + ID2= 2 (0304): 2.79 0.079 1.92 16.96
 ID = 3 (2318): 5.79 0.136 2.08 16.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |
 STANDHYD (0305) | Area (ha)= 2.15
 ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max. Eff. Inten. (mm/hr)= 90.60 27.26

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	over (min)	5.00	15.00
Storage Coeff. (min)=	2.96 (ii)	14.83 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.28	0.08	

TOTALS

PEAK FLOW (cms)=	0.13	0.08	0.167 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	38.36	18.71	23.62
TOTAL RAINFALL (mm)=	45.86	45.86	45.86
RUNOFF COEFFICIENT =	0.84	0.41	0.51

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2319) |
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 ID1= 1 (2318): 5.79 0.136 2.08 16.96
 + ID2= 2 (0305): 2.15 0.167 1.33 23.62
 ID = 3 (2319): 7.94 0.198 1.83 18.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |
 STANDHYD (1302) | Area (ha)= 2.86
 ID= 1 DT= 5.0 min | Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.46	0.40
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	138.08	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

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0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max.Eff.Inten.(mm/hr)= 90.60 32.45
over (min) 5.00 10.00
Storage Coeff. (min)= 3.23 (ii) 6.77 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

PEAK FLOW (cms)= 0.60 0.03 0.621 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 41.22
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1301)	Area (ha)= 3.68
ID= 1 DT= 5.0 min	Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max.Eff.Inten.(mm/hr)= 90.60 32.45
over (min) 5.00 10.00
Storage Coeff. (min)= 3.48 (ii) 7.11 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.76 0.04 0.786 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 41.02
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2315)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1301):	3.68	0.786	1.33	41.02
+ ID2= 2 (1302):	2.86	0.621	1.33	41.22
ID = 3 (2315):	6.54	1.407	1.33	41.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

STANDHYD (1303)	Area (ha)= 3.47
ID= 1 DT= 5.0 min	Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.99 0.48
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 152.10 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max.Eff.Inten.(mm/hr)= 90.60 32.45
over (min) 5.00 10.00
Storage Coeff. (min)= 3.42 (ii) 6.93 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.72 0.03 0.750 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 41.28
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2316)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1303):	3.47	0.750	1.33	41.28
+ ID2= 2 (2315):	6.54	1.407	1.33	41.11
ID = 3 (2316):	10.01	2.156	1.33	41.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (1304)	Area (ha)= 3.93
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.54 0.39
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 161.86 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max.Eff.Inten.(mm/hr)= 90.60 32.45
over (min) 5.00 10.00
Storage Coeff. (min)= 3.55 (ii) 6.60 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.85 0.03 0.873 (iii)

TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 44.86 18.71 42.25
 TOTAL RAINFALL (mm)= 45.86 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 2317) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1304): 3.93 0.873 1.33 42.25
+ ID2= 2 ( 2316): 10.01 2.156 1.33 41.17
=====
ID = 3 ( 2317): 13.94 3.029 1.33 41.47

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2317): 13.94 3.029 1.33 41.47
+ ID2= 2 ( 2319): 7.94 0.198 1.83 18.77
=====
ID = 3 ( 2320): 21.88 3.211 1.33 33.23

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1101) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.22
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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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 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min) = 5.00 10.00
 Storage Coeff. (min)= 3.34 (ii) 6.39 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.26 0.15

PEAK FLOW (cms)= 0.70 0.02 *TOTALS*
 TIME TO PEAK (hrs)= 1.33 1.42 0.721 (iii)
 RUNOFF VOLUME (mm)= 44.86 18.71 1.33
 TOTAL RAINFALL (mm)= 45.86 45.86 42.24
 RUNOFF COEFFICIENT = 0.98 0.41 45.86
 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 1102) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 2.07
Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00

```

-26-

Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 27.26
 over (min) = 5.00 15.00
 Storage Coeff. (min)= 2.93 (ii) 14.80 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.28 0.08

PEAK FLOW (cms)= 0.12 0.07 *TOTALS*
 TIME TO PEAK (hrs)= 1.33 1.50 0.158 (iii)
 RUNOFF VOLUME (mm)= 44.86 18.71 25.11
 TOTAL RAINFALL (mm)= 45.86 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41 0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1101): 3.22 0.721 1.33 42.24
+ ID2= 2 ( 1102): 2.07 0.158 1.33 25.11
=====

```

-27-

ID = 3 (1112): 5.29 0.879 1.33 35.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1201) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 5.38
Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 4.68 0.70
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 189.38 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min) = 5.00 10.00
 Storage Coeff. (min)= 3.90 (ii) 7.33 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 1.11 0.05 *TOTALS*
 TIME TO PEAK (hrs)= 1.33 1.42 1.148 (iii)
 RUNOFF VOLUME (mm)= 44.86 18.71 41.46
 TOTAL RAINFALL (mm)= 45.86 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

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- CN* = 84.0 Ia = Dep. 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 ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.30 0.77
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 164.72 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
over (min) 5.00 10.00
Storage Coeff. (min)= 3.59 (ii) 7.67 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.13

```

```

*TOTALS*
PEAK FLOW (cms)= 0.79 0.05 0.833 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 39.94
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.87

```

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

-29-

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1213) | AREA QPEAK TPEAK R.V.
| 1 + 2 = 3 | (ha) (cms) (hrs) (mm)
ID1= 1 ( 1201): 5.38 1.148 1.33 41.46
+ ID2= 2 ( 1202): 4.07 0.833 1.33 39.94
=====
ID = 3 ( 1213): 9.45 1.981 1.33 40.81

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1203) | Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.43 1.11
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 101.32 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

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```

Max.Eff.Inten.(mm/hr)= 90.60 27.26
over (min) 5.00 15.00
Storage Coeff. (min)= 2.68 (ii) 14.55 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.08

```

```

*TOTALS*
PEAK FLOW (cms)= 0.11 0.05 0.131 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 26.05
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.57

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1214) | AREA QPEAK TPEAK R.V.
| 1 + 2 = 3 | (ha) (cms) (hrs) (mm)
ID1= 1 ( 1203): 1.54 0.131 1.33 26.05
+ ID2= 2 ( 1213): 9.45 1.981 1.33 40.81
=====
ID = 3 ( 1214): 10.99 2.112 1.33 38.74

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLL

```

```

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\VO2\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\118e6c
e0-ae70-4872-9fd4-dd7158abae14\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\118e6c
e0-ae70-4872-9fd4-dd7158abae14\scenar

DATE: 05-28-2026

TIME: 11:03:21

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run1.3 10-yr 4 hr Chicago (We **
*****

```

```

| CHICAGO STORM | IDF curve parameters: A= 860.000
| Ptotal= 51.46 mm | B= 6.500
| | C= 0.763
used in: INTENSITY = A / (t + B)^C

```

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

```

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.00 3.77 | 1.00 27.48 | 2.00 8.69 | 3.00 4.46
0.17 4.30 | 1.17 101.29 | 2.17 7.43 | 3.17 4.15
0.33 5.04 | 1.33 35.55 | 2.33 6.51 | 3.33 3.89
0.50 6.16 | 1.50 19.45 | 2.50 5.82 | 3.50 3.66
0.67 8.05 | 1.67 13.59 | 2.67 5.27 | 3.67 3.46
0.83 12.06 | 1.83 10.55 | 2.83 4.83 | 3.83 3.28

```

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```

-----
| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.75

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

Unit Hyd Qpeak (cms)= 0.153

```

PEAK FLOW (cms)= 0.078 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 20.925
TOTAL RAINFALL (mm)= 51.457
RUNOFF COEFFICIENT = 0.407

```

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

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.47

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46

```

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```

0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW (cms)= 0.098 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 20.924
TOTAL RAINFALL (mm)= 51.457
RUNOFF COEFFICIENT = 0.407

```

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

```

-----
| ADD HYD ( 2318) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 1305): | AREA (ha)= 3.00 QPEAK (cms)= 0.078 TPEAK (hrs)= 2.33 R.V. (mm)= 20.92
| ID2= 2 ( 0304): | 2.79 0.098 1.92 20.92
|=====|
| ID = 3 ( 2318): | 5.79 0.167 2.08 20.92

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.54 1.61
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 119.72 40.00
Mannings n = 0.013 0.250

```

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

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```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

```

Max.Eff.Inten.(mm/hr)= 101.29 33.56
over (min) 5.00 15.00
Storage Coeff. (min)= 2.83 (ii) 13.75 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.08

```

```

PEAK FLOW (cms)= 0.15 0.10 *TOTALS* 0.195 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 43.96 22.76 28.05
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.85 0.44 0.55

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2319) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2318): | AREA (ha)= 5.79 QPEAK (cms)= 0.167 TPEAK (hrs)= 2.08 R.V. (mm)= 20.92
| ID2= 2 ( 0305): | 2.15 0.195 1.33 28.05
|=====|
| ID = 3 ( 2319): | 7.94 0.242 1.83 22.85

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

-----
| CALIB |
| STANDHYD ( 1302) | Area (ha)= 2.86
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.46 0.40
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 138.08 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

```

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.08 (ii) 6.47 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

```

```

PEAK FLOW (cms)= 0.67 0.03 *TOTALS* 0.701 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 46.61
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.91

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1301) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.68
Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30

IMPERVIOUS PERVIOUS (i)
(ha)= 3.14 0.54
(mm)= 1.00 5.00
(%)= 1.00 2.00
(m)= 156.63 40.00
Mannings n = 0.013 0.250

```

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

```

-----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.77 1.083 27.48 2.083 8.69 3.08 4.46
0.167 3.77 1.167 27.48 2.167 8.69 3.17 4.46
0.250 4.30 1.250 101.29 2.250 7.43 3.25 4.15
0.333 4.30 1.333 101.29 2.333 7.43 3.33 4.15
0.417 5.04 1.417 35.55 2.417 6.51 3.42 3.89
0.500 5.04 1.500 35.55 2.500 6.51 3.50 3.89
0.583 6.16 1.583 19.45 2.583 5.82 3.58 3.66
0.667 6.16 1.667 19.45 2.667 5.82 3.67 3.66
0.750 8.05 1.750 13.59 2.750 5.27 3.75 3.46
0.833 8.05 1.833 13.59 2.833 5.27 3.83 3.46
0.917 12.06 1.917 10.55 2.917 4.83 3.92 3.28
1.000 12.06 2.000 10.55 3.000 4.83 4.00 3.28

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.33 (ii) 6.80 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

*TOTALS*
PEAK FLOW (cms)= 0.85 0.05 0.888 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 46.38
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.90

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

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

```

-----
| ADD HYD ( 2315) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1301): 3.68 0.888 1.33 46.38
+ ID2= 2 ( 1302): 2.86 0.701 1.33 46.61
=====
ID = 3 ( 2315): 6.54 1.589 1.33 46.48

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1303) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.47
Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30

IMPERVIOUS PERVIOUS (i)
(ha)= 2.99 0.48
(mm)= 1.00 5.00
(%)= 1.00 2.00
(m)= 152.10 40.00
Mannings n = 0.013 0.250

```

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

```

-----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.77 1.083 27.48 2.083 8.69 3.08 4.46
0.167 3.77 1.167 27.48 2.167 8.69 3.17 4.46
0.250 4.30 1.250 101.29 2.250 7.43 3.25 4.15
0.333 4.30 1.333 101.29 2.333 7.43 3.33 4.15
0.417 5.04 1.417 35.55 2.417 6.51 3.42 3.89
0.500 5.04 1.500 35.55 2.500 6.51 3.50 3.89
0.583 6.16 1.583 19.45 2.583 5.82 3.58 3.66
0.667 6.16 1.667 19.45 2.667 5.82 3.67 3.66
0.750 8.05 1.750 13.59 2.750 5.27 3.75 3.46
0.833 8.05 1.833 13.59 2.833 5.27 3.83 3.46
0.917 12.06 1.917 10.55 2.917 4.83 3.92 3.28
1.000 12.06 2.000 10.55 3.000 4.83 4.00 3.28

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.27 (ii) 6.63 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00

```

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```

Unit Hyd. peak (cms)= 0.27 0.14

*TOTALS*
PEAK FLOW (cms)= 0.81 0.04 0.846 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 46.66
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.91

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2316) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1303): 3.47 0.846 1.33 46.66
+ ID2= 2 ( 2315): 6.54 1.589 1.33 46.48
=====
ID = 3 ( 2316): 10.01 2.435 1.33 46.54

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1304) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.93
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
(ha)= 3.54 0.39
(mm)= 1.00 5.00
(%)= 1.00 2.00
(m)= 161.86 40.00
Mannings n = 0.013 0.250

```

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

```

-----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.77 1.083 27.48 2.083 8.69 3.08 4.46
0.167 3.77 1.167 27.48 2.167 8.69 3.17 4.46
0.250 4.30 1.250 101.29 2.250 7.43 3.25 4.15

```

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```

0.333 4.30 1.333 101.29 2.333 7.43 3.33 4.15
0.417 5.04 1.417 35.55 2.417 6.51 3.42 3.89
0.500 5.04 1.500 35.55 2.500 6.51 3.50 3.89
0.583 6.16 1.583 19.45 2.583 5.82 3.58 3.66
0.667 6.16 1.667 19.45 2.667 5.82 3.67 3.66
0.750 8.05 1.750 13.59 2.750 5.27 3.75 3.46
0.833 8.05 1.833 13.59 2.833 5.27 3.83 3.46
0.917 12.06 1.917 10.55 2.917 4.83 3.92 3.28
1.000 12.06 2.000 10.55 3.000 4.83 4.00 3.28

```

```

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.39 (ii) 6.31 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.15

```

```

*TOTALS*
PEAK FLOW (cms)= 0.96 0.03 0.985 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 47.69
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.93

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2317) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1304): 3.93 0.985 1.33 47.69
+ ID2= 2 ( 2316): 10.01 2.435 1.33 46.54
=====
ID = 3 ( 2317): 13.94 3.420 1.33 46.87

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2317): 13.94 3.420 1.33 46.87
+ ID2= 2 ( 2319): 7.94 0.242 1.83 22.85

```

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```
=====
ID = 3 ( 2320): 21.88 3.636 1.33 38.15
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| CALIB |
| STANDHYD ( 1101) | Area (ha)= 3.22
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
|-----|
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 2.90 0.32 |
| Dep. Storage (mm)= 1.00 5.00 |
| Average Slope (%)= 1.00 2.00 |
| Length (m)= 146.52 40.00 |
| Mannings n = 0.013 0.250 |
```

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

```
----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28
```

```
Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.20 (ii) 6.11 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15
```

```
*TOTALS*
PEAK FLOW (cms)= 0.79 0.03 0.812 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 47.69
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.93
```

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

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- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
|-----|
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 0.51 1.56 |
| Dep. Storage (mm)= 1.00 5.00 |
| Average Slope (%)= 1.00 2.00 |
| Length (m)= 117.47 40.00 |
| Mannings n = 0.013 0.250 |
```

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

```
----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28
```

```
Max.Eff.Inten.(mm/hr)= 101.29 33.56
over (min) 5.00 15.00
Storage Coeff. (min)= 2.80 (ii) 13.72 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.08
```

```
*TOTALS*
PEAK FLOW (cms)= 0.14 0.10 0.185 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 29.54
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.57
```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 1101): 3.22 0.812 1.33 47.69 |
| + ID2= 2 ( 1102): 2.07 0.185 1.33 29.54 |
|-----|
| ID = 3 ( 1112): 5.29 0.998 1.33 40.59 |
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
-----
| CALIB |
| STANDHYD ( 1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
|-----|
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 4.68 0.70 |
| Dep. Storage (mm)= 1.00 5.00 |
| Average Slope (%)= 1.00 2.00 |
| Length (m)= 189.38 40.00 |
| Mannings n = 0.013 0.250 |
```

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

```
----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
```

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1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```
Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.73 (ii) 7.01 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.14
```

```
*TOTALS*
PEAK FLOW (cms)= 1.25 0.06 1.297 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 46.86
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.91
```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
|-----|
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 3.30 0.77 |
| Dep. Storage (mm)= 1.00 5.00 |
| Average Slope (%)= 1.00 2.00 |
| Length (m)= 164.72 40.00 |
| Mannings n = 0.013 0.250 |
```

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

```
----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
```

-44-

0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.43 (ii) 7.34 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.13

TOTALS

PEAK FLOW (cms)= 0.89 0.06 0.943 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 45.25
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.88

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1213)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1201):	5.38	1.297	1.33	46.86
+ ID2= 2 (1202):	4.07	0.943	1.33	45.25
=====				
ID = 3 (1213):	9.45	2.240	1.33	46.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD (1203)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min		1.54	28.10	28.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.43	1.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	101.32	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Max.Eff.Inten.(mm/hr)= 101.29 33.56
over (min) 5.00 15.00
Storage Coeff. (min)= 2.56 (ii) 13.49 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.08

TOTALS

PEAK FLOW (cms)= 0.12 0.07 0.153 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 30.54
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1203):	1.54	0.153	1.33	30.54
+ ID2= 2 (1213):	9.45	2.240	1.33	46.16
=====				
ID = 3 (1214):	10.99	2.393	1.33	43.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLL

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\VO2\voindat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\841d7f
01-146c-4cad-aaef-3dbee8c1c49\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\841d7f
01-146c-4cad-aaef-3dbee8c1c49\scenar

DATE: 05-28-2026 TIME: 11:03:23

USER:

COMMENTS: _____

** SIMULATION : Run1.4 25-yr 4 hr Chicago (We **

CHICAGO STORM	IDF curve parameters: A= 900.000
Ptotal= 59.70 mm	B= 5.200

C= 0.745
used in: INTENSITY = A / (t + B)^C

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.58	1.00	30.64	2.00	10.16	3.00	5.38
0.17	5.20	1.17	118.51	2.17	8.75	3.17	5.03
0.33	6.05	1.33	39.43	2.33	7.72	3.33	4.72
0.50	7.32	1.50	21.89	2.50	6.94	3.50	4.45
0.67	9.44	1.67	15.53	2.67	6.31	3.67	4.22
0.83	13.86	1.83	12.21	2.83	5.80	3.83	4.01

CALIB	NASHYD (1305)	Area (ha)	Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min		7.50	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.75	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.101 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 27.087
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.454

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

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.47

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW (cms)= 0.127 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 27.086
TOTAL RAINFALL (mm)= 59.696
RUNOFF COEFFICIENT = 0.454

```

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

```

-----
| ADD HYD ( 2318) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 1305): | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
| + ID2= 2 ( 0304): | 3.00 0.101 2.25 27.09
| + ID3= 3 ( 2318): | 2.79 0.127 1.92 27.09
|-----|
| ID = 3 ( 2318): | 5.79 0.217 2.00 27.09

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.54 1.61
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 119.72 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min) = 5.00 15.00
Storage Coeff. (min)= 2.66 (ii) 11.72 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

```

```

*TOTALS*
PEAK FLOW (cms)= 0.17 0.14 0.244 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 52.20 29.02 34.81
TOTAL RAINFALL (mm)= 59.70 59.70 59.70
RUNOFF COEFFICIENT = 0.87 0.49 0.58

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2319) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2318): | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
| + ID2= 2 ( 0305): | 5.79 0.217 2.00 27.09
| + ID3= 3 ( 2319): | 2.15 0.244 1.33 34.81
|-----|
| ID = 3 ( 2319): | 7.94 0.311 1.67 29.18

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1302) | Area (ha)= 2.86
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.46 0.40
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 138.08 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min) = 5.00 10.00
Storage Coeff. (min)= 2.90 (ii) 6.08 (ii)

```

```

Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15
*TOTALS*
PEAK FLOW (cms)= 0.79 0.05 0.830 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 58.70 29.02 54.57
TOTAL RAINFALL (mm)= 59.70 59.70 59.70
RUNOFF COEFFICIENT = 0.98 0.49 0.91

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1301) | Area (ha)= 3.68
| ID= 1 DT= 5.0 min | Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51 53.59

```

```

over (min)          5.00      10.00
Storage Coeff. (min)= 3.12 (ii) 6.39 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.27      0.15

                                *TOTALS*
PEAK FLOW (cms)=      1.00      0.06      1.053 (iii)
TIME TO PEAK (hrs)=    1.33      1.42      1.33
RUNOFF VOLUME (mm)=    58.70     29.02     54.33
TOTAL RAINFALL (mm)=    59.70     59.70     59.70
RUNOFF COEFFICIENT =     0.98      0.49      0.91

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2315) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1301):    3.68    1.053    1.33    54.33
+ ID2= 2 ( 1302):    2.86    0.830    1.33    54.57
=====
ID = 3 ( 2315):    6.54    1.883    1.33    54.44

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| STANDHYD ( 1303) | Area (ha)= 3.47
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
-----
IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 2.99      0.48
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 152.10     40.00
Mannings n = 0.013      0.250

```

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

```

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

```

```

0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51      53.59
over (min)          5.00      10.00
Storage Coeff. (min)= 3.07 (ii) 6.23 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.27      0.15

```

```

                                *TOTALS*
PEAK FLOW (cms)=      0.96      0.06      1.003 (iii)
TIME TO PEAK (hrs)=    1.33      1.42      1.33
RUNOFF VOLUME (mm)=    58.70     29.02     54.63
TOTAL RAINFALL (mm)=    59.70     59.70     59.70
RUNOFF COEFFICIENT =     0.98      0.49      0.92

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2316) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1303):    3.47    1.003    1.33    54.63
+ ID2= 2 ( 2315):    6.54    1.883    1.33    54.44
=====
ID = 3 ( 2316):   10.01    2.886    1.33    54.50

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| STANDHYD ( 1304) | Area (ha)= 3.93
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----

```

```

-----
IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 3.54      0.39
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 161.86     40.00
Mannings n = 0.013      0.250

```

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

```

-----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
-----
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51      53.59
over (min)          5.00      10.00
Storage Coeff. (min)= 3.19 (ii) 5.92 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.27      0.15

```

```

                                *TOTALS*
PEAK FLOW (cms)=      1.13      0.05      1.165 (iii)
TIME TO PEAK (hrs)=    1.33      1.42      1.33
RUNOFF VOLUME (mm)=    58.70     29.02     55.73
TOTAL RAINFALL (mm)=    59.70     59.70     59.70
RUNOFF COEFFICIENT =     0.98      0.49      0.93

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2317) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1304):    3.93    1.165    1.33    55.73
+ ID2= 2 ( 2316):   10.01    2.886    1.33    54.50
=====
ID = 3 ( 2317):   13.94    4.051    1.33    54.85

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2317):   13.94    4.051    1.33    54.85
+ ID2= 2 ( 2319):    7.94    0.311    1.67    29.18
=====
ID = 3 ( 2320):   21.88    4.327    1.33    45.53

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB          |
| STANDHYD ( 1101) | Area (ha)= 3.22
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----

```

```

IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 2.90      0.32
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 146.52     40.00
Mannings n = 0.013      0.250

```

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

```

-----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
-----
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22

```

0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.00 (ii) 5.74 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 0.93 0.04
TIME TO PEAK (hrs)= 1.33 1.42
RUNOFF VOLUME (mm)= 58.70 29.02
TOTAL RAINFALL (mm)= 59.70 59.70
RUNOFF COEFFICIENT = 0.98 0.49

TOTALS
0.961 (iii)
1.33
55.73
59.70
0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1102)	Area (ha)= 2.07
ID= 1 DT= 5.0 min	Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.51	1.56
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	117.47	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45

-57-

0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min) 5.00 15.00
Storage Coeff. (min)= 2.63 (ii) 11.69 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

PEAK FLOW (cms)= 0.16 0.14
TIME TO PEAK (hrs)= 1.33 1.50
RUNOFF VOLUME (mm)= 58.70 29.02
TOTAL RAINFALL (mm)= 59.70 59.70
RUNOFF COEFFICIENT = 0.98 0.49

TOTALS
0.232 (iii)
1.33
36.29
59.70
0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112)				
1	2	3		
			AREA	QPEAK
			(ha)	(cms)
ID1= 1 (1101):	3.22	0.961	1.33	55.73
+ ID2= 2 (1102):	2.07	0.232	1.33	36.29
ID = 3 (1112):	5.29	1.193	1.33	48.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (1201)	Area (ha)= 5.38
ID= 1 DT= 5.0 min	Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n =	0.013	0.250

-58-

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.50 (ii) 6.58 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 1.47 0.08
TIME TO PEAK (hrs)= 1.33 1.42
RUNOFF VOLUME (mm)= 58.70 29.02
TOTAL RAINFALL (mm)= 59.70 59.70
RUNOFF COEFFICIENT = 0.98 0.49

TOTALS
1.540 (iii)
1.33
54.84
59.70
0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1202)	Area (ha)= 4.07
ID= 1 DT= 5.0 min	Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.30	0.77
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	164.72	40.00

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Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.22 (ii) 6.89 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

PEAK FLOW (cms)= 1.05 0.09
TIME TO PEAK (hrs)= 1.33 1.42
RUNOFF VOLUME (mm)= 58.70 29.02
TOTAL RAINFALL (mm)= 59.70 59.70
RUNOFF COEFFICIENT = 0.98 0.49

TOTALS
1.121 (iii)
1.33
53.12
59.70
0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1213)				
1	2	3		
			AREA	QPEAK
			(ha)	(cms)
ID1= 1 (1201):	5.38	1.540	1.33	54.84
+ ID2= 2 (1202):	4.07	1.121	1.33	53.12

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ID = 3 (1213): 9.45 2.661 1.33 54.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1203) | Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10
-----
IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.43 1.11
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 101.32 40.00
Mannings n = 0.013 0.250

```

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

```

-----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.29 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.29 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51 53.59
over (min)= 5.00 15.00
Storage Coeff. (min)= 2.41 (ii) 11.46 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.09

```

```

*TOTALS*
PEAK FLOW (cms)= 0.14 0.10 0.190 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 58.70 29.02 37.36
TOTAL RAINFALL (mm)= 59.70 59.70 59.70
RUNOFF COEFFICIENT = 0.98 0.49 0.63

```

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

-61-

CN* = 84.0 Ia = Dep. 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 ( 1214) |
| 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 ( 1203): 1.54 0.190 1.33 37.36
+ ID2= 2 ( 1213): 9.45 2.661 1.33 54.10
-----
ID = 3 ( 1214): 10.99 2.851 1.33 51.75

```

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 A A L
V V 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\VO2\vo1n.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\67fe709-6b28-4175-8afc-bd306d6d118d\7492b
b3-04af-445a-9b1c-fa62c88254d9\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\67fe709-6b28-4175-8afc-bd306d6d118d\7492b
b3-04af-445a-9b1c-fa62c88254d9\scenar

DATE: 05-28-2026

TIME: 11:03:25

-62-

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run1.5 50-yr 4 hr Chicago (We **
*****

```

```

| CHICAGO STORM | IDF curve parameters: A= 960.000
| Ptotal= 66.93 mm | B= 5.100
C= 0.736

```

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

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

```

TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.00 5.29 | 1.00 34.17 | 2.00 11.57 | 3.00 6.20
0.17 5.99 | 1.17 130.18 | 2.17 9.99 | 3.17 5.79
0.33 6.95 | 1.33 43.81 | 2.33 8.84 | 3.33 5.44
0.50 8.38 | 1.50 24.58 | 2.50 7.95 | 3.50 5.14
0.67 10.77 | 1.67 17.55 | 2.67 7.25 | 3.67 4.88
0.83 15.69 | 1.83 13.86 | 2.83 6.67 | 3.83 4.64

```

```

| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.75

```

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

```

-----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79

```

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```

0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

Unit Hyd Qpeak (cms)= 0.153

```

PEAK FLOW (cms)= 0.122 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 32.758
TOTAL RAINFALL (mm)= 66.928
RUNOFF COEFFICIENT = 0.489

```

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

```

| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.47

```

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

```

-----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW (cms)= 0.154 (i)
TIME TO PEAK (hrs)= 1.917

```

-64-

RUNOFF VOLUME (mm)= 32.757
 TOTAL RAINFALL (mm)= 66.928
 RUNOFF COEFFICIENT = 0.489

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

ADD HYD (2318)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1305):	3.00	0.122	2.25	32.76
+ ID2= 2 (0304):	2.79	0.154	1.92	32.76
=====				
ID = 3 (2318):	5.79	0.264	2.00	32.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0305)			
ID= 1 DT= 5.0 min			
	Area (ha)=	PERVIOUS (i)	
Surface Area (ha)=	0.54	1.61	
Dep. Storage (mm)=	7.50	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	119.72	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79
0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.56 (ii) 10.99 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.29 0.09

TOTALS

PEAK FLOW (cms)= 0.19 0.17 0.281 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 59.43 34.77 40.93
 TOTAL RAINFALL (mm)= 66.93 66.93 66.93
 RUNOFF COEFFICIENT = 0.89 0.52 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2319)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2318):	5.79	0.264	2.00	32.76
+ ID2= 2 (0305):	2.15	0.281	1.33	40.93
=====				
ID = 3 (2319):	7.94	0.375	1.67	34.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1302)			
ID= 1 DT= 5.0 min			
	Area (ha)=	PERVIOUS (i)	
Surface Area (ha)=	2.46	0.40	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	138.08	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79
0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.79 (ii) 5.85 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 0.87 0.06 *TOTALS*
 TIME TO PEAK (hrs)= 1.33 1.42 0.920 (iii)
 RUNOFF VOLUME (mm)= 65.93 34.77 61.60
 TOTAL RAINFALL (mm)= 66.93 66.93 66.93
 RUNOFF COEFFICIENT = 0.99 0.52 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (1301)			
ID= 1 DT= 5.0 min			
	Area (ha)=	PERVIOUS (i)	
Surface Area (ha)=	3.14	0.54	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	156.63	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79
0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.01 (ii) 6.15 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 1.10 0.08 *TOTALS*
 TIME TO PEAK (hrs)= 1.33 1.42 1.168 (iii)
 RUNOFF VOLUME (mm)= 65.93 34.77 61.35
 TOTAL RAINFALL (mm)= 66.93 66.93 66.93
 RUNOFF COEFFICIENT = 0.99 0.52 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2315)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1301):	3.68	1.168	1.33	61.35
+ ID2= 2 (1302):	2.86	0.920	1.33	61.60
=====				
ID = 3 (2315):	6.54	2.087	1.33	61.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1303) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.47
Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.99 0.48
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 152.10 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) = 5.00 10.00
Storage Coeff. (min)= 2.96 (ii) 6.00 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 1.06 0.07 *TOTALS* 1.112 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 61.66
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.92

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2316) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1303): 3.47 1.112 1.33 61.66
+ ID2= 2 ( 2315): 6.54 2.087 1.33 61.46
=====
ID = 3 ( 2316): 10.01 3.199 1.33 61.53

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1304) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.93
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.54 0.39
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 161.86 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) = 5.00 10.00
Storage Coeff. (min)= 3.07 (ii) 5.71 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

```

TOTALS

```

PEAK FLOW (cms)= 1.24 0.06 1.290 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 62.81
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.94

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2317) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1304): 3.93 1.290 1.33 62.81
+ ID2= 2 ( 2316): 10.01 3.199 1.33 61.53
=====
ID = 3 ( 2317): 13.94 4.489 1.33 61.89

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2317): 13.94 4.489 1.33 61.89
+ ID2= 2 ( 2319): 7.94 0.375 1.67 34.97
=====
ID = 3 ( 2320): 21.88 4.812 1.33 52.12

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1101) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.22
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) = 5.00 10.00
Storage Coeff. (min)= 2.89 (ii) 5.53 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.16

```

TOTALS

```

PEAK FLOW (cms)= 1.02 0.05 1.063 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 62.81
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.94

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 2.07
Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00

```

Length (m)= 117.47 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.53 (ii) 10.96 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.29 0.09

PEAK FLOW (cms)= 0.18 0.17 0.268 (iii)
 TIME TO PEAK (hrs)= 1.33 1.33
 RUNOFF VOLUME (mm)= 65.93 34.77 42.40
 TOTAL RAINFALL (mm)= 66.93 66.93 66.93
 RUNOFF COEFFICIENT = 0.99 0.52 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1101): AREA (ha)= 3.22 QPEAK (cms)= 1.063 TPEAK (hrs)= 1.33 R.V. (mm)= 62.81
+ ID2= 2 ( 1102): AREA (ha)= 2.07 QPEAK (cms)= 0.268 TPEAK (hrs)= 1.33 R.V. (mm)= 42.40

```

=====

ID = 3 (1112): 5.29 1.331 1.33 54.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
-----

```

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 4.68 0.70
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 189.38 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.37 (ii) 6.34 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.26 0.15

PEAK FLOW (cms)= 1.63 0.10 1.708 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 65.93 34.77 61.88
 TOTAL RAINFALL (mm)= 66.93 66.93 66.93
 RUNOFF COEFFICIENT = 0.99 0.52 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
-----

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IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 3.30 0.77
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 164.72 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.10 (ii) 6.64 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.27 0.14

PEAK FLOW (cms)= 1.16 0.10 1.246 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 65.93 34.77 60.07
 TOTAL RAINFALL (mm)= 66.93 66.93 66.93
 RUNOFF COEFFICIENT = 0.99 0.52 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 1213) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1201): AREA (ha)= 5.38 QPEAK (cms)= 1.708 TPEAK (hrs)= 1.33 R.V. (mm)= 61.88
+ ID2= 2 ( 1202): AREA (ha)= 4.07 QPEAK (cms)= 1.246 TPEAK (hrs)= 1.33 R.V. (mm)= 60.07
-----
ID = 3 ( 1213): 9.45 2.954 1.33 61.10

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 1203) | Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10
-----

```

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.43 1.11
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 101.32 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64

```

1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.32 (ii) 10.75 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.30 0.09
 TOTALS
 PEAK FLOW (cms)= 0.15 0.12 0.217 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 65.93 34.77 43.52
 TOTAL RAINFALL (mm)= 66.93 66.93 66.93
 RUNOFF COEFFICIENT = 0.99 0.52 0.65

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (1214) |
1 + 2 = 3
 ID1= 1 (1203): 1.54 0.217 1.33 43.52
 + ID2= 2 (1213): 9.45 2.954 1.33 61.10
 =====
 ID = 3 (1214): 10.99 3.171 1.33 58.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 =====
 V V I SSSS U U A L (v 6.2.2015)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 V V I SSSS UUUU 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 Y M M 0 0
 000 T T H H Y 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\ZhouJ\AppData\Local\Civica\VH5\vf67fe709-6b28-4175-8afc-bd306d6d118d\d4357f
 f6-9b48-46fb-994f-4ba789d9b9d9\scenar
 Summary filename:
 C:\Users\ZhouJ\AppData\Local\Civica\VH5\vf67fe709-6b28-4175-8afc-bd306d6d118d\d4357f
 f6-9b48-46fb-994f-4ba789d9b9d9\scenar

DATE: 05-28-2026

TIME: 11:03:24

USER:

COMMENTS: _____

 ** SIMULATION : Run1.6 100-yr 4 hr Chicago (W **

 | CHICAGO STORM | IDF curve parameters: A=1020.000
 | Ptotal= 73.18 mm | B= 4.700
 ----- C= 0.731
 used in: INTENSITY = A / (t + B)^C

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	5.85	1.00	36.88	2.00	12.66	3.00	6.84
0.17	6.62	1.17	142.99	2.17	10.96	3.17	6.40
0.33	7.67	1.33	47.20	2.33	9.71	3.33	6.02
0.50	9.22	1.50	26.61	2.50	8.75	3.50	5.69
0.67	11.80	1.67	19.09	2.67	7.99	3.67	5.40
0.83	17.10	1.83	15.13	2.83	7.36	3.83	5.14

 | CALIB |
 | NASHYD (1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 ----- U.H. Tp(hrs)= 0.75

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.142 (i)
 TIME TO PEAK (hrs)= 2.250
 RUNOFF VOLUME (mm)= 37.821
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.517

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

 | CALIB |
 | NASHYD (0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
 ----- U.H. Tp(hrs)= 0.47

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.179 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 37.820
 TOTAL RAINFALL (mm)= 73.182
 RUNOFF COEFFICIENT = 0.517

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

 | ADD HYD (2318) |
1 + 2 = 3
 ID1= 1 (1305): 3.00 0.142 2.25 37.82
 + ID2= 2 (0304): 2.79 0.179 1.92 37.82
 =====
 ID = 3 (2318): 5.79 0.306 2.00 37.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (0305) | Area (ha)= 2.15
 | ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)=	142.99	74.97
over (min)	5.00	10.00
Storage Coeff. (min)=	2.47 (ii)	10.39 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.30	0.09

PEAK FLOW (cms)=	0.21	0.20	0.320 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	65.68	39.88	46.33
TOTAL RAINFALL (mm)=	73.18	73.18	73.18
RUNOFF COEFFICIENT =	0.90	0.54	0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2319)				
1	2	3	AREA	QPEAK
			(ha)	(cms)
				TPEAK
				(hrs)
				R.V.
				(mm)
ID1= 1 (2318):	5.79	0.306	2.00	37.82
+ ID2= 2 (0305):	2.15	0.320	1.33	46.33
=====				
ID = 3 (2319):	7.94	0.434	1.67	40.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1302)			
ID= 1 DT= 5.0 min	Area	(ha)=	2.86
	Total Imp(%)=	86.10	Dir. Conn.(%)= 86.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.46	0.40
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	138.08	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)=	142.99	74.97
over (min)	5.00	10.00
Storage Coeff. (min)=	2.69 (ii)	5.64 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.29	0.15

PEAK FLOW (cms)=	0.96	0.07	1.017 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	72.18	39.88	67.69
TOTAL RAINFALL (mm)=	73.18	73.18	73.18
RUNOFF COEFFICIENT =	0.99	0.54	0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1301)			
ID= 1 DT= 5.0 min	Area	(ha)=	3.68
	Total Imp(%)=	85.30	Dir. Conn.(%)= 85.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.14	0.54
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	156.63	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)=	142.99	74.97
over (min)	5.00	10.00
Storage Coeff. (min)=	2.90 (ii)	5.93 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.15

PEAK FLOW (cms)=	1.22	0.09	1.293 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	72.18	39.88	67.43
TOTAL RAINFALL (mm)=	73.18	73.18	73.18
RUNOFF COEFFICIENT =	0.99	0.54	0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2315)				
1	2	3	AREA	QPEAK
			(ha)	(cms)
				TPEAK
				(hrs)
				R.V.
				(mm)
ID1= 1 (1301):	3.68	1.293	1.33	67.43
+ ID2= 2 (1302):	2.86	1.017	1.33	67.69
=====				
ID = 3 (2315):	6.54	2.310	1.33	67.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1303)			
ID= 1 DT= 5.0 min	Area	(ha)=	3.47
	Total Imp(%)=	86.30	Dir. Conn.(%)= 86.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.99	0.48
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	152.10	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	' TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)=	142.99	74.97
over (min)	5.00	10.00
Storage Coeff. (min)=	2.85 (ii)	5.78 (ii)

```

Unit Hyd. Tpeak (min)=      5.00      10.00
Unit Hyd. peak  (cms)=      0.28      0.15

                                *TOTALS*
PEAK FLOW      (cms)=      1.16      0.08      1.230 (iii)
TIME TO PEAK   (hrs)=      1.33      1.42      1.33
RUNOFF VOLUME  (mm)=      72.18     39.88     67.76
TOTAL RAINFALL (mm)=      73.18     73.18     73.18
RUNOFF COEFFICIENT =      0.99      0.54      0.93

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2316) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1303):    3.47    1.230    1.33    67.76
+ ID2= 2 ( 2315):    6.54    2.310    1.33    67.55
=====
ID = 3 ( 2316):    10.01    3.540    1.33    67.62

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1304) | Area (ha)= 3.93
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----
IMPVIOUS (i)
Surface Area (ha)= 3.54 0.39
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 161.86 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84

```

```

0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02
0.583 9.22 | 1.583 26.61 | 2.583 8.75 | 3.58 5.69
0.667 9.22 | 1.667 26.61 | 2.667 8.75 | 3.67 5.69
0.750 11.80 | 1.750 19.09 | 2.750 7.99 | 3.75 5.40
0.833 11.80 | 1.833 19.09 | 2.833 7.99 | 3.83 5.40
0.917 17.10 | 1.917 15.13 | 2.917 7.36 | 3.92 5.14
1.000 17.10 | 2.000 15.13 | 3.000 7.36 | 4.00 5.14

```

```

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) = 5.00 10.00
Storage Coeff. (min)= 2.96 (ii) 5.50 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.16

```

```

                                *TOTALS*
PEAK FLOW      (cms)=      1.37      0.07      1.426 (iii)
TIME TO PEAK   (hrs)=      1.33      1.42      1.33
RUNOFF VOLUME  (mm)=      72.18     39.88     68.95
TOTAL RAINFALL (mm)=      73.18     73.18     73.18
RUNOFF COEFFICIENT =      0.99      0.54      0.94

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2317) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1304):    3.93    1.426    1.33    68.95
+ ID2= 2 ( 2316):   10.01    3.540    1.33    67.62
=====
ID = 3 ( 2317):   13.94    4.965    1.33    67.99

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2317):   13.94    4.965    1.33    67.99

```

```

+ ID2= 2 ( 2319):    7.94    0.434    1.67    40.12
=====
ID = 3 ( 2320):    21.88    5.337    1.33    57.88

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1101) | Area (ha)= 3.22
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----
IMPVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84
0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02
0.583 9.22 | 1.583 26.61 | 2.583 8.75 | 3.58 5.69
0.667 9.22 | 1.667 26.61 | 2.667 8.75 | 3.67 5.69
0.750 11.80 | 1.750 19.09 | 2.750 7.99 | 3.75 5.40
0.833 11.80 | 1.833 19.09 | 2.833 7.99 | 3.83 5.40
0.917 17.10 | 1.917 15.13 | 2.917 7.36 | 3.92 5.14
1.000 17.10 | 2.000 15.13 | 3.000 7.36 | 4.00 5.14

```

```

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) = 5.00 10.00
Storage Coeff. (min)= 2.78 (ii) 5.32 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.16

```

```

                                *TOTALS*
PEAK FLOW      (cms)=      1.13      0.05      1.174 (iii)
TIME TO PEAK   (hrs)=      1.33      1.42      1.33
RUNOFF VOLUME  (mm)=      72.18     39.88     68.95
TOTAL RAINFALL (mm)=      73.18     73.18     73.18
RUNOFF COEFFICIENT =      0.99      0.54      0.94

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
-----

```

```

IMPVIOUS (i)
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84
0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02
0.583 9.22 | 1.583 26.61 | 2.583 8.75 | 3.58 5.69
0.667 9.22 | 1.667 26.61 | 2.667 8.75 | 3.67 5.69
0.750 11.80 | 1.750 19.09 | 2.750 7.99 | 3.75 5.40
0.833 11.80 | 1.833 19.09 | 2.833 7.99 | 3.83 5.40
0.917 17.10 | 1.917 15.13 | 2.917 7.36 | 3.92 5.14
1.000 17.10 | 2.000 15.13 | 3.000 7.36 | 4.00 5.14

```

```

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) = 5.00 15.00
Storage Coeff. (min)= 2.44 (ii) 10.36 (iii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.09

```

```

                                *TOTALS*
PEAK FLOW      (cms)=      0.20      0.20      0.305 (iii)
TIME TO PEAK   (hrs)=      1.33      1.50      1.33
RUNOFF VOLUME  (mm)=      72.18     39.88     47.79
TOTAL RAINFALL (mm)=      73.18     73.18     73.18
RUNOFF COEFFICIENT =      0.99      0.54      0.65

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1101):	3.22	1.174	1.33	68.95
+ ID2= 2 (1102):	2.07	0.305	1.33	47.79
=====				
ID = 3 (1112):	5.29	1.480	1.33	60.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1201)				
ID= 1 DT= 5.0 min				
	Area	(ha)=		
	Total Imp(%)=	87.00	Dir. Conn.(%)=	87.00

	IMPERVIOUS	PERVIOUS (i)
	(ha)=	
Surface Area	4.68	0.70
Dep. Storage	1.00	5.00
Average Slope	1.00	2.00
Length	189.38	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40

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0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14
Max.Eff.Inten.(mm/hr)=		142.99	74.97				
over (min)		5.00	10.00				
Storage Coeff. (min)=		3.25 (ii)	6.11 (ii)				
Unit Hyd. Tpeak (min)=		5.00	10.00				
Unit Hyd. peak (cms)=		0.27	0.15				
				TOTALS			
PEAK FLOW (cms)=		1.80	0.11	1.891 (iii)			
TIME TO PEAK (hrs)=		1.33	1.42	1.33			
RUNOFF VOLUME (mm)=		72.18	39.88	67.98			
TOTAL RAINFALL (mm)=		73.18	73.18	73.18			
RUNOFF COEFFICIENT =		0.99	0.54	0.93			

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1202)				
ID= 1 DT= 5.0 min				
	Area	(ha)=		
	Total Imp(%)=	81.20	Dir. Conn.(%)=	81.20

	IMPERVIOUS	PERVIOUS (i)
	(ha)=	
Surface Area	3.30	0.77
Dep. Storage	1.00	5.00
Average Slope	1.00	2.00
Length	164.72	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69

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0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)=	142.99	74.97
over (min)	5.00	10.00
Storage Coeff. (min)=	2.99 (ii)	6.39 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.15

PEAK FLOW (cms)=	1.28	0.12	1.381 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	
RUNOFF VOLUME (mm)=	72.18	39.88	66.11
TOTAL RAINFALL (mm)=	73.18	73.18	
RUNOFF COEFFICIENT =	0.99	0.54	0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1213)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1201):	5.38	1.891	1.33	67.98
+ ID2= 2 (1202):	4.07	1.381	1.33	66.11
=====				
ID = 3 (1213):	9.45	3.273	1.33	67.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1203)				
ID= 1 DT= 5.0 min				
	Area	(ha)=		
	Total Imp(%)=	28.10	Dir. Conn.(%)=	28.10

	IMPERVIOUS	PERVIOUS (i)
	(ha)=	
Surface Area	0.43	1.11
Dep. Storage	1.00	5.00
Average Slope	1.00	2.00
Length	101.32	40.00
Mannings n	0.013	0.250

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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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)=	142.99	74.97
over (min)	5.00	15.00
Storage Coeff. (min)=	2.23 (ii)	10.15 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.30	0.10

PEAK FLOW (cms)=	0.17	0.14	0.247 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	72.18	39.88	48.95
TOTAL RAINFALL (mm)=	73.18	73.18	
RUNOFF COEFFICIENT =	0.99	0.54	0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1203):	1.54	0.247	1.33	48.95
+ ID2= 2 (1213):	9.45	3.273	1.33	67.18
=====				
ID = 3 (1214):	10.99	3.519	1.33	64.62

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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
W   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\VO2\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\001eba
ae-c67b-4976-bcca-1d837899a406\scenar

Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\001eba
ae-c67b-4976-bcca-1d837899a406\scenar

DATE: 05-28-2026 TIME: 11:03:20

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run2.1 2-yr 24-hr SCS (Wellan) **
*****

```

```

| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
|            | bfe40e39-8792-435b-a2bb-8638b01a4cbc\4b1fefde
| Ptotal= 58.13 mm | Comments: 2-yr 24-hr SCS (Welland)
|

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.64	6.00	1.16	12.00	8.37	18.00	1.05
0.25	0.64	6.25	1.16	12.25	8.37	18.25	1.05
0.50	0.64	6.50	1.16	12.50	4.30	18.50	1.05
0.75	0.64	6.75	1.16	12.75	4.30	18.75	1.05
1.00	0.64	7.00	1.16	13.00	0.81	19.00	1.05
1.25	0.64	7.25	1.16	13.25	0.81	19.25	1.05
1.50	0.64	7.50	1.16	13.50	4.76	19.50	1.05
1.75	0.64	7.75	1.16	13.75	4.76	19.75	1.05
2.00	0.76	8.00	1.57	14.00	1.74	20.00	0.70
2.25	0.76	8.25	1.57	14.25	1.74	20.25	0.70
2.50	0.76	8.50	1.57	14.50	1.74	20.50	0.70
2.75	0.76	8.75	1.57	14.75	1.74	20.75	0.70
3.00	0.76	9.00	1.86	15.00	1.74	21.00	0.70
3.25	0.76	9.25	1.86	15.25	1.74	21.25	0.70
3.50	0.76	9.50	2.09	15.50	1.74	21.50	0.70
3.75	0.76	9.75	2.09	15.75	1.74	21.75	0.70
4.00	0.93	10.00	2.67	16.00	1.05	22.00	0.70
4.25	0.93	10.25	2.67	16.25	1.05	22.25	0.70
4.50	0.93	10.50	3.60	16.50	1.05	22.50	0.70
4.75	0.93	10.75	3.60	16.75	1.05	22.75	0.70
5.00	0.93	11.00	5.58	17.00	1.05	23.00	0.70
5.25	0.93	11.25	5.58	17.25	1.05	23.25	0.70
5.50	0.93	11.50	24.17	17.50	1.05	23.50	0.70
5.75	0.93	11.75	64.14	17.75	1.05	23.75	0.70

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| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.75

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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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05

0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70

4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.153

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PEAK FLOW (cms)= 0.078 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 25.887
TOTAL RAINFALL (mm)= 58.128
RUNOFF COEFFICIENT = 0.445

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

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| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.47

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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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05

0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70

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4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.102 (i)

TIME TO PEAK (hrs)= 12.333

RUNOFF VOLUME (mm)= 25.886

TOTAL RAINFALL (mm)= 58.128

RUNOFF COEFFICIENT = 0.445

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

ADD HYD (2318)				
1 + 2 = 3				

		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
ID1= 1 (1305):		3.00	0.078	12.67
+ ID2= 2 (0304):		2.79	0.102	12.33
=====				
ID = 3 (2318):		5.79	0.171	12.50
=====				

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0305)				
ID= 1 DT= 5.0 min				

		Area	(ha)=	2.15
		Total Imp(%)=	25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)	
		(ha)=	0.54	1.61
		Dep. Storage	(mm)=	7.50
		Average Slope	(%)=	1.00
		Length	(m)=	119.72
		Mannings n	=	0.013

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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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70

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3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

```

-----
| ADD HYD ( 2319) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2318): AREA QPEAK TPEAK R.V.
                  (ha) (cms) (hrs) (mm)
+ ID2= 2 ( 0305): 5.79 0.171 12.50 25.89
                  2.15 0.185 12.00 33.51
=====
ID = 3 ( 2319): 7.94 0.268 12.00 27.95

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 1302) |
| ID= 1 DT= 5.0 min |
-----

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                IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.46 0.40
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 138.00 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 0.64 6.083 1.16 12.083 8.38 18.08 1.05
0.167 0.64 6.167 1.16 12.167 8.37 18.17 1.05
0.250 0.64 6.250 1.16 12.250 8.37 18.25 1.05
0.333 0.64 6.333 1.16 12.333 8.37 18.33 1.05
0.417 0.64 6.417 1.16 12.417 8.37 18.42 1.05
0.500 0.64 6.500 1.16 12.500 8.37 18.50 1.05
0.583 0.64 6.583 1.16 12.583 4.30 18.58 1.05
0.667 0.64 6.667 1.16 12.667 4.30 18.67 1.05
0.750 0.64 6.750 1.16 12.750 4.30 18.75 1.05
0.833 0.64 6.833 1.16 12.833 4.30 18.83 1.05
0.917 0.64 6.917 1.16 12.917 4.30 18.92 1.05
1.000 0.64 7.000 1.16 13.000 4.30 19.00 1.05
1.083 0.64 7.083 1.16 13.083 0.81 19.08 1.05
1.167 0.64 7.167 1.16 13.167 0.81 19.17 1.05
1.250 0.64 7.250 1.16 13.250 0.81 19.25 1.05
1.333 0.64 7.333 1.16 13.333 0.81 19.33 1.05
1.417 0.64 7.417 1.16 13.417 0.81 19.42 1.05
1.500 0.64 7.500 1.16 13.500 0.81 19.50 1.05
1.583 0.64 7.583 1.16 13.583 4.76 19.58 1.05
1.667 0.64 7.667 1.16 13.667 4.76 19.67 1.05

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1.750 0.64 7.750 1.16 13.750 4.76 19.75 1.05
1.833 0.64 7.833 1.16 13.833 4.76 19.83 1.05
1.917 0.64 7.917 1.16 13.917 4.76 19.92 1.05
2.000 0.64 8.000 1.16 14.000 4.76 20.00 1.05
2.083 0.76 8.083 1.57 14.083 1.74 20.08 0.70
2.167 0.76 8.167 1.57 14.167 1.74 20.17 0.70
2.250 0.76 8.250 1.57 14.250 1.74 20.25 0.70
2.333 0.76 8.333 1.57 14.333 1.74 20.33 0.70
2.417 0.76 8.417 1.57 14.417 1.74 20.42 0.70
2.500 0.76 8.500 1.57 14.500 1.74 20.50 0.70
2.583 0.76 8.583 1.57 14.583 1.74 20.58 0.70
2.667 0.76 8.667 1.57 14.667 1.74 20.67 0.70
2.750 0.76 8.750 1.57 14.750 1.74 20.75 0.70
2.833 0.76 8.833 1.57 14.833 1.74 20.83 0.70
2.917 0.76 8.917 1.57 14.917 1.74 20.92 0.70
3.000 0.76 9.000 1.57 15.000 1.74 21.00 0.70
3.083 0.76 9.083 1.86 15.083 1.74 21.08 0.70
3.167 0.76 9.167 1.86 15.167 1.74 21.17 0.70
3.250 0.76 9.250 1.86 15.250 1.74 21.25 0.70
3.333 0.76 9.333 1.86 15.333 1.74 21.33 0.70
3.417 0.76 9.417 1.86 15.417 1.74 21.42 0.70
3.500 0.76 9.500 1.86 15.500 1.74 21.50 0.70
3.583 0.76 9.583 2.09 15.583 1.74 21.58 0.70
3.667 0.76 9.667 2.09 15.667 1.74 21.67 0.70
3.750 0.76 9.750 2.09 15.750 1.74 21.75 0.70
3.833 0.76 9.833 2.09 15.833 1.74 21.83 0.70
3.917 0.76 9.917 2.09 15.917 1.74 21.92 0.70
4.000 0.76 10.000 2.09 16.000 1.74 22.00 0.70
4.083 0.93 10.083 2.67 16.083 1.05 22.08 0.70
4.167 0.93 10.167 2.67 16.167 1.05 22.17 0.70
4.250 0.93 10.250 2.67 16.250 1.05 22.25 0.70
4.333 0.93 10.333 2.67 16.333 1.05 22.33 0.70
4.417 0.93 10.417 2.67 16.417 1.05 22.42 0.70
4.500 0.93 10.500 2.67 16.500 1.05 22.50 0.70
4.583 0.93 10.583 3.60 16.583 1.05 22.58 0.70
4.667 0.93 10.667 3.60 16.667 1.05 22.67 0.70
4.750 0.93 10.750 3.60 16.750 1.05 22.75 0.70
4.833 0.93 10.833 3.60 16.833 1.05 22.83 0.70
4.917 0.93 10.917 3.60 16.917 1.05 22.92 0.70
5.000 0.93 11.000 3.60 17.000 1.05 23.00 0.70
5.083 0.93 11.083 5.58 17.083 1.05 23.08 0.70
5.167 0.93 11.167 5.58 17.167 1.05 23.17 0.70
5.250 0.93 11.250 5.58 17.250 1.05 23.25 0.70
5.333 0.93 11.333 5.58 17.333 1.05 23.33 0.70
5.417 0.93 11.417 5.58 17.417 1.05 23.42 0.70
5.500 0.93 11.500 5.58 17.500 1.05 23.50 0.70
5.583 0.93 11.583 24.17 17.583 1.05 23.58 0.70
5.667 0.93 11.667 24.17 17.667 1.05 23.67 0.70
5.750 0.93 11.750 24.17 17.750 1.05 23.75 0.70
5.833 0.93 11.833 64.14 17.833 1.05 23.83 0.70

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5.917 0.93 11.917 64.14 17.917 1.05 23.92 0.70
6.000 0.93 12.000 64.14 18.000 1.05 24.00 0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 3.70 (ii) 7.77 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 0.43 0.03 0.467 (iii)
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 53.05
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.91

```

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

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(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1301) |
| ID= 1 DT= 5.0 min |
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                IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

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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 0.64 6.083 1.16 12.083 8.38 18.08 1.05
0.167 0.64 6.167 1.16 12.167 8.37 18.17 1.05
0.250 0.64 6.250 1.16 12.250 8.37 18.25 1.05
0.333 0.64 6.333 1.16 12.333 8.37 18.33 1.05
0.417 0.64 6.417 1.16 12.417 8.37 18.42 1.05
0.500 0.64 6.500 1.16 12.500 8.37 18.50 1.05
0.583 0.64 6.583 1.16 12.583 4.30 18.58 1.05
0.667 0.64 6.667 1.16 12.667 4.30 18.67 1.05

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0.750 0.64 6.750 1.16 12.750 4.30 18.75 1.05
0.833 0.64 6.833 1.16 12.833 4.30 18.83 1.05
0.917 0.64 6.917 1.16 12.917 4.30 18.92 1.05
1.000 0.64 7.000 1.16 13.000 4.30 19.00 1.05
1.083 0.64 7.083 1.16 13.083 0.81 19.08 1.05
1.167 0.64 7.167 1.16 13.167 0.81 19.17 1.05
1.250 0.64 7.250 1.16 13.250 0.81 19.25 1.05
1.333 0.64 7.333 1.16 13.333 0.81 19.33 1.05
1.417 0.64 7.417 1.16 13.417 0.81 19.42 1.05
1.500 0.64 7.500 1.16 13.500 0.81 19.50 1.05
1.583 0.64 7.583 1.16 13.583 4.76 19.58 1.05
1.667 0.64 7.667 1.16 13.667 4.76 19.67 1.05
1.750 0.64 7.750 1.16 13.750 4.76 19.75 1.05
1.833 0.64 7.833 1.16 13.833 4.76 19.83 1.05
1.917 0.64 7.917 1.16 13.917 4.76 19.92 1.05
2.000 0.64 8.000 1.16 14.000 4.76 20.00 1.05
2.083 0.76 8.083 1.57 14.083 1.74 20.08 0.70
2.167 0.76 8.167 1.57 14.167 1.74 20.17 0.70
2.250 0.76 8.250 1.57 14.250 1.74 20.25 0.70
2.333 0.76 8.333 1.57 14.333 1.74 20.33 0.70
2.417 0.76 8.417 1.57 14.417 1.74 20.42 0.70
2.500 0.76 8.500 1.57 14.500 1.74 20.50 0.70
2.583 0.76 8.583 1.57 14.583 1.74 20.58 0.70
2.667 0.76 8.667 1.57 14.667 1.74 20.67 0.70
2.750 0.76 8.750 1.57 14.750 1.74 20.75 0.70
2.833 0.76 8.833 1.57 14.833 1.74 20.83 0.70
2.917 0.76 8.917 1.57 14.917 1.74 20.92 0.70
3.000 0.76 9.000 1.57 15.000 1.74 21.00 0.70
3.083 0.76 9.083 1.86 15.083 1.74 21.08 0.70
3.167 0.76 9.167 1.86 15.167 1.74 21.17 0.70
3.250 0.76 9.250 1.86 15.250 1.74 21.25 0.70
3.333 0.76 9.333 1.86 15.333 1.74 21.33 0.70
3.417 0.76 9.417 1.86 15.417 1.74 21.42 0.70
3.500 0.76 9.500 1.86 15.500 1.74 21.50 0.70
3.583 0.76 9.583 2.09 15.583 1.74 21.58 0.70
3.667 0.76 9.667 2.09 15.667 1.74 21.67 0.70
3.750 0.76 9.750 2.09 15.750 1.74 21.75 0.70
3.833 0.76 9.833 2.09 15.833 1.74 21.83 0.70
3.917 0.76 9.917 2.09 15.917 1.74 21.92 0.70
4.000 0.76 10.000 2.09 16.000 1.74 22.00 0.70
4.083 0.93 10.083 2.67 16.083 1.05 22.08 0.70
4.167 0.93 10.167 2.67 16.167 1.05 22.17 0.70
4.250 0.93 10.250 2.67 16.250 1.05 22.25 0.70
4.333 0.93 10.333 2.67 16.333 1.05 22.33 0.70
4.417 0.93 10.417 2.67 16.417 1.05 22.42 0.70
4.500 0.93 10.500 2.67 16.500 1.05 22.50 0.70
4.583 0.93 10.583 3.60 16.583 1.05 22.58 0.70
4.667 0.93 10.667 3.60 16.667 1.05 22.67 0.70
4.750 0.93 10.750 3.60 16.750 1.05 22.75 0.70
4.833 0.93 10.833 3.60 16.833 1.05 22.83 0.70

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4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 3.99 (ii) 8.17 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 0.55 0.04 0.596 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 52.82
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1301):	3.68	0.596	12.00	52.82
+ ID2= 2 (1302):	2.86	0.467	12.00	53.05
ID = 3 (2315):	6.54	1.063	12.00	52.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |

| STANDHYD (1303) | Area (ha)= 3.47
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.99	0.48
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	152.10	40.00
Mannings n =	0.013	0.250

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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70

2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 3.92 (ii) 7.96 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 0.53 0.04 0.566 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 53.11
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1303):	3.47	0.566	12.00	53.11
+ ID2= 2 (2315):	6.54	1.063	12.00	52.92
ID = 3 (2316):	10.01	1.629	12.00	52.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |
| STANDHYD (1304) | Area (ha)= 3.93
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.54	0.39
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	161.86	40.00
Mannings n =	0.013	0.250

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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05

0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70

5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max. Eff. Inten. (mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 4.07 (ii) 7.57 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

TOTALS
PEAK FLOW (cms)= 0.62 0.03 0.653 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 54.19
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2317):	3.93	0.653	12.00	54.19
+ ID2= 2 (2316):	10.01	1.629	12.00	52.98
=====				
ID = 3 (2317):	13.94	2.282	12.00	53.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

	AREA	QPEAK	TPEAK	R.V.
ID1= 1 (2317):	3.93	0.653	12.00	54.19
+ ID2= 2 (2316):	10.01	1.629	12.00	52.98
=====				
ID = 3 (2317):	13.94	2.282	12.00	53.33

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2317):	13.94	2.282	12.00	53.33
+ ID2= 2 (2319):	7.94	0.268	12.00	27.95
=====				
ID = 3 (2320):	21.88	2.550	12.00	44.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (1101):	Area (ha)= 3.22
ID= 1 DT= 5.0 min	Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.90	0.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	146.52	40.00
Mannings n	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05

2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70

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over (min)          5.00      10.00
Storage Coeff. (min)= 3.84 (ii) 7.34 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.25      0.13

PEAK FLOW (cms)=      0.51      0.03
TIME TO PEAK (hrs)=   12.00     12.00
RUNOFF VOLUME (mm)=   57.13     27.81
TOTAL RAINFALL (mm)=  58.13     58.13
RUNOFF COEFFICIENT =   0.98      0.48

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TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
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IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.51      1.56
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 117.47      40.00
Mannings n = 0.013      0.250

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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 0.64 | 6.083 1.16 | 12.083 8.38 | 18.08 1.05
0.167 0.64 | 6.167 1.16 | 12.167 8.37 | 18.17 1.05
0.250 0.64 | 6.250 1.16 | 12.250 8.37 | 18.25 1.05
0.333 0.64 | 6.333 1.16 | 12.333 8.37 | 18.33 1.05
0.417 0.64 | 6.417 1.16 | 12.417 8.37 | 18.42 1.05
0.500 0.64 | 6.500 1.16 | 12.500 8.37 | 18.50 1.05
0.583 0.64 | 6.583 1.16 | 12.583 4.30 | 18.58 1.05
0.667 0.64 | 6.667 1.16 | 12.667 4.30 | 18.67 1.05
0.750 0.64 | 6.750 1.16 | 12.750 4.30 | 18.75 1.05
0.833 0.64 | 6.833 1.16 | 12.833 4.30 | 18.83 1.05
0.917 0.64 | 6.917 1.16 | 12.917 4.30 | 18.92 1.05
1.000 0.64 | 7.000 1.16 | 13.000 4.30 | 19.00 1.05

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1.083 0.64 | 7.083 1.16 | 13.083 0.81 | 19.08 1.05
1.167 0.64 | 7.167 1.16 | 13.167 0.81 | 19.17 1.05
1.250 0.64 | 7.250 1.16 | 13.250 0.81 | 19.25 1.05
1.333 0.64 | 7.333 1.16 | 13.333 0.81 | 19.33 1.05
1.417 0.64 | 7.417 1.16 | 13.417 0.81 | 19.42 1.05
1.500 0.64 | 7.500 1.16 | 13.500 0.81 | 19.50 1.05
1.583 0.64 | 7.583 1.16 | 13.583 4.76 | 19.58 1.05
1.667 0.64 | 7.667 1.16 | 13.667 4.76 | 19.67 1.05
1.750 0.64 | 7.750 1.16 | 13.750 4.76 | 19.75 1.05
1.833 0.64 | 7.833 1.16 | 13.833 4.76 | 19.83 1.05
1.917 0.64 | 7.917 1.16 | 13.917 4.76 | 19.92 1.05
2.000 0.64 | 8.000 1.16 | 14.000 4.76 | 20.00 1.05
2.083 0.76 | 8.083 1.57 | 14.083 1.74 | 20.08 0.70
2.167 0.76 | 8.167 1.57 | 14.167 1.74 | 20.17 0.70
2.250 0.76 | 8.250 1.57 | 14.250 1.74 | 20.25 0.70
2.333 0.76 | 8.333 1.57 | 14.333 1.74 | 20.33 0.70
2.417 0.76 | 8.417 1.57 | 14.417 1.74 | 20.42 0.70
2.500 0.76 | 8.500 1.57 | 14.500 1.74 | 20.50 0.70
2.583 0.76 | 8.583 1.57 | 14.583 1.74 | 20.58 0.70
2.667 0.76 | 8.667 1.57 | 14.667 1.74 | 20.67 0.70
2.750 0.76 | 8.750 1.57 | 14.750 1.74 | 20.75 0.70
2.833 0.76 | 8.833 1.57 | 14.833 1.74 | 20.83 0.70
2.917 0.76 | 8.917 1.57 | 14.917 1.74 | 20.92 0.70
3.000 0.76 | 9.000 1.57 | 15.000 1.74 | 21.00 0.70
3.083 0.76 | 9.083 1.86 | 15.083 1.74 | 21.08 0.70
3.167 0.76 | 9.167 1.86 | 15.167 1.74 | 21.17 0.70
3.250 0.76 | 9.250 1.86 | 15.250 1.74 | 21.25 0.70
3.333 0.76 | 9.333 1.86 | 15.333 1.74 | 21.33 0.70
3.417 0.76 | 9.417 1.86 | 15.417 1.74 | 21.42 0.70
3.500 0.76 | 9.500 1.86 | 15.500 1.74 | 21.50 0.70
3.583 0.76 | 9.583 2.09 | 15.583 1.74 | 21.58 0.70
3.667 0.76 | 9.667 2.09 | 15.667 1.74 | 21.67 0.70
3.750 0.76 | 9.750 2.09 | 15.750 1.74 | 21.75 0.70
3.833 0.76 | 9.833 2.09 | 15.833 1.74 | 21.83 0.70
3.917 0.76 | 9.917 2.09 | 15.917 1.74 | 21.92 0.70
4.000 0.76 | 10.000 2.09 | 16.000 1.74 | 22.00 0.70
4.083 0.93 | 10.083 2.67 | 16.083 1.05 | 22.08 0.70
4.167 0.93 | 10.167 2.67 | 16.167 1.05 | 22.17 0.70
4.250 0.93 | 10.250 2.67 | 16.250 1.05 | 22.25 0.70
4.333 0.93 | 10.333 2.67 | 16.333 1.05 | 22.33 0.70
4.417 0.93 | 10.417 2.67 | 16.417 1.05 | 22.42 0.70
4.500 0.93 | 10.500 2.67 | 16.500 1.05 | 22.50 0.70
4.583 0.93 | 10.583 3.60 | 16.583 1.05 | 22.58 0.70
4.667 0.93 | 10.667 3.60 | 16.667 1.05 | 22.67 0.70
4.750 0.93 | 10.750 3.60 | 16.750 1.05 | 22.75 0.70
4.833 0.93 | 10.833 3.60 | 16.833 1.05 | 22.83 0.70
4.917 0.93 | 10.917 3.60 | 16.917 1.05 | 22.92 0.70
5.000 0.93 | 11.000 3.60 | 17.000 1.05 | 23.00 0.70
5.083 0.93 | 11.083 5.58 | 17.083 1.05 | 23.08 0.70
5.167 0.93 | 11.167 5.58 | 17.167 1.05 | 23.17 0.70

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5.250 0.93 | 11.250 5.58 | 17.250 1.05 | 23.25 0.70
5.333 0.93 | 11.333 5.58 | 17.333 1.05 | 23.33 0.70
5.417 0.93 | 11.417 5.58 | 17.417 1.05 | 23.42 0.70
5.500 0.93 | 11.500 5.58 | 17.500 1.05 | 23.50 0.70
5.583 0.93 | 11.583 24.17 | 17.583 1.05 | 23.58 0.70
5.667 0.93 | 11.667 24.17 | 17.667 1.05 | 23.67 0.70
5.750 0.93 | 11.750 24.17 | 17.750 1.05 | 23.75 0.70
5.833 0.93 | 11.833 64.14 | 17.833 1.05 | 23.83 0.70
5.917 0.93 | 11.917 64.14 | 17.917 1.05 | 23.92 0.70
6.000 0.93 | 12.000 64.14 | 18.000 1.05 | 24.00 0.70

```

```

Max.Eff.Inten.(mm/hr)= 64.14      36.31
over (min)          5.00      15.00
Storage Coeff. (min)= 3.36 (ii) 13.94 (ii)
Unit Hyd. Tpeak (min)= 5.00      15.00
Unit Hyd. peak (cms)= 0.26      0.08

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TOTALS

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PEAK FLOW (cms)=      0.09      0.10
TIME TO PEAK (hrs)=   12.00     12.00
RUNOFF VOLUME (mm)=   57.13     27.81
TOTAL RAINFALL (mm)=  58.13     58.13
RUNOFF COEFFICIENT =   0.98      0.60

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1101): 3.22 0.537 12.00 54.19
+ ID2= 2 ( 1102): 2.07 0.177 12.00 34.99
=====
ID = 3 ( 1112): 5.29 0.714 12.00 46.68

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
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IMPERVIOUS      PERVIOUS (i)

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Surface Area (ha)= 4.68      0.70
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 189.38      40.00
Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.64 | 6.083 1.16 | 12.083 8.38 | 18.08 1.05
0.167 0.64 | 6.167 1.16 | 12.167 8.37 | 18.17 1.05
0.250 0.64 | 6.250 1.16 | 12.250 8.37 | 18.25 1.05
0.333 0.64 | 6.333 1.16 | 12.333 8.37 | 18.33 1.05
0.417 0.64 | 6.417 1.16 | 12.417 8.37 | 18.42 1.05
0.500 0.64 | 6.500 1.16 | 12.500 8.37 | 18.50 1.05
0.583 0.64 | 6.583 1.16 | 12.583 4.30 | 18.58 1.05
0.667 0.64 | 6.667 1.16 | 12.667 4.30 | 18.67 1.05
0.750 0.64 | 6.750 1.16 | 12.750 4.30 | 18.75 1.05
0.833 0.64 | 6.833 1.16 | 12.833 4.30 | 18.83 1.05
0.917 0.64 | 6.917 1.16 | 12.917 4.30 | 18.92 1.05
1.000 0.64 | 7.000 1.16 | 13.000 4.30 | 19.00 1.05
1.083 0.64 | 7.083 1.16 | 13.083 0.81 | 19.08 1.05
1.167 0.64 | 7.167 1.16 | 13.167 0.81 | 19.17 1.05
1.250 0.64 | 7.250 1.16 | 13.250 0.81 | 19.25 1.05
1.333 0.64 | 7.333 1.16 | 13.333 0.81 | 19.33 1.05
1.417 0.64 | 7.417 1.16 | 13.417 0.81 | 19.42 1.05
1.500 0.64 | 7.500 1.16 | 13.500 0.81 | 19.50 1.05
1.583 0.64 | 7.583 1.16 | 13.583 4.76 | 19.58 1.05
1.667 0.64 | 7.667 1.16 | 13.667 4.76 | 19.67 1.05
1.750 0.64 | 7.750 1.16 | 13.750 4.76 | 19.75 1.05
1.833 0.64 | 7.833 1.16 | 13.833 4.76 | 19.83 1.05
1.917 0.64 | 7.917 1.16 | 13.917 4.76 | 19.92 1.05
2.000 0.64 | 8.000 1.16 | 14.000 4.76 | 20.00 1.05
2.083 0.76 | 8.083 1.57 | 14.083 1.74 | 20.08 0.70
2.167 0.76 | 8.167 1.57 | 14.167 1.74 | 20.17 0.70
2.250 0.76 | 8.250 1.57 | 14.250 1.74 | 20.25 0.70
2.333 0.76 | 8.333 1.57 | 14.333 1.74 | 20.33 0.70
2.417 0.76 | 8.417 1.57 | 14.417 1.74 | 20.42 0.70
2.500 0.76 | 8.500 1.57 | 14.500 1.74 | 20.50 0.70
2.583 0.76 | 8.583 1.57 | 14.583 1.74 | 20.58 0.70
2.667 0.76 | 8.667 1.57 | 14.667 1.74 | 20.67 0.70
2.750 0.76 | 8.750 1.57 | 14.750 1.74 | 20.75 0.70
2.833 0.76 | 8.833 1.57 | 14.833 1.74 | 20.83 0.70
2.917 0.76 | 8.917 1.57 | 14.917 1.74 | 20.92 0.70
3.000 0.76 | 9.000 1.57 | 15.000 1.74 | 21.00 0.70
3.083 0.76 | 9.083 1.86 | 15.083 1.74 | 21.08 0.70
3.167 0.76 | 9.167 1.86 | 15.167 1.74 | 21.17 0.70

```

3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max. Eff. Inten. (mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 4.48 (ii) 8.42 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.23 0.12

PEAK FLOW (cms)= 0.82 0.06 0.873 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 53.32
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.92

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 84.0 Ia = Dep. 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)= 4.07	
STANDHYD (1202)	Total Imp(%)= 81.20	Dir. Conn.(%)= 81.20
ID= 1 DT= 5.0 min		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.30	0.77
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	164.72	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70

2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max. Eff. Inten. (mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 4.12 (ii) 8.81 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.12
PEAK FLOW (cms)= 0.58 0.06 0.641 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 51.61
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1213)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (1201):	5.38	0.873	12.00	53.32
+ ID2= 2 (1202):	4.07	0.641	12.00	51.61
ID = 3 (1213):	9.45	1.513	12.00	52.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)= 1.54	
STANDHYD (1203)	Total Imp(%)= 28.10	Dir. Conn.(%)= 28.10
ID= 1 DT= 5.0 min		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.43	1.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	101.32	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05

0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70

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4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 36.31
over (min) 5.00 15.00
Storage Coeff. (min)= 3.08 (ii) 13.66 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.08

PEAK FLOW (cms)= 0.08 0.07 0.139 (iii)
TIME TO PEAK (hrs)= 12.00 12.08 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 36.04
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.62

TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1203):	1.54	0.139	12.00	36.04
ID2= 2 (1213):	9.45	1.513	12.00	52.58

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ID = 3 (1214): 10.99 1.652 12.00 50.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

=====

V	V	I	SSSS	U	U	A	L	(v 6.2.2015)
V	V	I	SS	U	U	A	A	L
V	V	I	SS	U	U	A	A	A
V	V	I	SS	U	U	A	A	L
V	V	I	SSSS	UUUUU	A	A	LLLLL	

000 TTTT TTTT 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 Y M M O O
000 T T H H Y 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\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\47749c
ef-6560-4c2c-9d65-1b1af763404c\scenar

Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\47749c
ef-6560-4c2c-9d65-1b1af763404c\scenar

DATE: 05-28-2026 TIME: 11:03:22

USER:

COMMENTS: _____

** SIMULATION : Run2.2 5-yr 24-hr SCS (wellan) **

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.77	6.00	1.40	12.00	10.05	18.00	1.26
0.25	0.77	6.25	1.40	12.25	10.05	18.25	1.26
0.50	0.77	6.50	1.40	12.50	5.17	18.50	1.26
0.75	0.77	6.75	1.40	12.75	5.17	18.75	1.26
1.00	0.77	7.00	1.40	13.00	0.98	19.00	1.26
1.25	0.77	7.25	1.40	13.25	0.98	19.25	1.26
1.50	0.77	7.50	1.40	13.50	5.72	19.50	1.26
1.75	0.77	7.75	1.40	13.75	5.72	19.75	1.26
2.00	0.91	8.00	1.88	14.00	2.09	20.00	0.84
2.25	0.91	8.25	1.88	14.25	2.09	20.25	0.84
2.50	0.91	8.50	1.88	14.50	2.09	20.50	0.84
2.75	0.91	8.75	1.88	14.75	2.09	20.75	0.84
3.00	0.91	9.00	2.23	15.00	2.09	21.00	0.84
3.25	0.91	9.25	2.23	15.25	2.09	21.25	0.84
3.50	0.91	9.50	2.51	15.50	2.09	21.50	0.84
3.75	0.91	9.75	2.51	15.75	2.09	21.75	0.84
4.00	1.12	10.00	3.21	16.00	1.26	22.00	0.84
4.25	1.12	10.25	3.21	16.25	1.26	22.25	0.84
4.50	1.12	10.50	4.33	16.50	1.26	22.50	0.84
4.75	1.12	10.75	4.33	16.75	1.26	22.75	0.84
5.00	1.12	11.00	6.70	17.00	1.26	23.00	0.84
5.25	1.12	11.25	6.70	17.25	1.26	23.25	0.84
5.50	1.12	11.50	29.04	17.50	1.26	23.50	0.84
5.75	1.12	11.75	77.06	17.75	1.26	23.75	0.84

CALIB	Area (ha)	Curve Number (CN)	U.H. Tp(hrs)
NASHYD (1305)	3.00	84.0	0.75
ID= 1 DT= 5.0 min	7.50	# of Linear Res.(N)= 3.00	

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26

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0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84

4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.107 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 35.095

TOTAL RAINFALL (mm)= 69.835

RUNOFF COEFFICIENT = 0.503

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

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| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.47

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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	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26

0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84

4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84

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3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.06	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
 over (min) 5.00 15.00
 Storage Coeff. (min)= 3.16 (ii) 12.41 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.27 0.08
 PEAK FLOW (cms)= 0.11 0.15
 TIME TO PEAK (hrs)= 12.00 12.08
 RUNOFF VOLUME (mm)= 62.34 37.13
 TOTAL RAINFALL (mm)= 69.84 69.84
 RUNOFF COEFFICIENT = 0.89 0.53

TOTALS
 0.243 (iii)
 12.00
 43.43
 69.84
 0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2319)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2318):	5.79	0.235	12.42	35.09
+ ID2= 2 (0305):	2.15	0.243	12.00	43.43
ID = 3 (2319):	7.94	0.362	12.00	37.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1302)	Area	(ha)=	2.86
ID= 1 DT= 5.0 min	Total Imp(%)=	86.10	Dir. Conn.(%)= 86.10
IMPERVIOUS PERVIOUS (i)			
Surface Area	(ha)=	2.46	0.40
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	138.08	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26

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1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84

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5.750 1.12 |11.750 29.04 |17.750 1.26 | 23.75 0.84
5.833 1.12 |11.833 77.05 |17.833 1.26 | 23.83 0.84
5.917 1.12 |11.917 77.06 |17.917 1.26 | 23.92 0.84
6.000 1.12 |12.000 77.06 |18.000 1.26 | 24.00 0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 10.00
Storage Coeff. (min)= 3.44 (ii) 7.22 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.52 0.05 0.569 (iii)
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 68.83 37.13 64.43
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1301) | Area (ha)= 3.68
| ID= 1 DT= 5.0 min | Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30

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IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

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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 0.77 | 6.083 1.40 | 12.083 10.06 | 18.08 1.26
0.167 0.77 | 6.167 1.40 | 12.167 10.05 | 18.17 1.26
0.250 0.77 | 6.250 1.40 | 12.250 10.05 | 18.25 1.26
0.333 0.77 | 6.333 1.40 | 12.333 10.05 | 18.33 1.26
0.417 0.77 | 6.417 1.40 | 12.417 10.05 | 18.42 1.26
0.500 0.77 | 6.500 1.40 | 12.500 10.05 | 18.50 1.26

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0.583 0.77 | 6.583 1.40 |12.583 5.17 | 18.58 1.26
0.667 0.77 | 6.667 1.40 |12.667 5.17 | 18.67 1.26
0.750 0.77 | 6.750 1.40 |12.750 5.17 | 18.75 1.26
0.833 0.77 | 6.833 1.40 |12.833 5.17 | 18.83 1.26
0.917 0.77 | 6.917 1.40 |12.917 5.17 | 18.92 1.26
1.000 0.77 | 7.000 1.40 |13.000 5.17 | 19.00 1.26
1.083 0.77 | 7.083 1.40 |13.083 0.98 | 19.08 1.26
1.167 0.77 | 7.167 1.40 |13.167 0.98 | 19.17 1.26
1.250 0.77 | 7.250 1.40 |13.250 0.98 | 19.25 1.26
1.333 0.77 | 7.333 1.40 |13.333 0.98 | 19.33 1.26
1.417 0.77 | 7.417 1.40 |13.417 0.98 | 19.42 1.26
1.500 0.77 | 7.500 1.40 |13.500 0.98 | 19.50 1.26
1.583 0.77 | 7.583 1.40 |13.583 5.72 | 19.58 1.26
1.667 0.77 | 7.667 1.40 |13.667 5.72 | 19.67 1.26
1.750 0.77 | 7.750 1.40 |13.750 5.72 | 19.75 1.26
1.833 0.77 | 7.833 1.40 |13.833 5.72 | 19.83 1.26
1.917 0.77 | 7.917 1.40 |13.917 5.72 | 19.92 1.26
2.000 0.77 | 8.000 1.40 |14.000 5.72 | 20.00 1.26
2.083 0.91 | 8.083 1.88 |14.083 2.09 | 20.08 0.84
2.167 0.91 | 8.167 1.88 |14.167 2.09 | 20.17 0.84
2.250 0.91 | 8.250 1.88 |14.250 2.09 | 20.25 0.84
2.333 0.91 | 8.333 1.88 |14.333 2.09 | 20.33 0.84
2.417 0.91 | 8.417 1.88 |14.417 2.09 | 20.42 0.84
2.500 0.91 | 8.500 1.88 |14.500 2.09 | 20.50 0.84
2.583 0.91 | 8.583 1.88 |14.583 2.09 | 20.58 0.84
2.667 0.91 | 8.667 1.88 |14.667 2.09 | 20.67 0.84
2.750 0.91 | 8.750 1.88 |14.750 2.09 | 20.75 0.84
2.833 0.91 | 8.833 1.88 |14.833 2.09 | 20.83 0.84
2.917 0.91 | 8.917 1.88 |14.917 2.09 | 20.92 0.84
3.000 0.91 | 9.000 1.88 |15.000 2.09 | 21.00 0.84
3.083 0.91 | 9.083 2.23 |15.083 2.09 | 21.08 0.84
3.167 0.91 | 9.167 2.23 |15.167 2.09 | 21.17 0.84
3.250 0.91 | 9.250 2.23 |15.250 2.09 | 21.25 0.84
3.333 0.91 | 9.333 2.23 |15.333 2.09 | 21.33 0.84
3.417 0.91 | 9.417 2.23 |15.417 2.09 | 21.42 0.84
3.500 0.91 | 9.500 2.23 |15.500 2.09 | 21.50 0.84
3.583 0.91 | 9.583 2.51 |15.583 2.09 | 21.58 0.84
3.667 0.91 | 9.667 2.51 |15.667 2.09 | 21.67 0.84
3.750 0.91 | 9.750 2.51 |15.750 2.09 | 21.75 0.84
3.833 0.91 | 9.833 2.51 |15.833 2.09 | 21.83 0.84
3.917 0.91 | 9.917 2.51 |15.917 2.09 | 21.92 0.84
4.000 0.91 |10.000 2.51 |16.000 2.09 | 22.00 0.84
4.083 1.12 |10.083 3.21 |16.083 1.26 | 22.08 0.84
4.167 1.12 |10.167 3.21 |16.167 1.26 | 22.17 0.84
4.250 1.12 |10.250 3.21 |16.250 1.26 | 22.25 0.84
4.333 1.12 |10.333 3.21 |16.333 1.26 | 22.33 0.84
4.417 1.12 |10.417 3.21 |16.417 1.26 | 22.42 0.84
4.500 1.12 |10.500 3.21 |16.500 1.26 | 22.50 0.84
4.583 1.12 |10.583 4.33 |16.583 1.26 | 22.58 0.84
4.667 1.12 |10.667 4.33 |16.667 1.26 | 22.67 0.84

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4.750 1.12 |10.750 4.33 |16.750 1.26 | 22.75 0.84
4.833 1.12 |10.833 4.33 |16.833 1.26 | 22.83 0.84
4.917 1.12 |10.917 4.33 |16.917 1.26 | 22.92 0.84
5.000 1.12 |11.000 4.33 |17.000 1.26 | 23.00 0.84
5.083 1.12 |11.083 6.70 |17.083 1.26 | 23.08 0.84
5.167 1.12 |11.167 6.70 |17.167 1.26 | 23.17 0.84
5.250 1.12 |11.250 6.70 |17.250 1.26 | 23.25 0.84
5.333 1.12 |11.333 6.70 |17.333 1.26 | 23.33 0.84
5.417 1.12 |11.417 6.70 |17.417 1.26 | 23.42 0.84
5.500 1.12 |11.500 6.70 |17.500 1.26 | 23.50 0.84
5.583 1.12 |11.583 29.04 |17.583 1.26 | 23.58 0.84
5.667 1.12 |11.667 29.04 |17.667 1.26 | 23.67 0.84
5.750 1.12 |11.750 29.04 |17.750 1.26 | 23.75 0.84
5.833 1.12 |11.833 77.05 |17.833 1.26 | 23.83 0.84
5.917 1.12 |11.917 77.06 |17.917 1.26 | 23.92 0.84
6.000 1.12 |12.000 77.06 |18.000 1.26 | 24.00 0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 10.00
Storage Coeff. (min)= 3.71 (ii) 7.59 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 0.66 0.06 0.726 (iii)
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 64.17
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.92

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2315) |
| 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
-----
ID1= 1 ( 1301): 3.68 0.726 12.00 64.17
+ ID2= 2 ( 1302): 2.86 0.569 12.00 64.43
=====
ID = 3 ( 2315): 6.54 1.294 12.00 64.28

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 1303) | Area (ha)= 3.47
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
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IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.99 0.48
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 152.10 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 0.77 | 6.083 1.40 | 12.083 10.06 | 18.08 1.26
0.167 0.77 | 6.167 1.40 | 12.167 10.05 | 18.17 1.26
0.250 0.77 | 6.250 1.40 | 12.250 10.05 | 18.25 1.26
0.333 0.77 | 6.333 1.40 | 12.333 10.05 | 18.33 1.26
0.417 0.77 | 6.417 1.40 | 12.417 10.05 | 18.42 1.26
0.500 0.77 | 6.500 1.40 | 12.500 10.05 | 18.50 1.26
0.583 0.77 | 6.583 1.40 | 12.583 5.17 | 18.58 1.26
0.667 0.77 | 6.667 1.40 | 12.667 5.17 | 18.67 1.26
0.750 0.77 | 6.750 1.40 | 12.750 5.17 | 18.75 1.26
0.833 0.77 | 6.833 1.40 | 12.833 5.17 | 18.83 1.26
0.917 0.77 | 6.917 1.40 | 12.917 5.17 | 18.92 1.26
1.000 0.77 | 7.000 1.40 | 13.000 5.17 | 19.00 1.26
1.083 0.77 | 7.083 1.40 | 13.083 0.98 | 19.08 1.26
1.167 0.77 | 7.167 1.40 | 13.167 0.98 | 19.17 1.26
1.250 0.77 | 7.250 1.40 | 13.250 0.98 | 19.25 1.26
1.333 0.77 | 7.333 1.40 | 13.333 0.98 | 19.33 1.26
1.417 0.77 | 7.417 1.40 | 13.417 0.98 | 19.42 1.26
1.500 0.77 | 7.500 1.40 | 13.500 0.98 | 19.50 1.26
1.583 0.77 | 7.583 1.40 | 13.583 5.72 | 19.58 1.26
1.667 0.77 | 7.667 1.40 | 13.667 5.72 | 19.67 1.26
1.750 0.77 | 7.750 1.40 | 13.750 5.72 | 19.75 1.26
1.833 0.77 | 7.833 1.40 | 13.833 5.72 | 19.83 1.26
1.917 0.77 | 7.917 1.40 | 13.917 5.72 | 19.92 1.26
2.000 0.77 | 8.000 1.40 | 14.000 5.72 | 20.00 1.26
2.083 0.91 | 8.083 1.88 | 14.083 2.09 | 20.08 0.84
2.167 0.91 | 8.167 1.88 | 14.167 2.09 | 20.17 0.84
2.250 0.91 | 8.250 1.88 | 14.250 2.09 | 20.25 0.84
2.333 0.91 | 8.333 1.88 | 14.333 2.09 | 20.33 0.84
2.417 0.91 | 8.417 1.88 | 14.417 2.09 | 20.42 0.84
2.500 0.91 | 8.500 1.88 | 14.500 2.09 | 20.50 0.84
2.583 0.91 | 8.583 1.88 | 14.583 2.09 | 20.58 0.84
2.667 0.91 | 8.667 1.88 | 14.667 2.09 | 20.67 0.84

```

2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84
Max. Eff. Inten. (mm/hr)=	77.06	50.88					
over (min)	5.00	10.00					
Storage Coeff. (min)=	3.65 (ii)	7.40 (ii)					
Unit Hyd. Tpeak (min)=	5.00	10.00					
Unit Hyd. peak (cms)=	0.25	0.13					
PEAK FLOW (cms)=	0.63	0.05	0.689 (iii)				
TIME TO PEAK (hrs)=	12.00	12.00	12.00				
RUNOFF VOLUME (mm)=	68.83	37.13	64.49				

TOTAL RAINFALL (mm)= 69.84 69.84 69.84
 RUNOFF COEFFICIENT = 0.99 0.53 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2316) |
1 + 2 = 3
 ID1= 1 (1303): 3.47 0.689 12.00 64.49
 + ID2= 2 (2315): 6.54 1.294 12.00 64.28
 =====
 ID = 3 (2316): 10.01 1.983 12.00 64.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (1304) | Area (ha)= 3.93
 | ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 3.54 0.39
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 161.86 40.00
 Mannings n = 0.013 0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26

0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84

4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max. Eff. Inten. (mm/hr)= 77.06 50.88
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.79 (ii) 7.04 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.25 0.14
 TOTALS
 PEAK FLOW (cms)= 0.75 0.05 0.794 (iii)
 TIME TO PEAK (hrs)= 12.00 12.00 12.00
 RUNOFF VOLUME (mm)= 68.84 37.13 65.66
 TOTAL RAINFALL (mm)= 69.84 69.84 69.84
 RUNOFF COEFFICIENT = 0.99 0.53 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2317) |
1 + 2 = 3
 ID1= 1 (1304): 3.93 0.794 12.00 65.66
 + ID2= 2 (2316): 10.01 1.983 12.00 64.36
 =====
 ID = 3 (2317): 13.94 2.777 12.00 64.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2317): 13.94 2.777 12.00 64.72
+ ID2= 2 ( 2319): 7.94 0.362 12.00 37.35
-----
ID = 3 ( 2320): 21.88 3.139 12.00 54.79

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 1101) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.22
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

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IMPERVIOUS PERVIOUS (i)
(ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 0.77 6.083 1.40 12.083 10.06 18.08 1.26
0.167 0.77 6.167 1.40 12.167 10.05 18.17 1.26
0.250 0.77 6.250 1.40 12.250 10.05 18.25 1.26
0.333 0.77 6.333 1.40 12.333 10.05 18.33 1.26
0.417 0.77 6.417 1.40 12.417 10.05 18.42 1.26
0.500 0.77 6.500 1.40 12.500 10.05 18.50 1.26
0.583 0.77 6.583 1.40 12.583 5.17 18.58 1.26
0.667 0.77 6.667 1.40 12.667 5.17 18.67 1.26
0.750 0.77 6.750 1.40 12.750 5.17 18.75 1.26
0.833 0.77 6.833 1.40 12.833 5.17 18.83 1.26
0.917 0.77 6.917 1.40 12.917 5.17 18.92 1.26
1.000 0.77 7.000 1.40 13.000 5.17 19.00 1.26
1.083 0.77 7.083 1.40 13.083 0.98 19.08 1.26
1.167 0.77 7.167 1.40 13.167 0.98 19.17 1.26
1.250 0.77 7.250 1.40 13.250 0.98 19.25 1.26
1.333 0.77 7.333 1.40 13.333 0.98 19.33 1.26
1.417 0.77 7.417 1.40 13.417 0.98 19.42 1.26
1.500 0.77 7.500 1.40 13.500 0.98 19.50 1.26
1.583 0.77 7.583 1.40 13.583 5.72 19.58 1.26
1.667 0.77 7.667 1.40 13.667 5.72 19.67 1.26
1.750 0.77 7.750 1.40 13.750 5.72 19.75 1.26
1.833 0.77 7.833 1.40 13.833 5.72 19.83 1.26

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1.917 0.77 7.917 1.40 13.917 5.72 19.92 1.26
2.000 0.77 8.000 1.40 14.000 5.72 20.00 1.26
2.083 0.91 8.083 1.88 14.083 2.09 20.08 0.84
2.167 0.91 8.167 1.88 14.167 2.09 20.17 0.84
2.250 0.91 8.250 1.88 14.250 2.09 20.25 0.84
2.333 0.91 8.333 1.88 14.333 2.09 20.33 0.84
2.417 0.91 8.417 1.88 14.417 2.09 20.42 0.84
2.500 0.91 8.500 1.88 14.500 2.09 20.50 0.84
2.583 0.91 8.583 1.88 14.583 2.09 20.58 0.84
2.667 0.91 8.667 1.88 14.667 2.09 20.67 0.84
2.750 0.91 8.750 1.88 14.750 2.09 20.75 0.84
2.833 0.91 8.833 1.88 14.833 2.09 20.83 0.84
2.917 0.91 8.917 1.88 14.917 2.09 20.92 0.84
3.000 0.91 9.000 1.88 15.000 2.09 21.00 0.84
3.083 0.91 9.083 2.23 15.083 2.09 21.08 0.84
3.167 0.91 9.167 2.23 15.167 2.09 21.17 0.84
3.250 0.91 9.250 2.23 15.250 2.09 21.25 0.84
3.333 0.91 9.333 2.23 15.333 2.09 21.33 0.84
3.417 0.91 9.417 2.23 15.417 2.09 21.42 0.84
3.500 0.91 9.500 2.23 15.500 2.09 21.50 0.84
3.583 0.91 9.583 2.51 15.583 2.09 21.58 0.84
3.667 0.91 9.667 2.51 15.667 2.09 21.67 0.84
3.750 0.91 9.750 2.51 15.750 2.09 21.75 0.84
3.833 0.91 9.833 2.51 15.833 2.09 21.83 0.84
3.917 0.91 9.917 2.51 15.917 2.09 21.92 0.84
4.000 0.91 10.000 2.51 16.000 2.09 22.00 0.84
4.083 1.12 10.083 3.21 16.083 1.26 22.08 0.84
4.167 1.12 10.167 3.21 16.167 1.26 22.17 0.84
4.250 1.12 10.250 3.21 16.250 1.26 22.25 0.84
4.333 1.12 10.333 3.21 16.333 1.26 22.33 0.84
4.417 1.12 10.417 3.21 16.417 1.26 22.42 0.84
4.500 1.12 10.500 3.21 16.500 1.26 22.50 0.84
4.583 1.12 10.583 4.33 16.583 1.26 22.58 0.84
4.667 1.12 10.667 4.33 16.667 1.26 22.67 0.84
4.750 1.12 10.750 4.33 16.750 1.26 22.75 0.84
4.833 1.12 10.833 4.33 16.833 1.26 22.83 0.84
4.917 1.12 10.917 4.33 16.917 1.26 22.92 0.84
5.000 1.12 11.000 4.33 17.000 1.26 23.00 0.84
5.083 1.12 11.083 6.70 17.083 1.26 23.08 0.84
5.167 1.12 11.167 6.70 17.167 1.26 23.17 0.84
5.250 1.12 11.250 6.70 17.250 1.26 23.25 0.84
5.333 1.12 11.333 6.70 17.333 1.26 23.33 0.84
5.417 1.12 11.417 6.70 17.417 1.26 23.42 0.84
5.500 1.12 11.500 6.70 17.500 1.26 23.50 0.84
5.583 1.12 11.583 29.04 17.583 1.26 23.58 0.84
5.667 1.12 11.667 29.04 17.667 1.26 23.67 0.84
5.750 1.12 11.750 29.04 17.750 1.26 23.75 0.84
5.833 1.12 11.833 77.06 17.833 1.26 23.83 0.84
5.917 1.12 11.917 77.06 17.917 1.26 23.92 0.84
6.000 1.12 12.000 77.06 18.000 1.26 24.00 0.84

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Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 10.00
Storage Coeff. (min)= 3.57 (ii) 6.82 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14
PEAK FLOW (cms)= 0.61 0.04 *TOTALS*
TIME TO PEAK (hrs)= 12.00 12.00 0.652 (iii)
RUNOFF VOLUME (mm)= 68.84 37.13 65.66
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.94

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

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(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) |
| ID= 1 DT= 5.0 min |
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Area (ha)= 2.07
Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

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IMPERVIOUS PERVIOUS (i)
(ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

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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 0.77 6.083 1.40 12.083 10.06 18.08 1.26
0.167 0.77 6.167 1.40 12.167 10.05 18.17 1.26
0.250 0.77 6.250 1.40 12.250 10.05 18.25 1.26
0.333 0.77 6.333 1.40 12.333 10.05 18.33 1.26
0.417 0.77 6.417 1.40 12.417 10.05 18.42 1.26
0.500 0.77 6.500 1.40 12.500 10.05 18.50 1.26
0.583 0.77 6.583 1.40 12.583 5.17 18.58 1.26
0.667 0.77 6.667 1.40 12.667 5.17 18.67 1.26
0.750 0.77 6.750 1.40 12.750 5.17 18.75 1.26
0.833 0.77 6.833 1.40 12.833 5.17 18.83 1.26

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0.917 0.77 6.917 1.40 12.917 5.17 18.92 1.26
1.000 0.77 7.000 1.40 13.000 5.17 19.00 1.26
1.083 0.77 7.083 1.40 13.083 0.98 19.08 1.26
1.167 0.77 7.167 1.40 13.167 0.98 19.17 1.26
1.250 0.77 7.250 1.40 13.250 0.98 19.25 1.26
1.333 0.77 7.333 1.40 13.333 0.98 19.33 1.26
1.417 0.77 7.417 1.40 13.417 0.98 19.42 1.26
1.500 0.77 7.500 1.40 13.500 0.98 19.50 1.26
1.583 0.77 7.583 1.40 13.583 5.72 19.58 1.26
1.667 0.77 7.667 1.40 13.667 5.72 19.67 1.26
1.750 0.77 7.750 1.40 13.750 5.72 19.75 1.26
1.833 0.77 7.833 1.40 13.833 5.72 19.83 1.26
1.917 0.77 7.917 1.40 13.917 5.72 19.92 1.26
2.000 0.77 8.000 1.40 14.000 5.72 20.00 1.26
2.083 0.91 8.083 1.88 14.083 2.09 20.08 0.84
2.167 0.91 8.167 1.88 14.167 2.09 20.17 0.84
2.250 0.91 8.250 1.88 14.250 2.09 20.25 0.84
2.333 0.91 8.333 1.88 14.333 2.09 20.33 0.84
2.417 0.91 8.417 1.88 14.417 2.09 20.42 0.84
2.500 0.91 8.500 1.88 14.500 2.09 20.50 0.84
2.583 0.91 8.583 1.88 14.583 2.09 20.58 0.84
2.667 0.91 8.667 1.88 14.667 2.09 20.67 0.84
2.750 0.91 8.750 1.88 14.750 2.09 20.75 0.84
2.833 0.91 8.833 1.88 14.833 2.09 20.83 0.84
2.917 0.91 8.917 1.88 14.917 2.09 20.92 0.84
3.000 0.91 9.000 1.88 15.000 2.09 21.00 0.84
3.083 0.91 9.083 2.23 15.083 2.09 21.08 0.84
3.167 0.91 9.167 2.23 15.167 2.09 21.17 0.84
3.250 0.91 9.250 2.23 15.250 2.09 21.25 0.84
3.333 0.91 9.333 2.23 15.333 2.09 21.33 0.84
3.417 0.91 9.417 2.23 15.417 2.09 21.42 0.84
3.500 0.91 9.500 2.23 15.500 2.09 21.50 0.84
3.583 0.91 9.583 2.51 15.583 2.09 21.58 0.84
3.667 0.91 9.667 2.51 15.667 2.09 21.67 0.84
3.750 0.91 9.750 2.51 15.750 2.09 21.75 0.84
3.833 0.91 9.833 2.51 15.833 2.09 21.83 0.84
3.917 0.91 9.917 2.51 15.917 2.09 21.92 0.84
4.000 0.91 10.000 2.51 16.000 2.09 22.00 0.84
4.083 1.12 10.083 3.21 16.083 1.26 22.08 0.84
4.167 1.12 10.167 3.21 16.167 1.26 22.17 0.84
4.250 1.12 10.250 3.21 16.250 1.26 22.25 0.84
4.333 1.12 10.333 3.21 16.333 1.26 22.33 0.84
4.417 1.12 10.417 3.21 16.417 1.26 22.42 0.84
4.500 1.12 10.500 3.21 16.500 1.26 22.50 0.84
4.583 1.12 10.583 4.33 16.583 1.26 22.58 0.84
4.667 1.12 10.667 4.33 16.667 1.26 22.67 0.84
4.750 1.12 10.750 4.33 16.750 1.26 22.75 0.84
4.833 1.12 10.833 4.33 16.833 1.26 22.83 0.84
4.917 1.12 10.917 4.33 16.917 1.26 22.92 0.84
5.000 1.12 11.000 4.33 17.000 1.26 23.00 0.84

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5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max. Eff. Inten. (mm/hr)= 77.06 50.88
over (min) 5.00 15.00
Storage Coeff. (min)= 3.12 (ii) 12.37 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.08

PEAK FLOW (cms)= 0.11 0.14 0.233 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 44.89
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1101):	3.22	0.652	12.00	65.66
+ ID2= 2 (1102):	2.07	0.233	12.00	44.89
ID = 3 (1112):	5.29	0.885	12.00	57.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	5.38
STANDHYD (1201):	Total Imp(%)=	87.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	87.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n =	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84

3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max. Eff. Inten. (mm/hr)= 77.06 50.88
over (min) 5.00 10.00
Storage Coeff. (min)= 4.16 (ii) 7.82 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 0.98 0.08 1.063 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 64.71
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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)=	4.07
STANDHYD (1202):	Total Imp(%)=	81.20
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	81.20

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.30	0.77
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	164.72	40.00
Mannings n =	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26

2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max. Eff. Inten. (mm/hr)= 77.06 50.88

over (min)	5.00	10.00
Storage Coeff. (min)=	3.83 (ii)	8.19 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.25	0.13

TOTALS

PEAK FLOW (cms)=	0.70	0.08	0.783 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	68.84	37.13	62.87
TOTAL RAINFALL (mm)=	69.84	69.84	69.84
RUNOFF COEFFICIENT =	0.99	0.53	0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1213)				
1 + 2 = 3				

ID1= 1 (1201):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (1202):	5.38	1.063	12.00	64.71
	4.07	0.783	12.00	62.87
=====				
ID = 3 (1213):	9.45	1.846	12.00	63.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1203)				
ID= 1 DT= 5.0 min				

		Area (ha)=	1.54	
		Total Imp(%)=	28.10	Dir. Conn.(%)= 28.10

		IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.43	1.11		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	101.32	40.00		
Mannings n =	0.013	0.250		

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

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

0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84

4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

```
+ ID2= 2 ( 1213):    9.45    1.846    12.00    63.92
=====
ID = 3 ( 1214):    10.99    2.028    12.00    61.41
=====
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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=====
V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLL

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 Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:

C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\evd683
33-b40e-40eb-95aa-81105cc24bb8\scenar

Summary filename:

C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\evd683
33-b40e-40eb-95aa-81105cc24bb8\scenar

DATE: 05-28-2026

TIME: 11:03:25

USER:

COMMENTS: _____

** SIMULATION : Run2.3 10-yr 24-hr SCS (Wella) **

```
-----
| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
| bfe40e39-8792-435b-a2bb-8638b01a4cbc\56b76213
| Ptotal= 80.00 mm | Comments: 10-yr 24-hr SCS (Wella)
-----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.88	6.00	1.60	12.00	11.52	18.00	1.44
0.25	0.88	6.25	1.60	12.25	11.52	18.25	1.44
0.50	0.88	6.50	1.60	12.50	5.92	18.50	1.44
0.75	0.88	6.75	1.60	12.75	5.92	18.75	1.44
1.00	0.88	7.00	1.60	13.00	1.12	19.00	1.44
1.25	0.88	7.25	1.60	13.25	1.12	19.25	1.44
1.50	0.88	7.50	1.60	13.50	6.56	19.50	1.44
1.75	0.88	7.75	1.60	13.75	6.56	19.75	1.44
2.00	1.04	8.00	2.16	14.00	2.40	20.00	0.96
2.25	1.04	8.25	2.16	14.25	2.40	20.25	0.96
2.50	1.04	8.50	2.16	14.50	2.40	20.50	0.96
2.75	1.04	8.75	2.16	14.75	2.40	20.75	0.96
3.00	1.04	9.00	2.56	15.00	2.40	21.00	0.96
3.25	1.04	9.25	2.56	15.25	2.40	21.25	0.96
3.50	1.04	9.50	2.88	15.50	2.40	21.50	0.96
3.75	1.04	9.75	2.88	15.75	2.40	21.75	0.96
4.00	1.28	10.00	3.68	16.00	1.44	22.00	0.96
4.25	1.28	10.25	3.68	16.25	1.44	22.25	0.96
4.50	1.28	10.50	4.96	16.50	1.44	22.50	0.96
4.75	1.28	10.75	4.96	16.75	1.44	22.75	0.96
5.00	1.28	11.00	7.68	17.00	1.44	23.00	0.96
5.25	1.28	11.25	7.68	17.25	1.44	23.25	0.96
5.50	1.28	11.50	33.28	17.50	1.44	23.50	0.96
5.75	1.28	11.75	88.32	17.75	1.44	23.75	0.96

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-----
| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.75
-----
```

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

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

0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96

4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.32	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Unit Hyd Qpeak (cms)= 0.153

```
PEAK FLOW (cms)= 0.134 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 43.482
TOTAL RAINFALL (mm)= 80.000
RUNOFF COEFFICIENT = 0.544
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(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.47
-----
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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
```

0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96

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4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.174 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 43.480
 TOTAL RAINFALL (mm)= 80.000
 RUNOFF COEFFICIENT = 0.543

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

ADD HYD (2318)									
1 + 2 = 3					AREA	QPEAK	TPEAK	R.V.	
					(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (1305):					3.00	0.134	12.67	43.48	
+ ID2= 2 (0304):					2.79	0.174	12.33	43.48	
					=====				
ID = 3 (2318):					5.79	0.294	12.42	43.48	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB									
STANDHYD (0305)					Area	(ha)=	2.15		
ID= 1 DT= 5.0 min					Total Imp(%)=	25.00	Dir. Conn.(%)=	25.00	
					=====				
					IMPERVIOUS				
					(ha)=	0.54	PERVIOUS (i)	1.61	
					Dep. Storage	(mm)=	7.50	5.00	

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Average Slope (%)= 1.00
 Length (m)= 119.72
 Mannings n = 0.013

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96

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3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.9

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

ADD HYD (2319)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2318):	5.79	0.294	12.42	43.48
+ ID2= 2 (0305):	2.15	0.296	12.00	52.31
=====				
ID = 3 (2319):	7.94	0.449	12.00	45.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1302)	Area (ha)=	2.86		
ID= 1 DT= 5.0 min	Total Imp(%)=	86.10	Dir. Conn.(%)=	86.10
=====				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	2.46	0.40		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	138.08	40.00		
Mannings n =	0.013	0.250		

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	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44

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1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96

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5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96
ten. (mm/hr)=	88.32	62.08					
over (min)	5.00	10.00					
eff. (min)	3.26 (ii)	6.83 (ii)					
Tpeak (min)	5.00	10.00					
peak (cms)	0.27	0.14					
	(cms)=	0.60	0.06	*TOTALS*			
	(hrs)=	12.00	12.00	0.657 (iii)			
RAK	(mm)	79.00	45.59	12.00			
UME	(mm)	80.00	80.00	74.35			
FALL	(mm)	80.00	80.00	80.00			
FFICIENT	=	0.99	0.57	0.93			

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1301)	Area (ha)=	3.68		
ID= 1 DT= 5.0 min	Total Imp(%)=	85.30	Dir. Conn.(%)=	85.30
=====				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	3.14	0.54		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	156.63	40.00		
Mannings n =	0.013	0.250		

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	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44

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0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96

4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Max.Eff.Inten.(mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.51 (ii) 7.19 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.76 0.08
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59
TOTAL RAINFALL (mm)= 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57

TOTALS

0.840 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2315) |
| 1 + 2 = 3 |
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ID1= 1 ( 1301): 3.68 0.840 12.00 74.09
+ ID2= 2 ( 1302): 2.86 0.657 12.00 74.35
=====
ID = 3 ( 2315): 6.54 1.497 12.00 74.20

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 1303) | Area (ha)= 3.47
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.99	0.48
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	152.10	40.00
Mannings n =	0.013	0.250

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

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----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44
1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44
1.917 0.88 | 7.917 1.60 | 13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 | 14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 | 14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 | 14.167 2.40 | 20.17 0.96
2.250 1.04 | 8.250 2.16 | 14.250 2.40 | 20.25 0.96
2.333 1.04 | 8.333 2.16 | 14.333 2.40 | 20.33 0.96
2.417 1.04 | 8.417 2.16 | 14.417 2.40 | 20.42 0.96
2.500 1.04 | 8.500 2.16 | 14.500 2.40 | 20.50 0.96

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2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

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-----
| ADD HYD ( 2316) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1303): 3.47 0.796 12.00 74.42
+ ID2= 2 ( 2315): 6.54 1.497 12.00 74.20
=====
ID = 3 ( 2316): 10.01 2.294 12.00 74.28

```

TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59
TOTAL RAINFALL (mm)= 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2316) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1303): 3.47 0.796 12.00 74.42
+ ID2= 2 ( 2315): 6.54 1.497 12.00 74.20
=====
ID = 3 ( 2316): 10.01 2.294 12.00 74.28

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 1304) | Area (ha)= 3.93
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.54	0.39
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	161.86	40.00
Mannings n =	0.013	0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44

```

Max.Eff.Inten.(mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.45 (ii) 7.01 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.73 0.07

TOTALS

0.796 (iii)

0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96

4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96
Max.Eff.Inten.(mm/hr)= 88.32 62.08							
over (min) 5.00 10.00							
Storage Coeff. (min)= 3.58 (ii) 6.66 (ii)							
Unit Hyd. Tpeak (min)= 5.00 10.00							
Unit Hyd. peak (cms)= 0.26 0.14							
TOTALS							
PEAK FLOW (cms)= 0.86 0.06 0.916 (iii)							
TIME TO PEAK (hrs)= 12.00 12.00 12.00							
RUNOFF VOLUME (mm)= 79.00 45.59 75.66							
TOTAL RAINFALL (mm)= 80.00 80.00 80.00							
RUNOFF COEFFICIENT = 0.99 0.57 0.95							

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2317)					
1 + 2 = 3					

ID1= 1 (1304):		3.93	0.916	12.00	75.66
+ ID2= 2 (2316):		10.01	2.294	12.00	74.28
=====					
ID = 3 (2317):		13.94	3.210	12.00	74.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2320)					
1 + 2 = 3					

ID1= 1 (2317):		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
+ ID2= 2 (2319):		13.94	3.210	12.00	74.67
		7.94	0.449	12.00	45.87
=====					
ID = 3 (2320):		21.88	3.659	12.00	64.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (1101)					
ID= 1 DT= 5.0 min					

		Area	(ha)=	3.22	
		Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00

		IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)=	2.90	0.32		
Dep. Storage	(mm)=	1.00	5.00		
Average Slope	(%)=	1.00	2.00		
Length	(m)=	146.52	40.00		
Mannings n	=	0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44

1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96

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5.917 1.28 |11.917 88.32 |17.917 1.44 | 23.92 0.96
6.000 1.28 |12.000 88.32 |18.000 1.44 | 24.00 0.96

Max.Eff.Inten.(mm/hr)= 88.32 62.00
over (min) 5.00 10.00
Storage Coeff. (min)= 3.38 (ii) 6.46 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

*TOTALS*
PEAK FLOW (cms)= 0.71 0.05 0.753 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59 75.66
TOTAL RAINFALL (mm)= 80.00 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57 0.95

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

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IMPervIOUS PERVIOUS (i)
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

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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 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44

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0.750 0.88 | 6.750 1.60 |12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 |12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 |12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 |13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 |13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 |13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 |13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 |13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 |13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 |13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 |13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 |13.667 6.56 | 19.67 1.44
1.750 0.88 | 7.750 1.60 |13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 |13.833 6.56 | 19.83 1.44
1.917 0.88 | 7.917 1.60 |13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 |14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 |14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 |14.167 2.40 | 20.17 0.96
2.250 1.04 | 8.250 2.16 |14.250 2.40 | 20.25 0.96
2.333 1.04 | 8.333 2.16 |14.333 2.40 | 20.33 0.96
2.417 1.04 | 8.417 2.16 |14.417 2.40 | 20.42 0.96
2.500 1.04 | 8.500 2.16 |14.500 2.40 | 20.50 0.96
2.583 1.04 | 8.583 2.16 |14.583 2.40 | 20.58 0.96
2.667 1.04 | 8.667 2.16 |14.667 2.40 | 20.67 0.96
2.750 1.04 | 8.750 2.16 |14.750 2.40 | 20.75 0.96
2.833 1.04 | 8.833 2.16 |14.833 2.40 | 20.83 0.96
2.917 1.04 | 8.917 2.16 |14.917 2.40 | 20.92 0.96
3.000 1.04 | 9.000 2.16 |15.000 2.40 | 21.00 0.96
3.083 1.04 | 9.083 2.56 |15.083 2.40 | 21.08 0.96
3.167 1.04 | 9.167 2.56 |15.167 2.40 | 21.17 0.96
3.250 1.04 | 9.250 2.56 |15.250 2.40 | 21.25 0.96
3.333 1.04 | 9.333 2.56 |15.333 2.40 | 21.33 0.96
3.417 1.04 | 9.417 2.56 |15.417 2.40 | 21.42 0.96
3.500 1.04 | 9.500 2.56 |15.500 2.40 | 21.50 0.96
3.583 1.04 | 9.583 2.88 |15.583 2.40 | 21.58 0.96
3.667 1.04 | 9.667 2.88 |15.667 2.40 | 21.67 0.96
3.750 1.04 | 9.750 2.88 |15.750 2.40 | 21.75 0.96
3.833 1.04 | 9.833 2.88 |15.833 2.40 | 21.83 0.96
3.917 1.04 | 9.917 2.88 |15.917 2.40 | 21.92 0.96
4.000 1.04 |10.000 2.88 |16.000 2.40 | 22.00 0.96
4.083 1.28 |10.083 3.68 |16.083 1.44 | 22.08 0.96
4.167 1.28 |10.167 3.68 |16.167 1.44 | 22.17 0.96
4.250 1.28 |10.250 3.68 |16.250 1.44 | 22.25 0.96
4.333 1.28 |10.333 3.68 |16.333 1.44 | 22.33 0.96
4.417 1.28 |10.417 3.68 |16.417 1.44 | 22.42 0.96
4.500 1.28 |10.500 3.68 |16.500 1.44 | 22.50 0.96
4.583 1.28 |10.583 4.96 |16.583 1.44 | 22.58 0.96
4.667 1.28 |10.667 4.96 |16.667 1.44 | 22.67 0.96
4.750 1.28 |10.750 4.96 |16.750 1.44 | 22.75 0.96
4.833 1.28 |10.833 4.96 |16.833 1.44 | 22.83 0.96

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4.917 1.28 |10.917 4.96 |16.917 1.44 | 22.92 0.96
5.000 1.28 |11.000 4.96 |17.000 1.44 | 23.00 0.96
5.083 1.28 |11.083 7.68 |17.083 1.44 | 23.08 0.96
5.167 1.28 |11.167 7.68 |17.167 1.44 | 23.17 0.96
5.250 1.28 |11.250 7.68 |17.250 1.44 | 23.25 0.96
5.333 1.28 |11.333 7.68 |17.333 1.44 | 23.33 0.96
5.417 1.28 |11.417 7.68 |17.417 1.44 | 23.42 0.96
5.500 1.28 |11.500 7.68 |17.500 1.44 | 23.50 0.96
5.583 1.28 |11.583 33.28 |17.583 1.44 | 23.58 0.96
5.667 1.28 |11.667 33.28 |17.667 1.44 | 23.67 0.96
5.750 1.28 |11.750 33.28 |17.750 1.44 | 23.75 0.96
5.833 1.28 |11.833 88.31 |17.833 1.44 | 23.83 0.96
5.917 1.28 |11.917 88.32 |17.917 1.44 | 23.92 0.96
6.000 1.28 |12.000 88.32 |18.000 1.44 | 24.00 0.96

Max.Eff.Inten.(mm/hr)= 88.32 62.00
over (min) 5.00 15.00
Storage Coeff. (min)= 2.96 (ii) 11.50 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.09

*TOTALS*
PEAK FLOW (cms)= 0.12 0.18 0.284 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59 53.77
TOTAL RAINFALL (mm)= 80.00 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57 0.67

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1101): 3.22 0.753 12.00 75.66
+ ID2= 2 ( 1102): 2.07 0.284 12.00 53.77
=====
ID = 3 ( 1112): 5.29 1.036 12.00 67.09

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |

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| STANDHYD ( 1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

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IMPervIOUS PERVIOUS (i)
Surface Area (ha)= 4.68 0.70
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 189.38 40.00
Mannings n = 0.013 0.250

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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 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44
1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44
1.917 0.88 | 7.917 1.60 | 13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 | 14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 | 14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 | 14.167 2.40 | 20.17 0.96
2.250 1.04 | 8.250 2.16 | 14.250 2.40 | 20.25 0.96
2.333 1.04 | 8.333 2.16 | 14.333 2.40 | 20.33 0.96
2.417 1.04 | 8.417 2.16 | 14.417 2.40 | 20.42 0.96
2.500 1.04 | 8.500 2.16 | 14.500 2.40 | 20.50 0.96
2.583 1.04 | 8.583 2.16 | 14.583 2.40 | 20.58 0.96
2.667 1.04 | 8.667 2.16 | 14.667 2.40 | 20.67 0.96
2.750 1.04 | 8.750 2.16 | 14.750 2.40 | 20.75 0.96
2.833 1.04 | 8.833 2.16 | 14.833 2.40 | 20.83 0.96

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2.917 1.04 | 8.917 2.16 |14.917 2.40 | 20.92 0.96
3.000 1.04 | 9.000 2.16 |15.000 2.40 | 21.00 0.96
3.083 1.04 | 9.083 2.56 |15.083 2.40 | 21.08 0.96
3.167 1.04 | 9.167 2.56 |15.167 2.40 | 21.17 0.96
3.250 1.04 | 9.250 2.56 |15.250 2.40 | 21.25 0.96
3.333 1.04 | 9.333 2.56 |15.333 2.40 | 21.33 0.96
3.417 1.04 | 9.417 2.56 |15.417 2.40 | 21.42 0.96
3.500 1.04 | 9.500 2.56 |15.500 2.40 | 21.50 0.96
3.583 1.04 | 9.583 2.88 |15.583 2.40 | 21.58 0.96
3.667 1.04 | 9.667 2.88 |15.667 2.40 | 21.67 0.96
3.750 1.04 | 9.750 2.88 |15.750 2.40 | 21.75 0.96
3.833 1.04 | 9.833 2.88 |15.833 2.40 | 21.83 0.96
3.917 1.04 | 9.917 2.88 |15.917 2.40 | 21.92 0.96
4.000 1.04 |10.000 2.88 |16.000 2.40 | 22.00 0.96
4.083 1.28 |10.083 3.68 |16.083 1.44 | 22.08 0.96
4.167 1.28 |10.167 3.68 |16.167 1.44 | 22.17 0.96
4.250 1.28 |10.250 3.68 |16.250 1.44 | 22.25 0.96
4.333 1.28 |10.333 3.68 |16.333 1.44 | 22.33 0.96
4.417 1.28 |10.417 3.68 |16.417 1.44 | 22.42 0.96
4.500 1.28 |10.500 3.68 |16.500 1.44 | 22.50 0.96
4.583 1.28 |10.583 4.96 |16.583 1.44 | 22.58 0.96
4.667 1.28 |10.667 4.96 |16.667 1.44 | 22.67 0.96
4.750 1.28 |10.750 4.96 |16.750 1.44 | 22.75 0.96
4.833 1.28 |10.833 4.96 |16.833 1.44 | 22.83 0.96
4.917 1.28 |10.917 4.96 |16.917 1.44 | 22.92 0.96
5.000 1.28 |11.000 4.96 |17.000 1.44 | 23.00 0.96
5.083 1.28 |11.083 7.68 |17.083 1.44 | 23.08 0.96
5.167 1.28 |11.167 7.68 |17.167 1.44 | 23.17 0.96
5.250 1.28 |11.250 7.68 |17.250 1.44 | 23.25 0.96
5.333 1.28 |11.333 7.68 |17.333 1.44 | 23.33 0.96
5.417 1.28 |11.417 7.68 |17.417 1.44 | 23.42 0.96
5.500 1.28 |11.500 7.68 |17.500 1.44 | 23.50 0.96
5.583 1.28 |11.583 33.28 |17.583 1.44 | 23.58 0.96
5.667 1.28 |11.667 33.28 |17.667 1.44 | 23.67 0.96
5.750 1.28 |11.750 33.28 |17.750 1.44 | 23.75 0.96
5.833 1.28 |11.833 88.31 |17.833 1.44 | 23.83 0.96
5.917 1.28 |11.917 88.32 |17.917 1.44 | 23.92 0.96
6.000 1.28 |12.000 88.32 |18.000 1.44 | 24.00 0.96

Max.Eff.Inten.(mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.94 (ii) 7.41 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 1.13 0.10
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59
TOTAL RAINFALL (mm)= 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57

*TOTALS*
1.230 (iii)
12.00
74.66
80.00
0.93

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
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-----
Surface Area (ha)= 3.30 0.77
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 164.72 40.00
Mannings n = 0.013 0.250
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 5.92 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44
1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44

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1.917 0.88 | 7.917 1.60 |13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 |14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 |14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 |14.167 2.40 | 20.17 0.96
2.250 1.04 | 8.250 2.16 |14.250 2.40 | 20.25 0.96
2.333 1.04 | 8.333 2.16 |14.333 2.40 | 20.33 0.96
2.417 1.04 | 8.417 2.16 |14.417 2.40 | 20.42 0.96
2.500 1.04 | 8.500 2.16 |14.500 2.40 | 20.50 0.96
2.583 1.04 | 8.583 2.16 |14.583 2.40 | 20.58 0.96
2.667 1.04 | 8.667 2.16 |14.667 2.40 | 20.67 0.96
2.750 1.04 | 8.750 2.16 |14.750 2.40 | 20.75 0.96
2.833 1.04 | 8.833 2.16 |14.833 2.40 | 20.83 0.96
2.917 1.04 | 8.917 2.16 |14.917 2.40 | 20.92 0.96
3.000 1.04 | 9.000 2.16 |15.000 2.40 | 21.00 0.96
3.083 1.04 | 9.083 2.56 |15.083 2.40 | 21.08 0.96
3.167 1.04 | 9.167 2.56 |15.167 2.40 | 21.17 0.96
3.250 1.04 | 9.250 2.56 |15.250 2.40 | 21.25 0.96
3.333 1.04 | 9.333 2.56 |15.333 2.40 | 21.33 0.96
3.417 1.04 | 9.417 2.56 |15.417 2.40 | 21.42 0.96
3.500 1.04 | 9.500 2.56 |15.500 2.40 | 21.50 0.96
3.583 1.04 | 9.583 2.88 |15.583 2.40 | 21.58 0.96
3.667 1.04 | 9.667 2.88 |15.667 2.40 | 21.67 0.96
3.750 1.04 | 9.750 2.88 |15.750 2.40 | 21.75 0.96
3.833 1.04 | 9.833 2.88 |15.833 2.40 | 21.83 0.96
3.917 1.04 | 9.917 2.88 |15.917 2.40 | 21.92 0.96
4.000 1.04 |10.000 2.88 |16.000 2.40 | 22.00 0.96
4.083 1.28 |10.083 3.68 |16.083 1.44 | 22.08 0.96
4.167 1.28 |10.167 3.68 |16.167 1.44 | 22.17 0.96
4.250 1.28 |10.250 3.68 |16.250 1.44 | 22.25 0.96
4.333 1.28 |10.333 3.68 |16.333 1.44 | 22.33 0.96
4.417 1.28 |10.417 3.68 |16.417 1.44 | 22.42 0.96
4.500 1.28 |10.500 3.68 |16.500 1.44 | 22.50 0.96
4.583 1.28 |10.583 4.96 |16.583 1.44 | 22.58 0.96
4.667 1.28 |10.667 4.96 |16.667 1.44 | 22.67 0.96
4.750 1.28 |10.750 4.96 |16.750 1.44 | 22.75 0.96
4.833 1.28 |10.833 4.96 |16.833 1.44 | 22.83 0.96
4.917 1.28 |10.917 4.96 |16.917 1.44 | 22.92 0.96
5.000 1.28 |11.000 4.96 |17.000 1.44 | 23.00 0.96
5.083 1.28 |11.083 7.68 |17.083 1.44 | 23.08 0.96
5.167 1.28 |11.167 7.68 |17.167 1.44 | 23.17 0.96
5.250 1.28 |11.250 7.68 |17.250 1.44 | 23.25 0.96
5.333 1.28 |11.333 7.68 |17.333 1.44 | 23.33 0.96
5.417 1.28 |11.417 7.68 |17.417 1.44 | 23.42 0.96
5.500 1.28 |11.500 7.68 |17.500 1.44 | 23.50 0.96
5.583 1.28 |11.583 33.28 |17.583 1.44 | 23.58 0.96
5.667 1.28 |11.667 33.28 |17.667 1.44 | 23.67 0.96
5.750 1.28 |11.750 33.28 |17.750 1.44 | 23.75 0.96
5.833 1.28 |11.833 88.31 |17.833 1.44 | 23.83 0.96
5.917 1.28 |11.917 88.32 |17.917 1.44 | 23.92 0.96
6.000 1.28 |12.000 88.32 |18.000 1.44 | 24.00 0.96

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```

Max.Eff.Inten.(mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.62 (ii) 7.75 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 0.80 0.11
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59
TOTAL RAINFALL (mm)= 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57

*TOTALS*
0.909 (iii)
12.00
72.72
80.00
0.91

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1213) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1201): 5.38 1.230 12.00 74.66
+ ID2= 2 ( 1202): 4.07 0.909 12.00 72.72
=====
ID = 3 ( 1213): 9.45 2.139 12.00 73.82
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 1203) | Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10
-----

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-----
Surface Area (ha)= 0.43 1.11
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 101.32 40.00
Mannings n = 0.013 0.250
-----

```

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	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96

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4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Max.Eff.Inten.(mm/hr)= 88.32 62.08
over (min) 5.00 15.00
Storage Coeff. (min)= 2.71 (ii) 11.25 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

PEAK FLOW (cms)= 0.11 0.13 0.220 (iii)
TIME TO PEAK (hrs)= 12.00 12.08 12.00
RUNOFF VOLUME (mm)= 79.00 45.59 54.97
TOTAL RAINFALL (mm)= 80.00 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57 0.69

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.

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-----
ID1= 1 ( 1203): 1.54 0.220 12.00 54.97
+ ID2= 2 ( 1213): 9.45 2.139 12.00 73.82
=====
ID = 3 ( 1214): 10.99 2.359 12.00 71.18

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A L
V V I SS U U A A L
VV I SSSS 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\VO2\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\00ff0c
25-4c16-4fba-9472-283bb7a84a4c\scenar

Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\00ff0c
25-4c16-4fba-9472-283bb7a84a4c\scenar

DATE: 05-28-2026

TIME: 11:03:20

USER:

COMMENTS: _____

** SIMULATION : Run2.4 25-yr 24-hr SCS (Wella **

```

-----
| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
| | bfe40e39-8792-435b-a2bb-8638b01a4cbc\F54576b6
| Ptotal= 95.60 mm | Comments: 25-yr 24-hr SCS (Welland)
-----

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	1.05	6.00	1.91	12.00	13.77	18.00	1.72
0.25	1.05	6.25	1.91	12.25	13.77	18.25	1.72
0.50	1.05	6.50	1.91	12.50	7.07	18.50	1.72
0.75	1.05	6.75	1.91	12.75	7.07	18.75	1.72
1.00	1.05	7.00	1.91	13.00	1.34	19.00	1.72
1.25	1.05	7.25	1.91	13.25	1.34	19.25	1.72
1.50	1.05	7.50	1.91	13.50	7.84	19.50	1.72
1.75	1.05	7.75	1.91	13.75	7.84	19.75	1.72
2.00	1.24	8.00	2.58	14.00	2.87	20.00	1.15
2.25	1.24	8.25	2.58	14.25	2.87	20.25	1.15
2.50	1.24	8.50	2.58	14.50	2.87	20.50	1.15
2.75	1.24	8.75	2.58	14.75	2.87	20.75	1.15
3.00	1.24	9.00	3.06	15.00	2.87	21.00	1.15
3.25	1.24	9.25	3.06	15.25	2.87	21.25	1.15
3.50	1.24	9.50	3.44	15.50	2.87	21.50	1.15
3.75	1.24	9.75	3.44	15.75	2.87	21.75	1.15
4.00	1.53	10.00	4.40	16.00	1.72	22.00	1.15
4.25	1.53	10.25	4.40	16.25	1.72	22.25	1.15
4.50	1.53	10.50	5.93	16.50	1.72	22.50	1.15
4.75	1.53	10.75	5.93	16.75	1.72	22.75	1.15
5.00	1.53	11.00	9.18	17.00	1.72	23.00	1.15
5.25	1.53	11.25	9.18	17.25	1.72	23.25	1.15
5.50	1.53	11.50	39.77	17.50	1.72	23.50	1.15
5.75	1.53	11.75	105.54	17.75	1.72	23.75	1.15

| CALIB |
| NASHYD (1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.75

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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	1.05	6.083	1.91	12.083	13.78	18.08	1.72		
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72		
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72		
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72		
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72		
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72		
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72		
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72		
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72		
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72		
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72		
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72		
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72		
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72		
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72		
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72		
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72		
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72		
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72		
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72		
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72		
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72		
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72		
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72		
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15		
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15		
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15		
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15		
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15		
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15		
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15		
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15		
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15		
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15		
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15		
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15		
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15		
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15		
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15		
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15		
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15		
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15		
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15		

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3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.176 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 56.871

TOTAL RAINFALL (mm)= 95.603

RUNOFF COEFFICIENT = 0.595

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

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| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
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U.H. Tp(hrs)= 0.47

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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	1.05	6.083	1.91	12.083	13.78	18.08	1.72		
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72		
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72		
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72		
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72		
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72		
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72		
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72		
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72		
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72		
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72		
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72		
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72		
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72		
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72		
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72		
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72		
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72		
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72		
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72		
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72		
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72		
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72		
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72		
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15		
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15		
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15		
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15		
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15		
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15		
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15		
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15		
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15		
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15		
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15		
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15		
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15		
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15		
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15		
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15		
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15		
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15		
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15		
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15		
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15		
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15		
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15		

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4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.54	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

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| CALIB |
| STANDHYD ( 0305) |
| ID= 1 DT= 5.0 min |
|-----|
Area (ha)= 2.15
Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.54 1.61
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 119.72 40.00
Mannings n = 0.013 0.250

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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 1.05 6.083 1.91 12.083 13.78 18.08 1.72
0.167 1.05 6.167 1.91 12.167 13.77 18.17 1.72
0.250 1.05 6.250 1.91 12.250 13.77 18.25 1.72
0.333 1.05 6.333 1.91 12.333 13.77 18.33 1.72
0.417 1.05 6.417 1.91 12.417 13.77 18.42 1.72
0.500 1.05 6.500 1.91 12.500 13.77 18.50 1.72
0.583 1.05 6.583 1.91 12.583 7.07 18.58 1.72
0.667 1.05 6.667 1.91 12.667 7.07 18.67 1.72
0.750 1.05 6.750 1.91 12.750 7.07 18.75 1.72
0.833 1.05 6.833 1.91 12.833 7.07 18.83 1.72
0.917 1.05 6.917 1.91 12.917 7.07 18.92 1.72
1.000 1.05 7.000 1.91 13.000 7.07 19.00 1.72
1.083 1.05 7.083 1.91 13.083 1.34 19.08 1.72
1.167 1.05 7.167 1.91 13.167 1.34 19.17 1.72
1.250 1.05 7.250 1.91 13.250 1.34 19.25 1.72
1.333 1.05 7.333 1.91 13.333 1.34 19.33 1.72
1.417 1.05 7.417 1.91 13.417 1.34 19.42 1.72
1.500 1.05 7.500 1.91 13.500 1.34 19.50 1.72
1.583 1.05 7.583 1.91 13.583 7.84 19.58 1.72
1.667 1.05 7.667 1.91 13.667 7.84 19.67 1.72
1.750 1.05 7.750 1.91 13.750 7.84 19.75 1.72
1.833 1.05 7.833 1.91 13.833 7.84 19.83 1.72
1.917 1.05 7.917 1.91 13.917 7.84 19.92 1.72
2.000 1.05 8.000 1.91 14.000 7.84 20.00 1.72
2.083 1.24 8.083 2.58 14.083 2.87 20.08 1.15
2.167 1.24 8.167 2.58 14.167 2.87 20.17 1.15
2.250 1.24 8.250 2.58 14.250 2.87 20.25 1.15
2.333 1.24 8.333 2.58 14.333 2.87 20.33 1.15
2.417 1.24 8.417 2.58 14.417 2.87 20.42 1.15
2.500 1.24 8.500 2.58 14.500 2.87 20.50 1.15
2.583 1.24 8.583 2.58 14.583 2.87 20.58 1.15
2.667 1.24 8.667 2.58 14.667 2.87 20.67 1.15
2.750 1.24 8.750 2.58 14.750 2.87 20.75 1.15

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2.833 1.24 8.833 2.58 14.833 2.87 20.83 1.15
2.917 1.24 8.917 2.58 14.917 2.87 20.92 1.15
3.000 1.24 9.000 2.58 15.000 2.87 21.00 1.15
3.083 1.24 9.083 3.06 15.083 2.87 21.08 1.15
3.167 1.24 9.167 3.06 15.167 2.87 21.17 1.15
3.250 1.24 9.250 3.06 15.250 2.87 21.25 1.15
3.333 1.24 9.333 3.06 15.333 2.87 21.33 1.15
3.417 1.24 9.417 3.06 15.417 2.87 21.42 1.15
3.500 1.24 9.500 3.06 15.500 2.87 21.50 1.15
3.583 1.24 9.583 3.44 15.583 2.87 21.58 1.15
3.667 1.24 9.667 3.44 15.667 2.87 21.67 1.15
3.750 1.24 9.750 3.44 15.750 2.87 21.75 1.15
3.833 1.24 9.833 3.44 15.833 2.87 21.83 1.15
3.917 1.24 9.917 3.44 15.917 2.87 21.92 1.15
4.000 1.24 10.000 3.44 16.000 2.87 22.00 1.15
4.083 1.53 10.083 4.40 16.083 1.72 22.08 1.15
4.167 1.53 10.167 4.40 16.167 1.72 22.17 1.15
4.250 1.53 10.250 4.40 16.250 1.72 22.25 1.15
4.333 1.53 10.333 4.40 16.333 1.72 22.33 1.15
4.417 1.53 10.417 4.40 16.417 1.72 22.42 1.15
4.500 1.53 10.500 4.40 16.500 1.72 22.50 1.15
4.583 1.53 10.583 5.93 16.583 1.72 22.58 1.15
4.667 1.53 10.667 5.93 16.667 1.72 22.67 1.15
4.750 1.53 10.750 5.93 16.750 1.72 22.75 1.15
4.833 1.53 10.833 5.93 16.833 1.72 22.83 1.15
4.917 1.53 10.917 5.93 16.917 1.72 22.92 1.15
5.000 1.53 11.000 5.93 17.000 1.72 23.00 1.15
5.083 1.53 11.083 9.18 17.083 1.72 23.08 1.15
5.167 1.53 11.167 9.18 17.167 1.72 23.17 1.15
5.250 1.53 11.250 9.18 17.250 1.72 23.25 1.15
5.333 1.53 11.333 9.18 17.333 1.72 23.33 1.15
5.417 1.53 11.417 9.18 17.417 1.72 23.42 1.15
5.500 1.53 11.500 9.18 17.500 1.72 23.50 1.15
5.583 1.53 11.583 39.77 17.583 1.72 23.58 1.15
5.667 1.53 11.667 39.77 17.667 1.72 23.67 1.15
5.750 1.53 11.750 39.77 17.750 1.72 23.75 1.15
5.833 1.53 11.833 105.53 17.833 1.72 23.83 1.15
5.917 1.53 11.917 105.54 17.917 1.72 23.92 1.15
6.000 1.53 12.000 105.54 18.000 1.72 24.00 1.15

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Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 15.00
Storage Coeff. (min)= 2.79 (ii) 10.52 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.09

```

```

*TOTALS*
PEAK FLOW (cms)= 0.16 0.24 0.380 (iii)
TIME TO PEAK (hrs)= 12.00 12.08 12.00
RUNOFF VOLUME (mm)= 88.10 59.06 66.32
TOTAL RAINFALL (mm)= 95.60 95.60 95.60

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RUNOFF COEFFICIENT = 0.92 0.62 0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 2319) |
| 1 + 2 = 3 |
|-----|
ID1= 1 ( 2318): AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
+ ID2= 2 ( 0305): 5.79 0.387 12.42 56.87
2.15 0.380 12.00 66.32
=====
ID = 3 ( 2319): 7.94 0.587 12.00 59.43

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| STANDHYD ( 1302) |
| ID= 1 DT= 5.0 min |
|-----|
Area (ha)= 2.86
Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.46 0.40
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 138.08 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 1.05 6.083 1.91 12.083 13.78 18.08 1.72
0.167 1.05 6.167 1.91 12.167 13.77 18.17 1.72
0.250 1.05 6.250 1.91 12.250 13.77 18.25 1.72
0.333 1.05 6.333 1.91 12.333 13.77 18.33 1.72
0.417 1.05 6.417 1.91 12.417 13.77 18.42 1.72
0.500 1.05 6.500 1.91 12.500 13.77 18.50 1.72
0.583 1.05 6.583 1.91 12.583 7.07 18.58 1.72
0.667 1.05 6.667 1.91 12.667 7.07 18.67 1.72
0.750 1.05 6.750 1.91 12.750 7.07 18.75 1.72

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0.833 1.05 6.833 1.91 12.833 7.07 18.83 1.72
0.917 1.05 6.917 1.91 12.917 7.07 18.92 1.72
1.000 1.05 7.000 1.91 13.000 7.07 19.00 1.72
1.083 1.05 7.083 1.91 13.083 1.34 19.08 1.72
1.167 1.05 7.167 1.91 13.167 1.34 19.17 1.72
1.250 1.05 7.250 1.91 13.250 1.34 19.25 1.72
1.333 1.05 7.333 1.91 13.333 1.34 19.33 1.72
1.417 1.05 7.417 1.91 13.417 1.34 19.42 1.72
1.500 1.05 7.500 1.91 13.500 1.34 19.50 1.72
1.583 1.05 7.583 1.91 13.583 7.84 19.58 1.72
1.667 1.05 7.667 1.91 13.667 7.84 19.67 1.72
1.750 1.05 7.750 1.91 13.750 7.84 19.75 1.72
1.833 1.05 7.833 1.91 13.833 7.84 19.83 1.72
1.917 1.05 7.917 1.91 13.917 7.84 19.92 1.72
2.000 1.05 8.000 1.91 14.000 7.84 20.00 1.72
2.083 1.24 8.083 2.58 14.083 2.87 20.08 1.15
2.167 1.24 8.167 2.58 14.167 2.87 20.17 1.15
2.250 1.24 8.250 2.58 14.250 2.87 20.25 1.15
2.333 1.24 8.333 2.58 14.333 2.87 20.33 1.15
2.417 1.24 8.417 2.58 14.417 2.87 20.42 1.15
2.500 1.24 8.500 2.58 14.500 2.87 20.50 1.15
2.583 1.24 8.583 2.58 14.583 2.87 20.58 1.15
2.667 1.24 8.667 2.58 14.667 2.87 20.67 1.15
2.750 1.24 8.750 2.58 14.750 2.87 20.75 1.15
2.833 1.24 8.833 2.58 14.833 2.87 20.83 1.15
2.917 1.24 8.917 2.58 14.917 2.87 20.92 1.15
3.000 1.24 9.000 2.58 15.000 2.87 21.00 1.15
3.083 1.24 9.083 3.06 15.083 2.87 21.08 1.15
3.167 1.24 9.167 3.06 15.167 2.87 21.17 1.15
3.250 1.24 9.250 3.06 15.250 2.87 21.25 1.15
3.333 1.24 9.333 3.06 15.333 2.87 21.33 1.15
3.417 1.24 9.417 3.06 15.417 2.87 21.42 1.15
3.500 1.24 9.500 3.06 15.500 2.87 21.50 1.15
3.583 1.24 9.583 3.44 15.583 2.87 21.58 1.15
3.667 1.24 9.667 3.44 15.667 2.87 21.67 1.15
3.750 1.24 9.750 3.44 15.750 2.87 21.75 1.15
3.833 1.24 9.833 3.44 15.833 2.87 21.83 1.15
3.917 1.24 9.917 3.44 15.917 2.87 21.92 1.15
4.000 1.24 10.000 3.44 16.000 2.87 22.00 1.15
4.083 1.53 10.083 4.40 16.083 1.72 22.08 1.15
4.167 1.53 10.167 4.40 16.167 1.72 22.17 1.15
4.250 1.53 10.250 4.40 16.250 1.72 22.25 1.15
4.333 1.53 10.333 4.40 16.333 1.72 22.33 1.15
4.417 1.53 10.417 4.40 16.417 1.72 22.42 1.15
4.500 1.53 10.500 4.40 16.500 1.72 22.50 1.15
4.583 1.53 10.583 5.93 16.583 1.72 22.58 1.15
4.667 1.53 10.667 5.93 16.667 1.72 22.67 1.15
4.750 1.53 10.750 5.93 16.750 1.72 22.75 1.15
4.833 1.53 10.833 5.93 16.833 1.72 22.83 1.15
4.917 1.53 10.917 5.93 16.917 1.72 22.92 1.15

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5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15
Max.Eff.Inten.(mm/hr)= 105.54 79.59							
over (min) 5.00 10.00							
Storage Coeff. (min)= 3.03 (ii) 6.36 (ii)							
Unit Hyd. Tpeak (min)= 5.00 10.00							
Unit Hyd. peak (cms)= 0.27 0.15							
TOTALS							
PEAK FLOW (cms)= 0.72 0.08 0.794 (iii)							
TIME TO PEAK (hrs)= 12.00 12.00 12.00							
RUNOFF VOLUME (mm)= 94.60 59.06 89.66							
TOTAL RAINFALL (mm)= 95.60 95.60 95.60							
RUNOFF COEFFICIENT = 0.99 0.62 0.94							

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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)= 3.68
STANDHYD (1301)	Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30
ID= 1 DT= 5.0 min	

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)=	3.14	0.54
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	156.63	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15

4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15
Max.Eff.Inten.(mm/hr)= 105.54 79.59							
over (min) 5.00 10.00							
Storage Coeff. (min)= 3.27 (ii) 6.69 (ii)							
Unit Hyd. Tpeak (min)= 5.00 10.00							
Unit Hyd. peak (cms)= 0.27 0.14							
TOTALS							
PEAK FLOW (cms)= 0.91 0.10 1.015 (iii)							
TIME TO PEAK (hrs)= 12.00 12.00 12.00							
RUNOFF VOLUME (mm)= 94.60 59.06 89.38							
TOTAL RAINFALL (mm)= 95.60 95.60 95.60							
RUNOFF COEFFICIENT = 0.99 0.62 0.93							

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2315) |

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1301):	3.68	1.015	12.00	89.38
+ ID2= 2 (1302):	2.86	0.794	12.00	89.66
ID = 3 (2315):	6.54	1.809	12.00	89.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)= 3.47
STANDHYD (1303)	Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
ID= 1 DT= 5.0 min	

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)=	2.99	0.48
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	152.10	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----								
TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72	
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72	
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72	
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72	
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72	
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72	
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72	
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72	
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72	
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72	
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72	
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72	
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72	
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72	
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72	
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72	
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72	
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72	
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72	
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72	
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72	
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72	
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72	

2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Max.Eff.Inten.(mm/hr)=	105.54	79.59	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.22 (ii)	6.52 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.14	
TOTALS			
PEAK FLOW (cms)=	0.87	0.09	0.962 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	94.60	59.06	89.73
TOTAL RAINFALL (mm)=	95.60	95.60	95.60
RUNOFF COEFFICIENT =	0.99	0.62	0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2316)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1303):	3.47	0.962	12.00	89.73
+ ID2= 2 (2315):	6.54	1.809	12.00	89.50
=====				
ID = 3 (2316):	10.01	2.771	12.00	89.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1304)			
ID= 1 DT= 5.0 min			
	Area (ha)=	3.93	
	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.54	0.39
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	161.86	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72	
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72	
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72	
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72	
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72	
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72	
0.583	1.05	6.583	1.91	12.583	13.77	18.58	1.72	
0.667	1.05	6.667	1.91	12.667	13.77	18.67	1.72	
0.750	1.05	6.750	1.91	12.750	13.77	18.75	1.72	
0.833	1.05	6.833	1.91	12.833	13.77	18.83	1.72	
0.917	1.05	6.917	1.91	12.917	13.77	18.92	1.72	
1.000	1.05	7.000	1.91	13.000	13.77	19.00	1.72	
1.083	1.05	7.083	1.91	13.083	13.77	19.08	1.72	
1.167	1.05	7.167	1.91	13.167	13.77	19.17	1.72	
1.250	1.05	7.250	1.91	13.250	13.77	19.25	1.72	
1.333	1.05	7.333	1.91	13.333	13.77	19.33	1.72	
1.417	1.05	7.417	1.91	13.417	13.77	19.42	1.72	
1.500	1.05	7.500	1.91	13.500	13.77	19.50	1.72	
1.583	1.05	7.583	1.91	13.583	13.77	19.58	1.72	
1.667	1.05	7.667	1.91	13.667	13.77	19.67	1.72	
1.750	1.05	7.750	1.91	13.750	13.77	19.75	1.72	
1.833	1.05	7.833	1.91	13.833	13.77	19.83	1.72	
1.917	1.05	7.917	1.91	13.917	13.77	19.92	1.72	
2.000	1.05	8.000	1.91	14.000	13.77	20.00	1.72	
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15	
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15	
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15	
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15	
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15	
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15	
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15	
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15	
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15	
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15	
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15	
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15	
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15	
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15	
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15	
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15	
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15	
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15	
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15	
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15	
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15	
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15	
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15	
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15	
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15	

4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15

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ID1= 1 ( 1304):      3.93   1.104   12.00   91.05
+ ID2= 2 ( 2316):      10.01   2.771   12.00   89.58
=====
ID = 3 ( 2317):      13.94   3.876   12.00   90.00

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2320) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2317): |      13.94   3.876   12.00   90.00
+ ID2= 2 ( 2319): |      7.94   0.587   12.00   59.43
=====
| ID = 3 ( 2320): |      21.88   4.462   12.00   78.90

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| STANDHYD ( 1101) | Area (ha)= 3.22
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
|-----|

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IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 1.05 | 6.083 1.91 | 12.083 13.78 | 18.08 1.72
0.167 1.05 | 6.167 1.91 | 12.167 13.77 | 18.17 1.72
0.250 1.05 | 6.250 1.91 | 12.250 13.77 | 18.25 1.72
0.333 1.05 | 6.333 1.91 | 12.333 13.77 | 18.33 1.72
0.417 1.05 | 6.417 1.91 | 12.417 13.77 | 18.42 1.72
0.500 1.05 | 6.500 1.91 | 12.500 13.77 | 18.50 1.72
0.583 1.05 | 6.583 1.91 | 12.583 7.07 | 18.58 1.72
0.667 1.05 | 6.667 1.91 | 12.667 7.07 | 18.67 1.72
0.750 1.05 | 6.750 1.91 | 12.750 7.07 | 18.75 1.72
0.833 1.05 | 6.833 1.91 | 12.833 7.07 | 18.83 1.72
0.917 1.05 | 6.917 1.91 | 12.917 7.07 | 18.92 1.72
1.000 1.05 | 7.000 1.91 | 13.000 7.07 | 19.00 1.72
1.083 1.05 | 7.083 1.91 | 13.083 1.34 | 19.08 1.72

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1.167 1.05 | 7.167 1.91 | 13.167 1.34 | 19.17 1.72
1.250 1.05 | 7.250 1.91 | 13.250 1.34 | 19.25 1.72
1.333 1.05 | 7.333 1.91 | 13.333 1.34 | 19.33 1.72
1.417 1.05 | 7.417 1.91 | 13.417 1.34 | 19.42 1.72
1.500 1.05 | 7.500 1.91 | 13.500 1.34 | 19.50 1.72
1.583 1.05 | 7.583 1.91 | 13.583 7.84 | 19.58 1.72
1.667 1.05 | 7.667 1.91 | 13.667 7.84 | 19.67 1.72
1.750 1.05 | 7.750 1.91 | 13.750 7.84 | 19.75 1.72
1.833 1.05 | 7.833 1.91 | 13.833 7.84 | 19.83 1.72
1.917 1.05 | 7.917 1.91 | 13.917 7.84 | 19.92 1.72
2.000 1.05 | 8.000 1.91 | 14.000 7.84 | 20.00 1.72
2.083 1.24 | 8.083 2.58 | 14.083 2.87 | 20.08 1.15
2.167 1.24 | 8.167 2.58 | 14.167 2.87 | 20.17 1.15
2.250 1.24 | 8.250 2.58 | 14.250 2.87 | 20.25 1.15
2.333 1.24 | 8.333 2.58 | 14.333 2.87 | 20.33 1.15
2.417 1.24 | 8.417 2.58 | 14.417 2.87 | 20.42 1.15
2.500 1.24 | 8.500 2.58 | 14.500 2.87 | 20.50 1.15
2.583 1.24 | 8.583 2.58 | 14.583 2.87 | 20.58 1.15
2.667 1.24 | 8.667 2.58 | 14.667 2.87 | 20.67 1.15
2.750 1.24 | 8.750 2.58 | 14.750 2.87 | 20.75 1.15
2.833 1.24 | 8.833 2.58 | 14.833 2.87 | 20.83 1.15
2.917 1.24 | 8.917 2.58 | 14.917 2.87 | 20.92 1.15
3.000 1.24 | 9.000 2.58 | 15.000 2.87 | 21.00 1.15
3.083 1.24 | 9.083 3.06 | 15.083 2.87 | 21.08 1.15
3.167 1.24 | 9.167 3.06 | 15.167 2.87 | 21.17 1.15
3.250 1.24 | 9.250 3.06 | 15.250 2.87 | 21.25 1.15
3.333 1.24 | 9.333 3.06 | 15.333 2.87 | 21.33 1.15
3.417 1.24 | 9.417 3.06 | 15.417 2.87 | 21.42 1.15
3.500 1.24 | 9.500 3.06 | 15.500 2.87 | 21.50 1.15
3.583 1.24 | 9.583 3.44 | 15.583 2.87 | 21.58 1.15
3.667 1.24 | 9.667 3.44 | 15.667 2.87 | 21.67 1.15
3.750 1.24 | 9.750 3.44 | 15.750 2.87 | 21.75 1.15
3.833 1.24 | 9.833 3.44 | 15.833 2.87 | 21.83 1.15
3.917 1.24 | 9.917 3.44 | 15.917 2.87 | 21.92 1.15
4.000 1.24 | 10.000 3.44 | 16.000 2.87 | 22.00 1.15
4.083 1.53 | 10.083 4.40 | 16.083 1.72 | 22.08 1.15
4.167 1.53 | 10.167 4.40 | 16.167 1.72 | 22.17 1.15
4.250 1.53 | 10.250 4.40 | 16.250 1.72 | 22.25 1.15
4.333 1.53 | 10.333 4.40 | 16.333 1.72 | 22.33 1.15
4.417 1.53 | 10.417 4.40 | 16.417 1.72 | 22.42 1.15
4.500 1.53 | 10.500 4.40 | 16.500 1.72 | 22.50 1.15
4.583 1.53 | 10.583 5.93 | 16.583 1.72 | 22.58 1.15
4.667 1.53 | 10.667 5.93 | 16.667 1.72 | 22.67 1.15
4.750 1.53 | 10.750 5.93 | 16.750 1.72 | 22.75 1.15
4.833 1.53 | 10.833 5.93 | 16.833 1.72 | 22.83 1.15
4.917 1.53 | 10.917 5.93 | 16.917 1.72 | 22.92 1.15
5.000 1.53 | 11.000 5.93 | 17.000 1.72 | 23.00 1.15
5.083 1.53 | 11.083 9.18 | 17.083 1.72 | 23.08 1.15
5.167 1.53 | 11.167 9.18 | 17.167 1.72 | 23.17 1.15
5.250 1.53 | 11.250 9.18 | 17.250 1.72 | 23.25 1.15

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5.333 1.53 | 11.333 9.18 | 17.333 1.72 | 23.33 1.15
5.417 1.53 | 11.417 9.18 | 17.417 1.72 | 23.42 1.15
5.500 1.53 | 11.500 9.18 | 17.500 1.72 | 23.50 1.15
5.583 1.53 | 11.583 39.77 | 17.583 1.72 | 23.58 1.15
5.667 1.53 | 11.667 39.77 | 17.667 1.72 | 23.67 1.15
5.750 1.53 | 11.750 39.77 | 17.750 1.72 | 23.75 1.15
5.833 1.53 | 11.833 105.53 | 17.833 1.72 | 23.83 1.15
5.917 1.53 | 11.917 105.54 | 17.917 1.72 | 23.92 1.15
6.000 1.53 | 12.000 105.54 | 18.000 1.72 | 24.00 1.15

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```

Max. Eff. Inten. (mm/hr)= 105.54 79.59
over (min) = 5.00 10.00
Storage Coeff. (min)= 3.14 (ii) 6.01 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

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PEAK FLOW (cms)= 0.85 0.06
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 94.60 59.06
TOTAL RAINFALL (mm)= 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
|-----|
IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 1.05 | 6.083 1.91 | 12.083 13.78 | 18.08 1.72

```

```

0.167 1.05 | 6.167 1.91 | 12.167 13.77 | 18.17 1.72
0.250 1.05 | 6.250 1.91 | 12.250 13.77 | 18.25 1.72
0.333 1.05 | 6.333 1.91 | 12.333 13.77 | 18.33 1.72
0.417 1.05 | 6.417 1.91 | 12.417 13.77 | 18.42 1.72
0.500 1.05 | 6.500 1.91 | 12.500 13.77 | 18.50 1.72
0.583 1.05 | 6.583 1.91 | 12.583 7.07 | 18.58 1.72
0.667 1.05 | 6.667 1.91 | 12.667 7.07 | 18.67 1.72
0.750 1.05 | 6.750 1.91 | 12.750 7.07 | 18.75 1.72
0.833 1.05 | 6.833 1.91 | 12.833 7.07 | 18.83 1.72
0.917 1.05 | 6.917 1.91 | 12.917 7.07 | 18.92 1.72
1.000 1.05 | 7.000 1.91 | 13.000 7.07 | 19.00 1.72
1.083 1.05 | 7.083 1.91 | 13.083 1.34 | 19.08 1.72
1.167 1.05 | 7.167 1.91 | 13.167 1.34 | 19.17 1.72
1.250 1.05 | 7.250 1.91 | 13.250 1.34 | 19.25 1.72
1.333 1.05 | 7.333 1.91 | 13.333 1.34 | 19.33 1.72
1.417 1.05 | 7.417 1.91 | 13.417 1.34 | 19.42 1.72
1.500 1.05 | 7.500 1.91 | 13.500 1.34 | 19.50 1.72
1.583 1.05 | 7.583 1.91 | 13.583 7.84 | 19.58 1.72
1.667 1.05 | 7.667 1.91 | 13.667 7.84 | 19.67 1.72
1.750 1.05 | 7.750 1.91 | 13.750 7.84 | 19.75 1.72
1.833 1.05 | 7.833 1.91 | 13.833 7.84 | 19.83 1.72
1.917 1.05 | 7.917 1.91 | 13.917 7.84 | 19.92 1.72
2.000 1.05 | 8.000 1.91 | 14.000 7.84 | 20.00 1.72
2.083 1.24 | 8.083 2.58 | 14.083 2.87 | 20.08 1.15
2.167 1.24 | 8.167 2.58 | 14.167 2.87 | 20.17 1.15
2.250 1.24 | 8.250 2.58 | 14.250 2.87 | 20.25 1.15
2.333 1.24 | 8.333 2.58 | 14.333 2.87 | 20.33 1.15
2.417 1.24 | 8.417 2.58 | 14.417 2.87 | 20.42 1.15
2.500 1.24 | 8.500 2.58 | 14.500 2.87 | 20.50 1.15
2.583 1.24 | 8.583 2.58 | 14.583 2.87 | 20.58 1.15
2.667 1.24 | 8.667 2.58 | 14.667 2.87 | 20.67 1.15
2.750 1.24 | 8.750 2.58 | 14.750 2.87 | 20.75 1.15
2.833 1.24 | 8.833 2.58 | 14.833 2.87 | 20.83 1.15
2.917 1.24 | 8.917 2.58 | 14.917 2.87 | 20.92 1.15
3.000 1.24 | 9.000 2.58 | 15.000 2.87 | 21.00 1.15
3.083 1.24 | 9.083 3.06 | 15.083 2.87 | 21.08 1.15
3.167 1.24 | 9.167 3.06 | 15.167 2.87 | 21.17 1.15
3.250 1.24 | 9.250 3.06 | 15.250 2.87 | 21.25 1.15
3.333 1.24 | 9.333 3.06 | 15.333 2.87 | 21.33 1.15
3.417 1.24 | 9.417 3.06 | 15.417 2.87 | 21.42 1.15
3.500 1.24 | 9.500 3.06 | 15.500 2.87 | 21.50 1.15
3.583 1.24 | 9.583 3.44 | 15.583 2.87 | 21.58 1.15
3.667 1.24 | 9.667 3.44 | 15.667 2.87 | 21.67 1.15
3.750 1.24 | 9.750 3.44 | 15.750 2.87 | 21.75 1.15
3.833 1.24 | 9.833 3.44 | 15.833 2.87 | 21.83 1.15
3.917 1.24 | 9.917 3.44 | 15.917 2.87 | 21.92 1.15
4.000 1.24 | 10.000 3.44 | 16.000 2.87 | 22.00 1.15
4.083 1.53 | 10.083 4.40 | 16.083 1.72 | 22.08 1.15
4.167 1.53 | 10.167 4.40 | 16.167 1.72 | 22.17 1.15
4.250 1.53 | 10.250 4.40 | 16.250 1.72 | 22.25 1.15

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4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Max. Eff. Inten. (mm/hr)= 105.54 79.59
over (min)= 5.00 15.00
Storage Coeff. (min)= 2.75 (ii) 10.49 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.09

PEAK FLOW (cms)= 0.15 0.24 0.365 (iii)
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 94.60 59.06 67.77
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112) |
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1101):	3.22	0.907	12.00	91.05
+ ID2= 2 (1102):	2.07	0.365	12.00	67.77

=====

ID = 3 (1112):	5.29	1.271	12.00	81.94
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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |
| STANDHYD (1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15

2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Max. Eff. Inten. (mm/hr)= 105.54 79.59
over (min)= 5.00 10.00
Storage Coeff. (min)= 3.67 (ii) 6.90 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.25 0.14
PEAK FLOW (cms)= 1.36 0.13 1.487 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 94.60 59.06 89.98
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.30	0.77
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	164.72	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72

1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15

5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15
Max.Eff.Inten.(mm/hr)=				105.54	79.59		
over (min)				5.00	10.00		
Storage Coeff. (min)=				3.37 (ii)	7.22 (ii)		
Unit Hyd. Tpeak (min)=				5.00	10.00		
Unit Hyd. peak (cms)=				0.26	0.14		
TOTALS							
PEAK FLOW (cms)=				0.96	0.14	1.102 (iii)	
TIME TO PEAK (hrs)=				12.00	12.00	12.00	
RUNOFF VOLUME (mm)=				94.60	59.06	87.92	
TOTAL RAINFALL (mm)=				95.60	95.60	95.60	
RUNOFF COEFFICIENT =				0.99	0.62	0.92	
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!							
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:							
CN* = 84.0 Ia = Dep. 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 (1213)							
1 + 2 = 3							

				AREA	QPEAK	TPEAK	R.V.
				(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1201):				5.38	1.487	12.00	89.98
+ ID2= 2 (1202):				4.07	1.102	12.00	87.92
=====							
ID = 3 (1213):				9.45	2.589	12.00	89.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
STANDHYD (1203)							
ID= 1 DT= 5.0 min							

				Area	(ha)=	1.54	
				Total Imp(%)=	28.10	Dir. Conn.(%)=	28.10

				IMPERVIOUS		PERVIOUS (i)	
Surface Area				(ha)=	0.43	1.11	
Dep. Storage				(mm)=	1.00	5.00	
Average Slope				(%)=	1.00	2.00	

Length (m)= 101.32 40.00
Mannings n = 0.013 0.250

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

TIME RAIN							
hrs mm/hr							
0.083 1.05							
0.167 1.05							
0.250 1.05							
0.333 1.05							
0.417 1.05							
0.500 1.05							
0.583 1.05							
0.667 1.05							
0.750 1.05							
0.833 1.05							
0.917 1.05							
1.000 1.05							
1.083 1.05							
1.167 1.05							
1.250 1.05							
1.333 1.05							
1.417 1.05							
1.500 1.05							
1.583 1.05							
1.667 1.05							
1.750 1.05							
1.833 1.05							
1.917 1.05							
2.000 1.05							
2.083 1.24							
2.167 1.24							
2.250 1.24							
2.333 1.24							
2.417 1.24							
2.500 1.24							
2.583 1.24							
2.667 1.24							
2.750 1.24							
2.833 1.24							
2.917 1.24							
3.000 1.24							
3.083 1.24							
3.167 1.24							
3.250 1.24							
3.333 1.24							
3.417 1.24							

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

```

-----
| ADD HYD ( 1214) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1203): 1.54 0.281 12.00 69.05
+ ID2= 2 ( 1213): 9.45 2.589 12.00 89.09
=====
ID = 3 ( 1214): 10.99 2.870 12.00 86.28

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLL

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\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\3acae0
cc-14e7-4243-8457-3188e15c850f\scenar

Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\3acae0
cc-14e7-4243-8457-3188e15c850f\scenar

DATE: 05-28-2026

TIME: 11:03:22

USER:

-213-

COMMENTS: _____

```

-----
** SIMULATION : Run2.5 50-yr 24-hr SCS (WeIla **
-----

```

```

-----
| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
| | bfe40e39-8792-435b-a2bb-8638b01a4cbc\da728ef3
| Ptotal=108.82 mm | Comments: 50-yr 24-hr SCS (Welland)
-----

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	1.20	6.00	2.18	12.00	15.67	18.00	1.96
0.25	1.20	6.25	2.18	12.25	15.67	18.25	1.96
0.50	1.20	6.50	2.18	12.50	8.05	18.50	1.96
0.75	1.20	6.75	2.18	12.75	8.05	18.75	1.96
1.00	1.20	7.00	2.18	13.00	1.52	19.00	1.96
1.25	1.20	7.25	2.18	13.25	1.52	19.25	1.96
1.50	1.20	7.50	2.18	13.50	8.92	19.50	1.96
1.75	1.20	7.75	2.18	13.75	8.92	19.75	1.96
2.00	1.41	8.00	2.94	14.00	3.26	20.00	1.31
2.25	1.41	8.25	2.94	14.25	3.26	20.25	1.31
2.50	1.41	8.50	2.94	14.50	3.26	20.50	1.31
2.75	1.41	8.75	2.94	14.75	3.26	20.75	1.31
3.00	1.41	9.00	3.48	15.00	3.26	21.00	1.31
3.25	1.41	9.25	3.48	15.25	3.26	21.25	1.31
3.50	1.41	9.50	3.92	15.50	3.26	21.50	1.31
3.75	1.41	9.75	3.92	15.75	3.26	21.75	1.31
4.00	1.74	10.00	5.00	16.00	1.96	22.00	1.31
4.25	1.74	10.25	5.00	16.25	1.96	22.25	1.31
4.50	1.74	10.50	6.75	16.50	1.96	22.50	1.31
4.75	1.74	10.75	6.75	16.75	1.96	22.75	1.31
5.00	1.74	11.00	10.44	17.00	1.96	23.00	1.31
5.25	1.74	11.25	10.44	17.25	1.96	23.25	1.31
5.50	1.74	11.50	45.26	17.50	1.96	23.50	1.31
5.75	1.74	11.75	120.12	17.75	1.96	23.75	1.31

```

-----
| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0

```

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```

|ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.75

```

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

```

-----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.20 6.083 2.18 12.083 15.67 18.08 1.96
0.167 1.20 6.167 2.18 12.167 15.67 18.17 1.96
0.250 1.20 6.250 2.18 12.250 15.67 18.25 1.96
0.333 1.20 6.333 2.18 12.333 15.67 18.33 1.96
0.417 1.20 6.417 2.18 12.417 15.67 18.42 1.96
0.500 1.20 6.500 2.18 12.500 15.67 18.50 1.96
0.583 1.20 6.583 2.18 12.583 8.05 18.58 1.96
0.667 1.20 6.667 2.18 12.667 8.05 18.67 1.96
0.750 1.20 6.750 2.18 12.750 8.05 18.75 1.96
0.833 1.20 6.833 2.18 12.833 8.05 18.83 1.96
0.917 1.20 6.917 2.18 12.917 8.05 18.92 1.96
1.000 1.20 7.000 2.18 13.000 8.05 19.00 1.96
1.083 1.20 7.083 2.18 13.083 1.52 19.08 1.96
1.167 1.20 7.167 2.18 13.167 1.52 19.17 1.96
1.250 1.20 7.250 2.18 13.250 1.52 19.25 1.96
1.333 1.20 7.333 2.18 13.333 1.52 19.33 1.96
1.417 1.20 7.417 2.18 13.417 1.52 19.42 1.96
1.500 1.20 7.500 2.18 13.500 1.52 19.50 1.96
1.583 1.20 7.583 2.18 13.583 8.92 19.58 1.96
1.667 1.20 7.667 2.18 13.667 8.92 19.67 1.96
1.750 1.20 7.750 2.18 13.750 8.92 19.75 1.96
1.833 1.20 7.833 2.18 13.833 8.92 19.83 1.96
1.917 1.20 7.917 2.18 13.917 8.92 19.92 1.96
2.000 1.20 8.000 2.18 14.000 8.92 20.00 1.96
2.083 1.41 8.083 2.94 14.083 3.26 20.08 1.31
2.167 1.41 8.167 2.94 14.167 3.26 20.17 1.31
2.250 1.41 8.250 2.94 14.250 3.26 20.25 1.31
2.333 1.41 8.333 2.94 14.333 3.26 20.33 1.31
2.417 1.41 8.417 2.94 14.417 3.26 20.42 1.31
2.500 1.41 8.500 2.94 14.500 3.26 20.50 1.31
2.583 1.41 8.583 2.94 14.583 3.26 20.58 1.31
2.667 1.41 8.667 2.94 14.667 3.26 20.67 1.31
2.750 1.41 8.750 2.94 14.750 3.26 20.75 1.31
2.833 1.41 8.833 2.94 14.833 3.26 20.83 1.31
2.917 1.41 8.917 2.94 14.917 3.26 20.92 1.31
3.000 1.41 9.000 2.94 15.000 3.26 21.00 1.31
3.083 1.41 9.083 3.48 15.083 3.26 21.08 1.31
3.167 1.41 9.167 3.48 15.167 3.26 21.17 1.31
3.250 1.41 9.250 3.48 15.250 3.26 21.25 1.31
3.333 1.41 9.333 3.48 15.333 3.26 21.33 1.31
3.417 1.41 9.417 3.48 15.417 3.26 21.42 1.31

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3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.12	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.212 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 68.574

TOTAL RAINFALL (mm)= 108.820

RUNOFF COEFFICIENT = 0.630

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

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
|ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.47

```

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	mm/hr	
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96		
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96		
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96		
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96		
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96		
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96		
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96		
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96		
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96		
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96		
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96		
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96		
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96		
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96		
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96		
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96		
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96		
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96		
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96		
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96		
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96		
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96		
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96		
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96		
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31		
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31		
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31		
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31		
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31		
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31		
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31		
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31		
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31		
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31		
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31		
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31		
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31		
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31		
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31		
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31		
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31		
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31		
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31		
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31		
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31		

3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.276 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 68.570
 TOTAL RAINFALL (mm)= 108.820
 RUNOFF COEFFICIENT = 0.630

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

ADD HYD (2318)									
1 + 2 = 3									
					AREA	QPEAK	TPEAK	R.V.	
					(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (	1305):	3.00	0.212	12.67	68.57				
+ ID2= 2 (	0304):	2.79	0.276	12.33	68.57				
=====									
ID = 3 (	2318):	5.79	0.468	12.42	68.57				

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (0305)		Area (ha)= 2.15			
ID= 1 DT= 5.0 min		Total Imp(%)= 25.00		Dir. Conn.(%)= 25.00	

```

RUNOFF VOLUME (mm)= 101.32 70.82 78.44
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.93 0.65 0.72

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2319) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2318): 5.79 0.468 12.42 68.57
+ ID2= 2 ( 0305): 2.15 0.497 12.00 78.44
=====
ID = 3 ( 2319): 7.94 0.751 12.00 71.24

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1302) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 2.86
Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

```

```

IMPERVIOUS PERVIOUS (i)
(ha)= 2.46 0.40
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 138.00 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.20 6.083 2.18 12.083 15.68 18.08 1.96
0.167 1.20 6.167 2.18 12.167 15.67 18.17 1.96
0.250 1.20 6.250 2.18 12.250 15.67 18.25 1.96
0.333 1.20 6.333 2.18 12.333 15.67 18.33 1.96
0.417 1.20 6.417 2.18 12.417 15.67 18.42 1.96
0.500 1.20 6.500 2.18 12.500 15.67 18.50 1.96
0.583 1.20 6.583 2.18 12.583 8.05 18.58 1.96

```

```

0.667 1.20 6.667 2.18 12.667 8.05 18.67 1.96
0.750 1.20 6.750 2.18 12.750 8.05 18.75 1.96
0.833 1.20 6.833 2.18 12.833 8.05 18.83 1.96
0.917 1.20 6.917 2.18 12.917 8.05 18.92 1.96
1.000 1.20 7.000 2.18 13.000 8.05 19.00 1.96
1.083 1.20 7.083 2.18 13.083 1.52 19.08 1.96
1.167 1.20 7.167 2.18 13.167 1.52 19.17 1.96
1.250 1.20 7.250 2.18 13.250 1.52 19.25 1.96
1.333 1.20 7.333 2.18 13.333 1.52 19.33 1.96
1.417 1.20 7.417 2.18 13.417 1.52 19.42 1.96
1.500 1.20 7.500 2.18 13.500 1.52 19.50 1.96
1.583 1.20 7.583 2.18 13.583 8.92 19.58 1.96
1.667 1.20 7.667 2.18 13.667 8.92 19.67 1.96
1.750 1.20 7.750 2.18 13.750 8.92 19.75 1.96
1.833 1.20 7.833 2.18 13.833 8.92 19.83 1.96
1.917 1.20 7.917 2.18 13.917 8.92 19.92 1.96
2.000 1.20 8.000 2.18 14.000 8.92 20.00 1.96
2.083 1.41 8.083 2.94 14.083 3.26 20.08 1.31
2.167 1.41 8.167 2.94 14.167 3.26 20.17 1.31
2.250 1.41 8.250 2.94 14.250 3.26 20.25 1.31
2.333 1.41 8.333 2.94 14.333 3.26 20.33 1.31
2.417 1.41 8.417 2.94 14.417 3.26 20.42 1.31
2.500 1.41 8.500 2.94 14.500 3.26 20.50 1.31
2.583 1.41 8.583 2.94 14.583 3.26 20.58 1.31
2.667 1.41 8.667 2.94 14.667 3.26 20.67 1.31
2.750 1.41 8.750 2.94 14.750 3.26 20.75 1.31
2.833 1.41 8.833 2.94 14.833 3.26 20.83 1.31
2.917 1.41 8.917 2.94 14.917 3.26 20.92 1.31
3.000 1.41 9.000 2.94 15.000 3.26 21.00 1.31
3.083 1.41 9.083 3.48 15.083 3.26 21.08 1.31
3.167 1.41 9.167 3.48 15.167 3.26 21.17 1.31
3.250 1.41 9.250 3.48 15.250 3.26 21.25 1.31
3.333 1.41 9.333 3.48 15.333 3.26 21.33 1.31
3.417 1.41 9.417 3.48 15.417 3.26 21.42 1.31
3.500 1.41 9.500 3.48 15.500 3.26 21.50 1.31
3.583 1.41 9.583 3.92 15.583 3.26 21.58 1.31
3.667 1.41 9.667 3.92 15.667 3.26 21.67 1.31
3.750 1.41 9.750 3.92 15.750 3.26 21.75 1.31
3.833 1.41 9.833 3.92 15.833 3.26 21.83 1.31
3.917 1.41 9.917 3.92 15.917 3.26 21.92 1.31
4.000 1.41 10.000 3.92 16.000 3.26 22.00 1.31
4.083 1.74 10.083 5.00 16.083 1.96 22.08 1.31
4.167 1.74 10.167 5.00 16.167 1.96 22.17 1.31
4.250 1.74 10.250 5.00 16.250 1.96 22.25 1.31
4.333 1.74 10.333 5.00 16.333 1.96 22.33 1.31
4.417 1.74 10.417 5.00 16.417 1.96 22.42 1.31
4.500 1.74 10.500 5.00 16.500 1.96 22.50 1.31
4.583 1.74 10.583 6.75 16.583 1.96 22.58 1.31
4.667 1.74 10.667 6.75 16.667 1.96 22.67 1.31
4.750 1.74 10.750 6.75 16.750 1.96 22.75 1.31

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4.833 1.74 10.833 6.75 16.833 1.96 22.83 1.31
4.917 1.74 10.917 6.75 16.917 1.96 22.92 1.31
5.000 1.74 11.000 6.75 17.000 1.96 23.00 1.31
5.083 1.74 11.083 10.44 17.083 1.96 23.08 1.31
5.167 1.74 11.167 10.44 17.167 1.96 23.17 1.31
5.250 1.74 11.250 10.44 17.250 1.96 23.25 1.31
5.333 1.74 11.333 10.44 17.333 1.96 23.33 1.31
5.417 1.74 11.417 10.44 17.417 1.96 23.42 1.31
5.500 1.74 11.500 10.44 17.500 1.96 23.50 1.31
5.583 1.74 11.583 45.26 17.583 1.96 23.58 1.31
5.667 1.74 11.667 45.26 17.667 1.96 23.67 1.31
5.750 1.74 11.750 45.26 17.750 1.96 23.75 1.31
5.833 1.74 11.833 120.11 17.833 1.96 23.83 1.31
5.917 1.74 11.917 120.12 17.917 1.96 23.92 1.31
6.000 1.74 12.000 120.12 18.000 1.96 24.00 1.31

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Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 2.88 (ii) 6.04 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

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PEAK FLOW (cms)= 0.82 0.09 *TOTALS*
TIME TO PEAK (hrs)= 12.00 12.00 0.910 (iii)
RUNOFF VOLUME (mm)= 107.82 70.82 102.68
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.94

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1301) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.68
Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30

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IMPERVIOUS PERVIOUS (i)
(ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

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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 1.20 6.083 2.18 12.083 15.68 18.08 1.96
0.167 1.20 6.167 2.18 12.167 15.67 18.17 1.96
0.250 1.20 6.250 2.18 12.250 15.67 18.25 1.96
0.333 1.20 6.333 2.18 12.333 15.67 18.33 1.96
0.417 1.20 6.417 2.18 12.417 15.67 18.42 1.96
0.500 1.20 6.500 2.18 12.500 15.67 18.50 1.96
0.583 1.20 6.583 2.18 12.583 8.05 18.58 1.96
0.667 1.20 6.667 2.18 12.667 8.05 18.67 1.96
0.750 1.20 6.750 2.18 12.750 8.05 18.75 1.96
0.833 1.20 6.833 2.18 12.833 8.05 18.83 1.96
0.917 1.20 6.917 2.18 12.917 8.05 18.92 1.96
1.000 1.20 7.000 2.18 13.000 8.05 19.00 1.96
1.083 1.20 7.083 2.18 13.083 1.52 19.08 1.96
1.167 1.20 7.167 2.18 13.167 1.52 19.17 1.96
1.250 1.20 7.250 2.18 13.250 1.52 19.25 1.96
1.333 1.20 7.333 2.18 13.333 1.52 19.33 1.96
1.417 1.20 7.417 2.18 13.417 1.52 19.42 1.96
1.500 1.20 7.500 2.18 13.500 1.52 19.50 1.96
1.583 1.20 7.583 2.18 13.583 8.92 19.58 1.96
1.667 1.20 7.667 2.18 13.667 8.92 19.67 1.96
1.750 1.20 7.750 2.18 13.750 8.92 19.75 1.96
1.833 1.20 7.833 2.18 13.833 8.92 19.83 1.96
1.917 1.20 7.917 2.18 13.917 8.92 19.92 1.96
2.000 1.20 8.000 2.18 14.000 8.92 20.00 1.96
2.083 1.41 8.083 2.94 14.083 3.26 20.08 1.31
2.167 1.41 8.167 2.94 14.167 3.26 20.17 1.31
2.250 1.41 8.250 2.94 14.250 3.26 20.25 1.31
2.333 1.41 8.333 2.94 14.333 3.26 20.33 1.31
2.417 1.41 8.417 2.94 14.417 3.26 20.42 1.31
2.500 1.41 8.500 2.94 14.500 3.26 20.50 1.31
2.583 1.41 8.583 2.94 14.583 3.26 20.58 1.31
2.667 1.41 8.667 2.94 14.667 3.26 20.67 1.31
2.750 1.41 8.750 2.94 14.750 3.26 20.75 1.31
2.833 1.41 8.833 2.94 14.833 3.26 20.83 1.31
2.917 1.41 8.917 2.94 14.917 3.26 20.92 1.31
3.000 1.41 9.000 2.94 15.000 3.26 21.00 1.31
3.083 1.41 9.083 3.48 15.083 3.26 21.08 1.31
3.167 1.41 9.167 3.48 15.167 3.26 21.17 1.31
3.250 1.41 9.250 3.48 15.250 3.26 21.25 1.31
3.333 1.41 9.333 3.48 15.333 3.26 21.33 1.31
3.417 1.41 9.417 3.48 15.417 3.26 21.42 1.31
3.500 1.41 9.500 3.48 15.500 3.26 21.50 1.31
3.583 1.41 9.583 3.92 15.583 3.26 21.58 1.31
3.667 1.41 9.667 3.92 15.667 3.26 21.67 1.31
3.750 1.41 9.750 3.92 15.750 3.26 21.75 1.31

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3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max. Eff. Inten. (mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 3.11 (ii) 6.35 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

PEAK FLOW (cms)= 1.04 0.12 1.164 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82 102.38
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2315)				
1 + 2 = 3				

		AREA	QPEAK	TPEAK
		(ha)	(cms)	(hrs)
		R.V.		
		(mm)		
ID1= 1 (1301):		3.68	1.164	12.00
+ ID2= 2 (1302):		2.86	0.910	12.00
		102.38		
		102.68		

ID = 3 (2315):		6.54	2.074	12.00
		102.51		

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1303)				
ID= 1 DT= 5.0 min				

		Area	(ha)=	3.47
		Total Imp(%)=	86.30	Dir. Conn.(%)= 86.30

		IMPERVIOUS		PERVIOUS (i)
Surface Area	(ha)=	2.99	0.48	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	152.10	40.00	
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96		
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96		
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96		
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96		
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96		
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96		
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96		
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96		
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96		
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96		
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96		
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96		
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96		
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96		
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96		
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96		
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96		
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96		
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96		
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96		
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96		

1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31

6.000 1.74 | 12.000 120.12 | 18.000 1.96 | 24.00 1.31

Max. Eff. Inten. (mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 3.05 (ii) 6.19 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

PEAK FLOW (cms)= 0.99 0.11 1.103 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82 102.75
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2316)				
1 + 2 = 3				

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1303):	3.47	1.103	12.00	102.75
+ ID2= 2 (2315):	6.54	2.074	12.00	102.51
=====				
ID = 3 (2316):	10.01	3.177	12.00	102.59

---- TRANSFORMED HYETOGRAPH ----									
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	1.20	6.083	2.18	12.083	15.68	18.08	1.96		
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96		
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96		
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96		
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96		
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96		
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96		
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96		
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96		
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96		
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96		
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96		
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96		
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96		
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96		
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96		
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96		
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96		
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96		
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96		
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96		
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96		
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96		
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96		
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31		
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31		
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31		
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31		
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31		
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31		
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31		
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31		
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31		
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31		
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31		
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31		
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31		
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31		
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31		
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31		
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31		
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31		
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31		
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31		
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31		
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31		
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31		

4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max. Eff. Inten. (mm/hr)=	120.12	94.63	
over (min)	5.00	10.00	
Storage Coeff. (min)=	3.17 (ii)	5.89 (iii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.15	

PEAK FLOW (cms)=	1.17	0.09	1.264 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	107.82	70.82	104.12
TOTAL RAINFALL (mm)=	108.82	108.82	108.82
RUNOFF COEFFICIENT =	0.99	0.65	0.96

TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2317) |

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1304):	3.93	1.264	12.00	104.12
+ ID2= 2 (2316):	10.01	3.177	12.00	102.59
ID = 3 (2317):	13.94	4.441	12.00	103.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2317):	13.94	4.441	12.00	103.02
+ ID2= 2 (2319):	7.94	0.751	12.00	71.24
ID = 3 (2320):	21.88	5.192	12.00	91.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	3.22
STANDHYD (1101)	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.90	0.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	146.52	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96		
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96		
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96		
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96		
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96		
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96		
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96		
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96		
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96		
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96		
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96		

1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.32	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.43	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31

5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 2.99 (ii) 5.71 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

TOTALS

PEAK FLOW (cms)= 0.96 0.07 1.038 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82 104.12
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.96

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1102)	Area (ha)= 2.07
ID= 1 DT= 5.0 min	Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.51	1.56
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	117.47	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31

4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 2.61 (ii) 9.83 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.29 0.11

TOTALS

PEAK FLOW (cms)= 0.17 0.31 0.478 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82 79.88
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112)	
1 + 2 = 3	AREA QPEAK TPEAK R.V. (ha) (cms) (hrs) (mm)

ID1= 1 (1101): 3.22 1.038 12.00 104.12
+ ID2= 2 (1102): 2.07 0.478 12.00 79.88
=====

ID = 3 (1112): 5.29 1.515 12.00 94.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (1201)	Area (ha)= 5.38
ID= 1 DT= 5.0 min	Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31

2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31
Max. Eff. Inten. (mm/hr)= 120.12 94.63							
over (min) 5.00 10.00							

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Storage Coeff. (min)=	3.48 (ii)	6.55 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.26	0.14	
TOTALS			
PEAK FLOW (cms)=	1.55	0.16	1.705 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	107.82	70.82	103.01
TOTAL RAINFALL (mm)=	108.82	108.82	108.82
RUNOFF COEFFICIENT =	0.99	0.65	0.95

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1202)			
ID= 1 DT= 5.0 min			
		Area (ha)= 4.07	
		Total Imp(%)= 81.20	Dir. Conn.(%)= 81.20

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.30	0.77	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	164.72	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96

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1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31

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5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max. Eff. Inten. (mm/hr)=		120.12	94.63
over (min)		5.00	10.00
Storage Coeff. (min)=	3.20 (ii)	6.86 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.27	0.14	

TOTALS			
PEAK FLOW (cms)=	1.10	0.17	1.266 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	107.82	70.82	1

Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 101.32 40.00
 Mannings n = 0.013 0.250

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	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31

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3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max. Eff. Inten. (mm/hr)= 120.12 94.63
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.39 (ii) 9.61 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.30 0.11

PEAK FLOW (cms)= 0.14 0.22 *TOTALS*
 TIME TO PEAK (hrs)= 12.00 12.00 0.365 (iii)
 RUNOFF VOLUME (mm)= 107.82 70.82 81.21
 TOTAL RAINFALL (mm)= 108.82 108.82 108.82
 RUNOFF COEFFICIENT = 0.99 0.65 0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. Storage (Above)

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(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
 THAN THE STORAGE COEFFICIENT.
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

 | ADD HYD (1214) |
1 + 2 = 3
 ID1= 1 (1203): 1.54 0.365 12.00 81.21
 + ID2= 2 (1213): 9.45 2.971 12.00 102.08
 =====
 ID = 3 (1214): 10.99 3.336 12.00 99.16
 =====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 V V I SSSS U U A L (v 6.2.2015)
 V V I SS U U A A L
 V V I SS U U A A A A L
 V V I SS U U A A L
 V V I SSSS UUUU 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\VO2\vo.in.dat

Output filename:
 C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\27772
 45-a61f-4d86-9ac3-02d5a0ff6af0\scenar
 Summary filename:
 C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\27772
 45-a61f-4d86-9ac3-02d5a0ff6af0\scenar

DATE: 05-28-2026

TIME: 11:03:24

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USER:

COMMENTS: _____

 ** SIMULATION : Run2.6 100-yr 24-hr SCS (Well) **

 | READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
 | | ata\Local\Temp\
 | | bfe40e39-8792-435b-a2bb-8638b01a4cbc\9a6d5800
 | Ptotal=120.00 mm | Comments: 100-yr 24-hr SCS (Welland)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	1.32	6.00	2.40	12.00	17.28	18.00	2.16
0.25	1.32	6.25	2.40	12.25	17.28	18.25	2.16
0.50	1.32	6.50	2.40	12.50	8.88	18.50	2.16
0.75	1.32	6.75	2.40	12.75	8.88	18.75	2.16
1.00	1.32	7.00	2.40	13.00	1.68	19.00	2.16
1.25	1.32	7.25	2.40	13.25	1.68	19.25	2.16
1.50	1.32	7.50	2.40	13.50	9.84	19.50	2.16
1.75	1.32	7.75	2.40	13.75	9.84	19.75	2.16
2.00	1.56	8.00	3.24	14.00	3.60	20.00	1.44
2.25	1.56	8.25	3.24	14.25	3.60	20.25	1.44
2.50	1.56	8.50	3.24	14.50	3.60	20.50	1.44
2.75	1.56	8.75	3.24	14.75	3.60	20.75	1.44
3.00	1.56	9.00	3.84	15.00	3.60	21.00	1.44
3.25	1.56	9.25	3.84	15.25	3.60	21.25	1.44
3.50	1.56	9.50	4.32	15.50	3.60	21.50	1.44
3.75	1.56	9.75	4.32	15.75	3.60	21.75	1.44
4.00	1.92	10.00	5.52	16.00	2.16	22.00	1.44
4.25	1.92	10.25	5.52	16.25	2.16	22.25	1.44
4.50	1.92	10.50	7.44	16.50	2.16	22.50	1.44
4.75	1.92	10.75	7.44	16.75	2.16	22.75	1.44
5.00	1.92	11.00	11.52	17.00	2.16	23.00	1.44
5.25	1.92	11.25	11.52	17.25	2.16	23.25	1.44
5.50	1.92	11.50	49.92	17.50	2.16	23.50	1.44
5.75	1.92	11.75	132.48	17.75	2.16	23.75	1.44

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| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.75

```

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	1.32	6.083	2.40	12.083	17.29	18.08	2.16		
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16		
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16		
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16		
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16		
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16		
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16		
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16		
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16		
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16		
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16		
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16		
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16		
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16		
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16		
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16		
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16		
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16		
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16		
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16		
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16		
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16		
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16		
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16		
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44		
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44		
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44		
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44		
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44		
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44		
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44		
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44		
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44		
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44		
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44		
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44		
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44		
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44		
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44		

3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.48	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.153

```

PEAK FLOW (cms)= 0.243 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 78.667
TOTAL RAINFALL (mm)= 129.000
RUNOFF COEFFICIENT = 0.656

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

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| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.47

```

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	1.32	6.083	2.40	12.083	17.29	18.08	2.16		
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16		
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16		
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16		
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16		
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16		
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16		
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16		
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16		
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16		
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16		
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16		
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16		
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16		
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16		
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16		
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16		
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16		
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16		
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16		
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16		
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16		
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16		
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16		
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44		
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44		
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44		
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44		
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44		
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44		
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44		
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44		
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44		
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44		
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44		
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44		
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44		
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44		
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44		
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44		
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44		
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44		
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44		

3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.48	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (0305) | Area (ha)= 2.15
 | ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.54 1.61
 Dep. Storage (mm)= 7.50 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 119.72 40.00
 Mannings n = 0.013 0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44

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2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max.Eff.Inten.(mm/hr)= 132.48 107.47
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.54 (ii) 9.40 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.29 0.12

TOTALS

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PEAK FLOW (cms)= 0.20 0.37 0.567 (iii)
 TIME TO PEAK (hrs)= 12.00 12.00 12.00
 RUNOFF VOLUME (mm)= 112.50 80.95 88.83
 TOTAL RAINFALL (mm)= 120.00 120.00 120.00
 RUNOFF COEFFICIENT = 0.94 0.67 0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 1a = Dep. 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 (2319) |
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2318):	5.79	0.537	12.42	78.67
+ ID2= 2 (0305):	2.15	0.567	12.00	88.83
=====				
ID = 3 (2319):	7.94	0.862	12.00	81.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (1302) | Area (ha)= 2.86
 | ID= 1 DT= 5.0 min | Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 2.46 0.40
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 138.08 40.00
 Mannings n = 0.013 0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16

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0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92						

4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44
Max.Eff.Inten.(mm/hr)=	132.48		107.47				
over (min)	5.00		10.00				
Storage Coeff. (min)=	2.77 (ii)		5.81 (ii)				
Unit Hyd. Tpeak (min)=	5.00		10.00				
Unit Hyd. peak (cms)=	0.28		0.15				
PEAK FLOW (cms)=	0.90		0.10		*TOTALS*		
TIME TO PEAK (hrs)=	12.00		12.00		1.008 (iii)		
RUNOFF VOLUME (mm)=	119.00		80.95		12.00		
TOTAL RAINFALL (mm)=	120.00		120.00		113.71		
RUNOFF COEFFICIENT =	0.99		0.67		120.00		
					0.95		

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1301)	Area (ha)=	3.68	
ID= 1 DT= 5.0 min	Total Imp(%)=	85.30	Dir. Conn.(%)= 85.30

Surface Area (ha)=	3.14	IMPERVIOUS 0.54	
Dep. Storage (mm)=	1.00	PERVIOUS (i) 5.00	
Average Slope (%)=	1.00		
Length (m)=	156.63	40.00	
Mannings n =	0.013	0.250	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44

3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44
Max.Eff.Inten.(mm/hr)=	132.48		107.47				
over (min)	5.00		10.00				
Storage Coeff. (min)=	2.99		(ii)	6.11		(ii)	
Unit Hyd. Tpeak (min)=	5.00		10.00				
Unit Hyd. peak (cms)=	0.28		0.15				
PEAK FLOW (cms)=	1.15		0.14		*TOTALS*		
TIME TO PEAK (hrs)=	12.00		12.00		1.291 (iii)		
RUNOFF VOLUME (mm)=	119.00		80.95		113.41		
TOTAL RAINFALL (mm)=	120.00		120.00		120.00		
RUNOFF COEFFICIENT =	0.99		0.67		0.95		

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2315)				
1 + 2 = 3				

ID1= 1 (1301):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (1302):	3.68	1.291	12.00	113.41
=====				
ID = 3 (2315):	6.54	2.299	12.00	113.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1303)	Area (ha)=	3.47	
ID= 1 DT= 5.0 min	Total Imp(%)=	86.30	Dir. Conn.(%)= 86.30

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	2.99	0.48	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	152.10	40.00	
Mannings n =	0.013	0.250	

1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44

5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44
Max.Eff.Inten.(mm/hr)=		132.48	107.47				
over (min)		5.00	10.00				
Storage Coeff. (min)=		2.94 (ii)	5.96 (ii)				
Unit Hyd. Tpeak (min)=		5.00	10.00				
Unit Hyd. peak (cms)=		0.28	0.15				
TOTALS							
PEAK FLOW (cms)=		1.10	0.12	1.222 (iii)			
TIME TO PEAK (hrs)=		12.00	12.00	12.00			
RUNOFF VOLUME (mm)=		119.00	80.95	113.79			
TOTAL RAINFALL (mm)=		120.00	120.00	120.00			
RUNOFF COEFFICIENT =		0.99	0.67	0.95			

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2316)					AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3					(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1303):					3.47	1.222	12.00	113.79
+ ID2= 2 (2315):					6.54	2.299	12.00	113.54
ID = 3 (2316):					10.01	3.522	12.00	113.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				Area (ha)=	3.93		
STANDHYD (1304)				Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00
ID= 1 DT= 5.0 min							
				IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=				3.54	0.39		
Dep. Storage (mm)=				1.00	5.00		
Average Slope (%)=				1.00	2.00		
Length (m)=				161.86	40.00		
Mannings n =				0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44

3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44

```

-----
| ADD HYD ( 2317) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1304): 3.93 1.400 12.00 115.19
+ ID2= 2 ( 2316): 10.01 3.522 12.00 113.62
=====
ID = 3 ( 2317): 13.94 4.921 12.00 114.07

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2317): 13.94 4.921 12.00 114.07
+ ID2= 2 ( 2319): 7.94 0.862 12.00 81.42
=====
ID = 3 ( 2320): 21.88 5.783 12.00 102.22

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1101) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.22
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

```

```

-----
IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.32 6.083 2.40 12.083 17.29 18.08 2.16
0.167 1.32 6.167 2.40 12.167 17.28 18.17 2.16
0.250 1.32 6.250 2.40 12.250 17.28 18.25 2.16
0.333 1.32 6.333 2.40 12.333 17.28 18.33 2.16
0.417 1.32 6.417 2.40 12.417 17.28 18.42 2.16
0.500 1.32 6.500 2.40 12.500 17.28 18.50 2.16
0.583 1.32 6.583 2.40 12.583 8.88 18.58 2.16
0.667 1.32 6.667 2.40 12.667 8.88 18.67 2.16
0.750 1.32 6.750 2.40 12.750 8.88 18.75 2.16

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0.833 1.32 6.833 2.40 12.833 8.88 18.83 2.16
0.917 1.32 6.917 2.40 12.917 8.88 18.92 2.16
1.000 1.32 7.000 2.40 13.000 8.88 19.00 2.16
1.083 1.32 7.083 2.40 13.083 1.68 19.08 2.16
1.167 1.32 7.167 2.40 13.167 1.68 19.17 2.16
1.250 1.32 7.250 2.40 13.250 1.68 19.25 2.16
1.333 1.32 7.333 2.40 13.333 1.68 19.33 2.16
1.417 1.32 7.417 2.40 13.417 1.68 19.42 2.16
1.500 1.32 7.500 2.40 13.500 1.68 19.50 2.16
1.583 1.32 7.583 2.40 13.583 9.84 19.58 2.16
1.667 1.32 7.667 2.40 13.667 9.84 19.67 2.16
1.750 1.32 7.750 2.40 13.750 9.84 19.75 2.16
1.833 1.32 7.833 2.40 13.833 9.84 19.83 2.16
1.917 1.32 7.917 2.40 13.917 9.84 19.92 2.16
2.000 1.32 8.000 2.40 14.000 9.84 20.00 2.16
2.083 1.56 8.083 3.24 14.083 3.60 20.08 1.44
2.167 1.56 8.167 3.24 14.167 3.60 20.17 1.44
2.250 1.56 8.250 3.24 14.250 3.60 20.25 1.44
2.333 1.56 8.333 3.24 14.333 3.60 20.33 1.44
2.417 1.56 8.417 3.24 14.417 3.60 20.42 1.44
2.500 1.56 8.500 3.24 14.500 3.60 20.50 1.44
2.583 1.56 8.583 3.24 14.583 3.60 20.58 1.44
2.667 1.56 8.667 3.24 14.667 3.60 20.67 1.44
2.750 1.56 8.750 3.24 14.750 3.60 20.75 1.44
2.833 1.56 8.833 3.24 14.833 3.60 20.83 1.44
2.917 1.56 8.917 3.24 14.917 3.60 20.92 1.44
3.000 1.56 9.000 3.24 15.000 3.60 21.00 1.44
3.083 1.56 9.083 3.84 15.083 3.60 21.08 1.44
3.167 1.56 9.167 3.84 15.167 3.60 21.17 1.44
3.250 1.56 9.250 3.84 15.250 3.60 21.25 1.44
3.333 1.56 9.333 3.84 15.333 3.60 21.33 1.44
3.417 1.56 9.417 3.84 15.417 3.60 21.42 1.44
3.500 1.56 9.500 3.84 15.500 3.60 21.50 1.44
3.583 1.56 9.583 4.32 15.583 3.60 21.58 1.44
3.667 1.56 9.667 4.32 15.667 3.60 21.67 1.44
3.750 1.56 9.750 4.32 15.750 3.60 21.75 1.44
3.833 1.56 9.833 4.32 15.833 3.60 21.83 1.44
3.917 1.56 9.917 4.32 15.917 3.60 21.92 1.44
4.000 1.56 10.000 4.32 16.000 3.60 22.00 1.44
4.083 1.92 10.083 5.52 16.083 2.16 22.08 1.44
4.167 1.92 10.167 5.52 16.167 2.16 22.17 1.44
4.250 1.92 10.250 5.52 16.250 2.16 22.25 1.44
4.333 1.92 10.333 5.52 16.333 2.16 22.33 1.44
4.417 1.92 10.417 5.52 16.417 2.16 22.42 1.44
4.500 1.92 10.500 5.52 16.500 2.16 22.50 1.44
4.583 1.92 10.583 7.44 16.583 2.16 22.58 1.44
4.667 1.92 10.667 7.44 16.667 2.16 22.67 1.44
4.750 1.92 10.750 7.44 16.750 2.16 22.75 1.44
4.833 1.92 10.833 7.44 16.833 2.16 22.83 1.44
4.917 1.92 10.917 7.44 16.917 2.16 22.92 1.44

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5.000 1.92 11.000 7.44 17.000 2.16 23.00 1.44
5.083 1.92 11.083 11.52 17.083 2.16 23.08 1.44
5.167 1.92 11.167 11.52 17.167 2.16 23.17 1.44
5.250 1.92 11.250 11.52 17.250 2.16 23.25 1.44
5.333 1.92 11.333 11.52 17.333 2.16 23.33 1.44
5.417 1.92 11.417 11.52 17.417 2.16 23.42 1.44
5.500 1.92 11.500 11.52 17.500 2.16 23.50 1.44
5.583 1.92 11.583 49.92 17.583 2.16 23.58 1.44
5.667 1.92 11.667 49.92 17.667 2.16 23.67 1.44
5.750 1.92 11.750 49.92 17.750 2.16 23.75 1.44
5.833 1.92 11.833 132.47 17.833 2.16 23.83 1.44
5.917 1.92 11.917 132.48 17.917 2.16 23.92 1.44
6.000 1.92 12.000 132.48 18.000 2.16 24.00 1.44

```

```

Max.Eff.Inten.(mm/hr)= 132.48 107.47
over (min) 5.00 10.00
Storage Coeff. (min)= 2.87 (ii) 5.49 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.16

```

```

PEAK FLOW (cms)= 1.06 0.09 1.149 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 119.00 80.95 115.19
TOTAL RAINFALL (mm)= 120.00 120.00 120.00
RUNOFF COEFFICIENT = 0.99 0.67 0.96

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1102) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 2.07
Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

```

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-----
IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.32 6.083 2.40 12.083 17.29 18.08 2.16
0.167 1.32 6.167 2.40 12.167 17.28 18.17 2.16
0.250 1.32 6.250 2.40 12.250 17.28 18.25 2.16
0.333 1.32 6.333 2.40 12.333 17.28 18.33 2.16
0.417 1.32 6.417 2.40 12.417 17.28 18.42 2.16
0.500 1.32 6.500 2.40 12.500 17.28 18.50 2.16
0.583 1.32 6.583 2.40 12.583 8.88 18.58 2.16
0.667 1.32 6.667 2.40 12.667 8.88 18.67 2.16
0.750 1.32 6.750 2.40 12.750 8.88 18.75 2.16
0.833 1.32 6.833 2.40 12.833 8.88 18.83 2.16
0.917 1.32 6.917 2.40 12.917 8.88 18.92 2.16
1.000 1.32 7.000 2.40 13.000 8.88 19.00 2.16
1.083 1.32 7.083 2.40 13.083 1.68 19.08 2.16
1.167 1.32 7.167 2.40 13.167 1.68 19.17 2.16
1.250 1.32 7.250 2.40 13.250 1.68 19.25 2.16
1.333 1.32 7.333 2.40 13.333 1.68 19.33 2.16
1.417 1.32 7.417 2.40 13.417 1.68 19.42 2.16
1.500 1.32 7.500 2.40 13.500 1.68 19.50 2.16
1.583 1.32 7.583 2.40 13.583 9.84 19.58 2.16
1.667 1.32 7.667 2.40 13.667 9.84 19.67 2.16
1.750 1.32 7.750 2.40 13.750 9.84 19.75 2.16
1.833 1.32 7.833 2.40 13.833 9.84 19.83 2.16
1.917 1.32 7.917 2.40 13.917 9.84 19.92 2.16
2.000 1.32 8.000 2.40 14.000 9.84 20.00 2.16
2.083 1.56 8.083 3.24 14.083 3.60 20.08 1.44
2.167 1.56 8.167 3.24 14.167 3.60 20.17 1.44
2.250 1.56 8.250 3.24 14.250 3.60 20.25 1.44
2.333 1.56 8.333 3.24 14.333 3.60 20.33 1.44
2.417 1.56 8.417 3.24 14.417 3.60 20.42 1.44
2.500 1.56 8.500 3.24 14.500 3.60 20.50 1.44
2.583 1.56 8.583 3.24 14.583 3.60 20.58 1.44
2.667 1.56 8.667 3.24 14.667 3.60 20.67 1.44
2.750 1.56 8.750 3.24 14.750 3.60 20.75 1.44
2.833 1.56 8.833 3.24 14.833 3.60 20.83 1.44
2.917 1.56 8.917 3.24 14.917 3.60 20.92 1.44
3.000 1.56 9.000 3.24 15.000 3.60 21.00 1.44
3.083 1.56 9.083 3.84 15.083 3.60 21.08 1.44
3.167 1.56 9.167 3.84 15.167 3.60 21.17 1.44
3.250 1.56 9.250 3.84 15.250 3.60 21.25 1.44
3.333 1.56 9.333 3.84 15.333 3.60 21.33 1.44
3.417 1.56 9.417 3.84 15.417 3.60 21.42 1.44
3.500 1.56 9.500 3.84 15.500 3.60 21.50 1.44
3.583 1.56 9.583 4.32 15.583 3.60 21.58 1.44
3.667 1.56 9.667 4.32 15.667 3.60 21.67 1.44
3.750 1.56 9.750 4.32 15.750 3.60 21.75 1.44
3.833 1.56 9.833 4.32 15.833 3.60 21.83 1.44
3.917 1.56 9.917 4.32 15.917 3.60 21.92 1.44

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4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max.Eff.Inten.(mm/hr)= 132.48 107.47
over (min) 5.00 10.00
Storage Coeff. (min)= 2.51 (ii) 9.37 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.29 0.12

PEAK FLOW (cms)= 0.19 0.36 0.545 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 119.00 80.95 90.27
TOTAL RAINFALL (mm)= 120.00 120.00 120.00
RUNOFF COEFFICIENT = 0.99 0.67 0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112) |

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1101):	3.22	1.149	12.00	115.19
+ ID2= 2 (1102):	2.07	0.545	12.00	90.27
ID = 3 (1112):	5.29	1.694	12.00	105.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	5.38
STANDHYD (1201)	Total Imp(%)=	87.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	87.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n =	0.013	0.250

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	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16

2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max.Eff.Inten.(mm/hr)= 132.48 107.47
over (min) 5.00 10.00
Storage Coeff. (min)= 3.35 (ii) 6.30 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.15

PEAK FLOW (cms)= 1.71 0.18 1.891 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 119.00 80.95 114.05
TOTAL RAINFALL (mm)= 120.00 120.00 120.00
RUNOFF COEFFICIENT = 0.99 0.67 0.95

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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)=	4.07
STANDHYD (1202)	Total Imp(%)=	81.20
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	81.20

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.30	0.77
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	164.72	40.00
Mannings n =	0.013	0.250

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	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16

1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44

5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44
Max.Eff.Inten.(mm/hr)=							
		132.48	107.47				
over (min)		5.00	10.00				
Storage Coeff. (min)=		3.08 (ii)	6.59 (ii)				
Unit Hyd. Tpeak (min)=		5.00	10.00				
Unit Hyd. peak (cms)=		0.27	0.14				
TOTALS							
PEAK FLOW (cms)=		1.21	0.20		1.406 (iii)		
TIME TO PEAK (hrs)=		12.00	12.00		12.00		
RUNOFF VOLUME (mm)=		119.00	80.95		111.85		
TOTAL RAINFALL (mm)=		120.00	120.00		120.00		
RUNOFF COEFFICIENT =		0.99	0.67		0.93		

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 84.0 Ia = Dep. 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 (1213)					
1 + 2 = 3					

		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1201):		5.38	1.891	12.00	114.05
+ ID2= 2 (1202):		4.07	1.406	12.00	111.85
=====					
ID = 3 (1213):		9.45	3.296	12.00	113.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1203)			
Area (ha)=		1.54	
ID= 1 DT= 5.0 min		Total Imp(%)=	28.10 Dir. Conn.(%)= 28.10

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.43	1.11	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	101.32	40.00	
Mannings n	0.013	0.250	

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

TIME RAIN TIME RAIN TIME RAIN TIME RAIN							
hrs mm/hr	hrs	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44

3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214)				
1 + 2 = 3				

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1203):	1.54	0.415	12.00	91.64
+ ID2= 2 (1213):	9.45	3.296	12.00	113.10
=====				
ID = 3 (1214):	10.99	3.712	12.00	110.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

B-3 POST-EVELOPMENT CONDITIONS

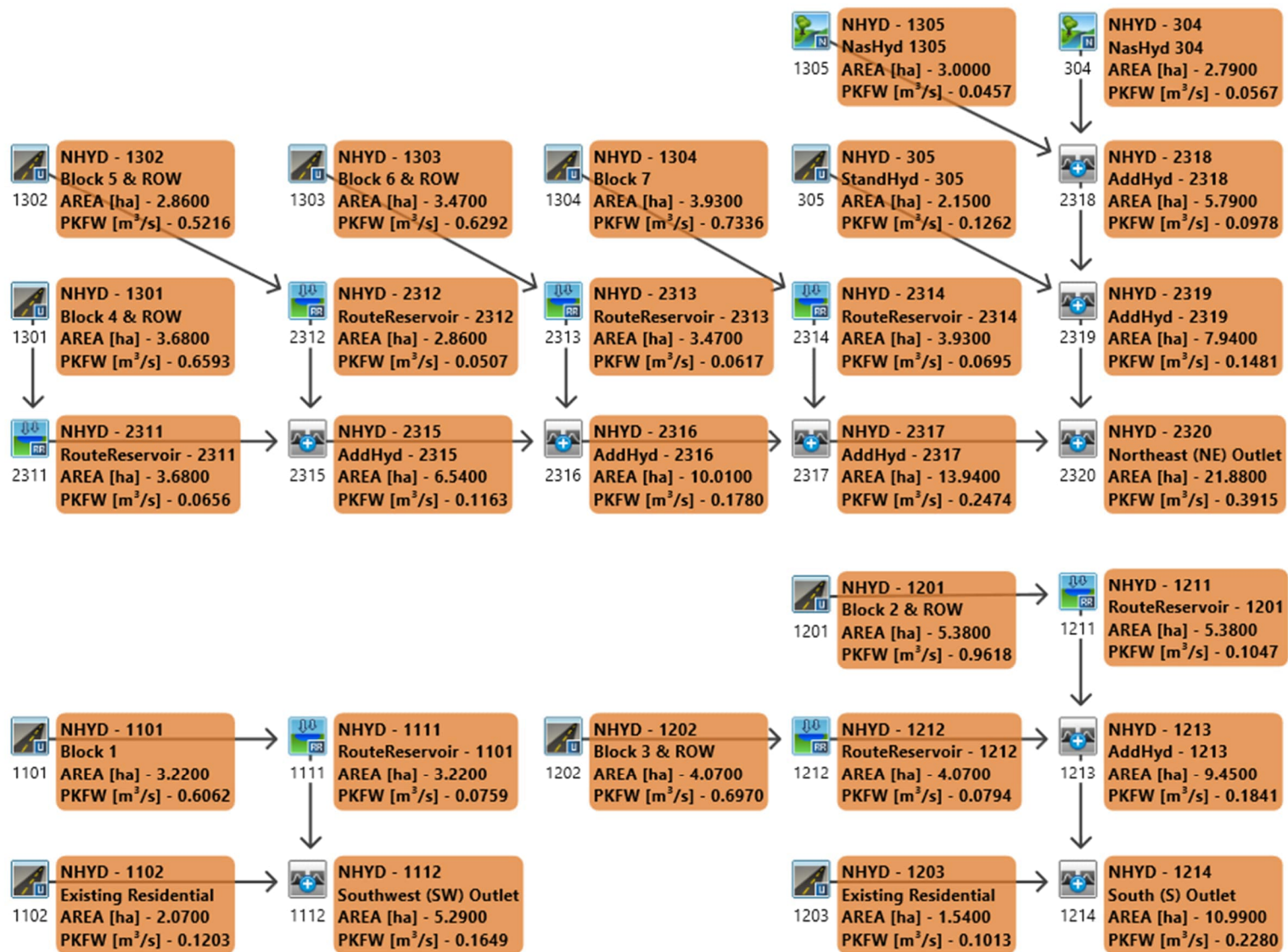


Figure B3 – VO Model Schematic _ Post-development Conditions

```

=====
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   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   Y   M   M   0   0
000   T   T   H   H   Y   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\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\40bc85
9d-60d1-45f7-b9b0-76950dce5c0e\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\XH5\F67fe709-6b28-4175-8afc-bd306d6d118d\40bc85
9d-60d1-45f7-b9b0-76950dce5c0e\scenar

```

DATE: 05-28-2026

TIME: 11:05:52

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run1.1 2-yr 4 hr Chicago (Wel **)
*****

```

```

-----
| CHICAGO STORM | IDf curve parameters: A= 755.000
| Ptotal= 38.96 mm | B= 8.000
|                   | C= 0.789
-----

```

-1-

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

```

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

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.65	1.00	21.73	2.00	6.45	3.00	3.16
0.17	3.04	1.17	77.19	2.17	5.45	3.17	2.93
0.33	3.61	1.33	28.29	2.33	4.74	3.33	2.73
0.50	4.46	1.50	15.20	2.50	4.20	3.50	2.56
0.67	5.95	1.67	10.40	2.67	3.78	3.67	2.42
0.83	9.16	1.83	7.94	2.83	3.44	3.83	2.28

```

-----
| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|                   | U.H. Tp(hrs)= 0.75
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.153

```

PEAK FLOW (cms)= 0.046 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 12.396
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.318

```

-2-

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

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|                   | U.H. Tp(hrs)= 0.47
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW (cms)= 0.057 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 12.396
TOTAL RAINFALL (mm)= 38.961
RUNOFF COEFFICIENT = 0.318

```

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

```

-----
| ADD HYD ( 2318) |
| 1 + 2 = 3 |
|             |
| ID1= 1 ( 1305): 3.00 0.046 2.33 12.40
+ ID2= 2 ( 0304): 2.79 0.057 1.92 12.40
+-----+
| ID = 3 ( 2318): 5.79 0.098 2.08 12.40

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-3-

```

-----
| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
|                   |
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.54 1.61
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 119.72 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.65 1.083 21.73 2.083 6.45 3.08 3.16
0.167 2.65 1.167 21.73 2.167 6.45 3.17 3.16
0.250 3.04 1.250 77.19 2.250 5.45 3.25 2.93
0.333 3.04 1.333 77.19 2.333 5.45 3.33 2.93
0.417 3.61 1.417 28.29 2.417 4.74 3.42 2.73
0.500 3.61 1.500 28.29 2.500 4.74 3.50 2.73
0.583 4.46 1.583 15.20 2.583 4.20 3.58 2.56
0.667 4.46 1.667 15.20 2.667 4.20 3.67 2.56
0.750 5.95 1.750 10.40 2.750 3.78 3.75 2.42
0.833 5.95 1.833 10.40 2.833 3.78 3.83 2.42
0.917 9.16 1.917 7.94 2.917 3.44 3.92 2.28
1.000 9.16 2.000 7.94 3.000 3.44 4.00 2.28

```

```

Max.Eff.Inten.(mm/hr)= 77.19 19.85
over (min)= 5.00 20.00
Storage Coeff. (min)= 3.16 (ii) 16.63 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.27 0.06

```

```

*TOTALS*
PEAK FLOW (cms)= 0.11 0.05 0.126 (iii)
TIME TO PEAK (hrs)= 1.33 1.58 1.33
RUNOFF VOLUME (mm)= 31.46 14.01 18.37
TOTAL RAINFALL (mm)= 38.96 38.96 38.96
RUNOFF COEFFICIENT = 0.81 0.36 0.47

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.

```

-4-

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

ADD HYD (2319)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2318):	5.79	0.098	2.08	12.40
+ ID2= 2 (0305):	2.15	0.126	1.33	18.37
=====				
ID = 3 (2319):	7.94	0.148	1.83	14.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1301)				
ID= 1 DT= 5.0 min	Area (ha)=	3.68		
	Total Imp(%)=	85.30	Dir. Conn.(%)=	85.30
=====				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	3.14	0.54		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	156.63	40.00		
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.65	1.083	21.73	2.083	6.45	3.08	3.16		
0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16		
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93		
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93		
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73		
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73		
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56		
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56		
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42		
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42		
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28		
1.000	9.16	2.000	7.94	3.000	3.44	4.00	2.28		
=====									
Max.Eff.Inten.(mm/hr)=	77.19	23.27							
over (min)	5.00	10.00							
Storage Coeff. (min)=	3.71 (ii)	7.58 (ii)							
Unit Hyd. Tpeak (min)=	5.00	10.00							

-5-

Unit Hyd. peak (cms)=	0.25	0.13	*TOTALS*
PEAK FLOW (cms)=	0.64	0.03	0.659 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	37.96	14.01	34.44
TOTAL RAINFALL (mm)=	38.96	38.96	38.96
RUNOFF COEFFICIENT =	0.97	0.36	0.88

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2311)				
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	0.1470	0.1190
	0.0660	0.0830	0.1780	0.1310
	0.0910	0.0960	0.2070	0.1410
	0.1130	0.1060	0.3250	0.1860
=====				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1301)	3.680	0.659	1.33	34.44
OUTFLOW: ID= 1 (2311)	3.680	0.066	2.17	34.35

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.94
TIME SHIFT OF PEAK FLOW (min)= 50.00
MAXIMUM STORAGE USED (ha.m.)= 0.0825

CALIB				
STANDHYD (1302)				
ID= 1 DT= 5.0 min	Area (ha)=	2.86		
	Total Imp(%)=	86.10	Dir. Conn.(%)=	86.10
=====				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	2.46	0.40		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	138.08	40.00		
Mannings n	=	0.013	0.250	

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

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---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.65	1.083	21.73	2.083	6.45	3.08	3.16		
0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16		
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93		
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93		
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73		
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73		
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56		
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56		
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42		
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42		
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28		
1.000	9.16	2.000	7.94	3.000	3.44	4.00	2.28		
=====									
Max.Eff.Inten.(mm/hr)=		77.19		23.27					
over (min)		5.00		10.00					
Storage Coeff. (min)=		3.44 (ii)		7.21 (ii)					
Unit Hyd. Tpeak (min)=		5.00		10.00					
Unit Hyd. peak (cms)=		0.26		0.14					
=====									
					TOTALS				
PEAK FLOW	(cms)=	0.51		0.02		0.522 (iii)			
TIME TO PEAK	(hrs)=	1.33		1.42		1.33			
RUNOFF VOLUME	(mm)=	37.96		14.01		34.63			
TOTAL RAINFALL	(mm)=	38.96		38.96		38.96			
RUNOFF COEFFICIENT	=	0.97		0.36		0.89			

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2312)				
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	0.1140	0.0930
	0.0510	0.0650	0.1380	0.1020
	0.0710	0.0750	0.1610	0.1100
	0.0880	0.0830	0.2520	0.1450
=====				
	AREA	QPEAK	TPEAK	R.V.

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INFLOW : ID= 2 (1302)	(ha)	(cms)	(hrs)	(mm)
	2.860	0.522	1.33	34.63
OUTFLOW: ID= 1 (2312)	2.860	0.051	2.17	34.52
=====				
PEAK FLOW REDUCTION [Qout/Qin](%)=	9.73			
TIME SHIFT OF PEAK FLOW (min)=	50.00			
MAXIMUM STORAGE USED (ha.m.)=	0.0647			

ADD HYD (2315)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2311):	3.68	0.066	2.17	34.35
+ ID2= 2 (2312):	2.86	0.051	2.17	34.52
=====				
ID = 3 (2315):	6.54	0.116	2.17	34.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1303)				
ID= 1 DT= 5.0 min	Area (ha)=	3.47		
	Total Imp(%)=	86.30	Dir. Conn.(%)=	86.30
=====				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	2.99	0.48		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	152.10	40.00		
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.65	1.083	21.73	2.083	6.45	3.08	3.16		
0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16		
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93		
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93		
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73		
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73		
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56		
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56		
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42		
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42		
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28		

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1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28

Max.Eff.Inten.(mm/hr)= 77.19 23.27
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.64 (ii) 7.39 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.25 0.13
 TOTALS
 PEAK FLOW (cms)= 0.61 0.02 0.629 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 37.96 14.01 34.68
 TOTAL RAINFALL (mm)= 38.96 38.96 38.96
 RUNOFF COEFFICIENT = 0.97 0.36 0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2313) | 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	0.1300	0.1130
0.0620	0.0790	0.1680	0.1240
0.0860	0.0910	0.1950	0.1340
0.1060	0.1010	0.3060	0.1760

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3.470	0.629	1.33	34.68
3.470	0.062	2.17	34.59

 INFLOW : ID= 2 (1303)
 OUTFLOW: ID= 1 (2313)

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.80
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0786

 | ADD HYD (2316) |
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3.47	0.062	2.17	34.59
6.54	0.116	2.17	34.42

 ID1= 1 (2313):
 + ID2= 2 (2315):

=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (1304) | Area (ha)= 3.93
 | ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.54	0.39
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	161.86	40.00
Mannings n	0.013	0.250

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	2.65	1.083	21.73	2.083	6.45	3.08	3.16
0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28
1.000	9.16	2.000	7.94	3.000	3.44	4.00	2.28

Max.Eff.Inten.(mm/hr)= 77.19 23.27
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.78 (ii) 7.03 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.25 0.14

TOTALS
 PEAK FLOW (cms)= 0.72 0.02 0.734 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 37.96 14.01 35.56
 TOTAL RAINFALL (mm)= 38.96 38.96 38.96
 RUNOFF COEFFICIENT = 0.97 0.36 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2314) | 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	0.1570	0.1320
0.0700	0.0930	0.1900	0.1450
0.0970	0.1070	0.2210	0.1560
0.1210	0.1170	0.3470	0.2040

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3.930	0.734	1.33	35.56
3.930	0.069	2.17	35.48

 INFLOW : ID= 2 (1304)
 OUTFLOW: ID= 1 (2314)

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.47
 TIME SHIFT OF PEAK FLOW (min)= 50.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0923

 | ADD HYD (2317) |
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3.93	0.069	2.17	35.48
10.01	0.178	2.17	34.48
13.94	0.247	2.17	34.76

 ID1= 1 (2314):
 + ID2= 2 (2316):
 ID = 3 (2317):

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | ADD HYD (2320) |
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
13.94	0.247	2.17	34.76
7.94	0.148	1.83	14.01
21.88	0.392	1.92	27.23

 ID1= 1 (2317):
 + ID2= 2 (2319):
 ID = 3 (2320):

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (1101) | Area (ha)= 3.22
 | ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.90	0.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	146.52	40.00
Mannings n	0.013	0.250

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	2.65	1.083	21.73	2.083	6.45	3.08	3.16
0.167	2.65	1.167	21.73	2.167	6.45	3.17	3.16
0.250	3.04	1.250	77.19	2.250	5.45	3.25	2.93
0.333	3.04	1.333	77.19	2.333	5.45	3.33	2.93
0.417	3.61	1.417	28.29	2.417	4.74	3.42	2.73
0.500	3.61	1.500	28.29	2.500	4.74	3.50	2.73
0.583	4.46	1.583	15.20	2.583	4.20	3.58	2.56
0.667	4.46	1.667	15.20	2.667	4.20	3.67	2.56
0.750	5.95	1.750	10.40	2.750	3.78	3.75	2.42
0.833	5.95	1.833	10.40	2.833	3.78	3.83	2.42
0.917	9.16	1.917	7.94	2.917	3.44	3.92	2.28
1.000	9.16	2.000	7.94	3.000	3.44	4.00	2.28

Max.Eff.Inten.(mm/hr)= 77.19 23.27
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.56 (ii) 6.81 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.26 0.14

TOTALS
 PEAK FLOW (cms)= 0.59 0.02 0.606 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 37.96 14.01 35.56
 TOTAL RAINFALL (mm)= 38.96 38.96 38.96
 RUNOFF COEFFICIENT = 0.97 0.36 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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( 1111) | 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 | 0.2210 | 0.0950
| 0.0760 | 0.0700 | 0.2760 | 0.1030
| 0.1230 | 0.0800 | 0.3270 | 0.1100
| 0.1610 | 0.0860 | 0.6360 | 0.1400
-----
| AREA | QPEAK | TPEAK | R.V.
| (ha) | (cms) | (hrs) | (mm)
| INFLOW : ID= 2 ( 1101) | 3.220 | 0.606 | 1.33 | 35.56
| OUTFLOW: ID= 1 ( 1111) | 3.220 | 0.076 | 1.92 | 35.49
-----
| PEAK FLOW REDUCTION [Qout/Qin](%)= 12.52
| TIME SHIFT OF PEAK FLOW (min)= 35.00
| MAXIMUM STORAGE USED (ha.m.)= 0.0699
-----

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-----
| CALIB
| STANDHYD ( 1102) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 2.07
| Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
-----

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-----
| IMPERVIOUS | PERVIOUS (i)
| (ha)= 0.51 | 1.56
| Dep. Storage (mm)= 1.00 | 5.00
| Average Slope (%)= 1.00 | 2.00
| Length (m)= 117.47 | 40.00
| Mannings n = 0.013 | 0.250
-----

```

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

```

-----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
| 0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
| 0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
| 0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
| 0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
| 0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
| 0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
| 0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
| 0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
| 0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
-----

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0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28
-----

```

```

Max.Eff.Inten.(mm/hr)= 77.19 19.85
over (min)= 5.00 20.00
Storage Coeff. (min)= 3.12 (ii) 16.60 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.27 0.06
-----

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```

-----
| PEAK FLOW (cms)= 0.11 0.05 *TOTALS*
| TIME TO PEAK (hrs)= 1.33 1.58 0.120 (iii)
| RUNOFF VOLUME (mm)= 37.96 14.01 19.87
| TOTAL RAINFALL (mm)= 38.96 38.96 38.96
| RUNOFF COEFFICIENT = 0.97 0.36 0.51
-----

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
| AREA | QPEAK | TPEAK | R.V.
| (ha) | (cms) | (hrs) | (mm)
| ID1= 1 ( 1102): | 2.07 0.120 1.33 19.87
| + ID2= 2 ( 1111): | 3.22 0.076 1.92 35.49
| =====
| ID = 3 ( 1112): | 5.29 0.165 1.33 29.38
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1201) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 5.38
| Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
-----

```

```

-----
| IMPERVIOUS | PERVIOUS (i)
| (ha)= 4.68 | 0.70
| Dep. Storage (mm)= 1.00 | 5.00
| Average Slope (%)= 1.00 | 2.00
| Length (m)= 189.38 | 40.00
| Mannings n = 0.013 | 0.250
-----

```

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

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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 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
| 0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
| 0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
| 0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
| 0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
| 0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
| 0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
| 0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
| 0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
| 0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
| 0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
| 1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28
-----

```

```

Max.Eff.Inten.(mm/hr)= 77.19 23.27
over (min)= 5.00 10.00
Storage Coeff. (min)= 4.16 (ii) 7.82 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13
-----

```

```

-----
| PEAK FLOW (cms)= 0.94 0.03 *TOTALS*
| TIME TO PEAK (hrs)= 1.33 1.42 0.962 (iii)
| RUNOFF VOLUME (mm)= 37.96 14.01 34.85
| TOTAL RAINFALL (mm)= 38.96 38.96 38.96
| RUNOFF COEFFICIENT = 0.97 0.36 0.89
-----

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1211) | 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 | 0.2600 | 0.1600
| 0.1050 | 0.1200 | 0.3330 | 0.1830
| 0.1540 | 0.1380 | 0.3940 | 0.1960
| 0.1970 | 0.1510 | 0.7720 | 0.2500
-----
| AREA | QPEAK | TPEAK | R.V.
| 0.0000 | 0.0000 | 0.2600 | 0.1600
| 0.1050 | 0.1200 | 0.3330 | 0.1830
| 0.1540 | 0.1380 | 0.3940 | 0.1960
| 0.1970 | 0.1510 | 0.7720 | 0.2500
-----

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```

INFLOW : ID= 2 ( 1201) (ha) (cms) (hrs) (mm)
OUTFLOW: ID= 1 ( 1211) 5.380 0.962 1.33 34.85
5.380 0.105 2.08 34.79
-----

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.89
TIME SHIFT OF PEAK FLOW (min)= 45.00
MAXIMUM STORAGE USED (ha.m.)= 0.1197
-----

```

```

-----
| CALIB
| STANDHYD ( 1202) |
| ID= 1 DT= 5.0 min |
-----
| Area (ha)= 4.07
| Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
-----

```

```

-----
| IMPERVIOUS | PERVIOUS (i)
| (ha)= 3.30 | 0.77
| Dep. Storage (mm)= 1.00 | 5.00
| Average Slope (%)= 1.00 | 2.00
| Length (m)= 164.72 | 40.00
| Mannings n = 0.013 | 0.250
-----

```

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

```

-----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
| 0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
| 0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
| 0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
| 0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
| 0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
| 0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
| 0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
| 0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
| 0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
| 0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
| 0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
| 1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28
-----

```

```

Max.Eff.Inten.(mm/hr)= 77.19 23.27
over (min)= 5.00 10.00
Storage Coeff. (min)= 3.82 (ii) 8.18 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13
-----

```

```

-----
| PEAK FLOW (cms)= 0.67 0.04 *TOTALS*
| TIME TO PEAK (hrs)= 1.33 1.42 0.697 (iii)
| RUNOFF VOLUME (mm)= 37.96 14.01 33.46
| TOTAL RAINFALL (mm)= 38.96 38.96 38.96
-----

```

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RUNOFF COEFFICIENT = 0.97 0.36 0.86

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1212)| 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 | 0.2030 | 0.1210
| 0.0800 | 0.0860 | 0.2520 | 0.1320
| 0.1170 | 0.0990 | 0.2980 | 0.1420
| 0.1490 | 0.1080 | 0.5840 | 0.1820
-----
| AREA | QPEAK | TPEAK | R.V.
| (ha) | (cms) | (hrs) | (mm)
| INFLOW : ID= 2 ( 1202) | 4.070 | 0.697 | 1.33 | 33.46
| OUTFLOW: ID= 1 ( 1212) | 4.070 | 0.079 | 2.08 | 33.39
-----
| PEAK FLOW REDUCTION [Qout/Qin](%)= 11.39
| TIME SHIFT OF PEAK FLOW (min)= 45.00
| MAXIMUM STORAGE USED (ha.m.)= 0.0855
-----

```

```

-----
| ADD HYD ( 1213)|
| 1 + 2 = 3 |
-----
| ID1= 1 ( 1211): | 5.38 | 0.105 | 2.08 | 34.79
| + ID2= 2 ( 1212): | 4.07 | 0.079 | 2.08 | 33.39
|=====
| ID = 3 ( 1213): | 9.45 | 0.184 | 2.08 | 34.19
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1203)| Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10
-----
| IMPERVIOUS | PERVIOUS (i)
| Surface Area (ha)= 0.43 1.11
-----

```

-17-

Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 101.32 40.00
Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
| 0.083 2.65 | 1.083 21.73 | 2.083 6.45 | 3.08 3.16
| 0.167 2.65 | 1.167 21.73 | 2.167 6.45 | 3.17 3.16
| 0.250 3.04 | 1.250 77.19 | 2.250 5.45 | 3.25 2.93
| 0.333 3.04 | 1.333 77.19 | 2.333 5.45 | 3.33 2.93
| 0.417 3.61 | 1.417 28.29 | 2.417 4.74 | 3.42 2.73
| 0.500 3.61 | 1.500 28.29 | 2.500 4.74 | 3.50 2.73
| 0.583 4.46 | 1.583 15.20 | 2.583 4.20 | 3.58 2.56
| 0.667 4.46 | 1.667 15.20 | 2.667 4.20 | 3.67 2.56
| 0.750 5.95 | 1.750 10.40 | 2.750 3.78 | 3.75 2.42
| 0.833 5.95 | 1.833 10.40 | 2.833 3.78 | 3.83 2.42
| 0.917 9.16 | 1.917 7.94 | 2.917 3.44 | 3.92 2.28
| 1.000 9.16 | 2.000 7.94 | 3.000 3.44 | 4.00 2.28
-----
| Max.Eff.Inten.(mm/hr)= 77.19 19.85
| over (min)= 5.00 20.00
| Storage Coeff. (min)= 2.86 (ii) 16.33 (iii)
| Unit Hyd. Tpeak (min)= 5.00 20.00
| Unit Hyd. peak (cms)= 0.28 0.06
-----
| PEAK FLOW (cms)= 0.09 0.04 0.101 (iii)
| TIME TO PEAK (hrs)= 1.33 1.58 1.33
| RUNOFF VOLUME (mm)= 37.96 14.01 20.73
| TOTAL RAINFALL (mm)= 38.96 38.96 38.96
| RUNOFF COEFFICIENT = 0.97 0.36 0.53
-----

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1214)|
| 1 + 2 = 3 |
-----
| AREA | QPEAK | TPEAK | R.V.
| (ha) | (cms) | (hrs) | (mm)
|=====

```

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```

ID1= 1 ( 1203): 1.54 0.101 1.33 20.73
+ ID2= 2 ( 1213): 9.45 0.184 2.08 34.19
|=====
ID = 3 ( 1214): 10.99 0.228 1.67 32.30
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLL
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 Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\ab08b5
c7-fe5a-4b83-8550-fcbd08134826\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\ab08b5
c7-fe5a-4b83-8550-fcbd08134826\scenar

DATE: 05-28-2026 TIME: 11:05:55

USER:

COMMENTS: _____

-19-

** SIMULATION : Run1.2 5-yr 4 hr Chicago (Wel **

```

-----
| CHICAGO STORM | IDF curve parameters: A= 830.000
| Ptotal= 45.86 mm | B= 7.300
| C= 0.777
| used in: INTENSITY = A / (t + B)^C
| Duration of storm = 4.00 hrs
| Storm time step = 10.00 min
| Time to peak ratio = 0.33
-----

```

```

| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
| 0.00 3.23 | 1.00 25.08 | 2.00 7.66 | 3.00 3.84
| 0.17 3.70 | 1.17 90.60 | 2.17 6.51 | 3.17 3.57
| 0.33 4.36 | 1.33 32.56 | 2.33 5.68 | 3.33 3.33
| 0.50 5.36 | 1.50 17.63 | 2.50 5.06 | 3.50 3.13
| 0.67 7.08 | 1.67 12.18 | 2.67 4.56 | 3.67 2.95
| 0.83 10.76 | 1.83 9.37 | 2.83 4.17 | 3.83 2.80
-----

```

```

-----
| CALIB
| NASHYD ( 1305)| Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.75
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
| 0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
| 0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
| 0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
| 0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
| 0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
| 0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
| 0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
| 0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
| 0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
| 0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
| 0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
| 1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80
-----

```

Unit Hyd Qpeak (cms)= 0.153

-20-

PEAK FLOW (cms)= 0.063 (i)
 TIME TO PEAK (hrs)= 2.333
 RUNOFF VOLUME (mm)= 16.964
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

CALIB			
NASHYD (0304)	Area (ha)= 2.79	Curve Number (CN)= 84.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.50	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.47		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.079 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 16.964
 TOTAL RAINFALL (mm)= 45.861
 RUNOFF COEFFICIENT = 0.370

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

ADD HYD (2318)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1305):	3.00	0.063	2.33	16.96
+ ID2= 2 (0304):	2.79	0.079	1.92	16.96
ID = 3 (2318):	5.79	0.136	2.08	16.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0305)	Area (ha)= 2.15		
ID= 1 DT= 5.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95
0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max.Eff.Inten.(mm/hr)= 90.60 27.26
 over (min)= 5.00 15.00
 Storage Coeff. (min)= 2.96 (ii) 14.83 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.28 0.08

			TOTALS
PEAK FLOW (cms)=	0.13	0.08	0.167 (iii)
TIME TO PEAK (hrs)=	1.33	1.50	1.33
RUNOFF VOLUME (mm)=	38.36	18.71	23.62
TOTAL RAINFALL (mm)=	45.86	45.86	45.86
RUNOFF COEFFICIENT =	0.84	0.41	0.51

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2319)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2318):	5.79	0.136	2.08	16.96
+ ID2= 2 (0305):	2.15	0.167	1.33	23.62
ID = 3 (2319):	7.94	0.198	1.83	18.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1301)	Area (ha)= 3.68		
ID= 1 DT= 5.0 min	Total Imp(%)= 85.30	Dir. Conn.(%)= 85.30	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.14	0.54
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	156.63	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.23	1.083	25.08	2.083	7.66	3.08	3.84
0.167	3.23	1.167	25.08	2.167	7.66	3.17	3.84
0.250	3.70	1.250	90.60	2.250	6.51	3.25	3.57
0.333	3.70	1.333	90.60	2.333	6.51	3.33	3.57
0.417	4.36	1.417	32.56	2.417	5.68	3.42	3.33
0.500	4.36	1.500	32.56	2.500	5.68	3.50	3.33
0.583	5.36	1.583	17.63	2.583	5.06	3.58	3.13
0.667	5.36	1.667	17.63	2.667	5.06	3.67	3.13
0.750	7.08	1.750	12.18	2.750	4.56	3.75	2.95
0.833	7.08	1.833	12.18	2.833	4.56	3.83	2.95

0.917	10.76	1.917	9.37	2.917	4.17	3.92	2.80
1.000	10.76	2.000	9.37	3.000	4.17	4.00	2.80

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min)= 5.00 10.00
 Storage Coeff. (min)= 3.48 (ii) 7.11 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.26 0.14

			TOTALS
PEAK FLOW (cms)=	0.76	0.04	0.786 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	44.86	18.71	41.02
TOTAL RAINFALL (mm)=	45.86	45.86	45.86
RUNOFF COEFFICIENT =	0.98	0.41	0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2311)			
IN= 2--> OUT= 1			
DT= 5.0 min			
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1470	0.1190
0.0660	0.0830	0.1780	0.1310
0.0910	0.0960	0.2070	0.1410
0.1130	0.1060	0.3250	0.1860

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (1301)	3.680	0.786	1.33	41.02
OUTFLOW: ID= 1 (2311)	3.680	0.090	2.00	40.93

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.47
 TIME SHIFT OF PEAK FLOW (min)= 40.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0956

CALIB			
STANDHYD (1302)	Area (ha)= 2.86		
ID= 1 DT= 5.0 min	Total Imp(%)= 86.10	Dir. Conn.(%)= 86.10	

	IMPERVIOUS	PERVIOUS (i)
--	------------	--------------

Surface Area (ha)= 2.46 0.40
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 138.08 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.23 1.083 25.08 2.083 7.66 3.08 3.84
0.167 3.23 1.167 25.08 2.167 7.66 3.17 3.84
0.250 3.70 1.250 90.60 2.250 6.51 3.25 3.57
0.333 3.70 1.333 90.60 2.333 6.51 3.33 3.57
0.417 4.36 1.417 32.56 2.417 5.68 3.42 3.33
0.500 4.36 1.500 32.56 2.500 5.68 3.50 3.33
0.583 5.36 1.583 17.63 2.583 5.06 3.58 3.13
0.667 5.36 1.667 17.63 2.667 5.06 3.67 3.13
0.750 7.08 1.750 12.18 2.750 4.56 3.75 2.95
0.833 7.08 1.833 12.18 2.833 4.56 3.83 2.95
0.917 10.76 1.917 9.37 2.917 4.17 3.92 2.80
1.000 10.76 2.000 9.37 3.000 4.17 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min)= 5.00 10.00
 Storage Coeff. (min)= 3.23 (ii) 6.77 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.27 0.14

PEAK FLOW (cms)= 0.60 0.03
 TIME TO PEAK (hrs)= 1.33 1.42
 RUNOFF VOLUME (mm)= 44.86 18.71
 TOTAL RAINFALL (mm)= 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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( 2312) | 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 | 0.1140 0.0930
0.0510 0.0650 | 0.1380 0.1020
0.0710 0.0750 | 0.1610 0.1100
0.0880 0.0830 | 0.2520 0.1450

```

AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (1302) 2.860 0.621 1.33 41.22
 OUTFLOW: ID= 1 (2312) 2.860 0.071 2.00 41.11

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.37
 TIME SHIFT OF PEAK FLOW (min)= 40.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0748

```

-----
| ADD HYD ( 2315) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2311): 3.68 0.090 2.00 40.93
+ ID2= 2 ( 2312): 2.86 0.071 2.00 41.11
=====
ID = 3 ( 2315): 6.54 0.161 2.00 41.01

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1303) | Area (ha)= 3.47
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
-----

```

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 2.99 0.48
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 152.10 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.23 1.083 25.08 2.083 7.66 3.08 3.84
0.167 3.23 1.167 25.08 2.167 7.66 3.17 3.84
0.250 3.70 1.250 90.60 2.250 6.51 3.25 3.57
0.333 3.70 1.333 90.60 2.333 6.51 3.33 3.57

```

```

0.417 4.36 1.417 32.56 2.417 5.68 3.42 3.33
0.500 4.36 1.500 32.56 2.500 5.68 3.50 3.33
0.583 5.36 1.583 17.63 2.583 5.06 3.58 3.13
0.667 5.36 1.667 17.63 2.667 5.06 3.67 3.13
0.750 7.08 1.750 12.18 2.750 4.56 3.75 2.95
0.833 7.08 1.833 12.18 2.833 4.56 3.83 2.95
0.917 10.76 1.917 9.37 2.917 4.17 3.92 2.80
1.000 10.76 2.000 9.37 3.000 4.17 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min)= 5.00 10.00
 Storage Coeff. (min)= 3.42 (ii) 6.93 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.72 0.03
 TIME TO PEAK (hrs)= 1.33 1.42
 RUNOFF VOLUME (mm)= 44.86 18.71
 TOTAL RAINFALL (mm)= 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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( 2313) | 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 | 0.1300 0.1130
0.0620 0.0790 | 0.1600 0.1240
0.0860 0.0910 | 0.1950 0.1340
0.1000 0.1010 | 0.3000 0.1700

```

AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (1303) 3.470 0.750 1.33 41.28
 OUTFLOW: ID= 1 (2313) 3.470 0.086 2.00 41.19

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.44
 TIME SHIFT OF PEAK FLOW (min)= 40.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0909

```

-----
| ADD HYD ( 2316) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2313): 3.47 0.086 2.00 41.19
+ ID2= 2 ( 2315): 6.54 0.161 2.00 41.01
=====
ID = 3 ( 2316): 10.01 0.246 2.00 41.07

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1304) | Area (ha)= 3.93
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----

```

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 3.54 0.39
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 161.86 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.23 1.083 25.08 2.083 7.66 3.08 3.84
0.167 3.23 1.167 25.08 2.167 7.66 3.17 3.84
0.250 3.70 1.250 90.60 2.250 6.51 3.25 3.57
0.333 3.70 1.333 90.60 2.333 6.51 3.33 3.57
0.417 4.36 1.417 32.56 2.417 5.68 3.42 3.33
0.500 4.36 1.500 32.56 2.500 5.68 3.50 3.33
0.583 5.36 1.583 17.63 2.583 5.06 3.58 3.13
0.667 5.36 1.667 17.63 2.667 5.06 3.67 3.13
0.750 7.08 1.750 12.18 2.750 4.56 3.75 2.95
0.833 7.08 1.833 12.18 2.833 4.56 3.83 2.95
0.917 10.76 1.917 9.37 2.917 4.17 3.92 2.80
1.000 10.76 2.000 9.37 3.000 4.17 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min)= 5.00 10.00
 Storage Coeff. (min)= 3.55 (ii) 6.60 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 0.85 0.03
 TOTALS 0.873 (iii)

```

TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 42.25
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.92

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2314) | 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 | 0.1570 | 0.1320 |
| 0.0700 | 0.0930 | 0.1900 | 0.1450 |
| 0.0970 | 0.1070 | 0.2210 | 0.1560 |
| 0.1210 | 0.1170 | 0.3470 | 0.2040 |
-----
| AREA | QPEAK | TPEAK | R.V. | |
| (ha) | (cms) | (hrs) | (mm) |
| INFLOW : ID= 2 ( 1304) | 3.930 | 0.873 | 1.33 | 42.25 |
| OUTFLOW: ID= 1 ( 2314) | 3.930 | 0.096 | 2.00 | 42.16 |
-----
| PEAK FLOW REDUCTION [Qout/Qin](%)= 11.02 |
| TIME SHIFT OF PEAK FLOW (min)= 40.00 |
| MAXIMUM STORAGE USED (ha.m.)= 0.1066 |
-----

```

```

-----
| ADD HYD ( 2317) |
| 1 + 2 = 3 |
-----
| ID1= 1 ( 2314): | 3.93 | 0.096 | 2.00 | 42.16 |
| + ID2= 2 ( 2316): | 10.01 | 0.246 | 2.00 | 41.07 |
| ===== |
| ID = 3 ( 2317): | 13.94 | 0.343 | 2.00 | 41.38 |
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
| AREA | QPEAK | TPEAK | R.V. |

```

```

-----
| (ha) | (cms) | (hrs) | (mm) | |
| ID1= 1 ( 2317): | 13.94 | 0.343 | 2.00 | 41.38 |
| + ID2= 2 ( 2319): | 7.94 | 0.198 | 1.83 | 18.77 |
| ===== |
| ID = 3 ( 2320): | 21.88 | 0.536 | 1.92 | 33.17 |
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1101) | Area (ha)= 3.22
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----

```

```

-----
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 2.90 | 0.32 |
| Dep. Storage (mm)= 1.00 | 5.00 |
| Average Slope (%)= 1.00 | 2.00 |
| Length (m)= 146.52 | 40.00 |
| Mannings n = 0.013 | 0.250 |
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME | RAIN | TIME | RAIN | TIME | RAIN | TIME | RAIN |
| hrs | mm/hr | hrs | mm/hr | hrs | mm/hr | hrs | mm/hr |
| 0.083 | 3.23 | 1.083 | 25.08 | 2.083 | 7.66 | 3.08 | 3.84 |
| 0.167 | 3.23 | 1.167 | 25.08 | 2.167 | 7.66 | 3.17 | 3.84 |
| 0.250 | 3.70 | 1.250 | 90.60 | 2.250 | 6.51 | 3.25 | 3.57 |
| 0.333 | 3.70 | 1.333 | 90.60 | 2.333 | 6.51 | 3.33 | 3.57 |
| 0.417 | 4.36 | 1.417 | 32.56 | 2.417 | 5.68 | 3.42 | 3.33 |
| 0.500 | 4.36 | 1.500 | 32.56 | 2.500 | 5.68 | 3.50 | 3.33 |
| 0.583 | 5.36 | 1.583 | 17.63 | 2.583 | 5.06 | 3.58 | 3.13 |
| 0.667 | 5.36 | 1.667 | 17.63 | 2.667 | 5.06 | 3.67 | 3.13 |
| 0.750 | 7.08 | 1.750 | 12.18 | 2.750 | 4.56 | 3.75 | 2.95 |
| 0.833 | 7.08 | 1.833 | 12.18 | 2.833 | 4.56 | 3.83 | 2.95 |
| 0.917 | 10.76 | 1.917 | 9.37 | 2.917 | 4.17 | 3.92 | 2.80 |
| 1.000 | 10.76 | 2.000 | 9.37 | 3.000 | 4.17 | 4.00 | 2.80 |
-----

```

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
over (min) 5.00 10.00
Storage Coeff. (min)= 3.34 (ii) 6.39 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.15
-----

```

```

PEAK FLOW (cms)= 0.70 0.02 0.721 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 42.24
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.92
-----

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1111) | 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 | 0.2210 | 0.0950 |
| 0.0760 | 0.0700 | 0.2760 | 0.1030 |
| 0.1230 | 0.0800 | 0.3270 | 0.1100 |
| 0.1610 | 0.0860 | 0.6360 | 0.1400 |
-----
| AREA | QPEAK | TPEAK | R.V. | |
| (ha) | (cms) | (hrs) | (mm) |
| INFLOW : ID= 2 ( 1101) | 3.220 | 0.721 | 1.33 | 42.24 |
| OUTFLOW: ID= 1 ( 1111) | 3.220 | 0.119 | 1.75 | 42.17 |
-----

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.53
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.0792
-----

```

```

-----
| CALIB |
| STANDHYD ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
-----

```

```

-----
| IMPERVIOUS | PERVIOUS (i) |
| Surface Area (ha)= 0.51 | 1.56 |
| Dep. Storage (mm)= 1.00 | 5.00 |
| Average Slope (%)= 1.00 | 2.00 |
| Length (m)= 117.47 | 40.00 |
| Mannings n = 0.013 | 0.250 |
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
| TIME | RAIN | TIME | RAIN | TIME | RAIN | TIME | RAIN |
| hrs | mm/hr | hrs | mm/hr | hrs | mm/hr | hrs | mm/hr |
| 0.083 | 3.23 | 1.083 | 25.08 | 2.083 | 7.66 | 3.08 | 3.84 |
| 0.167 | 3.23 | 1.167 | 25.08 | 2.167 | 7.66 | 3.17 | 3.84 |
-----

```

```

0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80
-----

```

```

Max.Eff.Inten.(mm/hr)= 90.60 27.26
over (min) 5.00 15.00
Storage Coeff. (min)= 2.93 (ii) 14.80 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.08
-----

```

```

PEAK FLOW (cms)= 0.12 0.07 0.158 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 44.86 18.71 25.11
TOTAL RAINFALL (mm)= 45.86 45.86 45.86
RUNOFF COEFFICIENT = 0.98 0.41 0.55
-----

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
| ID1= 1 ( 1102): | 2.07 | 0.158 | 1.33 | 25.11 |
| + ID2= 2 ( 1111): | 3.22 | 0.119 | 1.75 | 42.17 |
| ===== |
| ID = 3 ( 1112): | 5.29 | 0.212 | 1.33 | 35.50 |
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
-----

```

```

-----
| IMPERVIOUS | PERVIOUS (i) |

```

Surface Area (ha)= 4.68 0.70
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 189.38 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.90 (ii) 7.33 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 1.11 0.05
 TIME TO PEAK (hrs)= 1.33 1.42
 RUNOFF VOLUME (mm)= 44.86 18.71
 TOTAL RAINFALL (mm)= 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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( 1211) | 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 | 0.2600 0.1600
0.1050 0.1200 | 0.3330 0.1830
0.1540 0.1380 | 0.3940 0.1960
0.1970 0.1510 | 0.7720 0.2500

```

AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (1201) 5.380 1.148 1.33 41.46
 OUTFLOW: ID= 1 (1211) 5.380 0.152 1.92 41.41

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.27
 TIME SHIFT OF PEAK FLOW (min)= 35.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1374

```

-----
| CALIB |
| STANDHYD ( 1202) |
| ID= 1 DT= 5.0 min |
| Area (ha)= 4.07
| Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

```

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 3.30 0.77
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 164.72 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 32.45
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.59 (ii) 7.67 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.26 0.13
 PEAK FLOW (cms)= 0.79 0.05
 TIME TO PEAK (hrs)= 1.33 1.42
 RUNOFF VOLUME (mm)= 44.86 18.71
 TOTAL RAINFALL (mm)= 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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( 1212) | 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 | 0.2030 0.1210
0.0800 0.0860 | 0.2520 0.1320
0.1170 0.0990 | 0.2980 0.1420
0.1490 0.1080 | 0.5840 0.1820

```

AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (1202) 4.070 0.833 1.33 39.94
 OUTFLOW: ID= 1 (1212) 4.070 0.115 1.92 39.88

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.83
 TIME SHIFT OF PEAK FLOW (min)= 35.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0985

```

-----
| ADD HYD ( 1213) |
| 1 + 2 = 3 |
| ID1= 1 ( 1211): 5.38 0.152 1.92 41.41
| + ID2= 2 ( 1212): 4.07 0.115 1.92 39.88
| ID= 3 ( 1213): 9.45 0.268 1.92 40.75

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1203) |
| ID= 1 DT= 5.0 min |
| Area (ha)= 1.54
| Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10

```

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.43 1.11
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 101.32 40.00
 Mannings n = 0.013 0.250

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.23 | 1.083 25.08 | 2.083 7.66 | 3.08 3.84
0.167 3.23 | 1.167 25.08 | 2.167 7.66 | 3.17 3.84
0.250 3.70 | 1.250 90.60 | 2.250 6.51 | 3.25 3.57
0.333 3.70 | 1.333 90.60 | 2.333 6.51 | 3.33 3.57
0.417 4.36 | 1.417 32.56 | 2.417 5.68 | 3.42 3.33
0.500 4.36 | 1.500 32.56 | 2.500 5.68 | 3.50 3.33
0.583 5.36 | 1.583 17.63 | 2.583 5.06 | 3.58 3.13
0.667 5.36 | 1.667 17.63 | 2.667 5.06 | 3.67 3.13
0.750 7.08 | 1.750 12.18 | 2.750 4.56 | 3.75 2.95
0.833 7.08 | 1.833 12.18 | 2.833 4.56 | 3.83 2.95
0.917 10.76 | 1.917 9.37 | 2.917 4.17 | 3.92 2.80
1.000 10.76 | 2.000 9.37 | 3.000 4.17 | 4.00 2.80

```

Max.Eff.Inten.(mm/hr)= 90.60 27.26
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.68 (ii) 14.55 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.29 0.08

PEAK FLOW (cms)= 0.11 0.05
 TIME TO PEAK (hrs)= 1.33 1.50
 RUNOFF VOLUME (mm)= 44.86 18.71
 TOTAL RAINFALL (mm)= 45.86 45.86
 RUNOFF COEFFICIENT = 0.98 0.41

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 1214) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1203):    AREA   QPEAK   TPEAK   R.V.
                  (ha)   (cms)   (hrs)   (mm)
+ ID2= 2 ( 1213):    1.54   0.131  1.33   26.05
                  9.45   0.268  1.92   40.75
=====
ID = 3 ( 1214):    10.99   0.319   1.83   38.69
=====

```

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   A   A   A   L
V   V   I   SS      U   U   A   A   L
V   V   I   SSSSS   UUUUU   A   A   LLLLL
V   V   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   Y   M   M   0   0
000   T   T   H   H   Y   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\voind.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\VH5\F67fe709-6b28-4175-8afc-bd306d6d118d\F571d2
fe-5f0d-4c3a-9b1a-cb2adc2e522\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\VH5\F67fe709-6b28-4175-8afc-bd306d6d118d\F571d2
fe-5f0d-4c3a-9b1a-cb2adc2e522\scenar

DATE: 05-28-2026

TIME: 11:05:57

USER:

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COMMENTS: _____

```

-----
** SIMULATION : Run1.3 10-yr 4 hr Chicago (We **
-----

```

```

-----
| CHICAGO STORM |   IDF curve parameters: A= 860.000
| Ptotal= 51.46 mm |   B= 6.500
|                   |   C= 0.763
|                   |   used in: INTENSITY = A / (t + B)^C
-----

```

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

TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr
0.00	3.77	1.00	27.48	2.00	8.69	3.00	4.46	
0.17	4.30	1.17	101.29	2.17	7.43	3.17	4.15	
0.33	5.04	1.33	35.55	2.33	6.51	3.33	3.89	
0.50	6.16	1.50	19.45	2.50	5.82	3.50	3.66	
0.67	8.05	1.67	13.59	2.67	5.27	3.67	3.46	
0.83	12.06	1.83	10.55	2.83	4.83	3.83	3.28	

```

-----
| CALIB |
| NASHYD ( 1305) |   Area (ha)= 3.00   Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min |   Ia (mm)= 7.50   # of Linear Res.(N)= 3.00
|                   |   U.H. Tp(hrs)= 0.75
-----

```

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

```

-----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
-----

```

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0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.078 (i)
TIME TO PEAK (hrs)= 2.333
RUNOFF VOLUME (mm)= 20.925
TOTAL RAINFALL (mm)= 51.457
RUNOFF COEFFICIENT = 0.407

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

```

-----
| CALIB |
| NASHYD ( 0304) |   Area (ha)= 2.79   Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min |   Ia (mm)= 7.50   # of Linear Res.(N)= 3.00
|                   |   U.H. Tp(hrs)= 0.47
-----

```

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

```

-----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28
-----

```

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.098 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 20.924
TOTAL RAINFALL (mm)= 51.457
RUNOFF COEFFICIENT = 0.407

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

```

-----
| ADD HYD ( 2318) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1305):    AREA   QPEAK   TPEAK   R.V.
                  (ha)   (cms)   (hrs)   (mm)
+ ID2= 2 ( 0304):    3.00   0.078  2.33   20.92
                  2.79   0.098  1.92   20.92
=====
ID = 3 ( 2318):    5.79   0.167   2.08   20.92
=====

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0305) |   Area (ha)= 2.15
| ID= 1 DT= 5.0 min |   Total Imp(%)= 25.00   Dir. Conn.(%)= 25.00
|                   |
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n	0.013	0.250

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

```

-----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28
-----

```

Max.Eff.Inten.(mm/hr)= 101.29 33.56
over (min) 5.00 15.00
Storage Coeff. (min)= 2.83 (ii) 13.75 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00

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```

Unit Hyd. peak (cms)=      0.28      0.08

PEAK FLOW (cms)=          0.15      0.10      0.195 (iii)
TIME TO PEAK (hrs)=        1.33      1.50      1.33
RUNOFF VOLUME (mm)=       43.96     22.76     28.05
TOTAL RAINFALL (mm)=      51.46     51.46     51.46
RUNOFF COEFFICIENT =       0.85      0.44      0.55

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2319) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2318):   5.79  0.167  2.08  20.92
+ ID2= 2 ( 0305):   2.15  0.195  1.33  28.05
-----
ID = 3 ( 2319):   7.94  0.242  1.83  22.85

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1301) |
| ID= 1 DT= 5.0 min |
-----
                IMPERVIOUS    PERVIOUS (i)
Surface Area (ha)=      3.14      0.54
Dep. Storage (mm)=      1.00      5.00
Average Slope (%)=      1.00      2.00
Length (m)=      156.63     40.00
Mannings n =       0.013     0.250

```

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

```

-----
                ---- TRANSFORMED HYETOGRAPH ----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15

```

```

0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

```

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) = 5.00 10.00
Storage Coeff. (min)= 3.33 (ii) 6.80 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

```

```

-----
PEAK FLOW (cms)=      0.85      0.05      0.888 (iii)
TIME TO PEAK (hrs)=      1.33      1.42      1.33
RUNOFF VOLUME (mm)=     50.46     22.76     46.38
TOTAL RAINFALL (mm)=     51.46     51.46     51.46
RUNOFF COEFFICIENT =      0.98      0.44      0.90

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2311) |
| IN= 2--> OUT= 1 |
| DT= 5.0 min |
-----
                OVERFLOW IS OFF
                OUTFLOW STORAGE | OUTFLOW STORAGE
                (cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.1470 0.1190
0.0660 0.0830 | 0.1780 0.1310
0.0910 0.0960 | 0.2070 0.1410
0.1130 0.1060 | 0.3250 0.1860
-----
                AREA QPEAK TPEAK R.V.
                (ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1301) 3.680 0.888 1.33 46.38
OUTFLOW: ID= 1 ( 2311) 3.680 0.111 1.92 46.30
-----
PEAK FLOW REDUCTION [Qout/Qin](%)= 12.52
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 0.1052

```

```

-----
| CALIB |
| STANDHYD ( 1302) |
| ID= 1 DT= 5.0 min |
-----
                IMPERVIOUS    PERVIOUS (i)
Surface Area (ha)=      2.46      0.40
Dep. Storage (mm)=      1.00      5.00
Average Slope (%)=      1.00      2.00
Length (m)=      138.08     40.00
Mannings n =       0.013     0.250

```

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

```

-----
                ---- TRANSFORMED HYETOGRAPH ----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

```

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) = 5.00 10.00
Storage Coeff. (min)= 3.08 (ii) 6.47 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

```

```

-----
PEAK FLOW (cms)=      0.67      0.03      0.701 (iii)
TIME TO PEAK (hrs)=      1.33      1.42      1.33
RUNOFF VOLUME (mm)=     50.46     22.76     46.61
TOTAL RAINFALL (mm)=     51.46     51.46     51.46
RUNOFF COEFFICIENT =      0.98      0.44      0.91

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2312) |
| IN= 2--> OUT= 1 |
| DT= 5.0 min |
-----
                OVERFLOW IS OFF
                OUTFLOW STORAGE | OUTFLOW STORAGE
                (cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.1140 0.0930
0.0510 0.0650 | 0.1380 0.1020
0.0710 0.0750 | 0.1610 0.1190
0.0880 0.0830 | 0.2520 0.1450
-----
                AREA QPEAK TPEAK R.V.
                (ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1302) 2.860 0.701 1.33 46.61
OUTFLOW: ID= 1 ( 2312) 2.860 0.087 1.92 46.49
-----
PEAK FLOW REDUCTION [Qout/Qin](%)= 12.35
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 0.0823

```

```

-----
| ADD HYD ( 2315) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2311):   3.68  0.111  1.92  46.30
+ ID2= 2 ( 2312):   2.86  0.087  1.92  46.49
-----
ID = 3 ( 2315):   6.54  0.198  1.92  46.38

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1303) |
| ID= 1 DT= 5.0 min |
-----
                AREA (ha)=      3.47
Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
-----
                IMPERVIOUS    PERVIOUS (i)
Surface Area (ha)=      2.99      0.48
Dep. Storage (mm)=      1.00      5.00
Average Slope (%)=      1.00      2.00
Length (m)=      152.10     40.00
Mannings n =       0.013     0.250

```

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46		
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46		
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15		
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15		
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89		
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89		
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66		
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66		
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46		
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46		
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28		
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28		

Max.Eff.Inten.(mm/hr)=	101.29	40.39
over (min)	5.00	10.00
Storage Coeff. (min)=	3.27 (ii)	6.63 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.27	0.14

PEAK FLOW (cms)=	0.81	0.04	0.846 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	50.46	22.76	46.66
TOTAL RAINFALL (mm)=	51.46	51.46	51.46
RUNOFF COEFFICIENT =	0.98	0.44	0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2313)		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	0.1380	0.1130
		0.0620	0.0790	0.1680	0.1240
		0.0860	0.0910	0.1950	0.1340
		0.1060	0.1010	0.3060	0.1760
			AREA	QPEAK	TPEAK
			(ha)	(cms)	(hrs)
			3.470	0.846	1.33
					R.V.
					(mm)
INFLOW : ID= 2 (1303)					46.66

-45-

OUTFLOW: ID= 1 (2313)	3.470	0.104	1.92	46.57
------------------------	-------	-------	------	-------

PEAK FLOW REDUCTION [Qout/Qin](%)=	12.31
TIME SHIFT OF PEAK FLOW (min)=	35.00
MAXIMUM STORAGE USED (ha.m.)=	0.1001

ADD HYD (2316)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2313):	3.47	0.104	1.92	46.57
+ ID2= 2 (2315):	6.54	0.198	1.92	46.38
ID = 3 (2316):	10.01	0.302	1.92	46.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	3.93
STANDHYD (1304)	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00
ID= 1 DT= 5.0 min			

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.54 0.39
Dep. Storage (mm)=	1.00 5.00
Average Slope (%)=	1.00 2.00
Length (m)=	161.86 40.00
Mannings n =	0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46		
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46		
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15		
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15		
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89		
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89		
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66		
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66		
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46		
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46		
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28		
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28		

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Max.Eff.Inten.(mm/hr)=	101.29	40.39
over (min)	5.00	10.00
Storage Coeff. (min)=	3.39 (ii)	6.31 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.26	0.15

PEAK FLOW (cms)=	0.96	0.03	0.985 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	50.46	22.76	47.69
TOTAL RAINFALL (mm)=	51.46	51.46	51.46
RUNOFF COEFFICIENT =	0.98	0.44	0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2314)		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		0.1570	0.1320
	0.0700	0.0930		0.1900	0.1450
	0.0970	0.1070		0.2210	0.1560
	0.1210	0.1170		0.3470	0.2040
		AREA		QPEAK	TPEAK
		(ha)		(cms)	(hrs)
					R.V.
					(mm)
INFLOW : ID= 2 (1304)	3.930	0.985		1.33	47.69
OUTFLOW: ID= 1 (2314)	3.930	0.121		1.92	47.60

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.25
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 0.1168

ADD HYD (2317)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2314):	3.93	0.121	1.92	47.60
+ ID2= 2 (2316):	10.01	0.302	1.92	46.45
ID = 3 (2317):	13.94	0.422	1.92	46.77

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2320)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2317):	13.94	0.422	1.92	46.77
+ ID2= 2 (2319):	7.94	0.242	1.83	22.85
ID = 3 (2320):	21.88	0.661	1.83	38.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	3.22
STANDHYD (1101)	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00
ID= 1 DT= 5.0 min			

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.90 0.32
Dep. Storage (mm)=	1.00 5.00
Average Slope (%)=	1.00 2.00
Length (m)=	146.52 40.00
Mannings n =	0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.77	1.083	27.48	2.083	8.69	3.08	4.46		
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46		
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15		
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15		
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89		
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89		
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66		
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66		
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46		
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46		
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28		
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28		

Max.Eff.Inten.(mm/hr)=	101.29	40.39
over (min)	5.00	10.00
Storage Coeff. (min)=	3.20 (ii)	6.11 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00

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```

Unit Hyd. peak (cms)=      0.27      0.15

PEAK FLOW (cms)=      0.79      0.03      0.812 (iii)
TIME TO PEAK (hrs)=      1.33      1.42      1.33
RUNOFF VOLUME (mm)=      50.46      22.76      47.69
TOTAL RAINFALL (mm)=      51.46      51.46      51.46
RUNOFF COEFFICIENT =      0.98      0.44      0.93

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1111) | 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 | 0.2210 | 0.0950 |
| 0.0760 | 0.0700 | 0.2760 | 0.1030 |
| 0.1230 | 0.0800 | 0.3270 | 0.1100 |
| 0.1610 | 0.0860 | 0.6360 | 0.1400 |
-----
| AREA | QPEAK | TPEAK | R.V. |
| (ha) | (cms) | (hrs) | (mm) |
INFLOW : ID= 2 ( 1101) 3.220 0.812 1.33 47.69
OUTFLOW: ID= 1 ( 1111) 3.220 0.158 1.67 47.61

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.40
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.0858

```

```

-----
| CALIB |
| STANDHYD ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
-----
| IMPERVIOUS | PERVIOUS (i) |
| (ha) | (mm) | (mm) |
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

```

Max.Eff.Inten.(mm/hr)= 101.29 33.56
over (min) 5.00 15.00
Storage Coeff. (min)= 2.80 (ii) 13.72 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.08

```

```

-----
PEAK FLOW (cms)= 0.14 0.10 0.185 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 29.54
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.57

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
| AREA | QPEAK | TPEAK | R.V. |
| (ha) | (cms) | (hrs) | (mm) |
ID1= 1 ( 1102): 2.07 0.185 1.33 29.54
+ ID2= 2 ( 1111): 3.22 0.158 1.67 47.61
=====
ID = 3 ( 1112): 5.29 0.274 1.50 40.54

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
-----
| IMPERVIOUS | PERVIOUS (i) |
| (ha) | (mm) | (mm) |
Surface Area (ha)= 4.68 0.70
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 189.38 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46
0.833 8.05 | 1.833 13.59 | 2.833 5.27 | 3.83 3.46
0.917 12.06 | 1.917 10.55 | 2.917 4.83 | 3.92 3.28
1.000 12.06 | 2.000 10.55 | 3.000 4.83 | 4.00 3.28

```

```

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.73 (ii) 7.01 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.14

```

```

-----
PEAK FLOW (cms)= 1.25 0.06 1.297 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 46.86
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.91

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1211) | 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 | 0.2680 | 0.1680 |
| 0.1050 | 0.1200 | 0.3330 | 0.1830 |
| 0.1540 | 0.1380 | 0.3940 | 0.1960 |
| 0.1970 | 0.1510 | 0.7720 | 0.2500 |

```

```

INFLOW : ID= 2 ( 1201) 5.380 1.297 1.33 46.86
OUTFLOW: ID= 1 ( 1211) 5.380 0.194 1.83 46.80

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.94
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1502

```

```

-----
| CALIB |
| STANDHYD ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
-----
| IMPERVIOUS | PERVIOUS (i) |
| (ha) | (mm) | (mm) |
Surface Area (ha)= 3.30 0.77
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 164.72 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.77 | 1.083 27.48 | 2.083 8.69 | 3.08 4.46
0.167 3.77 | 1.167 27.48 | 2.167 8.69 | 3.17 4.46
0.250 4.30 | 1.250 101.29 | 2.250 7.43 | 3.25 4.15
0.333 4.30 | 1.333 101.29 | 2.333 7.43 | 3.33 4.15
0.417 5.04 | 1.417 35.55 | 2.417 6.51 | 3.42 3.89
0.500 5.04 | 1.500 35.55 | 2.500 6.51 | 3.50 3.89
0.583 6.16 | 1.583 19.45 | 2.583 5.82 | 3.58 3.66
0.667 6.16 | 1.667 19.45 | 2.667 5.82 | 3.67 3.66
0.750 8.05 | 1.750 13.59 | 2.750 5.27 | 3.75 3.46

```

0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Max.Eff.Inten.(mm/hr)= 101.29 40.39
over (min) 5.00 10.00
Storage Coeff. (min)= 3.43 (ii) 7.34 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.13

TOTALS
PEAK FLOW (cms)= 0.89 0.06 0.943 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 45.25
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.88

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1212) | 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	0.2030	0.1210
0.0000	0.0860	0.2520	0.1320
0.1170	0.0990	0.2980	0.1420
0.1490	0.1080	0.5840	0.1820

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
4.070	0.943	1.33	45.25
4.070	0.147	1.83	45.18

INFLOW : ID= 2 (1202)
OUTFLOW: ID= 1 (1212)

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.63
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1076

ADD HYD (1213) |
1 + 2 = 3 |

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.54	0.153	1.33	30.54
9.45	0.341	1.83	46.10

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ID1= 1 (1211):	5.38	0.194	1.83	46.80
+ ID2= 2 (1212):	4.07	0.147	1.83	45.18
=====				
ID = 3 (1213):	9.45	0.341	1.83	46.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (1203)	Area (ha)= 1.54
ID= 1 DT= 5.0 min	Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.43	1.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	101.32	40.00
Mannings n	0.013	0.250

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	3.77	1.083	27.48	2.083	8.69	3.08	4.46
0.167	3.77	1.167	27.48	2.167	8.69	3.17	4.46
0.250	4.30	1.250	101.29	2.250	7.43	3.25	4.15
0.333	4.30	1.333	101.29	2.333	7.43	3.33	4.15
0.417	5.04	1.417	35.55	2.417	6.51	3.42	3.89
0.500	5.04	1.500	35.55	2.500	6.51	3.50	3.89
0.583	6.16	1.583	19.45	2.583	5.82	3.58	3.66
0.667	6.16	1.667	19.45	2.667	5.82	3.67	3.66
0.750	8.05	1.750	13.59	2.750	5.27	3.75	3.46
0.833	8.05	1.833	13.59	2.833	5.27	3.83	3.46
0.917	12.06	1.917	10.55	2.917	4.83	3.92	3.28
1.000	12.06	2.000	10.55	3.000	4.83	4.00	3.28

Max.Eff.Inten.(mm/hr)= 101.29 33.56
over (min) 5.00 15.00
Storage Coeff. (min)= 2.56 (ii) 13.49 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.08

TOTALS
PEAK FLOW (cms)= 0.12 0.07 0.153 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 50.46 22.76 30.54
TOTAL RAINFALL (mm)= 51.46 51.46 51.46
RUNOFF COEFFICIENT = 0.98 0.44 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214) |
1 + 2 = 3 |

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.54	0.153	1.33	30.54
9.45	0.341	1.83	46.10

ID1= 1 (1203):
+ ID2= 2 (1213):
=====

ID = 3 (1214): 10.99 0.408 1.67 43.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS 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 SSSS 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\VO2\vo.in.dat

Output filename:
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Summary filename:
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c0-ee3c-48f9-8b62-91ad12c1a10c\scenar

-55-

DATE: 05-28-2026

TIME: 11:05:56

USER:

COMMENTS: _____

** SIMULATION : Run1.4 25-yr 4 hr Chicago (We **

CHICAGO STORM	IDF curve parameters: A= 900.000
Ptotal= 59.70 mm	B= 5.200
	C= 0.745

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

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	4.58	1.00	30.64	2.00	10.16	3.00	5.38
0.17	5.20	1.17	118.51	2.17	8.75	3.17	5.03
0.33	6.05	1.33	39.43	2.33	7.72	3.33	4.72
0.50	7.32	1.50	21.89	2.50	6.94	3.50	4.45
0.67	9.44	1.67	15.53	2.67	6.31	3.67	4.22
0.83	13.86	1.83	12.21	2.83	5.80	3.83	4.01

CALIB	
NASHYD (1305)	Area (ha)= 3.00 Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)=	0.75

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
0.00	4.58	1.00	30.64	2.00	10.16	3.00	5.38
0.17	5.20	1.17	118.51	2.17	8.75	3.17	5.03
0.33	6.05	1.33	39.43	2.33	7.72	3.33	4.72
0.50	7.32	1.50	21.89	2.50	6.94	3.50	4.45
0.67	9.44	1.67	15.53	2.67	6.31	3.67	4.22
0.83	13.86	1.83	12.21	2.83	5.80	3.83	4.01

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0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.101 (i)
 TIME TO PEAK (hrs)= 2.250
 RUNOFF VOLUME (mm)= 27.087
 TOTAL RAINFALL (mm)= 59.696
 RUNOFF COEFFICIENT = 0.454

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

CALIB			
NASHYD (0304)	Area (ha)=	2.79	Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.50	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)=	0.47	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Unit Hyd Qpeak (cms)= 0.227

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PEAK FLOW (cms)= 0.127 (i)
 TIME TO PEAK (hrs)= 1.917
 RUNOFF VOLUME (mm)= 27.086
 TOTAL RAINFALL (mm)= 59.696
 RUNOFF COEFFICIENT = 0.454

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

ADD HYD (2318)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (1305):	3.00	0.101	2.25	27.09
+ ID2= 2 (0304):	2.79	0.127	1.92	27.09
ID = 3 (2318):	5.79	0.217	2.00	27.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0305)	Area (ha)=	2.15	
ID= 1 DT= 5.0 min	Total Imp(%)=	25.00	Dir. Conn.(%)= 25.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22

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0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.66 (ii) 11.72 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.29 0.09

TOTALS
 PEAK FLOW (cms)= 0.17 0.14 0.244 (iii)
 TIME TO PEAK (hrs)= 1.33 1.50 1.33
 RUNOFF VOLUME (mm)= 52.20 29.02 34.81
 TOTAL RAINFALL (mm)= 59.70 59.70 59.70
 RUNOFF COEFFICIENT = 0.87 0.49 0.58

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (2319)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (2318):	5.79	0.217	2.00	27.09
+ ID2= 2 (0305):	2.15	0.244	1.33	34.81
ID = 3 (2319):	7.94	0.311	1.67	29.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1301)	Area (ha)=	3.68	
ID= 1 DT= 5.0 min	Total Imp(%)=	85.30	Dir. Conn.(%)= 85.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.14	0.54
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	156.63	40.00
Mannings n	0.013	0.250

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

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---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
 over (min) 5.00 10.00
 Storage Coeff. (min)= 3.12 (ii) 6.39 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.27 0.15

TOTALS
 PEAK FLOW (cms)= 1.00 0.06 1.053 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 58.70 29.02 54.33
 TOTAL RAINFALL (mm)= 59.70 59.70 59.70
 RUNOFF COEFFICIENT = 0.98 0.49 0.91

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2311)	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	0.1470	0.1190
0.0660	0.0830	0.1780	0.1310
0.0910	0.0960	0.2070	0.1410
0.1130	0.1060	0.3250	0.1860
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

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INFLOW : ID= 2 (1301) 3.680 1.053 1.33 54.33
 OUTFLOW: ID= 1 (2311) 3.680 0.146 1.83 54.25

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.87
 TIME SHIFT OF PEAK FLOW (min)= 30.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1188

CALIB
 STANDHYD (1302) Area (ha)= 2.86
 ID= 1 DT= 5.0 min Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

IMPERVIOUS PVIOUS (i)
 Surface Area (ha)= 2.46 0.40
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 138.08 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
 over (min)= 5.00 10.00
 Storage Coeff. (min)= 2.90 (ii) 6.08 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 0.79 0.05 0.830 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 58.70 29.02 54.57
 TOTAL RAINFALL (mm)= 59.70 59.70 59.70
 RUNOFF COEFFICIENT = 0.98 0.49 0.91

TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2312) 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	0.1140	0.0930
0.0510	0.0650	0.1380	0.1020
0.0710	0.0750	0.1610	0.1100
0.0880	0.0830	0.2520	0.1450

AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (1302) 2.860 0.830 1.33 54.57
 OUTFLOW: ID= 1 (2312) 2.860 0.114 1.83 54.46

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.69
 TIME SHIFT OF PEAK FLOW (min)= 30.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0930

ADD HYD (2315)
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2311): 3.68 0.146 1.83 54.25			
+ ID2= 2 (2312): 2.86 0.114 1.83 54.46			
ID = 3 (2315): 6.54 0.260 1.83 54.34			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
 STANDHYD (1303) Area (ha)= 3.47
 ID= 1 DT= 5.0 min Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30

IMPERVIOUS PVIOUS (i)
 Surface Area (ha)= 2.99 0.48
 Dep. Storage (mm)= 1.00 5.00

Average Slope (%)= 1.00 2.00
 Length (m)= 152.10 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max.Eff.Inten.(mm/hr)= 118.51 53.59
 over (min)= 5.00 10.00
 Storage Coeff. (min)= 3.07 (ii) 6.23 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.27 0.15

PEAK FLOW (cms)= 0.96 0.06 1.003 (iii)
 TIME TO PEAK (hrs)= 1.33 1.42 1.33
 RUNOFF VOLUME (mm)= 58.70 29.02 54.63
 TOTAL RAINFALL (mm)= 59.70 59.70 59.70
 RUNOFF COEFFICIENT = 0.98 0.49 0.92

TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2313) 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	0.1380	0.1130

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
0.0620	0.0790	0.1680	0.1240
0.0860	0.0910	0.1950	0.1340
0.1060	0.1010	0.3060	0.1760

AREA QPEAK TPEAK R.V.
 (ha) (cms) (hrs) (mm)
 INFLOW : ID= 2 (1303) 3.470 1.003 1.33 54.63
 OUTFLOW: ID= 1 (2313) 3.470 0.138 1.83 54.54

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.72
 TIME SHIFT OF PEAK FLOW (min)= 30.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1130

ADD HYD (2316)
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2313): 3.47 0.138 1.83 54.54			
+ ID2= 2 (2315): 6.54 0.260 1.83 54.34			
ID = 3 (2316): 10.01 0.397 1.83 54.41			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
 STANDHYD (1304) Area (ha)= 3.93
 ID= 1 DT= 5.0 min Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PVIOUS (i)
 Surface Area (ha)= 3.54 0.39
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 161.86 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72

0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max. Eff. Inten. (mm/hr)= 118.51
over (min)= 5.00
Storage Coeff. (min)= 3.19 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.27

TOTALS

PEAK FLOW (cms)= 1.13
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 58.70
TOTAL RAINFALL (mm)= 59.70
RUNOFF COEFFICIENT = 0.98

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2314) OVERFLOW IS OFF			
IN= 2--> OUT= 1			
DT= 5.0 min			
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)
	0.0000	0.0000	0.1570
	0.0700	0.0930	0.1900
	0.0970	0.1070	0.2210
	0.1210	0.1170	0.3470

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1304)	3.930	1.165	1.33	55.73
OUTFLOW: ID= 1 (2314)	3.930	0.156	1.83	55.64

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.39
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1318

ADD HYD (2317)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2314):	3.93	0.156	1.83	55.64
+ ID2= 2 (2316):	10.01	0.397	1.83	54.41
ID = 3 (2317):	13.94	0.553	1.83	54.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2320)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2317):	13.94	0.553	1.83	54.76
+ ID2= 2 (2319):	7.94	0.311	1.67	29.18
ID = 3 (2320):	21.88	0.862	1.83	45.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 3.22	
STANDHYD (1101)		Total Imp(%)= 90.00	Dir. Conn.(%)= 90.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.90	0.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	146.52	40.00
Mannings n =	0.013	0.250

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	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22

0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max. Eff. Inten. (mm/hr)= 118.51
over (min)= 5.00
Storage Coeff. (min)= 3.00 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.28

TOTALS

PEAK FLOW (cms)= 0.93
TIME TO PEAK (hrs)= 1.33
RUNOFF VOLUME (mm)= 58.70
TOTAL RAINFALL (mm)= 59.70
RUNOFF COEFFICIENT = 0.98

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1111) OVERFLOW IS OFF			
IN= 2--> OUT= 1			
DT= 5.0 min			
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)
	0.0000	0.0000	0.2210
	0.0700	0.0700	0.2760
	0.1230	0.0800	0.3270
	0.1610	0.0860	0.6360

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1101)	3.220	0.961	1.33	55.73
OUTFLOW: ID= 1 (1111)	3.220	0.217	1.58	55.66

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.60
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.0946

CALIB		Area (ha)= 2.07	
STANDHYD (1102)		Total Imp(%)= 24.50	Dir. Conn.(%)= 24.50
ID= 1 DT= 5.0 min			

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	0.51	1.56
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	117.47	40.00
Mannings n =	0.013	0.250

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	4.58	1.083	30.64	2.083	10.16	3.08	5.38
0.167	4.58	1.167	30.64	2.167	10.16	3.17	5.38
0.250	5.20	1.250	118.51	2.250	8.75	3.25	5.03
0.333	5.20	1.333	118.51	2.333	8.75	3.33	5.03
0.417	6.05	1.417	39.43	2.417	7.72	3.42	4.72
0.500	6.05	1.500	39.43	2.500	7.72	3.50	4.72
0.583	7.32	1.583	21.89	2.583	6.94	3.58	4.45
0.667	7.32	1.667	21.89	2.667	6.94	3.67	4.45
0.750	9.44	1.750	15.53	2.750	6.31	3.75	4.22
0.833	9.44	1.833	15.53	2.833	6.31	3.83	4.22
0.917	13.86	1.917	12.21	2.917	5.80	3.92	4.01
1.000	13.86	2.000	12.21	3.000	5.80	4.00	4.01

Max. Eff. Inten. (mm/hr)=	118.51	53.59
over (min)=	5.00	15.00
Storage Coeff. (min)=	2.63 (ii)	11.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.29	0.09

TOTALS

PEAK FLOW (cms)=	0.16	0.14
TIME TO PEAK (hrs)=	1.33	1.50
RUNOFF VOLUME (mm)=	58.70	29.02
TOTAL RAINFALL (mm)=	59.70	59.70
RUNOFF COEFFICIENT =	0.98	0.49

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.

```

-----
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 1102):    2.07    0.232    1.33    36.29
+ ID2= 2 ( 1111):    3.22    0.217    1.58    55.66
=====
ID = 3 ( 1112):    5.29    0.392    1.50    48.08

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1201)| Area (ha)= 5.38
| ID= 1 DT= 5.0 min| Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
-----

```

```

-----
| IMPERVIOUS      PERVIOUS (i)
| Surface Area (ha)= 4.68    0.70
| Dep. Storage (mm)= 1.00    5.00
| Average Slope (%)= 1.00    2.00
| Length (m)= 189.38    40.00
| Mannings n = 0.013    0.250
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

Max.Eff.Inten.(mm/hr)= 118.51    53.59
over (min) = 5.00    10.00
Storage Coeff. (min)= 3.50 (ii)    6.58 (ii)
Unit Hyd. Tpeak (min)= 5.00    10.00
Unit Hyd. peak (cms)= 0.26    0.14

*TOTALS*
PEAK FLOW (cms)= 1.47    0.08    1.540 (iii)
TIME TO PEAK (hrs)= 1.33    1.42    1.33
RUNOFF VOLUME (mm)= 58.70    29.02    54.84
TOTAL RAINFALL (mm)= 59.70    59.70    59.70
RUNOFF COEFFICIENT = 0.98    0.49    0.92

```

-69-

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1211)| 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 | 0.2680 0.1680
0.1050 0.1200 | 0.3330 0.1830
0.1540 0.1380 | 0.3940 0.1960
0.1970 0.1510 | 0.7720 0.2500

INFLOW : ID= 2 ( 1201) 5.380 1.540 1.33 54.84
OUTFLOW: ID= 1 ( 1211) 5.380 0.266 1.75 54.78

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.27
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1676

```

-----
| CALIB
| STANDHYD ( 1202)| Area (ha)= 4.07
| ID= 1 DT= 5.0 min| Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
-----

```

```

-----
| IMPERVIOUS      PERVIOUS (i)
| Surface Area (ha)= 3.30    0.77
| Dep. Storage (mm)= 1.00    5.00
| Average Slope (%)= 1.00    2.00
| Length (m)= 164.72    40.00
| Mannings n = 0.013    0.250
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38

```

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```

0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51    53.59
over (min) = 5.00    10.00
Storage Coeff. (min)= 3.22 (ii)    6.89 (ii)
Unit Hyd. Tpeak (min)= 5.00    10.00
Unit Hyd. peak (cms)= 0.27    0.14

```

```

*TOTALS*
PEAK FLOW (cms)= 1.05    0.09    1.121 (iii)
TIME TO PEAK (hrs)= 1.33    1.42    1.33
RUNOFF VOLUME (mm)= 58.70    29.02    53.12
TOTAL RAINFALL (mm)= 59.70    59.70    59.70
RUNOFF COEFFICIENT = 0.98    0.49    0.89

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1212)| 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 | 0.2030 0.1210
0.0800 0.0860 | 0.2520 0.1320
0.1170 0.0990 | 0.2980 0.1420
0.1490 0.1080 | 0.5840 0.1820

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1202) 4.070 1.121 1.33 53.12
OUTFLOW: ID= 1 ( 1212) 4.070 0.200 1.75 53.05

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.88
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1205

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```

-----
| ADD HYD ( 1213)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 1211): 5.38 0.266 1.75 54.78
+ ID2= 2 ( 1212): 4.07 0.200 1.75 53.05
=====
ID = 3 ( 1213): 9.45 0.466 1.75 54.04

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1203)| Area (ha)= 1.54
| ID= 1 DT= 5.0 min| Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10
-----

```

```

-----
| IMPERVIOUS      PERVIOUS (i)
| Surface Area (ha)= 0.43    1.11
| Dep. Storage (mm)= 1.00    5.00
| Average Slope (%)= 1.00    2.00
| Length (m)= 101.32    40.00
| Mannings n = 0.013    0.250
-----

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.58 | 1.083 30.64 | 2.083 10.16 | 3.08 5.38
0.167 4.58 | 1.167 30.64 | 2.167 10.16 | 3.17 5.38
0.250 5.20 | 1.250 118.51 | 2.250 8.75 | 3.25 5.03
0.333 5.20 | 1.333 118.51 | 2.333 8.75 | 3.33 5.03
0.417 6.05 | 1.417 39.43 | 2.417 7.72 | 3.42 4.72
0.500 6.05 | 1.500 39.43 | 2.500 7.72 | 3.50 4.72
0.583 7.32 | 1.583 21.89 | 2.583 6.94 | 3.58 4.45
0.667 7.32 | 1.667 21.89 | 2.667 6.94 | 3.67 4.45
0.750 9.44 | 1.750 15.53 | 2.750 6.31 | 3.75 4.22
0.833 9.44 | 1.833 15.53 | 2.833 6.31 | 3.83 4.22
0.917 13.86 | 1.917 12.21 | 2.917 5.80 | 3.92 4.01
1.000 13.86 | 2.000 12.21 | 3.000 5.80 | 4.00 4.01

```

```

Max.Eff.Inten.(mm/hr)= 118.51    53.59
over (min) = 5.00    15.00
Storage Coeff. (min)= 2.41 (ii)    11.46 (ii)
Unit Hyd. Tpeak (min)= 5.00    15.00
Unit Hyd. peak (cms)= 0.30    0.09

```

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```

*TOTALS*
PEAK FLOW      (cms)=      0.14      0.10      0.190 (iii)
TIME TO PEAK   (hrs)=      1.33      1.50      1.33
RUNOFF VOLUME  (mm)=      58.70     29.02     37.36
TOTAL RAINFALL (mm)=      59.70     59.70     59.70
RUNOFF COEFFICIENT =      0.98      0.49      0.63

```

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 ( 1214) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1203): 1.54 0.190 1.33 37.36
+ ID2= 2 ( 1213): 9.45 0.466 1.75 54.04
-----
ID = 3 ( 1214): 10.99 0.562 1.67 51.70

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

=====
V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLL

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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\VO2\voin.dat

Output filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\0b81e0
 28-76da-4094-ba61-338e244fa995\scenar
 Summary filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\0b81e0
 28-76da-4094-ba61-338e244fa995\scenar

DATE: 05-28-2026

TIME: 11:05:49

USER:

COMMENTS: _____

 ** SIMULATION : Run1.5 50-yr 4 hr Chicago (We **

```

| CHICAGO STORM | IDF curve parameters: A= 960.000
| Ptotal= 66.93 mm | B= 5.100
| | C= 0.736
| | used in: INTENSITY = A / (t + B)^C

```

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	5.29	1.00	34.17	2.00	11.57	3.00	6.20
0.17	5.99	1.17	130.18	2.17	9.99	3.17	5.79
0.33	6.95	1.33	43.81	2.33	8.84	3.33	5.44
0.50	8.38	1.50	24.58	2.50	7.95	3.50	5.14
0.67	10.77	1.67	17.55	2.67	7.25	3.67	4.88
0.83	15.69	1.83	13.86	2.83	6.67	3.83	4.64

```

| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| | U.H. Tp(hrs)= 0.75

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

Unit Hyd Qpeak (cms)= 0.153

```

PEAK FLOW      (cms)= 0.122 (i)
TIME TO PEAK   (hrs)= 2.250
RUNOFF VOLUME  (mm)= 32.758
TOTAL RAINFALL (mm)= 66.928
RUNOFF COEFFICIENT = 0.489

```

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

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
| | U.H. Tp(hrs)= 0.47

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14

```

0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW      (cms)= 0.154 (i)
TIME TO PEAK   (hrs)= 1.917
RUNOFF VOLUME  (mm)= 32.757
TOTAL RAINFALL (mm)= 66.928
RUNOFF COEFFICIENT = 0.489

```

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

```

| ADD HYD ( 2318) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1305): 3.00 0.122 2.25 32.76
+ ID2= 2 ( 0304): 2.79 0.154 1.92 32.76
-----
ID = 3 ( 2318): 5.79 0.264 2.00 32.76

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n =	0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79

0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 15.00
Storage Coeff. (min)= 2.56 (ii) 10.99 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

TOTALS
PEAK FLOW (cms)= 0.19 0.17 0.281 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 59.43 34.77 40.93
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.89 0.52 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2319)				
1 + 2 = 3				

ID1= 1 (2318):	5.79	0.264	2.00	32.76
+ ID2= 2 (0305):	2.15	0.281	1.33	40.93
=====				
ID = 3 (2319):	7.94	0.375	1.67	34.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1301)				
ID= 1 DT= 5.0 min				

Area (ha)= 3.68				
Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30				

IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	3.14	0.54		

Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	156.63	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79
0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 10.00
Storage Coeff. (min)= 3.01 (ii) 6.15 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

TOTALS
PEAK FLOW (cms)= 1.10 0.08 1.168 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 61.35
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2311)			
IN= 2--> OUT= 1			
DT= 5.0 min			

OVERFLOW IS OFF			
OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)

0.0000	0.0000	0.1470	0.1190
0.0660	0.0830	0.1780	0.1310
0.0910	0.0960	0.2070	0.1410
0.1130	0.1060	0.3250	0.1860

AREA			
(ha)			
QPEAK			
(cms)			
TPEAK			
(hrs)			
R.V.			
(mm)			
INFLOW : ID= 2 (1301)	3.680	1.168	1.33
OUTFLOW: ID= 1 (2311)	3.680	0.176	1.83

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.11
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1305

CALIB				
STANDHYD (1302)				
ID= 1 DT= 5.0 min				

Area (ha)= 2.86				
Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10				

IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	2.46	0.40		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	138.08	40.00		
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.29	1.083	34.17	2.083	11.57	3.08	6.20
0.167	5.29	1.167	34.17	2.167	11.57	3.17	6.20
0.250	5.99	1.250	130.18	2.250	9.99	3.25	5.79
0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 10.00
Storage Coeff. (min)= 2.79 (ii) 5.85 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.28 0.15
TOTALS
PEAK FLOW (cms)= 0.87 0.06 0.920 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 61.60
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2312)			
IN= 2--> OUT= 1			
DT= 5.0 min			

OVERFLOW IS OFF			
OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1140	0.0930
0.0510	0.0650	0.1380	0.1020
0.0710	0.0750	0.1610	0.1100
0.0880	0.0830	0.2520	0.1450

AREA			
(ha)			
QPEAK			
(cms)			
TPEAK			
(hrs)			
R.V.			
(mm)			
INFLOW : ID= 2 (1302)	2.860	0.920	1.33
OUTFLOW: ID= 1 (2312)	2.860	0.138	1.83

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.99
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1020

ADD HYD (2315)				
1 + 2 = 3				

ID1= 1 (2311):	3.68	0.176	1.83	61.26
+ ID2= 2 (2312):	2.86	0.138	1.83	61.48
=====				
ID = 3 (2315):	6.54	0.314	1.83	61.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB
| STANDHYD ( 1303) | Area (ha)= 3.47
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
-----
IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.99 0.48
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 152.10 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) = 5.00 10.00
Storage Coeff. (min)= 2.96 (ii) 6.00 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

```

```

PEAK FLOW (cms)= 1.06 0.07 *TOTALS* 1.112 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 61.66
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.92

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2313) | 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 | 0.1300 0.1130
0.0620 0.0790 | 0.1600 0.1240
0.0860 0.0910 | 0.1950 0.1340
0.1060 0.1010 | 0.3060 0.1760

```

```

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1303) 3.470 1.112 1.33 61.66
OUTFLOW: ID= 1 ( 2313) 3.470 0.168 1.83 61.57

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.09
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1239

```

```

-----
| ADD HYD ( 2316) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2313): 3.47 0.168 1.83 61.57
+ ID2= 2 ( 2315): 6.54 0.314 1.83 61.36
=====
ID = 3 ( 2316): 10.01 0.482 1.83 61.43

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1304) | Area (ha)= 3.93
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.54 0.39
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 161.86 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN

```

```

hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) = 5.00 10.00
Storage Coeff. (min)= 3.07 (ii) 5.71 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

```

```

PEAK FLOW (cms)= 1.24 0.06 *TOTALS* 1.290 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 62.81
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.94

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2314) | 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 | 0.1570 0.1320
0.0700 0.0930 | 0.1900 0.1450
0.0970 0.1070 | 0.2210 0.1560
0.1210 0.1170 | 0.3470 0.2040

```

```

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1304) 3.930 1.290 1.33 62.81
OUTFLOW: ID= 1 ( 2314) 3.930 0.189 1.83 62.73

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.63
TIME SHIFT OF PEAK FLOW (min)= 30.00
MAXIMUM STORAGE USED (ha.m.)= 0.1445

```

```

-----
| ADD HYD ( 2317) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2314): 3.93 0.189 1.83 62.73
+ ID2= 2 ( 2316): 10.01 0.482 1.83 61.43
=====
ID = 3 ( 2317): 13.94 0.671 1.83 61.80

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2317): 13.94 0.671 1.83 61.80
+ ID2= 2 ( 2319): 7.94 0.375 1.67 34.97
=====
ID = 3 ( 2320): 21.88 1.041 1.83 52.06

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB
| STANDHYD ( 1101) | Area (ha)= 3.22
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79

```

0.333	5.99	1.333	130.18	2.333	9.99	3.33	5.79
0.417	6.95	1.417	43.81	2.417	8.84	3.42	5.44
0.500	6.95	1.500	43.81	2.500	8.84	3.50	5.44
0.583	8.38	1.583	24.58	2.583	7.95	3.58	5.14
0.667	8.38	1.667	24.58	2.667	7.95	3.67	5.14
0.750	10.77	1.750	17.55	2.750	7.25	3.75	4.88
0.833	10.77	1.833	17.55	2.833	7.25	3.83	4.88
0.917	15.69	1.917	13.86	2.917	6.67	3.92	4.64
1.000	15.69	2.000	13.86	3.000	6.67	4.00	4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 10.00
Storage Coeff. (min)= 2.89 (ii) 5.53 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.16

TOTALS
PEAK FLOW (cms)= 1.02 0.05 1.063 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 62.81
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1111) |
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	0.2210	0.0950
0.0760	0.0700	0.2760	0.1030
0.1230	0.0800	0.3270	0.1100
0.1610	0.0860	0.6360	0.1400

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3.220	1.063	1.33	62.81
3.220	0.271	1.58	62.74

INFLOW : ID= 2 (1101)
OUTFLOW: ID= 1 (1111)

PEAK FLOW REDUCTION [Qout/Qin](%)= 25.51
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.1025

CALIB |
STANDHYD (1102) |
ID= 1 DT= 5.0 min |

Area (ha)= 2.07
Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

	IMPERVIOUS (ha)=	PERVIOUS (i)
Surface Area	0.51	1.56
Dep. Storage	1.00	5.00
Average Slope	1.00	2.00
Length	117.47	40.00
Mannings n	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN
hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr
0.083 5.29	1.083 34.17	2.083 11.57	3.08 6.20
0.167 5.29	1.167 34.17	2.167 11.57	3.17 6.20
0.250 5.99	1.250 130.18	2.250 9.99	3.25 5.79
0.333 5.99	1.333 130.18	2.333 9.99	3.33 5.79
0.417 6.95	1.417 43.81	2.417 8.84	3.42 5.44
0.500 6.95	1.500 43.81	2.500 8.84	3.50 5.44
0.583 8.38	1.583 24.58	2.583 7.95	3.58 5.14
0.667 8.38	1.667 24.58	2.667 7.95	3.67 5.14
0.750 10.77	1.750 17.55	2.750 7.25	3.75 4.88
0.833 10.77	1.833 17.55	2.833 7.25	3.83 4.88
0.917 15.69	1.917 13.86	2.917 6.67	3.92 4.64
1.000 15.69	2.000 13.86	3.000 6.67	4.00 4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 15.00
Storage Coeff. (min)= 2.53 (ii) 10.96 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.09

TOTALS
PEAK FLOW (cms)= 0.18 0.17 0.268 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 42.40
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112) |
1 + 2 = 3 |

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.07	0.268	1.33	42.40
3.22	0.271	1.58	62.74

ID1= 1 (1102):
+ ID2= 2 (1111):
=====

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
5.29	0.488	1.50	54.78

ID = 3 (1112):

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |
STANDHYD (1201) |
ID= 1 DT= 5.0 min |

Area (ha)= 5.38
Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

IMPERVIOUS (ha)=	PERVIOUS (i)
4.68	0.70
1.00	5.00
1.00	2.00
189.38	40.00
0.013	0.250

Surface Area (ha)=
Dep. Storage (mm)=
Average Slope (%)=
Length (m)=
Mannings n =

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

--- TRANSFORMED HYETOGRAPH ---

TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN
hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr
0.083 5.29	1.083 34.17	2.083 11.57	3.08 6.20
0.167 5.29	1.167 34.17	2.167 11.57	3.17 6.20
0.250 5.99	1.250 130.18	2.250 9.99	3.25 5.79
0.333 5.99	1.333 130.18	2.333 9.99	3.33 5.79
0.417 6.95	1.417 43.81	2.417 8.84	3.42 5.44
0.500 6.95	1.500 43.81	2.500 8.84	3.50 5.44
0.583 8.38	1.583 24.58	2.583 7.95	3.58 5.14
0.667 8.38	1.667 24.58	2.667 7.95	3.67 5.14
0.750 10.77	1.750 17.55	2.750 7.25	3.75 4.88
0.833 10.77	1.833 17.55	2.833 7.25	3.83 4.88
0.917 15.69	1.917 13.86	2.917 6.67	3.92 4.64
1.000 15.69	2.000 13.86	3.000 6.67	4.00 4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 10.00
Storage Coeff. (min)= 3.37 (ii) 6.34 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.26 0.15

TOTALS
PEAK FLOW (cms)= 1.63 0.10 1.708 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 61.88
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1211) |
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	0.2680	0.1680
0.1050	0.1200	0.3330	0.1830
0.1540	0.1380	0.3940	0.1960
0.1970	0.1510	0.7720	0.2500

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
5.380	1.708	1.33	61.88
5.380	0.329	1.75	61.82

INFLOW : ID= 2 (1201)
OUTFLOW: ID= 1 (1211)

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.28
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1828

CALIB |
STANDHYD (1202) |
ID= 1 DT= 5.0 min |

Area (ha)= 4.07
Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

IMPERVIOUS (ha)=	PERVIOUS (i)
3.30	0.77
1.00	5.00
1.00	2.00
164.72	40.00
0.013	0.250

Surface Area (ha)=
Dep. Storage (mm)=
Average Slope (%)=
Length (m)=
Mannings n =

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

```

      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64
1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 10.00
Storage Coeff. (min)= 3.10 (ii) 6.64 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

*TOTALS*
PEAK FLOW (cms)= 1.16 0.10 1.246 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 60.07
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.90

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1212) |
| IN= 2--> OUT= 1 |
| DT= 5.0 min |

```

OVERFLOW IS OFF

```

OUTFLOW STORAGE | OUTFLOW STORAGE
(cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.2030 0.1210
0.0800 0.0860 | 0.2520 0.1320
0.1170 0.0990 | 0.2980 0.1420
0.1490 0.1080 | 0.5840 0.1820

```

```

AREA QPEAK TPEAK R.V.

```

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```

      (ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1202) 4.070 1.246 1.33 60.07
OUTFLOW: ID= 1 ( 1212) 4.070 0.248 1.75 60.00

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.92
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1316

```

```

| ADD HYD ( 1213) |
| 1 + 2 = 3 |

```

```

      AREA QPEAK TPEAK R.V.
      (ha) (cms) (hrs) (mm)
ID1= 1 ( 1211): 5.38 0.329 1.75 61.82
+ ID2= 2 ( 1212): 4.07 0.248 1.75 60.00
=====
ID = 3 ( 1213): 9.45 0.578 1.75 61.04

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| STANDHYD ( 1203) |
| ID= 1 DT= 5.0 min |

```

```

Area (ha)= 1.54
Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.43 1.11
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 101.32 40.00
Mannings n = 0.013 0.250

```

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

```

      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.29 | 1.083 34.17 | 2.083 11.57 | 3.08 6.20
0.167 5.29 | 1.167 34.17 | 2.167 11.57 | 3.17 6.20
0.250 5.99 | 1.250 130.18 | 2.250 9.99 | 3.25 5.79
0.333 5.99 | 1.333 130.18 | 2.333 9.99 | 3.33 5.79
0.417 6.95 | 1.417 43.81 | 2.417 8.84 | 3.42 5.44
0.500 6.95 | 1.500 43.81 | 2.500 8.84 | 3.50 5.44
0.583 8.38 | 1.583 24.58 | 2.583 7.95 | 3.58 5.14
0.667 8.38 | 1.667 24.58 | 2.667 7.95 | 3.67 5.14
0.750 10.77 | 1.750 17.55 | 2.750 7.25 | 3.75 4.88
0.833 10.77 | 1.833 17.55 | 2.833 7.25 | 3.83 4.88
0.917 15.69 | 1.917 13.86 | 2.917 6.67 | 3.92 4.64

```

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```

1.000 15.69 | 2.000 13.86 | 3.000 6.67 | 4.00 4.64

```

```

Max.Eff.Inten.(mm/hr)= 130.18 64.10
over (min) 5.00 15.00
Storage Coeff. (min)= 2.32 (ii) 10.75 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.09

*TOTALS*
PEAK FLOW (cms)= 0.15 0.12 0.217 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 65.93 34.77 43.52
TOTAL RAINFALL (mm)= 66.93 66.93 66.93
RUNOFF COEFFICIENT = 0.99 0.52 0.65

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1214) |
| 1 + 2 = 3 |

```

```

      AREA QPEAK TPEAK R.V.
      (ha) (cms) (hrs) (mm)
ID1= 1 ( 1203): 1.54 0.217 1.33 43.52
+ ID2= 2 ( 1213): 9.45 0.578 1.75 61.04
=====
ID = 3 ( 1214): 10.99 0.698 1.67 58.58

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLL

```

```

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 Y M M 0 0
000 T T H H Y 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\ZhouJ\AppData\Local\Civica\VH5\F67fe709-6b28-4175-8afc-bd306d6d118d\7dd75f
ba-9580-4131-be0c-854d6cee1045\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\VH5\F67fe709-6b28-4175-8afc-bd306d6d118d\7dd75f
ba-9580-4131-be0c-854d6cee1045\scenar

DATE: 05-28-2026

TIME: 11:05:54

USER:

COMMENTS: _____

```

*****
** SIMULATION : Run1.6 100-yr 4 hr Chicago (W **
*****

```

```

| CHICAGO STORM |
| Ptotal= 73.18 mm |

```

```

IDF curve parameters: A=1020.000
B= 4.700
C= 0.731

```

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

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

```

TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.00 5.85 | 1.00 36.88 | 2.00 12.66 | 3.00 6.84
0.17 6.62 | 1.17 142.99 | 2.17 10.96 | 3.17 6.40
0.33 7.67 | 1.33 47.20 | 2.33 9.71 | 3.33 6.02
0.50 9.22 | 1.50 26.61 | 2.50 8.75 | 3.50 5.69
0.67 11.80 | 1.67 19.09 | 2.67 7.99 | 3.67 5.40
0.83 17.10 | 1.83 15.13 | 2.83 7.36 | 3.83 5.14

```

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```

-----
| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.75

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84
0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02
0.583 9.22 | 1.583 26.61 | 2.583 8.75 | 3.58 5.69
0.667 9.22 | 1.667 26.61 | 2.667 8.75 | 3.67 5.69
0.750 11.80 | 1.750 19.09 | 2.750 7.99 | 3.75 5.40
0.833 11.80 | 1.833 19.09 | 2.833 7.99 | 3.83 5.40
0.917 17.10 | 1.917 15.13 | 2.917 7.36 | 3.92 5.14
1.000 17.10 | 2.000 15.13 | 3.000 7.36 | 4.00 5.14

```

Unit Hyd Qpeak (cms)= 0.153

```

PEAK FLOW (cms)= 0.142 (i)
TIME TO PEAK (hrs)= 2.250
RUNOFF VOLUME (mm)= 37.821
TOTAL RAINFALL (mm)= 73.182
RUNOFF COEFFICIENT = 0.517

```

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

```

-----
| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.47

```

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

```

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

```

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```

0.083 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84
0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02
0.583 9.22 | 1.583 26.61 | 2.583 8.75 | 3.58 5.69
0.667 9.22 | 1.667 26.61 | 2.667 8.75 | 3.67 5.69
0.750 11.80 | 1.750 19.09 | 2.750 7.99 | 3.75 5.40
0.833 11.80 | 1.833 19.09 | 2.833 7.99 | 3.83 5.40
0.917 17.10 | 1.917 15.13 | 2.917 7.36 | 3.92 5.14
1.000 17.10 | 2.000 15.13 | 3.000 7.36 | 4.00 5.14

```

Unit Hyd Qpeak (cms)= 0.227

```

PEAK FLOW (cms)= 0.179 (i)
TIME TO PEAK (hrs)= 1.917
RUNOFF VOLUME (mm)= 37.820
TOTAL RAINFALL (mm)= 73.182
RUNOFF COEFFICIENT = 0.517

```

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

```

-----
| ADD HYD ( 2318) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 1305): | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
+ ID2= 2 ( 0304): | 3.00 0.142 2.25 37.82
|-----|
| ID = 3 ( 2318): | 5.79 0.306 2.00 37.82

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0305) | Area (ha)= 2.15
| ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.54 1.61
Dep. Storage (mm)= 7.50 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 119.72 40.00
Mannings n = 0.013 0.250

```

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

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```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84
0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02
0.583 9.22 | 1.583 26.61 | 2.583 8.75 | 3.58 5.69
0.667 9.22 | 1.667 26.61 | 2.667 8.75 | 3.67 5.69
0.750 11.80 | 1.750 19.09 | 2.750 7.99 | 3.75 5.40
0.833 11.80 | 1.833 19.09 | 2.833 7.99 | 3.83 5.40
0.917 17.10 | 1.917 15.13 | 2.917 7.36 | 3.92 5.14
1.000 17.10 | 2.000 15.13 | 3.000 7.36 | 4.00 5.14

```

```

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) 5.00 15.00
Storage Coeff. (min)= 2.47 (ii) 10.39 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.09

```

```

*TOTALS*
PEAK FLOW (cms)= 0.21 0.20 0.320 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 65.68 39.88 46.33
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.90 0.54 0.63

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 2319) |
| 1 + 2 = 3 |
|-----|
| ID1= 1 ( 2318): | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
+ ID2= 2 ( 0305): | 5.79 0.306 2.00 37.82
|-----|
| ID = 3 ( 2319): | 7.94 0.434 1.67 40.12

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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```

-----
| CALIB |
| STANDHYD ( 1301) | Area (ha)= 3.68
| ID= 1 DT= 5.0 min | Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30
|-----|

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 5.85 | 1.083 36.88 | 2.083 12.66 | 3.08 6.84
0.167 5.85 | 1.167 36.88 | 2.167 12.66 | 3.17 6.84
0.250 6.62 | 1.250 142.99 | 2.250 10.96 | 3.25 6.40
0.333 6.62 | 1.333 142.99 | 2.333 10.96 | 3.33 6.40
0.417 7.67 | 1.417 47.20 | 2.417 9.71 | 3.42 6.02
0.500 7.67 | 1.500 47.20 | 2.500 9.71 | 3.50 6.02
0.583 9.22 | 1.583 26.61 | 2.583 8.75 | 3.58 5.69
0.667 9.22 | 1.667 26.61 | 2.667 8.75 | 3.67 5.69
0.750 11.80 | 1.750 19.09 | 2.750 7.99 | 3.75 5.40
0.833 11.80 | 1.833 19.09 | 2.833 7.99 | 3.83 5.40
0.917 17.10 | 1.917 15.13 | 2.917 7.36 | 3.92 5.14
1.000 17.10 | 2.000 15.13 | 3.000 7.36 | 4.00 5.14

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Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) 5.00 10.00
Storage Coeff. (min)= 2.90 (ii) 5.93 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

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*TOTALS*
PEAK FLOW (cms)= 1.22 0.09 1.293 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 72.18 39.88 67.43
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.99 0.54 0.92

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

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(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2311)		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	0.1470	0.1190
	0.0660	0.0830	0.1780	0.1310
	0.0910	0.0960	0.2070	0.1410
	0.1130	0.1060	0.3250	0.1860

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (1301)	3.680	1.293	1.33	67.43
OUTFLOW: ID= 1 (2311)	3.680	0.206	1.75	67.35

	PEAK FLOW	REDUCTION	[Qout/Qin](%)= 15.92	
	TIME SHIFT OF PEAK FLOW		(min)= 25.00	
	MAXIMUM STORAGE	USED	(ha.m.)= 0.1407	

CALIB				
STANDHYD (1302)	Area	(ha)=	2.86	
ID= 1 DT= 5.0 min	Total Imp(%)=	86.10	Dir. Conn.(%)=	86.10

	IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)=	2.46	0.40	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	138.08	40.00	
Mannings n	=	0.013	0.250	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40

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	0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
	1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14
Max. Eff. Inten. (mm/hr)=	142.99		74.97					
over (min)	5.00		10.00					
Storage Coeff. (min)=	2.69 (ii)		5.64 (ii)					
Unit Hyd. Tpeak (min)=	5.00		10.00					
Unit Hyd. peak (cms)=	0.29		0.15					
PEAK FLOW (cms)=	0.96		0.07		*TOTALS*			
TIME TO PEAK (hrs)=	1.33		1.42		1.017 (iii)			
RUNOFF VOLUME (mm)=	72.18		39.88		1.33			
TOTAL RAINFALL (mm)=	73.18		73.18		67.69			
RUNOFF COEFFICIENT =	0.99		0.54		73.18			

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2312)		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	0.1140	0.0930	
	0.0510	0.0650	0.1380	0.1020	
	0.0710	0.0750	0.1610	0.1100	
	0.0880	0.0830	0.2520	0.1450	

	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
INFLOW : ID= 2 (1302)	2.860	1.017	1.33	67.69	
OUTFLOW: ID= 1 (2312)	2.860	0.161	1.75	67.58	

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.80
 TIME SHIFT OF PEAK FLOW (min)= 25.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1099

ADD HYD (2315)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
-----	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2311):	3.68	0.206	1.75	67.35

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+ ID2= 2 (2312):	2.86	0.161	1.75	67.58
=====				
ID = 3 (2315):	6.54	0.367	1.75	67.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1303)	Area	(ha)=	3.47	
ID= 1 DT= 5.0 min	Total Imp(%)=	86.30	Dir. Conn.(%)=	86.30

	IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)=	2.99	0.48	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	152.10	40.00	
Mannings n	=	0.013	0.250	

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)=	142.99	74.97		
over (min)	5.00	10.00		
Storage Coeff. (min)=	2.85 (ii)	5.78 (ii)		
Unit Hyd. Tpeak (min)=	5.00	10.00		
Unit Hyd. peak (cms)=	0.28	0.15		

PEAK FLOW (cms)=	1.16	0.08	1.230 (iii)
TIME TO PEAK (hrs)=	1.33	1.42	1.33
RUNOFF VOLUME (mm)=	72.18	39.88	67.76
TOTAL RAINFALL (mm)=	73.18	73.18	73.18
RUNOFF COEFFICIENT =	0.99	0.54	0.93

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

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- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2313)		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	0.1380	0.1130
		0.0620	0.0790	0.1680	0.1240
		0.0860	0.0910	0.1950	0.1340
		0.1060	0.1010	0.3060	0.1760
		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (1303)		3.470	1.230	1.33	67.76
OUTFLOW: ID= 1 (2313)		3.470	0.194	1.75	67.66

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.76
 TIME SHIFT OF PEAK FLOW (min)= 25.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1336

ADD HYD (2316)				
1 + 2 = 3				

ID1= 1 (2313):	3.47	0.194	1.75	67.66
+ ID2= 2 (2315):	6.54	0.367	1.75	67.45
=====				
ID = 3 (2316):	10.01	0.560	1.75	67.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1304)	Area	(ha)=	3.93	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00

	IMPERVIOUS	PERVIOUS (i)		
Surface Area	(ha)=	3.54	0.39	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	161.86	40.00	

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Mannings n = 0.013 0.250

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	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) 5.00 10.00
Storage Coeff. (min)= 2.96 (ii) 5.50 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.16

TOTALS
PEAK FLOW (cms)= 1.37 0.07 1.426 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 72.18 39.88 68.95
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.99 0.54 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2314)
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	0.1570	0.1320
0.0700	0.0930	0.1900	0.1450
0.0970	0.1070	0.2210	0.1560

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0.1210 0.1170 | 0.3470 0.2040

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 (1304) 3.930 1.426 1.33 68.95
OUTFLOW: ID= 1 (2314) 3.930 0.220 1.75 68.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 15.43
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1557

ADD HYD (2317)
1 + 2 = 3

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (2314): 3.93 0.220 1.75 68.87
+ ID2= 2 (2316): 10.01 0.560 1.75 67.52
ID = 3 (2317): 13.94 0.780 1.75 67.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2320)
1 + 2 = 3

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (2317): 13.94 0.780 1.75 67.90
+ ID2= 2 (2319): 7.94 0.434 1.67 40.12
ID = 3 (2320): 21.88 1.207 1.75 57.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (1101)
ID= 1 DT= 5.0 min

Area (ha)= 3.22
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

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

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---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) 5.00 10.00
Storage Coeff. (min)= 2.78 (ii) 5.32 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.16

TOTALS
PEAK FLOW (cms)= 1.13 0.05 1.174 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 72.18 39.88 68.95
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.99 0.54 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1111)
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	0.2210	0.0950
0.0760	0.0700	0.2760	0.1030
0.1230	0.0800	0.3270	0.1100
0.1610	0.0860	0.6360	0.1400

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)

INFLOW : ID= 2 (1101) 3.220 1.174 1.33 68.95
OUTFLOW: ID= 1 (1111) 3.220 0.321 1.58 68.88

PEAK FLOW REDUCTION [Qout/Qin](%)= 27.32
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.1098

CALIB
STANDHYD (1102)
ID= 1 DT= 5.0 min

Area (ha)= 2.07
Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) 5.00 10.00
Storage Coeff. (min)= 2.44 (ii) 10.36 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.09

TOTALS
PEAK FLOW (cms)= 0.20 0.20 0.305 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 72.18 39.88 47.79
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.99 0.54 0.65

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1102):	2.07	0.305	1.33	47.79
+ ID2= 2 (1111):	3.22	0.321	1.58	68.88
=====				
ID = 3 (1112):	5.29	0.578	1.50	60.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 5.38	
STANDHYD (1201)		Total Imp(%)= 87.00	
ID= 1 DT= 5.0 min		Dir. Conn.(%)= 87.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40

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0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) 5.00 10.00
Storage Coeff. (min)= 3.25 (ii) 6.11 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

TOTALS
PEAK FLOW (cms)= 1.80 0.11 1.891 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 72.18 39.88 67.98
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.99 0.54 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1211)				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		0.2600	0.1680		
	0.1050	0.1200		0.3330	0.1830		
	0.1540	0.1380		0.3940	0.1960		
	0.1970	0.1510		0.7720	0.2500		

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1201)	5.380	1.891	1.33	67.98
OUTFLOW: ID= 1 (1211)	5.380	0.391	1.67	67.93

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.66
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1956

CALIB		Area (ha)= 4.07	
STANDHYD (1202)		Total Imp(%)= 81.20	
ID= 1 DT= 5.0 min		Dir. Conn.(%)= 81.20	

IMPERVIOUS PERVIOUS (i)

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Surface Area (ha)=	3.30	0.77
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	164.72	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40
0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min) 5.00 10.00
Storage Coeff. (min)= 2.99 (ii) 6.39 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

TOTALS
PEAK FLOW (cms)= 1.28 0.12 1.381 (iii)
TIME TO PEAK (hrs)= 1.33 1.42 1.33
RUNOFF VOLUME (mm)= 72.18 39.88 66.11
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.99 0.54 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1212)				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	0.2030	0.1210	
0.0800	0.0860	0.2520	0.1320	
0.1170	0.0990	0.2980	0.1420	
0.1490	0.1080	0.5840	0.1820	

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1202)	4.070	1.381	1.33	66.11
OUTFLOW: ID= 1 (1212)	4.070	0.293	1.67	66.04

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.23
TIME SHIFT OF PEAK FLOW (min)= 20.00
MAXIMUM STORAGE USED (ha.m.)= 0.1412

ADD HYD (1213)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1211):	5.38	0.391	1.67	67.93
+ ID2= 2 (1212):	4.07	0.293	1.67	66.04
=====				
ID = 3 (1213):	9.45	0.684	1.67	67.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 1.54	
STANDHYD (1203)		Total Imp(%)= 28.10	
ID= 1 DT= 5.0 min		Dir. Conn.(%)= 28.10	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.43	1.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	101.32	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	5.85	1.083	36.88	2.083	12.66	3.08	6.84
0.167	5.85	1.167	36.88	2.167	12.66	3.17	6.84
0.250	6.62	1.250	142.99	2.250	10.96	3.25	6.40
0.333	6.62	1.333	142.99	2.333	10.96	3.33	6.40

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0.417	7.67	1.417	47.20	2.417	9.71	3.42	6.02
0.500	7.67	1.500	47.20	2.500	9.71	3.50	6.02
0.583	9.22	1.583	26.61	2.583	8.75	3.58	5.69
0.667	9.22	1.667	26.61	2.667	8.75	3.67	5.69
0.750	11.80	1.750	19.09	2.750	7.99	3.75	5.40
0.833	11.80	1.833	19.09	2.833	7.99	3.83	5.40
0.917	17.10	1.917	15.13	2.917	7.36	3.92	5.14
1.000	17.10	2.000	15.13	3.000	7.36	4.00	5.14

Max.Eff.Inten.(mm/hr)= 142.99 74.97
over (min)= 5.00 15.00
Storage Coeff. (min)= 2.23 (ii) 10.15 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.10

TOTALS
PEAK FLOW (cms)= 0.17 0.14 0.247 (iii)
TIME TO PEAK (hrs)= 1.33 1.50 1.33
RUNOFF VOLUME (mm)= 72.18 39.88 48.95
TOTAL RAINFALL (mm)= 73.18 73.18 73.18
RUNOFF COEFFICIENT = 0.99 0.54 0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214)				
1	2	3		
ID1= 1 (1203):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (1213):	1.54	0.247	1.33	48.95
	9.45	0.684	1.67	67.12
ID = 3 (1214):	10.99	0.826	1.58	64.57

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
V	V	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	Y	M	M	0	0
000	T	T	H	H	Y	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\vojn.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\67fe709-6b28-4175-8afc-bd306d6d118d\7a992a
1f-d04c-44d7-bff2-33ed6033f5d6\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\67fe709-6b28-4175-8afc-bd306d6d118d\7a992a
1f-d04c-44d7-bff2-33ed6033f5d6\scenar

DATE: 05-28-2026 TIME: 11:05:53

USER:

COMMENTS: _____

** SIMULATION : Run2.1 2-yr 24-hr SCS (Wellan **

READ STORM		Filename: C:\Users\ZhouJ\AppData\Local\Temp\7b238f43-dcf5-433e-b41e-e7c655d02d4d\4b1fefde									
Ptotal= 58.13 mm		Comments: 2-yr 24-hr SCS (Welland)									
TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN	TIME	RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	
0.00	0.64	6.00	1.16	12.00	8.37	18.00	1.05				
0.25	0.64	6.25	1.16	12.25	8.37	18.25	1.05				
0.50	0.64	6.50	1.16	12.50	4.30	18.50	1.05				

0.75	0.64	6.75	1.16	12.75	4.30	18.75	1.05
1.00	0.64	7.00	1.16	13.00	0.81	19.00	1.05
1.25	0.64	7.25	1.16	13.25	0.81	19.25	1.05
1.50	0.64	7.50	1.16	13.50	4.76	19.50	1.05
1.75	0.64	7.75	1.16	13.75	4.76	19.75	1.05
2.00	0.76	8.00	1.57	14.00	1.74	20.00	0.70
2.25	0.76	8.25	1.57	14.25	1.74	20.25	0.70
2.50	0.76	8.50	1.57	14.50	1.74	20.50	0.70
2.75	0.76	8.75	1.57	14.75	1.74	20.75	0.70
3.00	0.76	9.00	1.86	15.00	1.74	21.00	0.70
3.25	0.76	9.25	1.86	15.25	1.74	21.25	0.70
3.50	0.76	9.50	2.09	15.50	1.74	21.50	0.70
3.75	0.76	9.75	2.09	15.75	1.74	21.75	0.70
4.00	0.93	10.00	2.67	16.00	1.05	22.00	0.70
4.25	0.93	10.25	2.67	16.25	1.05	22.25	0.70
4.50	0.93	10.50	3.60	16.50	1.05	22.50	0.70
4.75	0.93	10.75	3.60	16.75	1.05	22.75	0.70
5.00	0.93	11.00	5.58	17.00	1.05	23.00	0.70
5.25	0.93	11.25	5.58	17.25	1.05	23.25	0.70
5.50	0.93	11.50	24.17	17.50	1.05	23.50	0.70
5.75	0.93	11.75	64.14	17.75	1.05	23.75	0.70

CALIB			
NASHYD (1305)	Area (ha)=	3.00	Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.50	# of Linear Res. (N)= 3.00
U.H. Tp(hrs)= 0.75			

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME
hrs	mm/hr	hrs	mm/hr	hrs	hrs	mm/hr	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05

1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70

5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.078 (i)
 TIME TO PEAK (hrs)= 12.667
 RUNOFF VOLUME (mm)= 25.887
 TOTAL RAINFALL (mm)= 58.128
 RUNOFF COEFFICIENT = 0.445

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

CALIB			
NASHYD (0304)			
ID= 1 DT= 5.0 min	Area (ha)= 2.79	Curve Number (CN)= 84.0	
	Ia (mm)= 7.50	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.47		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05

1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70

5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.102 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 25.886
 TOTAL RAINFALL (mm)= 58.128
 RUNOFF COEFFICIENT = 0.445

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

ADD HYD (2318)				
1 + 2 = 3				
ID1= 1 (1305):	3.00	0.078	12.67	25.89
+ ID2= 2 (0304):	2.79	0.102	12.33	25.89
=====				
ID = 3 (2318):	5.79	0.171	12.50	25.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (0305)			
ID= 1 DT= 5.0 min	Area (ha)= 2.15	Dir. Conn.(%)= 25.00	
	Total Imp(%)= 25.00		

IMPERVIOUS PERVIOUS (i)			
Surface Area (ha)=	0.54	1.61	
Dep. Storage (mm)=	7.50	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	119.72	40.00	
Mannings n	= 0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05

0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70</

4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 36.31
over (min) 5.00 15.00
Storage Coeff. (min)= 3.40 (ii) 13.98 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.26 0.08

PEAK FLOW (cms)= 0.10 0.10
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 50.63 27.81
TOTAL RAINFALL (mm)= 58.13 58.13
RUNOFF COEFFICIENT = 0.87 0.48

TOTALS

0.185 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2319) |
1 + 2 = 3
ID1= 1 (2318): 5.79 0.171 12.50 25.89
+ ID2= 2 (0305): 2.15 0.185 12.00 33.51
=====

ID = 3 (2319): 7.94 0.268 12.00 27.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |
| STANDHYD (1301) | Area (ha)= 3.68
| ID= 1 DT= 5.0 min | Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30

IMPERVIOUS (i)
Surface Area (ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 0.64 6.083 1.16 12.083 8.38 18.08 1.05
0.167 0.64 6.167 1.16 12.167 8.37 18.17 1.05
0.250 0.64 6.250 1.16 12.250 8.37 18.25 1.05
0.333 0.64 6.333 1.16 12.333 8.37 18.33 1.05
0.417 0.64 6.417 1.16 12.417 8.37 18.42 1.05
0.500 0.64 6.500 1.16 12.500 8.37 18.50 1.05
0.583 0.64 6.583 1.16 12.583 4.30 18.58 1.05
0.667 0.64 6.667 1.16 12.667 4.30 18.67 1.05
0.750 0.64 6.750 1.16 12.750 4.30 18.75 1.05
0.833 0.64 6.833 1.16 12.833 4.30 18.83 1.05
0.917 0.64 6.917 1.16 12.917 4.30 18.92 1.05
1.000 0.64 7.000 1.16 13.000 4.30 19.00 1.05
1.083 0.64 7.083 1.16 13.083 0.81 19.08 1.05
1.167 0.64 7.167 1.16 13.167 0.81 19.17 1.05
1.250 0.64 7.250 1.16 13.250 0.81 19.25 1.05
1.333 0.64 7.333 1.16 13.333 0.81 19.33 1.05
1.417 0.64 7.417 1.16 13.417 0.81 19.42 1.05
1.500 0.64 7.500 1.16 13.500 0.81 19.50 1.05
1.583 0.64 7.583 1.16 13.583 4.76 19.58 1.05
1.667 0.64 7.667 1.16 13.667 4.76 19.67 1.05
1.750 0.64 7.750 1.16 13.750 4.76 19.75 1.05
1.833 0.64 7.833 1.16 13.833 4.76 19.83 1.05
1.917 0.64 7.917 1.16 13.917 4.76 19.92 1.05
2.000 0.64 8.000 1.16 14.000 4.76 20.00 1.05
2.083 0.76 8.083 1.57 14.083 1.74 20.08 0.70
2.167 0.76 8.167 1.57 14.167 1.74 20.17 0.70
2.250 0.76 8.250 1.57 14.250 1.74 20.25 0.70
2.333 0.76 8.333 1.57 14.333 1.74 20.33 0.70
2.417 0.76 8.417 1.57 14.417 1.74 20.42 0.70
2.500 0.76 8.500 1.57 14.500 1.74 20.50 0.70

2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 3.99 (ii) 8.17 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 0.55 0.04

TOTALS

0.596 (iii)

TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81
TOTAL RAINFALL (mm)= 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2311) | 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 | 0.1470 0.1190
0.0660 0.0830 | 0.1780 0.1310
0.0910 0.0960 | 0.2070 0.1410
0.1130 0.1060 | 0.3250 0.1860

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 (1301) 3.680 0.596 12.00 52.82
OUTFLOW: ID= 1 (2311) 3.680 0.085 12.42 52.73

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.32
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.0930

| CALIB |
| STANDHYD (1302) | Area (ha)= 2.86
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

IMPERVIOUS (i)
Surface Area (ha)= 2.46 0.40
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 138.08 40.00
Mannings n = 0.013 0.250

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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70

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4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 3.70 (ii) 7.77 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 0.43 0.03 0.467 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 53.05
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.91

TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2312) | 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	0.1140	0.0930	
0.0510	0.0650	0.1380	0.1020	
0.0710	0.0750	0.1610	0.1100	
0.0880	0.0830	0.2520	0.1450	

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1302)	2.860	0.467	12.00	53.05
OUTFLOW: ID= 1 (2312)	2.860	0.067	12.42	52.94

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.26
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.0728

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2311):	3.68	0.085	12.42	52.73
+ ID2= 2 (2312):	2.86	0.067	12.42	52.94
ID = 3 (2315):	6.54	0.152	12.42	52.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

	Area (ha)=	Total Imp(%)=	Dir. Conn.(%)=
CALIB	3.47	86.30	86.30
STANDHYD (1303)			
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.99	0.48
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	152.10	40.00
Mannings n	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05

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0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0

4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 3.92 (ii) 7.96 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 0.53 0.04 0.566 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 53.11
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

OVERFLOW IS OFF			
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1380	0.1130
0.0620	0.0790	0.1680	0.1240
0.0860	0.0910	0.1950	0.1340
0.1060	0.1010	0.3060	0.1760

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1303)	3.470	0.566	12.00	53.11
OUTFLOW: ID= 1 (2313)	3.470	0.081	12.42	53.02

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.30
TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.0885

ADD HYD (2316)					
ID	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2313):		3.47	0.081	12.42	53.02
+ ID2= 2 (2315):		6.54	0.152	12.42	52.82
ID = 3 (2316):		10.01	0.233	12.42	52.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1304)	Area (ha)=	3.93	
ID= 1 DT= 5.0 min	Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.54	0.39
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	161.86	40.00
Mannings n =	0.013	0.250

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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05

0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 4.07 (ii) 7.57 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 0.62 0.03 0.653 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 54.19
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2314)				
IN= 2----> OUT= 1	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
DT= 5.0 min	0.0000	0.0000	0.1570	0.1320
	0.0700	0.0930	0.1900	0.1450
	0.0970	0.1070	0.2210	0.1560
	0.1210	0.1170	0.3470	0.2040

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1304)	3.930	0.653	12.00	54.19
OUTFLOW: ID= 1 (2314)	3.930	0.090	12.42	54.11

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.85

TIME SHIFT OF PEAK FLOW (min)= 25.00
MAXIMUM STORAGE USED (ha.m.)= 0.1036

ADD HYD (2317)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (2314):	3.93	0.090	12.42	54.11
+ ID2= 2 (2316):	10.01	0.233	12.42	52.89
ID = 3 (2317):	13.94	0.323	12.42	53.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2320)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (2317):	13.94	0.323	12.42	53.23
+ ID2= 2 (2319):	7.94	0.268	12.00	27.95
ID = 3 (2320):	21.88	0.566	12.17	44.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	3.22
STANDHYD (1101)	Total Imp(%)=	90.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	90.00
	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.90	0.32
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	146.52	40.00
Mannings n	=	0.013

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05

0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70

4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)= 64.14 38.40
over (min) 5.00 10.00
Storage Coeff. (min)= 3.84 (ii) 7.34 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 0.51 0.03
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 57.13 27.81
TOTAL RAINFALL (mm)= 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48

TOTALS

0.537 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1111)	OVERFLOW IS OFF
IN= 2--> OUT= 1	
DT= 5.0 min	
	OUTFLOW STORAGE
	(cms) (ha.m.)
0.0000	0.0000
0.0700	0.0700
0.1200	0.0800
0.1610	0.0860
	OUTFLOW STORAGE
	(cms) (ha.m.)
0.2210	0.0950
0.2760	0.1030
0.3270	0.1100
0.6360	0.1400

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1101)	3.220	0.537	12.00
OUTFLOW: ID= 1 (1111)	3.220	0.107	12.17

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.92
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.0767

CALIB	Area (ha)=	2.07
STANDHYD (1102)	Total Imp(%)=	24.50
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	24.50

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.51
Dep. Storage (mm)=	1.00
Average Slope (%)=	1.00
Length (m)=	117.47
Mannings n	= 0.013

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05

1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70
4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)=	64.14	36.31	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.36 (ii)	13.94 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.08	
PEAK FLOW (cms)=	0.09	0.10	*TOTALS*
TIME TO PEAK (hrs)=	12.00	12.00	0.177 (iii)
RUNOFF VOLUME (mm)=	57.13	27.81	12.00
TOTAL RAINFALL (mm)=	58.13	58.13	34.99
RUNOFF COEFFICIENT =	0.98	0.48	58.13
			0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1102):	2.07	0.177	12.00	34.99
+ ID2= 2 (1111):	3.22	0.107	12.17	54.12
ID = 3 (1112):	5.29	0.248	12.00	46.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	5.38
STANDHYD (1201)	Total Imp(%)=	87.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	87.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n =	0.013	0.250

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	0.64	6.083	1.16	12.083	8.38	18.08	1.05
0.167	0.64	6.167	1.16	12.167	8.37	18.17	1.05
0.250	0.64	6.250	1.16	12.250	8.37	18.25	1.05
0.333	0.64	6.333	1.16	12.333	8.37	18.33	1.05
0.417	0.64	6.417	1.16	12.417	8.37	18.42	1.05
0.500	0.64	6.500	1.16	12.500	8.37	18.50	1.05
0.583	0.64	6.583	1.16	12.583	4.30	18.58	1.05
0.667	0.64	6.667	1.16	12.667	4.30	18.67	1.05
0.750	0.64	6.750	1.16	12.750	4.30	18.75	1.05
0.833	0.64	6.833	1.16	12.833	4.30	18.83	1.05
0.917	0.64	6.917	1.16	12.917	4.30	18.92	1.05
1.000	0.64	7.000	1.16	13.000	4.30	19.00	1.05
1.083	0.64	7.083	1.16	13.083	0.81	19.08	1.05
1.167	0.64	7.167	1.16	13.167	0.81	19.17	1.05
1.250	0.64	7.250	1.16	13.250	0.81	19.25	1.05
1.333	0.64	7.333	1.16	13.333	0.81	19.33	1.05
1.417	0.64	7.417	1.16	13.417	0.81	19.42	1.05
1.500	0.64	7.500	1.16	13.500	0.81	19.50	1.05
1.583	0.64	7.583	1.16	13.583	4.76	19.58	1.05
1.667	0.64	7.667	1.16	13.667	4.76	19.67	1.05
1.750	0.64	7.750	1.16	13.750	4.76	19.75	1.05
1.833	0.64	7.833	1.16	13.833	4.76	19.83	1.05
1.917	0.64	7.917	1.16	13.917	4.76	19.92	1.05
2.000	0.64	8.000	1.16	14.000	4.76	20.00	1.05
2.083	0.76	8.083	1.57	14.083	1.74	20.08	0.70
2.167	0.76	8.167	1.57	14.167	1.74	20.17	0.70
2.250	0.76	8.250	1.57	14.250	1.74	20.25	0.70
2.333	0.76	8.333	1.57	14.333	1.74	20.33	0.70
2.417	0.76	8.417	1.57	14.417	1.74	20.42	0.70
2.500	0.76	8.500	1.57	14.500	1.74	20.50	0.70
2.583	0.76	8.583	1.57	14.583	1.74	20.58	0.70
2.667	0.76	8.667	1.57	14.667	1.74	20.67	0.70
2.750	0.76	8.750	1.57	14.750	1.74	20.75	0.70
2.833	0.76	8.833	1.57	14.833	1.74	20.83	0.70
2.917	0.76	8.917	1.57	14.917	1.74	20.92	0.70
3.000	0.76	9.000	1.57	15.000	1.74	21.00	0.70
3.083	0.76	9.083	1.86	15.083	1.74	21.08	0.70
3.167	0.76	9.167	1.86	15.167	1.74	21.17	0.70
3.250	0.76	9.250	1.86	15.250	1.74	21.25	0.70
3.333	0.76	9.333	1.86	15.333	1.74	21.33	0.70
3.417	0.76	9.417	1.86	15.417	1.74	21.42	0.70
3.500	0.76	9.500	1.86	15.500	1.74	21.50	0.70
3.583	0.76	9.583	2.09	15.583	1.74	21.58	0.70
3.667	0.76	9.667	2.09	15.667	1.74	21.67	0.70
3.750	0.76	9.750	2.09	15.750	1.74	21.75	0.70
3.833	0.76	9.833	2.09	15.833	1.74	21.83	0.70
3.917	0.76	9.917	2.09	15.917	1.74	21.92	0.70
4.000	0.76	10.000	2.09	16.000	1.74	22.00	0.70

4.083	0.93	10.083	2.67	16.083	1.05	22.08	0.70
4.167	0.93	10.167	2.67	16.167	1.05	22.17	0.70
4.250	0.93	10.250	2.67	16.250	1.05	22.25	0.70
4.333	0.93	10.333	2.67	16.333	1.05	22.33	0.70
4.417	0.93	10.417	2.67	16.417	1.05	22.42	0.70
4.500	0.93	10.500	2.67	16.500	1.05	22.50	0.70
4.583	0.93	10.583	3.60	16.583	1.05	22.58	0.70
4.667	0.93	10.667	3.60	16.667	1.05	22.67	0.70
4.750	0.93	10.750	3.60	16.750	1.05	22.75	0.70
4.833	0.93	10.833	3.60	16.833	1.05	22.83	0.70
4.917	0.93	10.917	3.60	16.917	1.05	22.92	0.70
5.000	0.93	11.000	3.60	17.000	1.05	23.00	0.70
5.083	0.93	11.083	5.58	17.083	1.05	23.08	0.70
5.167	0.93	11.167	5.58	17.167	1.05	23.17	0.70
5.250	0.93	11.250	5.58	17.250	1.05	23.25	0.70
5.333	0.93	11.333	5.58	17.333	1.05	23.33	0.70
5.417	0.93	11.417	5.58	17.417	1.05	23.42	0.70
5.500	0.93	11.500	5.58	17.500	1.05	23.50	0.70
5.583	0.93	11.583	24.17	17.583	1.05	23.58	0.70
5.667	0.93	11.667	24.17	17.667	1.05	23.67	0.70
5.750	0.93	11.750	24.17	17.750	1.05	23.75	0.70
5.833	0.93	11.833	64.14	17.833	1.05	23.83	0.70
5.917	0.93	11.917	64.14	17.917	1.05	23.92	0.70
6.000	0.93	12.000	64.14	18.000	1.05	24.00	0.70

Max.Eff.Inten.(mm/hr)=	64.14	38.40	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.48 (ii)	8.42 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.23		

```

-----
      (cms)      (ha.m.) |      (cms)      (ha.m.)
      0.0000      0.0000 |      0.2600      0.1600
      0.1050      0.1200 |      0.3330      0.1830
      0.1540      0.1380 |      0.3940      0.1960
      0.1970      0.1510 |      0.7720      0.2500

      AREA      QPEAK      TPEAK      R.V.
      (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 1201) 5.380      0.873      12.00      53.32
OUTFLOW: ID= 1 ( 1211) 5.380      0.141      12.33      53.26

      PEAK FLOW REDUCTION [Qout/Qin](%)= 16.17
      TIME SHIFT OF PEAK FLOW (min)= 20.00
      MAXIMUM STORAGE USED (ha.m.)= 0.1334

```

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-----
| CALIB |
| STANDHYD ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
-----

      IMPERVIOUS      PERVIOUS (i)
      (ha)= 3.30      0.77
      Dep. Storage (mm)= 1.00      5.00
      Average Slope (%)= 1.00      2.00
      Length (m)= 164.72      40.00
      Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.64 | 6.083 1.16 | 12.083 8.38 | 18.08 1.05
0.167 0.64 | 6.167 1.16 | 12.167 8.37 | 18.17 1.05
0.250 0.64 | 6.250 1.16 | 12.250 8.37 | 18.25 1.05
0.333 0.64 | 6.333 1.16 | 12.333 8.37 | 18.33 1.05
0.417 0.64 | 6.417 1.16 | 12.417 8.37 | 18.42 1.05
0.500 0.64 | 6.500 1.16 | 12.500 8.37 | 18.50 1.05
0.583 0.64 | 6.583 1.16 | 12.583 4.30 | 18.58 1.05
0.667 0.64 | 6.667 1.16 | 12.667 4.30 | 18.67 1.05
0.750 0.64 | 6.750 1.16 | 12.750 4.30 | 18.75 1.05
0.833 0.64 | 6.833 1.16 | 12.833 4.30 | 18.83 1.05
0.917 0.64 | 6.917 1.16 | 12.917 4.30 | 18.92 1.05
1.000 0.64 | 7.000 1.16 | 13.000 4.30 | 19.00 1.05
1.083 0.64 | 7.083 1.16 | 13.083 0.81 | 19.08 1.05
1.167 0.64 | 7.167 1.16 | 13.167 0.81 | 19.17 1.05
1.250 0.64 | 7.250 1.16 | 13.250 0.81 | 19.25 1.05
1.333 0.64 | 7.333 1.16 | 13.333 0.81 | 19.33 1.05

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1.417 0.64 | 7.417 1.16 | 13.417 0.81 | 19.42 1.05
1.500 0.64 | 7.500 1.16 | 13.500 0.81 | 19.50 1.05
1.583 0.64 | 7.583 1.16 | 13.583 4.76 | 19.58 1.05
1.667 0.64 | 7.667 1.16 | 13.667 4.76 | 19.67 1.05
1.750 0.64 | 7.750 1.16 | 13.750 4.76 | 19.75 1.05
1.833 0.64 | 7.833 1.16 | 13.833 4.76 | 19.83 1.05
1.917 0.64 | 7.917 1.16 | 13.917 4.76 | 19.92 1.05
2.000 0.64 | 8.000 1.16 | 14.000 4.76 | 20.00 1.05
2.083 0.76 | 8.083 1.57 | 14.083 1.74 | 20.08 0.70
2.167 0.76 | 8.167 1.57 | 14.167 1.74 | 20.17 0.70
2.250 0.76 | 8.250 1.57 | 14.250 1.74 | 20.25 0.70
2.333 0.76 | 8.333 1.57 | 14.333 1.74 | 20.33 0.70
2.417 0.76 | 8.417 1.57 | 14.417 1.74 | 20.42 0.70
2.500 0.76 | 8.500 1.57 | 14.500 1.74 | 20.50 0.70
2.583 0.76 | 8.583 1.57 | 14.583 1.74 | 20.58 0.70
2.667 0.76 | 8.667 1.57 | 14.667 1.74 | 20.67 0.70
2.750 0.76 | 8.750 1.57 | 14.750 1.74 | 20.75 0.70
2.833 0.76 | 8.833 1.57 | 14.833 1.74 | 20.83 0.70
2.917 0.76 | 8.917 1.57 | 14.917 1.74 | 20.92 0.70
3.000 0.76 | 9.000 1.57 | 15.000 1.74 | 21.00 0.70
3.083 0.76 | 9.083 1.86 | 15.083 1.74 | 21.08 0.70
3.167 0.76 | 9.167 1.86 | 15.167 1.74 | 21.17 0.70
3.250 0.76 | 9.250 1.86 | 15.250 1.74 | 21.25 0.70
3.333 0.76 | 9.333 1.86 | 15.333 1.74 | 21.33 0.70
3.417 0.76 | 9.417 1.86 | 15.417 1.74 | 21.42 0.70
3.500 0.76 | 9.500 1.86 | 15.500 1.74 | 21.50 0.70
3.583 0.76 | 9.583 2.09 | 15.583 1.74 | 21.58 0.70
3.667 0.76 | 9.667 2.09 | 15.667 1.74 | 21.67 0.70
3.750 0.76 | 9.750 2.09 | 15.750 1.74 | 21.75 0.70
3.833 0.76 | 9.833 2.09 | 15.833 1.74 | 21.83 0.70
3.917 0.76 | 9.917 2.09 | 15.917 1.74 | 21.92 0.70
4.000 0.76 | 10.000 2.09 | 16.000 1.74 | 22.00 0.70
4.083 0.93 | 10.083 2.67 | 16.083 1.05 | 22.08 0.70
4.167 0.93 | 10.167 2.67 | 16.167 1.05 | 22.17 0.70
4.250 0.93 | 10.250 2.67 | 16.250 1.05 | 22.25 0.70
4.333 0.93 | 10.333 2.67 | 16.333 1.05 | 22.33 0.70
4.417 0.93 | 10.417 2.67 | 16.417 1.05 | 22.42 0.70
4.500 0.93 | 10.500 2.67 | 16.500 1.05 | 22.50 0.70
4.583 0.93 | 10.583 3.60 | 16.583 1.05 | 22.58 0.70
4.667 0.93 | 10.667 3.60 | 16.667 1.05 | 22.67 0.70
4.750 0.93 | 10.750 3.60 | 16.750 1.05 | 22.75 0.70
4.833 0.93 | 10.833 3.60 | 16.833 1.05 | 22.83 0.70
4.917 0.93 | 10.917 3.60 | 16.917 1.05 | 22.92 0.70
5.000 0.93 | 11.000 3.60 | 17.000 1.05 | 23.00 0.70
5.083 0.93 | 11.083 5.58 | 17.083 1.05 | 23.08 0.70
5.167 0.93 | 11.167 5.58 | 17.167 1.05 | 23.17 0.70
5.250 0.93 | 11.250 5.58 | 17.250 1.05 | 23.25 0.70
5.333 0.93 | 11.333 5.58 | 17.333 1.05 | 23.33 0.70
5.417 0.93 | 11.417 5.58 | 17.417 1.05 | 23.42 0.70
5.500 0.93 | 11.500 5.58 | 17.500 1.05 | 23.50 0.70

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5.583 0.93 | 11.583 24.17 | 17.583 1.05 | 23.58 0.70
5.667 0.93 | 11.667 24.17 | 17.667 1.05 | 23.67 0.70
5.750 0.93 | 11.750 24.17 | 17.750 1.05 | 23.75 0.70
5.833 0.93 | 11.833 24.17 | 17.833 1.05 | 23.83 0.70
5.917 0.93 | 11.917 24.17 | 17.917 1.05 | 23.92 0.70
6.000 0.93 | 12.000 24.17 | 18.000 1.05 | 24.00 0.70

Max. Eff. Inten. (mm/hr)= 64.14      38.40
over (min)= 5.00      10.00
Storage Coeff. (min)= 4.12 (ii)      8.81 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.24      0.12

      *TOTALS*
PEAK FLOW (cms)= 0.58      0.06      0.641 (iii)
TIME TO PEAK (hrs)= 12.00      12.00      12.00
RUNOFF VOLUME (mm)= 57.13      27.81      51.61
TOTAL RAINFALL (mm)= 58.13      58.13      58.13
RUNOFF COEFFICIENT = 0.98      0.48      0.89

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1212) | 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 | 0.2030 0.1210
0.0800 0.0800 | 0.2520 0.1320
0.1170 0.0990 | 0.2980 0.1420
0.1490 0.1080 | 0.5840 0.1820

      AREA QPEAK TPEAK R.V.
      (ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1202) 4.070 0.641 12.00 51.61
OUTFLOW: ID= 1 ( 1212) 4.070 0.108 12.33 51.55

```

```

      PEAK FLOW REDUCTION [Qout/Qin](%)= 16.79
      TIME SHIFT OF PEAK FLOW (min)= 20.00
      MAXIMUM STORAGE USED (ha.m.)= 0.0958

```

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```

| ADD HYD ( 1213) |
| 1 + 2 = 3 |
-----
      AREA QPEAK TPEAK R.V.
      (ha) (cms) (hrs) (mm)
ID1= 1 ( 1211): 5.38 0.141 12.33 53.26
+ ID2= 2 ( 1212): 4.07 0.108 12.33 51.55
=====
ID = 3 ( 1213): 9.45 0.249 12.33 52.52

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1203) | Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10
-----

      IMPERVIOUS      PERVIOUS (i)
      (ha)= 0.43      1.11
      Dep. Storage (mm)= 1.00      5.00
      Average Slope (%)= 1.00      2.00
      Length (m)= 101.32      40.00
      Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
      TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
      hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.64 | 6.083 1.16 | 12.083 8.38 | 18.08 1.05
0.167 0.64 | 6.167 1.16 | 12.167 8.37 | 18.17 1.05
0.250 0.64 | 6.250 1.16 | 12.250 8.37 | 18.25 1.05
0.333 0.64 | 6.333 1.16 | 12.333 8.37 | 18.33 1.05
0.417 0.64 | 6.417 1.16 | 12.417 8.37 | 18.42 1.05
0.500 0.64 | 6.500 1.16 | 12.500 8.37 | 18.50 1.05
0.583 0.64 | 6.583 1.16 | 12.583 4.30 | 18.58 1.05
0.667 0.64 | 6.667 1.16 | 12.667 4.30 | 18.67 1.05
0.750 0.64 | 6.750 1.16 | 12.750 4.30 | 18.75 1.05
0.833 0.64 | 6.833 1.16 | 12.833 4.30 | 18.83 1.05
0.917 0.64 | 6.917 1.16 | 12.917 4.30 | 18.92 1.05
1.000 0.64 | 7.000 1.16 | 13.000 4.30 | 19.00 1.05
1.083 0.64 | 7.083 1.16 | 13.083 0.81 | 19.08 1.05
1.167 0.64 | 7.167 1.16 | 13.167 0.81 | 19.17 1.05
1.250 0.64 | 7.250 1.16 | 13.250 0.81 | 19.25 1.05
1.333 0.64 | 7.333 1.16 | 13.333 0.81 | 19.33 1.05
1.417 0.64 | 7.417 1.16 | 13.417 0.81 | 19.42 1.05
1.500 0.64 | 7.500 1.16 | 13.500 0.81 | 19.50 1.05
1.583 0.64 | 7.583 1.16 | 13.583 4.76 | 19.58 1.05
1.667 0.64 | 7.667 1.16 | 13.667 4.76 | 19.67 1.05
1.750 0.64 | 7.750 1.16 | 13.750 4.76 | 19.75 1.05
1.833 0.64 | 7.833 1.16 | 13.833 4.76 | 19.83 1.05

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1.917 0.64 | 7.917 1.16 | 13.917 4.76 | 19.92 1.05
2.000 0.64 | 8.000 1.16 | 14.000 4.76 | 20.00 1.05
2.083 0.76 | 8.083 1.57 | 14.083 1.74 | 20.08 0.70
2.167 0.76 | 8.167 1.57 | 14.167 1.74 | 20.17 0.70
2.250 0.76 | 8.250 1.57 | 14.250 1.74 | 20.25 0.70
2.333 0.76 | 8.333 1.57 | 14.333 1.74 | 20.33 0.70
2.417 0.76 | 8.417 1.57 | 14.417 1.74 | 20.42 0.70
2.500 0.76 | 8.500 1.57 | 14.500 1.74 | 20.50 0.70
2.583 0.76 | 8.583 1.57 | 14.583 1.74 | 20.58 0.70
2.667 0.76 | 8.667 1.57 | 14.667 1.74 | 20.67 0.70
2.750 0.76 | 8.750 1.57 | 14.750 1.74 | 20.75 0.70
2.833 0.76 | 8.833 1.57 | 14.833 1.74 | 20.83 0.70
2.917 0.76 | 8.917 1.57 | 14.917 1.74 | 20.92 0.70
3.000 0.76 | 9.000 1.57 | 15.000 1.74 | 21.00 0.70
3.083 0.76 | 9.083 1.86 | 15.083 1.74 | 21.08 0.70
3.167 0.76 | 9.167 1.86 | 15.167 1.74 | 21.17 0.70
3.250 0.76 | 9.250 1.86 | 15.250 1.74 | 21.25 0.70
3.333 0.76 | 9.333 1.86 | 15.333 1.74 | 21.33 0.70
3.417 0.76 | 9.417 1.86 | 15.417 1.74 | 21.42 0.70
3.500 0.76 | 9.500 1.86 | 15.500 1.74 | 21.50 0.70
3.583 0.76 | 9.583 2.09 | 15.583 1.74 | 21.58 0.70
3.667 0.76 | 9.667 2.09 | 15.667 1.74 | 21.67 0.70
3.750 0.76 | 9.750 2.09 | 15.750 1.74 | 21.75 0.70
3.833 0.76 | 9.833 2.09 | 15.833 1.74 | 21.83 0.70
3.917 0.76 | 9.917 2.09 | 15.917 1.74 | 21.92 0.70
4.000 0.76 | 10.000 2.09 | 16.000 1.74 | 22.00 0.70
4.083 0.93 | 10.083 2.67 | 16.083 1.05 | 22.08 0.70
4.167 0.93 | 10.167 2.67 | 16.167 1.05 | 22.17 0.70
4.250 0.93 | 10.250 2.67 | 16.250 1.05 | 22.25 0.70
4.333 0.93 | 10.333 2.67 | 16.333 1.05 | 22.33 0.70
4.417 0.93 | 10.417 2.67 | 16.417 1.05 | 22.42 0.70
4.500 0.93 | 10.500 2.67 | 16.500 1.05 | 22.50 0.70
4.583 0.93 | 10.583 3.60 | 16.583 1.05 | 22.58 0.70
4.667 0.93 | 10.667 3.60 | 16.667 1.05 | 22.67 0.70
4.750 0.93 | 10.750 3.60 | 16.750 1.05 | 22.75 0.70
4.833 0.93 | 10.833 3.60 | 16.833 1.05 | 22.83 0.70
4.917 0.93 | 10.917 3.60 | 16.917 1.05 | 22.92 0.70
5.000 0.93 | 11.000 3.60 | 17.000 1.05 | 23.00 0.70
5.083 0.93 | 11.083 5.58 | 17.083 1.05 | 23.08 0.70
5.167 0.93 | 11.167 5.58 | 17.167 1.05 | 23.17 0.70
5.250 0.93 | 11.250 5.58 | 17.250 1.05 | 23.25 0.70
5.333 0.93 | 11.333 5.58 | 17.333 1.05 | 23.33 0.70
5.417 0.93 | 11.417 5.58 | 17.417 1.05 | 23.42 0.70
5.500 0.93 | 11.500 5.58 | 17.500 1.05 | 23.50 0.70
5.583 0.93 | 11.583 24.17 | 17.583 1.05 | 23.58 0.70
5.667 0.93 | 11.667 24.17 | 17.667 1.05 | 23.67 0.70
5.750 0.93 | 11.750 24.17 | 17.750 1.05 | 23.75 0.70
5.833 0.93 | 11.833 64.14 | 17.833 1.05 | 23.83 0.70
5.917 0.93 | 11.917 64.14 | 17.917 1.05 | 23.92 0.70
6.000 0.93 | 12.000 64.14 | 18.000 1.05 | 24.00 0.70

```

```

Max.Eff.Inten.(mm/hr)= 64.14 36.31
over (min) 5.00 15.00
Storage Coeff. (min)= 3.08 (ii) 13.66 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.08

PEAK FLOW (cms)= 0.08 0.07 0.139 (iii)
TIME TO PEAK (hrs)= 12.00 12.08 12.00
RUNOFF VOLUME (mm)= 57.13 27.81 36.04
TOTAL RAINFALL (mm)= 58.13 58.13 58.13
RUNOFF COEFFICIENT = 0.98 0.48 0.62

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1214) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 1203): 1.54 0.139 12.00 36.04
+ ID2= 2 ( 1213): 9.45 0.249 12.33 52.52
=====
ID = 3 ( 1214): 10.99 0.322 12.17 50.21

```

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 A A A A 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 M M 0 0
0 0 T T H H Y Y M M 0 0
000 T T H H Y 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\voind.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\32fef8
fe-db55-4ffc-a1c2-5e055ab4527d\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\32fef8
fe-db55-4ffc-a1c2-5e055ab4527d\scenar

DATE: 05-28-2026 TIME: 11:05:51

USER:

COMMENTS: _____

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*****
** SIMULATION : Run2.2 5-yr 24-hr SCS (Wellan) **
*****

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| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
|            | 7b238f43-dcf5-433e-b41e-e7c655d02d4d\655ef187
| Ptotal= 69.83 mm | Comments: 5-yr 24-hr SCS (Wellan)
-----

```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.77	6.00	1.40	12.00	10.05	18.00	1.26
0.25	0.77	6.25	1.40	12.25	10.05	18.25	1.26
0.50	0.77	6.50	1.40	12.50	5.17	18.50	1.26
0.75	0.77	6.75	1.40	12.75	5.17	18.75	1.26
1.00	0.77	7.00	1.40	13.00	0.98	19.00	1.26
1.25	0.77	7.25	1.40	13.25	0.98	19.25	1.26
1.50	0.77	7.50	1.40	13.50	5.72	19.50	1.26
1.75	0.77	7.75	1.40	13.75	5.72	19.75	1.26
2.00	0.91	8.00	1.88	14.00	2.09	20.00	0.84
2.25	0.91	8.25	1.88	14.25	2.09	20.25	0.84
2.50	0.91	8.50	1.88	14.50	2.09	20.50	0.84

2.75	0.91	8.75	1.88	14.75	2.09	20.75	0.84
3.00	0.91	9.00	2.23	15.00	2.09	21.00	0.84
3.25	0.91	9.25	2.23	15.25	2.09	21.25	0.84
3.50	0.91	9.50	2.51	15.50	2.09	21.50	0.84
3.75	0.91	9.75	2.51	15.75	2.09	21.75	0.84
4.00	1.12	10.00	3.21	16.00	1.26	22.00	0.84
4.25	1.12	10.25	3.21	16.25	1.26	22.25	0.84
4.50	1.12	10.50	4.33	16.50	1.26	22.50	0.84
4.75	1.12	10.75	4.33	16.75	1.26	22.75	0.84
5.00	1.12	11.00	6.70	17.00	1.26	23.00	0.84
5.25	1.12	11.25	6.70	17.25	1.26	23.25	0.84
5.50	1.12	11.50	29.04	17.50	1.26	23.50	0.84
5.75	1.12	11.75	77.06	17.75	1.26	23.75	0.84

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| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----|
| U.H. Tp(hrs)= 0.75

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

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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 0.77 | 6.083 1.40 | 12.083 10.06 | 18.08 1.26
0.167 0.77 | 6.167 1.40 | 12.167 10.05 | 18.17 1.26
0.250 0.77 | 6.250 1.40 | 12.250 10.05 | 18.25 1.26
0.333 0.77 | 6.333 1.40 | 12.333 10.05 | 18.33 1.26
0.417 0.77 | 6.417 1.40 | 12.417 10.05 | 18.42 1.26
0.500 0.77 | 6.500 1.40 | 12.500 10.05 | 18.50 1.26
0.583 0.77 | 6.583 1.40 | 12.583 5.17 | 18.58 1.26
0.667 0.77 | 6.667 1.40 | 12.667 5.17 | 18.67 1.26
0.750 0.77 | 6.750 1.40 | 12.750 5.17 | 18.75 1.26
0.833 0.77 | 6.833 1.40 | 12.833 5.17 | 18.83 1.26
0.917 0.77 | 6.917 1.40 | 12.917 5.17 | 18.92 1.26
1.000 0.77 | 7.000 1.40 | 13.000 5.17 | 19.00 1.26
1.083 0.77 | 7.083 1.40 | 13.083 0.98 | 19.08 1.26
1.167 0.77 | 7.167 1.40 | 13.167 0.98 | 19.17 1.26
1.250 0.77 | 7.250 1.40 | 13.250 0.98 | 19.25 1.26
1.333 0.77 | 7.333 1.40 | 13.333 0.98 | 19.33 1.26
1.417 0.77 | 7.417 1.40 | 13.417 0.98 | 19.42 1.26
1.500 0.77 | 7.500 1.40 | 13.500 0.98 | 19.50 1.26
1.583 0.77 | 7.583 1.40 | 13.583 5.72 | 19.58 1.26
1.667 0.77 | 7.667 1.40 | 13.667 5.72 | 19.67 1.26
1.750 0.77 | 7.750 1.40 | 13.750 5.72 | 19.75 1.26
1.833 0.77 | 7.833 1.40 | 13.833 5.72 | 19.83 1.26

```

1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

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Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.107 (i)
 TIME TO PEAK (hrs)= 12.667
 RUNOFF VOLUME (mm)= 35.095
 TOTAL RAINFALL (mm)= 69.835
 RUNOFF COEFFICIENT = 0.503

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

 | CALIB |
 | NASHYD (0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
 | ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00

 U.H. Tp(hrs)= 0.47

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84

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2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.140 (i)

TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 35.093
 TOTAL RAINFALL (mm)= 69.835
 RUNOFF COEFFICIENT = 0.503

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

 | ADD HYD (2318) |
 | 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
 ID1= 1 (1305): 3.00 0.107 12.67 35.09
 + ID2= 2 (0304): 2.79 0.140 12.33 35.09
 =====
 ID = 3 (2318): 5.79 0.235 12.42 35.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (0305) | Area (ha)= 2.15
 | ID= 1 DT= 5.0 min | Total Imp(%)= 25.00 Dir. Conn.(%)= 25.00

IMPERVIOUS PERVIOUS (i)
 Surface Area (ha)= 0.54 1.61
 Dep. Storage (mm)= 7.50 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 119.72 40.00
 Mannings n = 0.013 0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.2

1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84

5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 15.00
Storage Coeff. (min)= 3.16 (ii) 12.41 (iii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.08

TOTALS
PEAK FLOW (cms)= 0.11 0.15 0.243 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 62.34 37.13 43.43
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.89 0.53 0.62

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2319) |
1 + 2 = 3
ID1= 1 (2318): 5.79 0.235 12.42 35.09
+ ID2= 2 (0305): 2.15 0.243 12.00 43.43
===== ID = 3 (2319): 7.94 0.362 12.00 37.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |
| STANDHYD (1301) | Area (ha)= 3.68
| ID= 1 DT= 5.0 min | Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 3.14 0.54
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 156.63 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84

3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

- CN* = 84.0 Ia = Dep. 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(2311) 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	0.1470	0.1190	
0.0660	0.0830	0.1780	0.1310	
0.0910	0.0960	0.2070	0.1410	
0.1130	0.1060	0.3250	0.1860	
AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
INFLOW : ID= 2 (1301)	3.680	0.726	12.00	64.17
OUTFLOW: ID= 1 (2311)	3.680	0.125	12.25	64.09
PEAK FLOW REDUCTION [Qout/Qin](%)= 17.18				
TIME SHIFT OF PEAK FLOW (min)= 15.00				
MAXIMUM STORAGE USED (ha.m.)= 0.1105				

CALIB				
STANDHYD (1302)				
ID= 1 DT= 5.0 min				
Area	(ha)=	2.86		
Total Imp(%)=	86.10	Dir. Conn.(%)=	86.10	
IMPERVIOUS	PERVIOUS (i)			
Surface Area	(ha)=	2.46	0.40	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	138.08	40.00	
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26		
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26		
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26		
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26		
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26		
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26		

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0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84

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4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max. Eff. Inten. (mm/hr)=	77.06	50.88
over (min)	5.00	10.00
Storage Coeff. (min)=	3.44 (ii)	7.22 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.26	0.14

PEAK FLOW (cms)=	0.52	0.05	*TOTALS*
TIME TO PEAK (hrs)=	12.00	12.00	0.569 (iii)
RUNOFF VOLUME (mm)=	68.83	37.13	64.43
TOTAL RAINFALL (mm)=	69.84	69.84	69.84
RUNOFF COEFFICIENT =	0.99	0.53	0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2312) 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	0.1140	0.0930	
0.0510	0.0650	0.1380	0.1020	
0.0710	0.0750	0.1610	0.1100	
0.0880	0.0830	0.2520	0.1450	
AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	

INFLOW : ID= 2 (1302)	2.860	0.569	12.00	64.43
OUTFLOW: ID= 1 (2312)	2.860	0.097	12.25	64.32

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.09
 TIME SHIFT OF PEAK FLOW (min)= 15.00
 MAXIMUM STORAGE USED (ha.m.)= 0.0866

ADD HYD (2315)				
1 + 2 = 3				
AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (2311):	3.68	0.125	12.25	64.09
+ ID2= 2 (2312):	2.86	0.097	12.25	64.32
ID = 3 (2315):	6.54	0.222	12.25	64.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1303)				
ID= 1 DT= 5.0 min				
Area	(ha)=	3.47		
Total Imp(%)=	86.30	Dir. Conn.(%)=	86.30	
IMPERVIOUS	PERVIOUS (i)			
Surface Area	(ha)=	2.99	0.48	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	152.10	40.00	
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26		
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26		
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26		
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26		
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26		
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26		
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26		
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26		
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26		
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26		
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26		
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26		

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1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84

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5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84
Max.Eff.Inten.(mm/hr)=				77.06	50.88		
over (min)				5.00	10.00		
Storage Coeff. (min)=				3.65 (ii)	7.40 (iii)		
Unit Hyd. Tpeak (min)=				5.00	10.00		
Unit Hyd. peak (cms)=				0.25	0.13		
TOTALS							
PEAK FLOW (cms)=				0.63	0.05	0.689 (iii)	
TIME TO PEAK (hrs)=				12.00	12.00	12.00	
RUNOFF VOLUME (mm)=				68.83	37.13	64.49	
TOTAL RAINFALL (mm)=				69.84	69.84	69.84	
RUNOFF COEFFICIENT =				0.99	0.53	0.92	

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

- (i) ON PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2313) |
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	0.1380	0.1130
0.0620	0.0790	0.1680	0.1240
0.0860	0.0910	0.1950	0.1340
0.1060	0.1010	0.3060	0.1760

INFLOW : ID= 2 (1303)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW: ID= 1 (2313)	3.470	0.689	12.00	64.49
	3.470	0.117	12.25	64.40

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.99
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.1052

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ADD HYD (2316)				
1 + 2 = 3				

ID1= 1 (2313):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (2315):	3.47	0.117	12.25	64.40
	6.54	0.222	12.25	64.19
=====				
ID = 3 (2316):	10.01	0.339	12.25	64.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1304)				
ID= 1 DT= 5.0 min				

Area (ha)=	3.93			
Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00		

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.54
Dep. Storage (mm)=	1.00
Average Slope (%)=	1.00
Length (m)=	161.86
Mannings n	0.013
	0.250

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	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26

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1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84

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5.750 1.12 |11.750 29.04 |17.750 1.26 | 23.75 0.84
5.833 1.12 |11.833 77.05 |17.833 1.26 | 23.83 0.84
5.917 1.12 |11.917 77.06 |17.917 1.26 | 23.92 0.84
6.000 1.12 |12.000 77.06 |18.000 1.26 | 24.00 0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 10.00
Storage Coeff. (min)= 3.79 (ii) 7.04 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.14

*TOTALS*
PEAK FLOW (cms)= 0.75 0.05 0.794 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 65.66
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.94

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2314) | 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 | 0.1570 0.1320
0.0700 0.0930 | 0.1900 0.1450
0.0970 0.1070 | 0.2210 0.1560
0.1210 0.1170 | 0.3470 0.2040

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```

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1304) 3.930 0.794 12.00 65.66
OUTFLOW: ID= 1 ( 2314) 3.930 0.134 12.25 65.58

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PEAK FLOW REDUCTION [Qout/Qin](%)= 16.91
TIME SHIFT OF PEAK FLOW (min)= 15.00
MAXIMUM STORAGE USED (ha.m.)= 0.1226

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| ADD HYD ( 2317) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.

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----- (ha) (cms) (hrs) (mm)
ID1= 1 ( 2314): 3.93 0.134 12.25 65.58
+ ID2= 2 ( 2316): 10.01 0.339 12.25 64.26
=====
ID = 3 ( 2317): 13.94 0.473 12.25 64.63

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 2320) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 2317): 13.94 0.473 12.25 64.63
+ ID2= 2 ( 2319): 7.94 0.362 12.00 37.35
=====
ID = 3 ( 2320): 21.88 0.817 12.17 54.73

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 1101) | Area (ha)= 3.22
| ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

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IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.90 0.32
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 146.52 40.00
Mannings n = 0.013 0.250

```

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

```

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 0.77 | 6.083 1.40 | 12.083 10.06 | 18.08 1.26
0.167 0.77 | 6.167 1.40 | 12.167 10.05 | 18.17 1.26
0.250 0.77 | 6.250 1.40 | 12.250 10.05 | 18.25 1.26
0.333 0.77 | 6.333 1.40 | 12.333 10.05 | 18.33 1.26
0.417 0.77 | 6.417 1.40 | 12.417 10.05 | 18.42 1.26
0.500 0.77 | 6.500 1.40 | 12.500 10.05 | 18.50 1.26
0.583 0.77 | 6.583 1.40 | 12.583 5.17 | 18.58 1.26
0.667 0.77 | 6.667 1.40 | 12.667 5.17 | 18.67 1.26
0.750 0.77 | 6.750 1.40 | 12.750 5.17 | 18.75 1.26
0.833 0.77 | 6.833 1.40 | 12.833 5.17 | 18.83 1.26
0.917 0.77 | 6.917 1.40 | 12.917 5.17 | 18.92 1.26
1.000 0.77 | 7.000 1.40 | 13.000 5.17 | 19.00 1.26

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1.083 0.77 | 7.083 1.40 |13.083 0.98 | 19.08 1.26
1.167 0.77 | 7.167 1.40 |13.167 0.98 | 19.17 1.26
1.250 0.77 | 7.250 1.40 |13.250 0.98 | 19.25 1.26
1.333 0.77 | 7.333 1.40 |13.333 0.98 | 19.33 1.26
1.417 0.77 | 7.417 1.40 |13.417 0.98 | 19.42 1.26
1.500 0.77 | 7.500 1.40 |13.500 0.98 | 19.50 1.26
1.583 0.77 | 7.583 1.40 |13.583 5.72 | 19.58 1.26
1.667 0.77 | 7.667 1.40 |13.667 5.72 | 19.67 1.26
1.750 0.77 | 7.750 1.40 |13.750 5.72 | 19.75 1.26
1.833 0.77 | 7.833 1.40 |13.833 5.72 | 19.83 1.26
1.917 0.77 | 7.917 1.40 |13.917 5.72 | 19.92 1.26
2.000 0.77 | 8.000 1.40 |14.000 5.72 | 20.00 1.26
2.083 0.91 | 8.083 1.88 |14.083 2.09 | 20.08 0.84
2.167 0.91 | 8.167 1.88 |14.167 2.09 | 20.17 0.84
2.250 0.91 | 8.250 1.88 |14.250 2.09 | 20.25 0.84
2.333 0.91 | 8.333 1.88 |14.333 2.09 | 20.33 0.84
2.417 0.91 | 8.417 1.88 |14.417 2.09 | 20.42 0.84
2.500 0.91 | 8.500 1.88 |14.500 2.09 | 20.50 0.84
2.583 0.91 | 8.583 1.88 |14.583 2.09 | 20.58 0.84
2.667 0.91 | 8.667 1.88 |14.667 2.09 | 20.67 0.84
2.750 0.91 | 8.750 1.88 |14.750 2.09 | 20.75 0.84
2.833 0.91 | 8.833 1.88 |14.833 2.09 | 20.83 0.84
2.917 0.91 | 8.917 1.88 |14.917 2.09 | 20.92 0.84
3.000 0.91 | 9.000 1.88 |15.000 2.09 | 21.00 0.84
3.083 0.91 | 9.083 2.23 |15.083 2.09 | 21.08 0.84
3.167 0.91 | 9.167 2.23 |15.167 2.09 | 21.17 0.84
3.250 0.91 | 9.250 2.23 |15.250 2.09 | 21.25 0.84
3.333 0.91 | 9.333 2.23 |15.333 2.09 | 21.33 0.84
3.417 0.91 | 9.417 2.23 |15.417 2.09 | 21.42 0.84
3.500 0.91 | 9.500 2.23 |15.500 2.09 | 21.50 0.84
3.583 0.91 | 9.583 2.51 |15.583 2.09 | 21.58 0.84
3.667 0.91 | 9.667 2.51 |15.667 2.09 | 21.67 0.84
3.750 0.91 | 9.750 2.51 |15.750 2.09 | 21.75 0.84
3.833 0.91 | 9.833 2.51 |15.833 2.09 | 21.83 0.84
3.917 0.91 | 9.917 2.51 |15.917 2.09 | 21.92 0.84
4.000 0.91 |10.000 2.51 |16.000 2.09 | 22.00 0.84
4.083 1.12 |10.083 3.21 |16.083 1.26 | 22.08 0.84
4.167 1.12 |10.167 3.21 |16.167 1.26 | 22.17 0.84
4.250 1.12 |10.250 3.21 |16.250 1.26 | 22.25 0.84
4.333 1.12 |10.333 3.21 |16.333 1.26 | 22.33 0.84
4.417 1.12 |10.417 3.21 |16.417 1.26 | 22.42 0.84
4.500 1.12 |10.500 3.21 |16.500 1.26 | 22.50 0.84
4.583 1.12 |10.583 4.33 |16.583 1.26 | 22.58 0.84
4.667 1.12 |10.667 4.33 |16.667 1.26 | 22.67 0.84
4.750 1.12 |10.750 4.33 |16.750 1.26 | 22.75 0.84
4.833 1.12 |10.833 4.33 |16.833 1.26 | 22.83 0.84
4.917 1.12 |10.917 4.33 |16.917 1.26 | 22.92 0.84
5.000 1.12 |11.000 4.33 |17.000 1.26 | 23.00 0.84
5.083 1.12 |11.083 6.70 |17.083 1.26 | 23.08 0.84
5.167 1.12 |11.167 6.70 |17.167 1.26 | 23.17 0.84

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5.250 1.12 |11.250 6.70 |17.250 1.26 | 23.25 0.84
5.333 1.12 |11.333 6.70 |17.333 1.26 | 23.33 0.84
5.417 1.12 |11.417 6.70 |17.417 1.26 | 23.42 0.84
5.500 1.12 |11.500 6.70 |17.500 1.26 | 23.50 0.84
5.583 1.12 |11.583 29.04 |17.583 1.26 | 23.58 0.84
5.667 1.12 |11.667 29.04 |17.667 1.26 | 23.67 0.84
5.750 1.12 |11.750 29.04 |17.750 1.26 | 23.75 0.84
5.833 1.12 |11.833 77.05 |17.833 1.26 | 23.83 0.84
5.917 1.12 |11.917 77.06 |17.917 1.26 | 23.92 0.84
6.000 1.12 |12.000 77.06 |18.000 1.26 | 24.00 0.84

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Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 10.00
Storage Coeff. (min)= 3.57 (ii) 6.82 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

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*TOTALS*
PEAK FLOW (cms)= 0.61 0.04 0.652 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 65.66
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1111) | 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 | 0.2210 0.0950
0.0700 0.0700 | 0.2700 0.1030
0.1230 0.0800 | 0.3270 0.1100
0.1610 0.0860 | 0.6360 0.1400

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AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1101) 3.220 0.652 12.00 65.66
OUTFLOW: ID= 1 ( 1111) 3.220 0.182 12.17 65.59

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PEAK FLOW REDUCTION [Qout/Qin](%)= 27.96
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.0899

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CALIB			
STANDHYD (1102)	Area (ha)=	2.07	
ID= 1 DT= 5.0 min	Total Imp(%)=	24.50	Dir. Conn.(%)= 24.50

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.51	1.56	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	117.47	40.00	
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26		
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26		
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26		
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26		
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26		
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26		
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26		
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26		
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26		
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26		
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26		
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26		
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26		
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26		
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26		
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26		
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26		
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26		
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26		
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26		
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26		
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26		
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26		
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26		
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84		
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84		
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84		
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84		
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84		
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84		

2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max. Eff. Inten. (mm/hr)= 77.06 50.88
over (min) 5.00 15.00
Storage Coeff. (min)= 3.12 (ii) 12.37 (iii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.27 0.08

TOTALS
0.233 (iii)

PEAK FLOW (cms)= 0.11 0.14

TIME TO PEAK (hrs)= 12.00 12.08 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 44.89
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1102):	2.07	0.233	12.00	44.89
+ ID2= 2 (1111):	3.22	0.182	12.17	65.59
=====				
ID = 3 (1112):	5.29	0.356	12.00	57.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1201)	Area (ha)=	5.38	
ID= 1 DT= 5.0 min	Total Imp(%)=	87.00	Dir. Conn.(%)= 87.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	4.68	0.70	
Dep. Storage (mm)=	1.00	5.00	
Average Slope (%)=	1.00	2.00	
Length (m)=	189.38	40.00	
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26		
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26		
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26		
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26		
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26		
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26		

0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84

4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 10.00
Storage Coeff. (min)= 4.16 (ii) 7.82 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.24 0.13

PEAK FLOW (cms)= 0.98 0.08 1.063 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 64.71
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1211) 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		0.2680		0.1680	
0.1050		0.1200		0.3330		0.1830	
0.1540		0.1380		0.3940		0.1960	
0.1970		0.1510		0.7720		0.2500	
AREA (ha)		QPEAK (cms)		TPEAK (hrs)		R. V. (mm)	

INFLOW : ID= 2 (1201) 5.380 1.063 12.00 64.71
OUTFLOW: ID= 1 (1211) 5.380 0.221 12.17 64.66

PEAK FLOW REDUCTION [Qout/Qin](%)= 20.83
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1573

CALIB
STANDHYD (1202) | Area (ha)= 4.07
ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.30 0.77
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 164.72 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26

2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84
2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88

over (min) 5.00 10.00
Storage Coeff. (min)= 3.83 (ii) 8.19 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.13

PEAK FLOW (cms)= 0.70 0.08 0.783 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 68.84 37.13 62.87
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1212) 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		0.2030		0.1210	
0.0800		0.0860		0.2520		0.1320	
0.1170		0.0990		0.2980		0.1420	
0.1490		0.1080		0.5840		0.1820	
AREA (ha)		QPEAK (cms)		TPEAK (hrs)		R. V. (mm)	
INFLOW : ID= 2 (1202)		4.070		0.783		12.00	
OUTFLOW: ID= 1 (1212)		4.070		0.170		12.17	

PEAK FLOW REDUCTION [Qout/Qin](%)= 21.71
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1133

ADD HYD (1213) |
1 + 2 = 3 |
ID1= 1 (1211): 5.38 0.221 12.17 64.66
+ ID2= 2 (1212): 4.07 0.170 12.17 62.81
ID = 3 (1213): 9.45 0.392 12.17 63.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (1203)
ID= 1 DT= 5.0 min

Area (ha)= 1.54
Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10

IMPERVIOUS PVIOUS (i)

Surface Area (ha)= 0.43 1.11
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 101.32 40.00
Mannings n = 0.013 0.250

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

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.77	6.083	1.40	12.083	10.06	18.08	1.26
0.167	0.77	6.167	1.40	12.167	10.05	18.17	1.26
0.250	0.77	6.250	1.40	12.250	10.05	18.25	1.26
0.333	0.77	6.333	1.40	12.333	10.05	18.33	1.26
0.417	0.77	6.417	1.40	12.417	10.05	18.42	1.26
0.500	0.77	6.500	1.40	12.500	10.05	18.50	1.26
0.583	0.77	6.583	1.40	12.583	5.17	18.58	1.26
0.667	0.77	6.667	1.40	12.667	5.17	18.67	1.26
0.750	0.77	6.750	1.40	12.750	5.17	18.75	1.26
0.833	0.77	6.833	1.40	12.833	5.17	18.83	1.26
0.917	0.77	6.917	1.40	12.917	5.17	18.92	1.26
1.000	0.77	7.000	1.40	13.000	5.17	19.00	1.26
1.083	0.77	7.083	1.40	13.083	0.98	19.08	1.26
1.167	0.77	7.167	1.40	13.167	0.98	19.17	1.26
1.250	0.77	7.250	1.40	13.250	0.98	19.25	1.26
1.333	0.77	7.333	1.40	13.333	0.98	19.33	1.26
1.417	0.77	7.417	1.40	13.417	0.98	19.42	1.26
1.500	0.77	7.500	1.40	13.500	0.98	19.50	1.26
1.583	0.77	7.583	1.40	13.583	5.72	19.58	1.26
1.667	0.77	7.667	1.40	13.667	5.72	19.67	1.26
1.750	0.77	7.750	1.40	13.750	5.72	19.75	1.26
1.833	0.77	7.833	1.40	13.833	5.72	19.83	1.26
1.917	0.77	7.917	1.40	13.917	5.72	19.92	1.26
2.000	0.77	8.000	1.40	14.000	5.72	20.00	1.26
2.083	0.91	8.083	1.88	14.083	2.09	20.08	0.84
2.167	0.91	8.167	1.88	14.167	2.09	20.17	0.84
2.250	0.91	8.250	1.88	14.250	2.09	20.25	0.84
2.333	0.91	8.333	1.88	14.333	2.09	20.33	0.84
2.417	0.91	8.417	1.88	14.417	2.09	20.42	0.84
2.500	0.91	8.500	1.88	14.500	2.09	20.50	0.84

Max.Eff.Inten.(mm/hr)= 77.06 50.88
over (min) 5.00 15.00
Storage Coeff. (min)= 2.86 (ii) 12.11 (iii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.09

TOTALS
PEAK FLOW (cms)= 0.09 0.10 0.182 (iii)

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2.583	0.91	8.583	1.88	14.583	2.09	20.58	0.84
2.667	0.91	8.667	1.88	14.667	2.09	20.67	0.84
2.750	0.91	8.750	1.88	14.750	2.09	20.75	0.84
2.833	0.91	8.833	1.88	14.833	2.09	20.83	0.84
2.917	0.91	8.917	1.88	14.917	2.09	20.92	0.84
3.000	0.91	9.000	1.88	15.000	2.09	21.00	0.84
3.083	0.91	9.083	2.23	15.083	2.09	21.08	0.84
3.167	0.91	9.167	2.23	15.167	2.09	21.17	0.84
3.250	0.91	9.250	2.23	15.250	2.09	21.25	0.84
3.333	0.91	9.333	2.23	15.333	2.09	21.33	0.84
3.417	0.91	9.417	2.23	15.417	2.09	21.42	0.84
3.500	0.91	9.500	2.23	15.500	2.09	21.50	0.84
3.583	0.91	9.583	2.51	15.583	2.09	21.58	0.84
3.667	0.91	9.667	2.51	15.667	2.09	21.67	0.84
3.750	0.91	9.750	2.51	15.750	2.09	21.75	0.84
3.833	0.91	9.833	2.51	15.833	2.09	21.83	0.84
3.917	0.91	9.917	2.51	15.917	2.09	21.92	0.84
4.000	0.91	10.000	2.51	16.000	2.09	22.00	0.84
4.083	1.12	10.083	3.21	16.083	1.26	22.08	0.84
4.167	1.12	10.167	3.21	16.167	1.26	22.17	0.84
4.250	1.12	10.250	3.21	16.250	1.26	22.25	0.84
4.333	1.12	10.333	3.21	16.333	1.26	22.33	0.84
4.417	1.12	10.417	3.21	16.417	1.26	22.42	0.84
4.500	1.12	10.500	3.21	16.500	1.26	22.50	0.84
4.583	1.12	10.583	4.33	16.583	1.26	22.58	0.84
4.667	1.12	10.667	4.33	16.667	1.26	22.67	0.84
4.750	1.12	10.750	4.33	16.750	1.26	22.75	0.84
4.833	1.12	10.833	4.33	16.833	1.26	22.83	0.84
4.917	1.12	10.917	4.33	16.917	1.26	22.92	0.84
5.000	1.12	11.000	4.33	17.000	1.26	23.00	0.84
5.083	1.12	11.083	6.70	17.083	1.26	23.08	0.84
5.167	1.12	11.167	6.70	17.167	1.26	23.17	0.84
5.250	1.12	11.250	6.70	17.250	1.26	23.25	0.84
5.333	1.12	11.333	6.70	17.333	1.26	23.33	0.84
5.417	1.12	11.417	6.70	17.417	1.26	23.42	0.84
5.500	1.12	11.500	6.70	17.500	1.26	23.50	0.84
5.583	1.12	11.583	29.04	17.583	1.26	23.58	0.84
5.667	1.12	11.667	29.04	17.667	1.26	23.67	0.84
5.750	1.12	11.750	29.04	17.750	1.26	23.75	0.84
5.833	1.12	11.833	77.05	17.833	1.26	23.83	0.84
5.917	1.12	11.917	77.06	17.917	1.26	23.92	0.84
6.000	1.12	12.000	77.06	18.000	1.26	24.00	0.84

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TIME TO PEAK (hrs)= 12.00 12.08 12.00
RUNOFF VOLUME (mm)= 68.83 37.13 46.03
TOTAL RAINFALL (mm)= 69.84 69.84 69.84
RUNOFF COEFFICIENT = 0.99 0.53 0.66

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1214)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1203):	1.54	0.182	12.00	46.03
+ ID2= 2 (1213):	9.45	0.392	12.17	63.86
ID = 3 (1214):	10.99	0.500	12.17	61.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A L
V V I SS U U A A L
VV I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y M M 0 0
0 0 T T H H Y Y M M 0 0
000 T T H H Y 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 OTTHYM0 6.2\VO2\vo.in.dat

Output filename:

-175-

C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\19251b
43-8614-4253-9961-7dd13829e4f5\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\19251b
43-8614-4253-9961-7dd13829e4f5\scenar

DATE: 05-28-2026

TIME: 11:05:50

USER:

COMMENTS: _____

** SIMULATION : Run2.3 10-yr 24-hr SCS (Wella **

READ STORM
ata\Local\Temp\
7b238f43-dcf5-433e-b41e-e7c655d02d4d\56b76213
Ptotal= 80.00 mm
Comments: 10-yr 24-hr SCS (Welland)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.88	6.00	1.60	12.00	11.52	18.00	1.44
0.25	0.88	6.25	1.60	12.25	11.52	18.25	1.44
0.50	0.88	6.50	1.60	12.50	5.92	18.50	1.44
0.75	0.88	6.75	1.60	12.75	5.92	18.75	1.44
1.00	0.88	7.00	1.60	13.00	1.12	19.00	1.44
1.25	0.88	7.25	1.60	13.25	1.12	19.25	1.44
1.50	0.88	7.50	1.60	13.50	6.56	19.50	1.44
1.75	0.88	7.75	1.60	13.75	6.56	19.75	1.44
2.00	1.04	8.00	2.16	14.00	2.40	20.00	0.96
2.25	1.04	8.25	2.16	14.25	2.40	20.25	0.96
2.50	1.04	8.50	2.16	14.50	2.40	20.50	0.96
2.75	1.04	8.75	2.16	14.75	2.40	20.75	0.96
3.00	1.04	9.00	2.56	15.00	2.40	21.00	0.96
3.25	1.04	9.25	2.56	15.25	2.40	21.25	0.96
3.50	1.04	9.50	2.88	15.50	2.40	21.50	0.96
3.75	1.04	9.75	2.88	15.75	2.40	21.75	0.96
4.00	1.28	10.00	3.68	16.00	1.44	22.00	0.96
4.25	1.28	10.25	3.68	16.25	1.44	22.25	0.96
4.50	1.28	10.50	4.96	16.50	1.44	22.50	0.96

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4.75	1.28	10.75	4.96	16.75	1.44	22.75	0.96
5.00	1.28	11.00	7.68	17.00	1.44	23.00	0.96
5.25	1.28	11.25	7.68	17.25	1.44	23.25	0.96
5.50	1.28	11.50	33.28	17.50	1.44	23.50	0.96
5.75	1.28	11.75	88.32	17.75	1.44	23.75	0.96

| CALIB |
| NASHYD (1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.75

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96

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2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.134 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 43.482
TOTAL RAINFALL (mm)= 80.000
RUNOFF COEFFICIENT = 0.544

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

| CALIB |
| NASHYD (0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.47

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96

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2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96				

```

-----
| ADD HYD ( 2318) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1305):      AREA      QPEAK      TPEAK      R.V.
                   (ha)      (cms)      (hrs)      (mm)
+ ID2= 2 ( 0304):      2.79      0.174      12.33      43.48
=====
ID = 3 ( 2318):      5.79      0.294      12.42      43.48

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 0305) |
| ID= 1 DT= 5.0 min |
-----

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```

                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=      0.54      1.61
Dep. Storage (mm)=      7.50      5.00
Average Slope (%)=      1.00      2.00
Length (m)=      119.72      40.00
Mannings n      =      0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 0.88 6.083 1.60 12.083 11.53 18.08 1.44
0.167 0.88 6.167 1.60 12.167 11.52 18.17 1.44
0.250 0.88 6.250 1.60 12.250 11.52 18.25 1.44
0.333 0.88 6.333 1.60 12.333 11.52 18.33 1.44
0.417 0.88 6.417 1.60 12.417 11.52 18.42 1.44
0.500 0.88 6.500 1.60 12.500 11.52 18.50 1.44
0.583 0.88 6.583 1.60 12.583 5.92 18.58 1.44
0.667 0.88 6.667 1.60 12.667 5.92 18.67 1.44
0.750 0.88 6.750 1.60 12.750 5.92 18.75 1.44
0.833 0.88 6.833 1.60 12.833 5.92 18.83 1.44
0.917 0.88 6.917 1.60 12.917 5.92 18.92 1.44
1.000 0.88 7.000 1.60 13.000 5.92 19.00 1.44
1.083 0.88 7.083 1.60 13.083 1.12 19.08 1.44
1.167 0.88 7.167 1.60 13.167 1.12 19.17 1.44
1.250 0.88 7.250 1.60 13.250 1.12 19.25 1.44
1.333 0.88 7.333 1.60 13.333 1.12 19.33 1.44
1.417 0.88 7.417 1.60 13.417 1.12 19.42 1.44
1.500 0.88 7.500 1.60 13.500 1.12 19.50 1.44
1.583 0.88 7.583 1.60 13.583 6.56 19.58 1.44
1.667 0.88 7.667 1.60 13.667 6.56 19.67 1.44

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1.750 0.88 7.750 1.60 13.750 6.56 19.75 1.44
1.833 0.88 7.833 1.60 13.833 6.56 19.83 1.44
1.917 0.88 7.917 1.60 13.917 6.56 19.92 1.44
2.000 0.88 8.000 1.60 14.000 6.56 20.00 1.44
2.083 1.04 8.083 2.16 14.083 2.40 20.08 0.96
2.167 1.04 8.167 2.16 14.167 2.40 20.17 0.96
2.250 1.04 8.250 2.16 14.250 2.40 20.25 0.96
2.333 1.04 8.333 2.16 14.333 2.40 20.33 0.96
2.417 1.04 8.417 2.16 14.417 2.40 20.42 0.96
2.500 1.04 8.500 2.16 14.500 2.40 20.50 0.96
2.583 1.04 8.583 2.16 14.583 2.40 20.58 0.96
2.667 1.04 8.667 2.16 14.667 2.40 20.67 0.96
2.750 1.04 8.750 2.16 14.750 2.40 20.75 0.96
2.833 1.04 8.833 2.16 14.833 2.40 20.83 0.96
2.917 1.04 8.917 2.16 14.917 2.40 20.92 0.96
3.000 1.04 9.000 2.16 15.000 2.40 21.00 0.96
3.083 1.04 9.083 2.56 15.083 2.40 21.08 0.96
3.167 1.04 9.167 2.56 15.167 2.40 21.17 0.96
3.250 1.04 9.250 2.56 15.250 2.40 21.25 0.96
3.333 1.04 9.333 2.56 15.333 2.40 21.33 0.96
3.417 1.04 9.417 2.56 15.417 2.40 21.42 0.96
3.500 1.04 9.500 2.56 15.500 2.40 21.50 0.96
3.583 1.04 9.583 2.88 15.583 2.40 21.58 0.96
3.667 1.04 9.667 2.88 15.667 2.40 21.67 0.96
3.750 1.04 9.750 2.88 15.750 2.40 21.75 0.96
3.833 1.04 9.833 2.88 15.833 2.40 21.83 0.96
3.917 1.04 9.917 2.88 15.917 2.40 21.92 0.96
4.000 1.04 10.000 2.88 16.000 2.40 22.00 0.96
4.083 1.28 10.083 3.68 16.083 1.44 22.08 0.96
4.167 1.28 10.167 3.68 16.167 1.44 22.17 0.96
4.250 1.28 10.250 3.68 16.250 1.44 22.25 0.96
4.333 1.28 10.333 3.68 16.333 1.44 22.33 0.96
4.417 1.28 10.417 3.68 16.417 1.44 22.42 0.96
4.500 1.28 10.500 3.68 16.500 1.44 22.50 0.96
4.583 1.28 10.583 4.96 16.583 1.44 22.58 0.96
4.667 1.28 10.667 4.96 16.667 1.44 22.67 0.96
4.750 1.28 10.750 4.96 16.750 1.44 22.75 0.96
4.833 1.28 10.833 4.96 16.833 1.44 22.83 0.96
4.917 1.28 10.917 4.96 16.917 1.44 22.92 0.96
5.000 1.28 11.000 4.96 17.000 1.44 23.00 0.96
5.083 1.28 11.083 7.68 17.083 1.44 23.08 0.96
5.167 1.28 11.167 7.68 17.167 1.44 23.17 0.96
5.250 1.28 11.250 7.68 17.250 1.44 23.25 0.96
5.333 1.28 11.333 7.68 17.333 1.44 23.33 0.96
5.417 1.28 11.417 7.68 17.417 1.44 23.42 0.96
5.500 1.28 11.500 7.68 17.500 1.44 23.50 0.96
5.583 1.28 11.583 33.28 17.583 1.44 23.58 0.96
5.667 1.28 11.667 33.28 17.667 1.44 23.67 0.96
5.750 1.28 11.750 33.28 17.750 1.44 23.75 0.96
5.833 1.28 11.833 88.31 17.833 1.44 23.83 0.96

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5.917 1.28 11.917 88.32 17.917 1.44 23.92 0.96
6.000 1.28 12.000 88.32 18.000 1.44 24.00 0.96

Max.Eff.Inten.(mm/hr)=      88.32      62.00
over (min)              5.00      15.00
Storage Coeff. (min)=    2.99 (ii)      11.53 (ii)
Unit Hyd. Tpeak (min)=    5.00      15.00
Unit Hyd. peak (cms)=     0.28      0.09

                *TOTALS*
PEAK FLOW (cms)=      0.13      0.18      0.296 (iii)
TIME TO PEAK (hrs)=    12.00      12.00      12.00
RUNOFF VOLUME (mm)=    72.50      45.59      52.31
TOTAL RAINFALL (mm)=    80.00      80.00      80.00
RUNOFF COEFFICIENT      =      0.91      0.57      0.65

```

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
    CN* = 84.0    Ia = Dep. 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 ( 2319) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2318):      AREA      QPEAK      TPEAK      R.V.
                   (ha)      (cms)      (hrs)      (mm)
+ ID2= 2 ( 0305):      2.15      0.296      12.00      52.31
=====
ID = 3 ( 2319):      7.94      0.449      12.00      45.87

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1301) |
| ID= 1 DT= 5.0 min |
-----

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```

                IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=      3.14      0.54
Dep. Storage (mm)=      1.00      5.00
Average Slope (%)=      1.00      2.00
Length (m)=      156.63      40.00
Mannings n      =      0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 0.88 6.083 1.60 12.083 11.53 18.08 1.44
0.167 0.88 6.167 1.60 12.167 11.52 18.17 1.44
0.250 0.88 6.250 1.60 12.250 11.52 18.25 1.44
0.333 0.88 6.333 1.60 12.333 11.52 18.33 1.44
0.417 0.88 6.417 1.60 12.417 11.52 18.42 1.44
0.500 0.88 6.500 1.60 12.500 11.52 18.50 1.44
0.583 0.88 6.583 1.60 12.583 5.92 18.58 1.44
0.667 0.88 6.667 1.60 12.667 5.92 18.67 1.44
0.750 0.88 6.750 1.60 12.750 5.92 18.75 1.44
0.833 0.88 6.833 1.60 12.833 5.92 18.83 1.44
0.917 0.88 6.917 1.60 12.917 5.92 18.92 1.44
1.000 0.88 7.000 1.60 13.000 5.92 19.00 1.44
1.083 0.88 7.083 1.60 13.083 1.12 19.08 1.44
1.167 0.88 7.167 1.60 13.167 1.12 19.17 1.44
1.250 0.88 7.250 1.60 13.250 1.12 19.25 1.44
1.333 0.88 7.333 1.60 13.333 1.12 19.33 1.44
1.417 0.88 7.417 1.60 13.417 1.12 19.42 1.44
1.500 0.88 7.500 1.60 13.500 1.12 19.50 1.44
1.583 0.88 7.583 1.60 13.583 6.56 19.58 1.44
1.667 0.88 7.667 1.60 13.667 6.56 19.67 1.44
1.750 0.88 7.750 1.60 13.750 6.56 19.75 1.44
1.833 0.88 7.833 1.60 13.833 6.56 19.83 1.44
1.917 0.88 7.917 1.60 13.917 6.56 19.92 1.44
2.000 0.88 8.000 1.60 14.000 6.56 20.00 1.44
2.083 1.04 8.083 2.16 14.083 2.40 20.08 0.96
2.167 1.04 8.167 2.16 14.167 2.40 20.17 0.96
2.250 1.04 8.250 2.16 14.250 2.40 20.25 0.96
2.333 1.04 8.333 2.16 14.333 2.40 20.33 0.96
2.417 1.04 8.417 2.16 14.417 2.40 20.42 0.96
2.500 1.04 8.500 2.16 14.500 2.40 20.50 0.96
2.583 1.04 8.583 2.16 14.583 2.40 20.58 0.96
2.667 1.04 8.667 2.16 14.667 2.40 20.67 0.96
2.750 1.04 8.750 2.16 14.750 2.40 20.75 0.96
2.833 1.04 8.833 2.16 14.833 2.40 20.83 0.96
2.917 1.04 8.917 2.16 14.917 2.40 20.92 0.96
3.000 1.04 9.000 2.16 15.000 2.40 21.00 0.96
3.083 1.04 9.083 2.56 15.083 2.40 21.08 0.96
3.167 1.04 9.167 2.56 15.167 2.40 21.17 0.96
3.250 1.04 9.250 2.56 15.250 2.40 21.25 0.96
3.333 1.04 9.333 2.56 15.333 2.40 21.33 0.96
3.417 1.04 9.417 2.56 15.417 2.40 21.42 0.96
3.500 1.04 9.500 2.56 15.500 2.40 21.50 0.96
3.583 1.04 9.583 2.88 15.583 2.40 21.58 0.96
3.667 1.04 9.667 2.88 15.667 2.40 21.67 0.96
3.750 1.04 9.750 2.88 15.750 2.40 21.75 0.96
3.833 1.04 9.833 2.88 15.833 2.40 21.83 0.96

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3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Max. Eff. Inten. (mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.51 (ii) 7.19 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

TOTALS
PEAK FLOW (cms)= 0.76 0.08 0.840 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59 74.09
TOTAL RAINFALL (mm)= 80.00 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2311) | 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	0.1470	0.1190
	0.0660	0.0830	0.1780	0.1310
	0.0910	0.0960	0.2070	0.1410
	0.1130	0.1060	0.3250	0.1860
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1301)	3.680	0.840	12.00	74.09
OUTFLOW: ID= 1 (2311)	3.680	0.164	12.17	74.00
	PEAK FLOW TIME SHIFT OF PEAK FLOW MAXIMUM STORAGE USED	REDUCTION [Qout/Qin](%)= 19.49 (min)= 10.00 (ha.m.)= 0.1257		

CALIB	Area (ha)= 2.86
STANDHYD (1302)	Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10
ID= 1 DT= 5.0 min	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.46	0.40
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	138.08	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44		
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44		
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44		
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44		
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44		
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44		
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44		
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44		
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44		
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44		
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44		
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44		
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44		
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44		

1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96

Max. Eff. Inten. (mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.26 (ii) 6.83 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

TOTALS
PEAK FLOW (cms)= 0.60 0.06 0.657 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59 74.35
TOTAL RAINFALL (mm)= 80.00 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2312) 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	0.1140	0.0930
		0.0510	0.0650	0.1380	0.1020
		0.0710	0.0750	0.1610	0.1100
		0.0880	0.0830	0.2520	0.1450
		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1302)		2.860	0.657	12.00	74.35
OUTFLOW: ID= 1 (2312)		2.860	0.128	12.17	74.24
		PEAK FLOW TIME SHIFT OF PEAK FLOW MAXIMUM STORAGE USED	REDUCTION [Qout/Qin](%)= 19.50 (min)= 10.00 (ha.m.)= 0.0984		

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-----
| ADD HYD ( 2315) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2311):      AREA      QPEAK      TPEAK      R.V.
                   (ha)      (cms)      (hrs)      (mm)
+ ID2= 2 ( 2312):      3.68      0.164      12.17      74.00
                   2.86      0.128      12.17      74.24
=====
ID = 3 ( 2315):      6.54      0.292      12.17      74.11

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 1303) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.47
Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30

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IMPERVIOUS      PERVIOUS (i)
(ha)= 2.99      0.48
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 152.10      40.00
Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44

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1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44
1.917 0.88 | 7.917 1.60 | 13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 | 14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 | 14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 | 14.167 2.40 | 20.17 0.96
2.250 1.04 | 8.250 2.16 | 14.250 2.40 | 20.25 0.96
2.333 1.04 | 8.333 2.16 | 14.333 2.40 | 20.33 0.96
2.417 1.04 | 8.417 2.16 | 14.417 2.40 | 20.42 0.96
2.500 1.04 | 8.500 2.16 | 14.500 2.40 | 20.50 0.96
2.583 1.04 | 8.583 2.16 | 14.583 2.40 | 20.58 0.96
2.667 1.04 | 8.667 2.16 | 14.667 2.40 | 20.67 0.96
2.750 1.04 | 8.750 2.16 | 14.750 2.40 | 20.75 0.96
2.833 1.04 | 8.833 2.16 | 14.833 2.40 | 20.83 0.96
2.917 1.04 | 8.917 2.16 | 14.917 2.40 | 20.92 0.96
3.000 1.04 | 9.000 2.16 | 15.000 2.40 | 21.00 0.96
3.083 1.04 | 9.083 2.56 | 15.083 2.40 | 21.08 0.96
3.167 1.04 | 9.167 2.56 | 15.167 2.40 | 21.17 0.96
3.250 1.04 | 9.250 2.56 | 15.250 2.40 | 21.25 0.96
3.333 1.04 | 9.333 2.56 | 15.333 2.40 | 21.33 0.96
3.417 1.04 | 9.417 2.56 | 15.417 2.40 | 21.42 0.96
3.500 1.04 | 9.500 2.56 | 15.500 2.40 | 21.50 0.96
3.583 1.04 | 9.583 2.88 | 15.583 2.40 | 21.58 0.96
3.667 1.04 | 9.667 2.88 | 15.667 2.40 | 21.67 0.96
3.750 1.04 | 9.750 2.88 | 15.750 2.40 | 21.75 0.96
3.833 1.04 | 9.833 2.88 | 15.833 2.40 | 21.83 0.96
3.917 1.04 | 9.917 2.88 | 15.917 2.40 | 21.92 0.96
4.000 1.04 | 10.000 2.88 | 16.000 2.40 | 22.00 0.96
4.083 1.28 | 10.083 3.68 | 16.083 1.44 | 22.08 0.96
4.167 1.28 | 10.167 3.68 | 16.167 1.44 | 22.17 0.96
4.250 1.28 | 10.250 3.68 | 16.250 1.44 | 22.25 0.96
4.333 1.28 | 10.333 3.68 | 16.333 1.44 | 22.33 0.96
4.417 1.28 | 10.417 3.68 | 16.417 1.44 | 22.42 0.96
4.500 1.28 | 10.500 3.68 | 16.500 1.44 | 22.50 0.96
4.583 1.28 | 10.583 4.96 | 16.583 1.44 | 22.58 0.96
4.667 1.28 | 10.667 4.96 | 16.667 1.44 | 22.67 0.96
4.750 1.28 | 10.750 4.96 | 16.750 1.44 | 22.75 0.96
4.833 1.28 | 10.833 4.96 | 16.833 1.44 | 22.83 0.96
4.917 1.28 | 10.917 4.96 | 16.917 1.44 | 22.92 0.96
5.000 1.28 | 11.000 4.96 | 17.000 1.44 | 23.00 0.96
5.083 1.28 | 11.083 7.68 | 17.083 1.44 | 23.08 0.96
5.167 1.28 | 11.167 7.68 | 17.167 1.44 | 23.17 0.96
5.250 1.28 | 11.250 7.68 | 17.250 1.44 | 23.25 0.96
5.333 1.28 | 11.333 7.68 | 17.333 1.44 | 23.33 0.96
5.417 1.28 | 11.417 7.68 | 17.417 1.44 | 23.42 0.96
5.500 1.28 | 11.500 7.68 | 17.500 1.44 | 23.50 0.96
5.583 1.28 | 11.583 33.28 | 17.583 1.44 | 23.58 0.96
5.667 1.28 | 11.667 33.28 | 17.667 1.44 | 23.67 0.96
5.750 1.28 | 11.750 33.28 | 17.750 1.44 | 23.75 0.96
5.833 1.28 | 11.833 88.31 | 17.833 1.44 | 23.83 0.96

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5.917 1.28 | 11.917 88.32 | 17.917 1.44 | 23.92 0.96
6.000 1.28 | 12.000 88.32 | 18.000 1.44 | 24.00 0.96

Max.Eff.Inten.(mm/hr)= 88.32      62.00
over (min) = 5.00      10.00
Storage Coeff. (min)= 3.45 (ii) 7.01 (ii)
Unit Hyd. Tpeak (min)= 5.00      10.00
Unit Hyd. peak (cms)= 0.26      0.14

PEAK FLOW (cms)= 0.73      0.07      *TOTALS*
TIME TO PEAK (hrs)= 12.00      12.00      0.796 (iii)
RUNOFF VOLUME (mm)= 79.00      45.59      74.42
TOTAL RAINFALL (mm)= 80.00      80.00      80.00
RUNOFF COEFFICIENT = 0.99      0.57      0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2313) |
| IN= 2----> OUT= 1 |
| DT= 5.0 min |
-----
OVERFLOW IS OFF

OUTFLOW STORAGE | OUTFLOW STORAGE
(cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.1300 0.1130
0.0620 0.0790 | 0.1680 0.1240
0.0860 0.0910 | 0.1950 0.1340
0.1060 0.1010 | 0.3060 0.1760

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1303) 3.470 0.796 12.00 74.42
OUTFLOW: ID= 1 ( 2313) 3.470 0.155 12.17 74.33

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PEAK FLOW REDUCTION [Qout/Qin](%)= 19.50
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1195

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-----
| ADD HYD ( 2316) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 2313):      AREA      QPEAK      TPEAK      R.V.
                   (ha)      (cms)      (hrs)      (mm)

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+ ID2= 2 ( 2315):      6.54      0.292      12.17      74.11
=====
ID = 3 ( 2316):      10.01      0.447      12.17      74.19

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1304) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 3.93
Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

```

```

IMPERVIOUS      PERVIOUS (i)
(ha)= 3.54      0.39
Dep. Storage (mm)= 1.00      5.00
Average Slope (%)= 1.00      2.00
Length (m)= 161.86      40.00
Mannings n = 0.013      0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44
1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44
1.917 0.88 | 7.917 1.60 | 13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 | 14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 | 14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 | 14.167 2.40 | 20.17 0.96

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2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

Max.Eff.Inten.(mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.58 (ii) 6.66 (ii)

Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.26	0.14	
TOTALS			
PEAK FLOW (cms)=	0.86	0.06	0.916 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	79.00	45.59	75.66
TOTAL RAINFALL (mm)=	80.00	80.00	80.00
RUNOFF COEFFICIENT =	0.99	0.57	0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2314)				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			0.1570	0.1320
		0.0700	0.0930			0.1900	0.1450
		0.0970	0.1070			0.2210	0.1560
		0.1210	0.1170			0.3470	0.2040

		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1304)		3.930	0.916	12.00	75.66
OUTFLOW: ID= 1 (2314)		3.930	0.175	12.17	75.57

PEAK FLOW REDUCTION [Qout/Qin](%)= 19.08
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1392

ADD HYD (2320)					
1 + 2 = 3					
ID1= 1 (2317):		13.94	0.622	12.17	74.58
+ ID2= 2 (2319):		7.94	0.449	12.00	45.87
=====					
ID = 3 (2320):		21.88	1.056	12.17	64.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
STANDHYD (1101)					
ID= 1 DT= 5.0 min					
		Area (ha)=	3.22		
		Total Imp(%)=	90.00	Dir. Conn.(%)= 90.00	

		IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=		2.90	0.32		
Dep. Storage (mm)=		1.00	5.00		
Average Slope (%)=		1.00	2.00		
Length (m)=		146.52	40.00		
Mannings n =		0.013	0.250		

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

1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96

```

5.917 1.28 |11.917 88.32 |17.917 1.44 |23.92 0.96
6.000 1.28 |12.000 88.32 |18.000 1.44 |24.00 0.96

Max.Eff.Inten.(mm/hr)= 88.32 62.08
over (min) 5.00 10.00
Storage Coeff. (min)= 3.38 (ii) 6.46 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

*TOTALS*
PEAK FLOW (cms)= 0.71 0.05 0.753 (iii)
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 79.00 45.59 75.66
TOTAL RAINFALL (mm)= 80.00 80.00 80.00
RUNOFF COEFFICIENT = 0.99 0.57 0.95

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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( 1111)| 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 | 0.2210 0.0950 |
| 0.0760 0.0700 | 0.2760 0.1030 |
| 0.1230 0.0800 | 0.3270 0.1100 |
| 0.1610 0.0860 | 0.6360 0.1400 |

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1101) 3.220 0.753 12.00 75.66
OUTFLOW: ID= 1 ( 1111) 3.220 0.256 12.00 75.59

PEAK FLOW REDUCTION [Qout/Qin](%)= 34.01
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1004

```

```

-----
| CALIB |
| STANDHYD ( 1102)| Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
-----

IMPERVIOUS PERVIOUS (i)

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```

Surface Area (ha)= 0.51 1.56
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 117.47 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44
1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44
1.917 0.88 | 7.917 1.60 | 13.917 6.56 | 19.92 1.44
2.000 0.88 | 8.000 1.60 | 14.000 6.56 | 20.00 1.44
2.083 1.04 | 8.083 2.16 | 14.083 2.40 | 20.08 0.96
2.167 1.04 | 8.167 2.16 | 14.167 2.40 | 20.17 0.96
2.250 1.04 | 8.250 2.16 | 14.250 2.40 | 20.25 0.96
2.333 1.04 | 8.333 2.16 | 14.333 2.40 | 20.33 0.96
2.417 1.04 | 8.417 2.16 | 14.417 2.40 | 20.42 0.96
2.500 1.04 | 8.500 2.16 | 14.500 2.40 | 20.50 0.96
2.583 1.04 | 8.583 2.16 | 14.583 2.40 | 20.58 0.96
2.667 1.04 | 8.667 2.16 | 14.667 2.40 | 20.67 0.96
2.750 1.04 | 8.750 2.16 | 14.750 2.40 | 20.75 0.96
2.833 1.04 | 8.833 2.16 | 14.833 2.40 | 20.83 0.96
2.917 1.04 | 8.917 2.16 | 14.917 2.40 | 20.92 0.96
3.000 1.04 | 9.000 2.16 | 15.000 2.40 | 21.00 0.96
3.083 1.04 | 9.083 2.56 | 15.083 2.40 | 21.08 0.96
3.167 1.04 | 9.167 2.56 | 15.167 2.40 | 21.17 0.96

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- CN* = 84.0 Ia = Dep. 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 ( 1112)|
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 1102): 2.07 0.284 12.00 53.77
+ ID2= 2 ( 1111): 3.22 0.256 12.00 75.59
=====
ID = 3 ( 1112): 5.29 0.481 12.00 67.05

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1201)| Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 4.68 0.70
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 189.38 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44

```

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1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96
2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96

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5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96
Max. Eff. Inten. (mm/hr)=			88.32	62.08			
over (min)			5.00	10.00			
Storage Coeff. (min)=			3.94	7.41	(ii)		
Unit Hyd. Tpeak (min)=			5.00	10.00			
Unit Hyd. peak (cms)=			0.24	0.13			
TOTALS							
PEAK FLOW (cms)=			1.13	0.10	1.230 (iii)		
TIME TO PEAK (hrs)=			12.00	12.00	12.00		
RUNOFF VOLUME (mm)=			79.00	45.59	74.66		
TOTAL RAINFALL (mm)=			80.00	80.00	80.00		
RUNOFF COEFFICIENT =			0.99	0.57	0.93		

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN* = 84.0 Ia = Dep. 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(1211) |
 | 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	0.2680	0.1680
0.1050	0.1200	0.3330	0.1830
0.1540	0.1380	0.3940	0.1960
0.1970	0.1510	0.7720	0.2500

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1201)	5.380	1.230	12.00	74.66
OUTFLOW: ID= 1 (1211)	5.380	0.308	12.17	74.60

PEAK FLOW REDUCTION [Qout/Qin](%)= 25.00

TIME SHIFT OF PEAK FLOW (min)= 10.00

MAXIMUM STORAGE USED (ha.m.)= 0.1775

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CALIB			
STANDHYD (1202)			
ID= 1 DT= 5.0 min			

Area (ha)=	4.07
Total Imp(%)=	81.20
Dir. Conn.(%)=	81.20
IMPERVIOUS	
Surface Area (ha)=	3.30
Dep. Storage (mm)=	1.00
Average Slope (%)=	1.00
Length (m)=	164.72
Mannings n	= 0.013
PERVIOUS (i)	
	0.77
	5.00
	2.00
	40.00
	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	0.88	6.083	1.60	12.083	11.53	18.08	1.44
0.167	0.88	6.167	1.60	12.167	11.52	18.17	1.44
0.250	0.88	6.250	1.60	12.250	11.52	18.25	1.44
0.333	0.88	6.333	1.60	12.333	11.52	18.33	1.44
0.417	0.88	6.417	1.60	12.417	11.52	18.42	1.44
0.500	0.88	6.500	1.60	12.500	11.52	18.50	1.44
0.583	0.88	6.583	1.60	12.583	5.92	18.58	1.44
0.667	0.88	6.667	1.60	12.667	5.92	18.67	1.44
0.750	0.88	6.750	1.60	12.750	5.92	18.75	1.44
0.833	0.88	6.833	1.60	12.833	5.92	18.83	1.44
0.917	0.88	6.917	1.60	12.917	5.92	18.92	1.44
1.000	0.88	7.000	1.60	13.000	5.92	19.00	1.44
1.083	0.88	7.083	1.60	13.083	1.12	19.08	1.44
1.167	0.88	7.167	1.60	13.167	1.12	19.17	1.44
1.250	0.88	7.250	1.60	13.250	1.12	19.25	1.44
1.333	0.88	7.333	1.60	13.333	1.12	19.33	1.44
1.417	0.88	7.417	1.60	13.417	1.12	19.42	1.44
1.500	0.88	7.500	1.60	13.500	1.12	19.50	1.44
1.583	0.88	7.583	1.60	13.583	6.56	19.58	1.44
1.667	0.88	7.667	1.60	13.667	6.56	19.67	1.44
1.750	0.88	7.750	1.60	13.750	6.56	19.75	1.44
1.833	0.88	7.833	1.60	13.833	6.56	19.83	1.44
1.917	0.88	7.917	1.60	13.917	6.56	19.92	1.44
2.000	0.88	8.000	1.60	14.000	6.56	20.00	1.44
2.083	1.04	8.083	2.16	14.083	2.40	20.08	0.96
2.167	1.04	8.167	2.16	14.167	2.40	20.17	0.96
2.250	1.04	8.250	2.16	14.250	2.40	20.25	0.96
2.333	1.04	8.333	2.16	14.333	2.40	20.33	0.96
2.417	1.04	8.417	2.16	14.417	2.40	20.42	0.96
2.500	1.04	8.500	2.16	14.500	2.40	20.50	0.96
2.583	1.04	8.583	2.16	14.583	2.40	20.58	0.96
2.667	1.04	8.667	2.16	14.667	2.40	20.67	0.96

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2.750	1.04	8.750	2.16	14.750	2.40	20.75	0.96
2.833	1.04	8.833	2.16	14.833	2.40	20.83	0.96
2.917	1.04	8.917	2.16	14.917	2.40	20.92	0.96
3.000	1.04	9.000	2.16	15.000	2.40	21.00	0.96
3.083	1.04	9.083	2.56	15.083	2.40	21.08	0.96
3.167	1.04	9.167	2.56	15.167	2.40	21.17	0.96
3.250	1.04	9.250	2.56	15.250	2.40	21.25	0.96
3.333	1.04	9.333	2.56	15.333	2.40	21.33	0.96
3.417	1.04	9.417	2.56	15.417	2.40	21.42	0.96
3.500	1.04	9.500	2.56	15.500	2.40	21.50	0.96
3.583	1.04	9.583	2.88	15.583	2.40	21.58	0.96
3.667	1.04	9.667	2.88	15.667	2.40	21.67	0.96
3.750	1.04	9.750	2.88	15.750	2.40	21.75	0.96
3.833	1.04	9.833	2.88	15.833	2.40	21.83	0.96
3.917	1.04	9.917	2.88	15.917	2.40	21.92	0.96
4.000	1.04	10.000	2.88	16.000	2.40	22.00	0.96
4.083	1.28	10.083	3.68	16.083	1.44	22.08	0.96
4.167	1.28	10.167	3.68	16.167	1.44	22.17	0.96
4.250	1.28	10.250	3.68	16.250	1.44	22.25	0.96
4.333	1.28	10.333	3.68	16.333	1.44	22.33	0.96
4.417	1.28	10.417	3.68	16.417	1.44	22.42	0.96
4.500	1.28	10.500	3.68	16.500	1.44	22.50	0.96
4.583	1.28	10.583	4.96	16.583	1.44	22.58	0.96
4.667	1.28	10.667	4.96	16.667	1.44	22.67	0.96
4.750	1.28	10.750	4.96	16.750	1.44	22.75	0.96
4.833	1.28	10.833	4.96	16.833	1.44	22.83	0.96
4.917	1.28	10.917	4.96	16.917	1.44	22.92	0.96
5.000	1.28	11.000	4.96	17.000	1.44	23.00	0.96
5.083	1.28	11.083	7.68	17.083	1.44	23.08	0.96
5.167	1.28	11.167	7.68	17.167	1.44	23.17	0.96
5.250	1.28	11.250	7.68	17.250	1.44	23.25	0.96
5.333	1.28	11.333	7.68	17.333	1.44	23.33	0.96
5.417	1.28	11.417	7.68	17.417	1.44	23.42	0.96
5.500	1.28	11.500	7.68	17.500	1.44	23.50	0.96
5.583	1.28	11.583	33.28	17.583	1.44	23.58	0.96
5.667	1.28	11.667	33.28	17.667	1.44	23.67	0.96
5.750	1.28	11.750	33.28	17.750	1.44	23.75	0.96
5.833	1.28	11.833	88.31	17.833	1.44	23.83	0.96
5.917	1.28	11.917	88.32	17.917	1.44	23.92	0.96
6.000	1.28	12.000	88.32	18.000	1.44	24.00	0.96

TOTAL RAINFALL (mm)= 80.00 80.00 80.00
 RUNOFF COEFFICIENT = 0.99 0.57 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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( 1212)| 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 | 0.2030 | 0.1210
| 0.0000 | 0.0060 | 0.2520 | 0.1320
| 0.1170 | 0.0990 | 0.2980 | 0.1420
| 0.1490 | 0.1080 | 0.5840 | 0.1820
-----
| AREA | QPEAK | TPEAK | R.V.
| (ha) | (cms) | (hrs) | (mm)
| INFLOW : ID= 2 ( 1202) | 4.070 | 0.909 | 12.00 | 72.72
| OUTFLOW : ID= 1 ( 1212) | 4.070 | 0.234 | 12.17 | 72.65
-----
| PEAK FLOW REDUCTION [Qout/Qin](%)= 25.75
| TIME SHIFT OF PEAK FLOW (min)= 10.00
| MAXIMUM STORAGE USED (ha.m.)= 0.1283
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-----
| ADD HYD ( 1213)|
| 1 + 2 = 3 |
-----
| ID1= 1 ( 1211): | 5.38 | 0.308 | 12.17 | 74.60
| + ID2= 2 ( 1212): | 4.07 | 0.234 | 12.17 | 72.65
| =====
| ID = 3 ( 1213): | 9.45 | 0.542 | 12.17 | 73.76
-----

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 1203)| Area (ha)= 1.54
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10
| =====
| IMPERVIOUS | PERVIOUS (i)
| =====

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Surface Area (ha)= 0.43 1.11
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 101.32 40.00
 Mannings n = 0.013 0.250

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

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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 0.88 | 6.083 1.60 | 12.083 11.53 | 18.08 1.44
| 0.167 0.88 | 6.167 1.60 | 12.167 11.52 | 18.17 1.44
| 0.250 0.88 | 6.250 1.60 | 12.250 11.52 | 18.25 1.44
| 0.333 0.88 | 6.333 1.60 | 12.333 11.52 | 18.33 1.44
| 0.417 0.88 | 6.417 1.60 | 12.417 11.52 | 18.42 1.44
| 0.500 0.88 | 6.500 1.60 | 12.500 11.52 | 18.50 1.44
| 0.583 0.88 | 6.583 1.60 | 12.583 5.92 | 18.58 1.44
| 0.667 0.88 | 6.667 1.60 | 12.667 5.92 | 18.67 1.44
| 0.750 0.88 | 6.750 1.60 | 12.750 5.92 | 18.75 1.44
| 0.833 0.88 | 6.833 1.60 | 12.833 5.92 | 18.83 1.44
| 0.917 0.88 | 6.917 1.60 | 12.917 5.92 | 18.92 1.44
| 1.000 0.88 | 7.000 1.60 | 13.000 5.92 | 19.00 1.44
| 1.083 0.88 | 7.083 1.60 | 13.083 1.12 | 19.08 1.44
| 1.167 0.88 | 7.167 1.60 | 13.167 1.12 | 19.17 1.44
| 1.250 0.88 | 7.250 1.60 | 13.250 1.12 | 19.25 1.44
| 1.333 0.88 | 7.333 1.60 | 13.333 1.12 | 19.33 1.44
| 1.417 0.88 | 7.417 1.60 | 13.417 1.12 | 19.42 1.44
| 1.500 0.88 | 7.500 1.60 | 13.500 1.12 | 19.50 1.44
| 1.583 0.88 | 7.583 1.60 | 13.583 6.56 | 19.58 1.44
| 1.667 0.88 | 7.667 1.60 | 13.667 6.56 | 19.67 1.44
| 1.750 0.88 | 7.750 1.60 | 13.750 6.56 | 19.75 1.44
| 1.833 0.88 | 7.833 1.60 | 13.833 6.56 | 19.83 1.44
| 1.917 0.88 | 7.917 1.60 | 13.917 6.56 | 19.92 1.44
| 2.000 0.88 | 8.000 1.60 | 14.000 6.56 | 20.00 1.44
| 2.083 1.04 | 8.083 2.16 | 14.083 2.40 | 20.08 0.96
| 2.167 1.04 | 8.167 2.16 | 14.167 2.40 | 20.17 0.96
| 2.250 1.04 | 8.250 2.16 | 14.250 2.40 | 20.25 0.96
| 2.333 1.04 | 8.333 2.16 | 14.333 2.40 | 20.33 0.96
| 2.417 1.04 | 8.417 2.16 | 14.417 2.40 | 20.42 0.96
| 2.500 1.04 | 8.500 2.16 | 14.500 2.40 | 20.50 0.96
| 2.583 1.04 | 8.583 2.16 | 14.583 2.40 | 20.58 0.96
| 2.667 1.04 | 8.667 2.16 | 14.667 2.40 | 20.67 0.96
| 2.750 1.04 | 8.750 2.16 | 14.750 2.40 | 20.75 0.96
| 2.833 1.04 | 8.833 2.16 | 14.833 2.40 | 20.83 0.96
| 2.917 1.04 | 8.917 2.16 | 14.917 2.40 | 20.92 0.96
| 3.000 1.04 | 9.000 2.16 | 15.000 2.40 | 21.00 0.96
| 3.083 1.04 | 9.083 2.56 | 15.083 2.40 | 21.08 0.96
| 3.167 1.04 | 9.167 2.56 | 15.167 2.40 | 21.17 0.96
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3.250 1.04 | 9.250 2.56 | 15.250 2.40 | 21.25 0.96
3.333 1.04 | 9.333 2.56 | 15.333 2.40 | 21.33 0.96
3.417 1.04 | 9.417 2.56 | 15.417 2.40 | 21.42 0.96
3.500 1.04 | 9.500 2.56 | 15.500 2.40 | 21.50 0.96
3.583 1.04 | 9.583 2.88 | 15.583 2.40 | 21.58 0.96
3.667 1.04 | 9.667 2.88 | 15.667 2.40 | 21.67 0.96
3.750 1.04 | 9.750 2.88 | 15.750 2.40 | 21.75 0.96
3.833 1.04 | 9.833 2.88 | 15.833 2.40 | 21.83 0.96
3.917 1.04 | 9.917 2.88 | 15.917 2.40 | 21.92 0.96
4.000 1.04 | 10.000 2.88 | 16.000 2.40 | 22.00 0.96
4.083 1.28 | 10.083 3.68 | 16.083 1.44 | 22.08 0.96
4.167 1.28 | 10.167 3.68 | 16.167 1.44 | 22.17 0.96
4.250 1.28 | 10.250 3.68 | 16.250 1.44 | 22.25 0.96
4.333 1.28 | 10.333 3.68 | 16.333 1.44 | 22.33 0.96
4.417 1.28 | 10.417 3.68 | 16.417 1.44 | 22.42 0.96
4.500 1.28 | 10.500 3.68 | 16.500 1.44 | 22.50 0.96
4.583 1.28 | 10.583 4.96 | 16.583 1.44 | 22.58 0.96
4.667 1.28 | 10.667 4.96 | 16.667 1.44 | 22.67 0.96
4.750 1.28 | 10.750 4.96 | 16.750 1.44 | 22.75 0.96
4.833 1.28 | 10.833 4.96 | 16.833 1.44 | 22.83 0.96
4.917 1.28 | 10.917 4.96 | 16.917 1.44 | 22.92 0.96
5.000 1.28 | 11.000 4.96 | 17.000 1.44 | 23.00 0.96
5.083 1.28 | 11.083 7.68 | 17.083 1.44 | 23.08 0.96
5.167 1.28 | 11.167 7.68 | 17.167 1.44 | 23.17 0.96
5.250 1.28 | 11.250 7.68 | 17.250 1.44 | 23.25 0.96
5.333 1.28 | 11.333 7.68 | 17.333 1.44 | 23.33 0.96
5.417 1.28 | 11.417 7.68 | 17.417 1.44 | 23.42 0.96
5.500 1.28 | 11.500 7.68 | 17.500 1.44 | 23.50 0.96
5.583 1.28 | 11.583 33.28 | 17.583 1.44 | 23.58 0.96
5.667 1.28 | 11.667 33.28 | 17.667 1.44 | 23.67 0.96
5.750 1.28 | 11.750 33.28 | 17.750 1.44 | 23.75 0.96
5.833 1.28 | 11.833 88.31 | 17.833 1.44 | 23.83 0.96
5.917 1.28 | 11.917 88.32 | 17.917 1.44 | 23.92 0.96
6.000 1.28 | 12.000 88.32 | 18.000 1.44 | 24.00 0.96

```

Max. Eff. Inten. (mm/hr)= 88.32 62.08
 over (min) 5.00 15.00
 Storage Coeff. (min)= 2.71 (ii) 11.25 (ii)
 Unit Hyd. Tpeak (min)= 5.00 15.00
 Unit Hyd. peak (cms)= 0.29 0.09

TOTALS

PEAK FLOW (cms)= 0.11 0.13 0.220 (iii)
 TIME TO PEAK (hrs)= 12.00 12.08 12.00
 RUNOFF VOLUME (mm)= 79.00 45.59 54.97
 TOTAL RAINFALL (mm)= 80.00 80.00 80.00
 RUNOFF COEFFICIENT = 0.99 0.57 0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN* = 84.0 Ia = Dep. 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 ( 1214)|
| 1 + 2 = 3 |
-----
| ID1= 1 ( 1203): | 1.54 | 0.220 | 12.00 | 54.97
| + ID2= 2 ( 1213): | 9.45 | 0.542 | 12.17 | 73.76
| =====
| ID = 3 ( 1214): | 10.99 | 0.676 | 12.08 | 71.13
-----

```

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 A A A A 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 Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\353ac6
 70-3fcc-410b-9c7b-2590f8ecdf4c\scenar
 Summary filename:
 C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\353ac6
 70-3fcc-410b-9c7b-2590f8ecdf4c\scenar

DATE: 05-28-2026

TIME: 11:05:52

-207-

-208-

USER:

COMMENTS: _____

 ** SIMULATION : Run2.4 25-yr 24-hr SCS (Wella) **

READ STORM	Filename: C:\Users\ZhouJ\AppData ata\Local\Temp\ 7b238f43-dcf5-433e-b41e-e7c655d02d4d\54576b6
Ptotal= 95.60 mm	Comments: 25-yr 24-hr SCS (Welland)

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	1.05	6.00	1.91	12.00	13.77	18.00	1.72
0.25	1.05	6.25	1.91	12.25	13.77	18.25	1.72
0.50	1.05	6.50	1.91	12.50	7.07	18.50	1.72
0.75	1.05	6.75	1.91	12.75	7.07	18.75	1.72
1.00	1.05	7.00	1.91	13.00	1.34	19.00	1.72
1.25	1.05	7.25	1.91	13.25	1.34	19.25	1.72
1.50	1.05	7.50	1.91	13.50	7.84	19.50	1.72
1.75	1.05	7.75	1.91	13.75	7.84	19.75	1.72
2.00	1.24	8.00	2.58	14.00	2.87	20.00	1.15
2.25	1.24	8.25	2.58	14.25	2.87	20.25	1.15
2.50	1.24	8.50	2.58	14.50	2.87	20.50	1.15
2.75	1.24	8.75	2.58	14.75	2.87	20.75	1.15
3.00	1.24	9.00	3.06	15.00	2.87	21.00	1.15
3.25	1.24	9.25	3.06	15.25	2.87	21.25	1.15
3.50	1.24	9.50	3.44	15.50	2.87	21.50	1.15
3.75	1.24	9.75	3.44	15.75	2.87	21.75	1.15
4.00	1.53	10.00	4.40	16.00	1.72	22.00	1.15
4.25	1.53	10.25	4.40	16.25	1.72	22.25	1.15
4.50	1.53	10.50	5.93	16.50	1.72	22.50	1.15
4.75	1.53	10.75	5.93	16.75	1.72	22.75	1.15
5.00	1.53	11.00	9.18	17.00	1.72	23.00	1.15
5.25	1.53	11.25	9.18	17.25	1.72	23.25	1.15
5.50	1.53	11.50	39.77	17.50	1.72	23.50	1.15
5.75	1.53	11.75	105.54	17.75	1.72	23.75	1.15

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CALIB				
NASHYD (1305)	Area	(ha)=	3.00	Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min	Ia	(mm)=	7.50	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=		0.75	

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	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15

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3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.176 (i)

TIME TO PEAK (hrs)= 12.667

RUNOFF VOLUME (mm)= 56.871

TOTAL RAINFALL (mm)= 95.603

RUNOFF COEFFICIENT = 0.595

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

CALIB				
NASHYD (0304)	Area	(ha)=	2.79	Curve Number (CN)= 84.0
ID= 1 DT= 5.0 min	Ia	(mm)=	7.50	# of Linear Res.(N)= 3.00

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U.H. Tp(hrs)= 0.47

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	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	

3.563	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.229 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 56.868
TOTAL RAINFALL (mm)= 95.603
RUNOFF COEFFICIENT = 0.595

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

ADD HYD (2318)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
-----	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1305):	3.00	0.176	12.67	56.87
+ ID2= 2 (0304):	2.79	0.229	12.33	56.87

ID = 3 (2318): 5.79 0.387 12.42 56.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0305)		Area (ha)=	2.15	
ID= 1 DT= 5.0 min		Total Imp(%)=	25.00	Dir. Conn.(%)= 25.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.54	1.61
Dep. Storage	(mm)=	7.50	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	119.72	40.00
Mannings n	=	0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15

2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.54	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Max.Eff.Inten.(mm/hr)=	105.54	79.59
over (min)	5.00	15.00
Storage Coeff. (min)=	2.79 (ii)	10.52 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.28	0.09

			TOTALS	
PEAK FLOW	(cms)=	0.16	0.24	0.380 (iii)
TIME TO PEAK	(hrs)=	12.00	12.08	12.00
RUNOFF VOLUME	(mm)=	88.10	59.06	66.32
TOTAL RAINFALL	(mm)=	95.60	95.60	95.60
RUNOFF COEFFICIENT	=	0.92	0.62	0.69

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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
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- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2319)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 (2318):	5.79	0.387	12.42	56.87
+ ID2= 2 (2319):	2.15	0.380	12.00	66.32
ID = 3 (2305):	7.94	0.587	12.00	59.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1301)		Area (ha)=	3.68	
ID= 1 DT= 5.0 min		Total Imp(%)=	85.30	Dir. Conn.(%)= 85.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.14	0.54
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	156.63	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72

0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15

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4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.27 (ii) 6.69 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

PEAK FLOW (cms)= 0.91 0.10 1.015 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 94.60 59.06 89.38
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62 0.93

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2311) | 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 0.1470 0.1190
0.0660 0.0830 0.1780 0.1310
0.0910 0.0960 0.2070 0.1410
0.1130 0.1060 0.3250 0.1860

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INFLOW : ID= 2 (1301) AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
OUTFLOW: ID= 1 (2311) 3.680 1.015 12.00 89.38
3.680 0.227 12.17 89.29

PEAK FLOW REDUCTION [Qout/Qin](%)= 22.36
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1489

| CALIB |
| STANDHYD (1302) | Area (ha)= 2.86
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.46 0.40
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 138.08 40.00
Mannings n = 0.013 0.250

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	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72

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1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.54	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

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Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.03 (ii) 6.36 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

PEAK FLOW (cms)= 0.72 0.08 *TOTALS*
TIME TO PEAK (hrs)= 12.00 12.00 0.794 (iii)
RUNOFF VOLUME (mm)= 94.60 59.06 89.66
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2312)| 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 | 0.1140 | 0.0930
| 0.0510 | 0.0650 | 0.1380 | 0.1020
| 0.0710 | 0.0750 | 0.1610 | 0.1100
| 0.0880 | 0.0830 | 0.2520 | 0.1450
-----
| AREA | QPEAK | TPEAK | R.V.
| (ha) | (cms) | (hrs) | (mm)
INFLOW : ID= 2 ( 1302) 2.860 0.794 12.00 89.66
OUTFLOW: ID= 1 ( 2312) 2.860 0.177 12.17 89.55
-----
| PEAK FLOW REDUCTION [Qout/Qin](%)= 22.36
| TIME SHIFT OF PEAK FLOW (min)= 10.00
| MAXIMUM STORAGE USED (ha.m.)= 0.1167
|
-----

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-----
| ADD HYD ( 2315)|
| 1 + 2 = 3 |
-----
| ID1= 1 ( 2311): 3.68 0.227 12.17 89.29
| + ID2= 2 ( 2312): 2.86 0.177 12.17 89.55
| =====

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ID = 3 (2315): 6.54 0.404 12.17 89.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-----
| CALIB |
| STANDHYD ( 1303)| Area (ha)= 3.47
| ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30
-----
| IMPERVIOUS | PERVIOUS (i)
| Surface Area (ha)= 2.99 0.48
| Dep. Storage (mm)= 1.00 5.00
| Average Slope (%)= 1.00 2.00
| Length (m)= 152.10 40.00
| Mannings n = 0.013 0.250

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

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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 1.05 | 6.083 1.91 | 12.083 13.78 | 18.08 1.72
0.167 1.05 | 6.167 1.91 | 12.167 13.77 | 18.17 1.72
0.250 1.05 | 6.250 1.91 | 12.250 13.77 | 18.25 1.72
0.333 1.05 | 6.333 1.91 | 12.333 13.77 | 18.33 1.72
0.417 1.05 | 6.417 1.91 | 12.417 13.77 | 18.42 1.72
0.500 1.05 | 6.500 1.91 | 12.500 13.77 | 18.50 1.72
0.583 1.05 | 6.583 1.91 | 12.583 7.07 | 18.58 1.72
0.667 1.05 | 6.667 1.91 | 12.667 7.07 | 18.67 1.72
0.750 1.05 | 6.750 1.91 | 12.750 7.07 | 18.75 1.72
0.833 1.05 | 6.833 1.91 | 12.833 7.07 | 18.83 1.72
0.917 1.05 | 6.917 1.91 | 12.917 7.07 | 18.92 1.72
1.000 1.05 | 7.000 1.91 | 13.000 7.07 | 19.00 1.72
1.083 1.05 | 7.083 1.91 | 13.083 1.34 | 19.08 1.72
1.167 1.05 | 7.167 1.91 | 13.167 1.34 | 19.17 1.72
1.250 1.05 | 7.250 1.91 | 13.250 1.34 | 19.25 1.72
1.333 1.05 | 7.333 1.91 | 13.333 1.34 | 19.33 1.72
1.417 1.05 | 7.417 1.91 | 13.417 1.34 | 19.42 1.72
1.500 1.05 | 7.500 1.91 | 13.500 1.34 | 19.50 1.72
1.583 1.05 | 7.583 1.91 | 13.583 7.84 | 19.58 1.72
1.667 1.05 | 7.667 1.91 | 13.667 7.84 | 19.67 1.72
1.750 1.05 | 7.750 1.91 | 13.750 7.84 | 19.75 1.72
1.833 1.05 | 7.833 1.91 | 13.833 7.84 | 19.83 1.72
1.917 1.05 | 7.917 1.91 | 13.917 7.84 | 19.92 1.72
2.000 1.05 | 8.000 1.91 | 14.000 7.84 | 20.00 1.72
2.083 1.24 | 8.083 2.58 | 14.083 2.87 | 20.08 1.15
2.167 1.24 | 8.167 2.58 | 14.167 2.87 | 20.17 1.15
2.250 1.24 | 8.250 2.58 | 14.250 2.87 | 20.25 1.15
2.333 1.24 | 8.333 2.58 | 14.333 2.87 | 20.33 1.15

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2.417 1.24 | 8.417 2.58 | 14.417 2.87 | 20.42 1.15
2.500 1.24 | 8.500 2.58 | 14.500 2.87 | 20.50 1.15
2.583 1.24 | 8.583 2.58 | 14.583 2.87 | 20.58 1.15
2.667 1.24 | 8.667 2.58 | 14.667 2.87 | 20.67 1.15
2.750 1.24 | 8.750 2.58 | 14.750 2.87 | 20.75 1.15
2.833 1.24 | 8.833 2.58 | 14.833 2.87 | 20.83 1.15
2.917 1.24 | 8.917 2.58 | 14.917 2.87 | 20.92 1.15
3.000 1.24 | 9.000 2.58 | 15.000 2.87 | 21.00 1.15
3.083 1.24 | 9.083 3.06 | 15.083 2.87 | 21.08 1.15
3.167 1.24 | 9.167 3.06 | 15.167 2.87 | 21.17 1.15
3.250 1.24 | 9.250 3.06 | 15.250 2.87 | 21.25 1.15
3.333 1.24 | 9.333 3.06 | 15.333 2.87 | 21.33 1.15
3.417 1.24 | 9.417 3.06 | 15.417 2.87 | 21.42 1.15
3.500 1.24 | 9.500 3.06 | 15.500 2.87 | 21.50 1.15
3.583 1.24 | 9.583 3.44 | 15.583 2.87 | 21.58 1.15
3.667 1.24 | 9.667 3.44 | 15.667 2.87 | 21.67 1.15
3.750 1.24 | 9.750 3.44 | 15.750 2.87 | 21.75 1.15
3.833 1.24 | 9.833 3.44 | 15.833 2.87 | 21.83 1.15
3.917 1.24 | 9.917 3.44 | 15.917 2.87 | 21.92 1.15
4.000 1.24 | 10.000 3.44 | 16.000 2.87 | 22.00 1.15
4.083 1.53 | 10.083 4.40 | 16.083 1.72 | 22.08 1.15
4.167 1.53 | 10.167 4.40 | 16.167 1.72 | 22.17 1.15
4.250 1.53 | 10.250 4.40 | 16.250 1.72 | 22.25 1.15
4.333 1.53 | 10.333 4.40 | 16.333 1.72 | 22.33 1.15
4.417 1.53 | 10.417 4.40 | 16.417 1.72 | 22.42 1.15
4.500 1.53 | 10.500 4.40 | 16.500 1.72 | 22.50 1.15
4.583 1.53 | 10.583 5.93 | 16.583 1.72 | 22.58 1.15
4.667 1.53 | 10.667 5.93 | 16.667 1.72 | 22.67 1.15
4.750 1.53 | 10.750 5.93 | 16.750 1.72 | 22.75 1.15
4.833 1.53 | 10.833 5.93 | 16.833 1.72 | 22.83 1.15
4.917 1.53 | 10.917 5.93 | 16.917 1.72 | 22.92 1.15
5.000 1.53 | 11.000 5.93 | 17.000 1.72 | 23.00 1.15
5.083 1.53 | 11.083 9.18 | 17.083 1.72 | 23.08 1.15
5.167 1.53 | 11.167 9.18 | 17.167 1.72 | 23.17 1.15
5.250 1.53 | 11.250 9.18 | 17.250 1.72 | 23.25 1.15
5.333 1.53 | 11.333 9.18 | 17.333 1.72 | 23.33 1.15
5.417 1.53 | 11.417 9.18 | 17.417 1.72 | 23.42 1.15
5.500 1.53 | 11.500 9.18 | 17.500 1.72 | 23.50 1.15
5.583 1.53 | 11.583 39.77 | 17.583 1.72 | 23.58 1.15
5.667 1.53 | 11.667 39.77 | 17.667 1.72 | 23.67 1.15
5.750 1.53 | 11.750 39.77 | 17.750 1.72 | 23.75 1.15
5.833 1.53 | 11.833 105.53 | 17.833 1.72 | 23.83 1.15
5.917 1.53 | 11.917 105.54 | 17.917 1.72 | 23.92 1.15
6.000 1.53 | 12.000 105.54 | 18.000 1.72 | 24.00 1.15

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Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.22 (ii) 6.52 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

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-----
| PEAK FLOW (cms)= 0.87 0.09 *TOTALS*
| TIME TO PEAK (hrs)= 12.00 12.00 0.962 (iii)
| RUNOFF VOLUME (mm)= 94.60 59.06 89.73
| TOTAL RAINFALL (mm)= 95.60 95.60 95.60
| RUNOFF COEFFICIENT = 0.99 0.62 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 2313)| 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 | 0.1380 | 0.1130
| 0.0620 | 0.0790 | 0.1680 | 0.1240
| 0.0860 | 0.0910 | 0.1950 | 0.1340
| 0.1060 | 0.1010 | 0.3060 | 0.1760
-----
| AREA | QPEAK | TPEAK | R.V.
| (ha) | (cms) | (hrs) | (mm)
INFLOW : ID= 2 ( 1303) 3.470 0.962 12.00 89.73
OUTFLOW: ID= 1 ( 2313) 3.470 0.214 12.17 89.64
-----
| PEAK FLOW REDUCTION [Qout/Qin](%)= 22.26
| TIME SHIFT OF PEAK FLOW (min)= 10.00
| MAXIMUM STORAGE USED (ha.m.)= 0.1416
|
-----

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-----
| ADD HYD ( 2316)|
| 1 + 2 = 3 |
-----
| ID1= 1 ( 2313): 3.47 0.214 12.17 89.64
| + ID2= 2 ( 2315): 6.54 0.404 12.17 89.41
| =====
| ID = 3 ( 2316): 10.01 0.619 12.17 89.49

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |

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STANDHYD (1304) | Area (ha)= 3.93
ID= 1 DT= 5.0 min | Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.54 0.39
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 161.86 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72		
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72		
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72		
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72		
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72		
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72		
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72		
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72		
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72		
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72		
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72		
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72		
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72		
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72		
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72		
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72		
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72		
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72		
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72		
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72		
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72		
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72		
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72		
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72		
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15		
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15		
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15		
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15		
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15		
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15		
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15		
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15		
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15		
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15		

2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.34 (ii) 6.21 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.15

TOTALS
PEAK FLOW (cms)= 1.03 0.07 1.104 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 94.60 59.06 91.05
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62 0.95

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

OVERFLOW IS OFF				
RESERVOIR(2314)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2----> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min				
	0.0000	0.0000	0.1570	0.1320
	0.0700	0.0930	0.1900	0.1450
	0.0970	0.1070	0.2210	0.1560
	0.1210	0.1170	0.3470	0.2040
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW: ID= 2 (1304)	3.930	1.104	12.00	91.05
OUTFLOW: ID= 1 (2314)	3.930	0.242	12.17	90.96
PEAK FLOW REDUCTION [Qout/Qin](%)= 21.95				
TIME SHIFT OF PEAK FLOW (min)= 10.00				
MAXIMUM STORAGE USED (ha.m.)= 0.1646				

ADD HYD (2317)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2314):	3.93	0.242	12.17	90.96
+ ID2= 2 (2316):	10.01	0.619	12.17	89.49
ID = 3 (2317):	13.94	0.861	12.17	89.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2320)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2317):	13.94	0.861	12.17	89.90
+ ID2= 2 (2319):	7.94	0.587	12.00	59.43

ID = 3 (2320): 21.88 1.431 12.17 78.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

IMPERVIOUS PERVIOUS (i)				
Surface Area	(ha)=	2.90	0.32	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	146.52	40.00	
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	'	TIME	RAIN	TIME	RAIN	
hrs	mm/hr	hrs	mm/hr	'	hrs	mm/hr	hrs	mm/hr	
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72		
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72		
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72		
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72		
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72		
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72		
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72		
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72		
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72		
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72		
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72		
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72		
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72		
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72		
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72		
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72		
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72		
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72		
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72		
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72		
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72		
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72		
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72		
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72		
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15		
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15		
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15		
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15		

2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15
Max.Eff.Inten.(mm/hr)= 105.54 79.59							
over (min) 5.00 10.00							
Storage Coeff. (min)= 3.14 (ii) 6.01 (ii)							
Unit Hyd. Tpeak (min)= 5.00 10.00							
Unit Hyd. peak (cms)= 0.27 0.15							

					TOTALS	
PEAK FLOW	(cms)=	0.85	0.06		0.907	(iii)
TIME TO PEAK	(hrs)=	12.00	12.00		12.00	
RUNOFF VOLUME	(mm)=	94.60	59.06		91.05	
TOTAL RAINFALL	(mm)=	95.60	95.60		95.60	
RUNOFF COEFFICIENT	=	0.99	0.62		0.95	
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!						
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:						
CN* = 84.0 Ia = Dep. 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(1111) 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	0.2210	0.0950		
	0.0760	0.0700	0.2760	0.1030		
	0.1230	0.0800	0.3270	0.1100		
	0.1610	0.0860	0.6360	0.1400		

	AREA	QPEAK	TPEAK	R.V.		
	(ha)	(cms)	(hrs)	(mm)		
INFLOW : ID= 2 (1101)	3.220	0.907	12.00	91.05		
OUTFLOW: ID= 1 (1111)	3.220	0.385	12.08	90.98		

PEAK FLOW REDUCTION [Qout/Qin](%)= 42.51						
TIME SHIFT OF PEAK FLOW (min)= 5.00						
MAXIMUM STORAGE USED (ha.m.)= 0.1167						

CALIB						
STANDHYD (1102)						
ID= 1 DT= 5.0 min						

	Area	(ha)=	2.07			
	Total Imp(%)=		24.50	Dir. Conn.(%)=	24.50	

	IMPERVIOUS	PERVIOUS (i)				
Surface Area	(ha)=	0.51	1.56			
Dep. Storage	(mm)=	1.00	5.00			
Average Slope	(%)=	1.00	2.00			
Length	(m)=	117.47	40.00			
Mannings n	=	0.013	0.250			
NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.						

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15

3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15
TOTALS							
PEAK FLOW	(cms)=	0.15	0.24	0.365	(iii)		
TIME TO PEAK	(hrs)=	12.00	12.08	12.00			
RUNOFF VOLUME	(mm)=	94.60	59.06	67.77			
TOTAL RAINFALL	(mm)=	95.60	95.60	95.60			
RUNOFF COEFFICIENT	=	0.99	0.62	0.71			
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!							
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:							
CN* = 84.0 Ia = Dep. 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 ( 1112)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 1102): AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
+ ID2= 2 ( 1111): 2.07 0.365 12.00 67.77
3.22 0.385 12.00 90.98
-----
ID = 3 ( 1112): 5.29 0.676 12.00 81.90

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB
| STANDHYD ( 1201)|
| ID= 1 DT= 5.0 min |
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Area (ha)= 5.38
Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

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IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 4.68 0.70
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 189.38 40.00
Mannings n = 0.013 0.250

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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 1.05 6.083 1.91 12.083 13.78 18.08 1.72
0.167 1.05 6.167 1.91 12.167 13.77 18.17 1.72
0.250 1.05 6.250 1.91 12.250 13.77 18.25 1.72
0.333 1.05 6.333 1.91 12.333 13.77 18.33 1.72
0.417 1.05 6.417 1.91 12.417 13.77 18.42 1.72
0.500 1.05 6.500 1.91 12.500 13.77 18.50 1.72
0.583 1.05 6.583 1.91 12.583 13.77 18.58 1.72
0.667 1.05 6.667 1.91 12.667 13.77 18.67 1.72
0.750 1.05 6.750 1.91 12.750 13.77 18.75 1.72
0.833 1.05 6.833 1.91 12.833 13.77 18.83 1.72
0.917 1.05 6.917 1.91 12.917 13.77 18.92 1.72
1.000 1.05 7.000 1.91 13.000 13.77 19.00 1.72
1.083 1.05 7.083 1.91 13.083 13.77 19.08 1.72
1.167 1.05 7.167 1.91 13.167 13.77 19.17 1.72
1.250 1.05 7.250 1.91 13.250 13.77 19.25 1.72
1.333 1.05 7.333 1.91 13.333 13.77 19.33 1.72
1.417 1.05 7.417 1.91 13.417 13.77 19.42 1.72
1.500 1.05 7.500 1.91 13.500 13.77 19.50 1.72
1.583 1.05 7.583 1.91 13.583 13.77 19.58 1.72
1.667 1.05 7.667 1.91 13.667 13.77 19.67 1.72
1.750 1.05 7.750 1.91 13.750 13.77 19.75 1.72
1.833 1.05 7.833 1.91 13.833 13.77 19.83 1.72

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1.917 1.05 7.917 1.91 13.917 7.84 19.92 1.72
2.000 1.05 8.000 1.91 14.000 7.84 20.00 1.72
2.083 1.24 8.083 2.58 14.083 2.87 20.08 1.15
2.167 1.24 8.167 2.58 14.167 2.87 20.17 1.15
2.250 1.24 8.250 2.58 14.250 2.87 20.25 1.15
2.333 1.24 8.333 2.58 14.333 2.87 20.33 1.15
2.417 1.24 8.417 2.58 14.417 2.87 20.42 1.15
2.500 1.24 8.500 2.58 14.500 2.87 20.50 1.15
2.583 1.24 8.583 2.58 14.583 2.87 20.58 1.15
2.667 1.24 8.667 2.58 14.667 2.87 20.67 1.15
2.750 1.24 8.750 2.58 14.750 2.87 20.75 1.15
2.833 1.24 8.833 2.58 14.833 2.87 20.83 1.15
2.917 1.24 8.917 2.58 14.917 2.87 20.92 1.15
3.000 1.24 9.000 2.58 15.000 2.87 21.00 1.15
3.083 1.24 9.083 3.06 15.083 2.87 21.08 1.15
3.167 1.24 9.167 3.06 15.167 2.87 21.17 1.15
3.250 1.24 9.250 3.06 15.250 2.87 21.25 1.15
3.333 1.24 9.333 3.06 15.333 2.87 21.33 1.15
3.417 1.24 9.417 3.06 15.417 2.87 21.42 1.15
3.500 1.24 9.500 3.06 15.500 2.87 21.50 1.15
3.583 1.24 9.583 3.44 15.583 2.87 21.58 1.15
3.667 1.24 9.667 3.44 15.667 2.87 21.67 1.15
3.750 1.24 9.750 3.44 15.750 2.87 21.75 1.15
3.833 1.24 9.833 3.44 15.833 2.87 21.83 1.15
3.917 1.24 9.917 3.44 15.917 2.87 21.92 1.15
4.000 1.24 10.000 3.44 16.000 2.87 22.00 1.15
4.083 1.53 10.083 4.40 16.083 1.72 22.08 1.15
4.167 1.53 10.167 4.40 16.167 1.72 22.17 1.15
4.250 1.53 10.250 4.40 16.250 1.72 22.25 1.15
4.333 1.53 10.333 4.40 16.333 1.72 22.33 1.15
4.417 1.53 10.417 4.40 16.417 1.72 22.42 1.15
4.500 1.53 10.500 4.40 16.500 1.72 22.50 1.15
4.583 1.53 10.583 5.93 16.583 1.72 22.58 1.15
4.667 1.53 10.667 5.93 16.667 1.72 22.67 1.15
4.750 1.53 10.750 5.93 16.750 1.72 22.75 1.15
4.833 1.53 10.833 5.93 16.833 1.72 22.83 1.15
4.917 1.53 10.917 5.93 16.917 1.72 22.92 1.15
5.000 1.53 11.000 5.93 17.000 1.72 23.00 1.15
5.083 1.53 11.083 9.18 17.083 1.72 23.08 1.15
5.167 1.53 11.167 9.18 17.167 1.72 23.17 1.15
5.250 1.53 11.250 9.18 17.250 1.72 23.25 1.15
5.333 1.53 11.333 9.18 17.333 1.72 23.33 1.15
5.417 1.53 11.417 9.18 17.417 1.72 23.42 1.15
5.500 1.53 11.500 9.18 17.500 1.72 23.50 1.15
5.583 1.53 11.583 39.77 17.583 1.72 23.58 1.15
5.667 1.53 11.667 39.77 17.667 1.72 23.67 1.15
5.750 1.53 11.750 39.77 17.750 1.72 23.75 1.15
5.833 1.53 11.833 105.53 17.833 1.72 23.83 1.15
5.917 1.53 11.917 105.54 17.917 1.72 23.92 1.15
6.000 1.53 12.000 105.54 18.000 1.72 24.00 1.15

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Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.67 (ii) 6.90 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.25 0.14
*TOTALS*
PEAK FLOW (cms)= 1.36 0.13 1.487 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 94.60 59.06 89.98
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62 0.94

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

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1211)|
| IN= 2--> OUT= 1 |
| DT= 5.0 min |
-----
OUTFLOW STORAGE OUTFLOW STORAGE
(cms) (ha.m.) (cms) (ha.m.)
0.0000 0.0000 0.2600 0.1600
0.1050 0.1200 0.3330 0.1830
0.1540 0.1380 0.3940 0.1960
0.1970 0.1510 0.7720 0.2500

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AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 1201) 5.380 1.487 12.00 89.98
OUTFLOW: ID= 1 ( 1211) 5.380 0.460 12.17 89.93

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PEAK FLOW REDUCTION [Qout/Qin](%)= 30.93
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.2075

```

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| CALIB
| STANDHYD ( 1202)|
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 4.07
Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20

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```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.30 0.77
Dep. Storage (mm)= 1.00 5.00

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Average Slope (%)= 1.00 2.00
Length (m)= 164.72 40.00
Mannings n = 0.013 0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.05 6.083 1.91 12.083 13.78 18.08 1.72
0.167 1.05 6.167 1.91 12.167 13.77 18.17 1.72
0.250 1.05 6.250 1.91 12.250 13.77 18.25 1.72
0.333 1.05 6.333 1.91 12.333 13.77 18.33 1.72
0.417 1.05 6.417 1.91 12.417 13.77 18.42 1.72
0.500 1.05 6.500 1.91 12.500 13.77 18.50 1.72
0.583 1.05 6.583 1.91 12.583 13.77 18.58 1.72
0.667 1.05 6.667 1.91 12.667 13.77 18.67 1.72
0.750 1.05 6.750 1.91 12.750 13.77 18.75 1.72
0.833 1.05 6.833 1.91 12.833 13.77 18.83 1.72
0.917 1.05 6.917 1.91 12.917 13.77 18.92 1.72
1.000 1.05 7.000 1.91 13.000 13.77 19.00 1.72
1.083 1.05 7.083 1.91 13.083 13.77 19.08 1.72
1.167 1.05 7.167 1.91 13.167 13.77 19.17 1.72
1.250 1.05 7.250 1.91 13.250 13.77 19.25 1.72
1.333 1.05 7.333 1.91 13.333 13.77 19.33 1.72
1.417 1.05 7.417 1.91 13.417 13.77 19.42 1.72
1.500 1.05 7.500 1.91 13.500 13.77 19.50 1.72
1.583 1.05 7.583 1.91 13.583 13.77 19.58 1.72
1.667 1.05 7.667 1.91 13.667 13.77 19.67 1.72
1.750 1.05 7.750 1.91 13.750 13.77 19.75 1.72
1.833 1.05 7.833 1.91 13.833 13.77 19.83 1.72
1.917 1.05 7.917 1.91 13.917 13.77 19.92 1.72
2.000 1.05 8.000 1.91 14.000 13.77 20.00 1.72
2.083 1.24 8.083 2.58 14.083 2.87 20.08 1.15
2.167 1.24 8.167 2.58 14.167 2.87 20.17 1.15
2.250 1.24 8.250 2.58 14.250 2.87 20.25 1.15
2.333 1.24 8.333 2.58 14.333 2.87 20.33 1.15
2.417 1.24 8.417 2.58 14.417 2.87 20.42 1.15
2.500 1.24 8.500 2.58 14.500 2.87 20.50 1.15
2.583 1.24 8.583 2.58 14.583 2.87 20.58 1.15
2.667 1.24 8.667 2.58 14.667 2.87 20.67 1.15
2.750 1.24 8.750 2.58 14.750 2.87 20.75 1.15
2.833 1.24 8.833 2.58 14.833 2.87 20.83 1.15
2.917 1.24 8.917 2.58 14.917 2.87 20.92 1.15
3.000 1.24 9.000 2.58 15.000 2.87 21.00 1.15
3.083 1.24 9.083 3.06 15.083 2.87 21.08 1.15
3.167 1.24 9.167 3.06 15.167 2.87 21.17 1.15
3.250 1.24 9.250 3.06 15.250 2.87 21.25 1.15
3.333 1.24 9.333 3.06 15.333 2.87 21.33 1.15

```

3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15
3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

Max.Eff.Inten.(mm/hr)= 105.54 79.59
over (min) 5.00 10.00
Storage Coeff. (min)= 3.37 (ii) 7.22 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.26 0.14

TOTALS

PEAK FLOW (cms)= 0.96 0.14 1.102 (iii)
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 94.60 59.06 87.92
TOTAL RAINFALL (mm)= 95.60 95.60 95.60
RUNOFF COEFFICIENT = 0.99 0.62 0.92

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

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

RESERVOIR(1212)				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	0.2030	0.1210		
		0.0800	0.0860	0.2520	0.1320		
		0.1170	0.0990	0.2980	0.1420		
		0.1490	0.1080	0.5840	0.1820		

		AREA	QPEAK	TPEAK	R.V.		
		(ha)	(cms)	(hrs)	(mm)		
INFLOW : ID= 2 (1202)		4.070	1.102	12.00	87.92		
OUTFLOW: ID= 1 (1212)		4.070	0.348	12.08	87.85		

PEAK FLOW REDUCTION [Qout/Qin](%)= 31.56
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1504

ADD HYD (1213)							
1 + 2 = 3							
ID1= 1 (1211):		AREA	QPEAK	TPEAK	R.V.		
		(ha)	(cms)	(hrs)	(mm)		
		5.38	0.460	12.17	89.93		
+ ID2= 2 (1212):		4.07	0.348	12.08	87.85		
ID = 3 (1213):		9.45	0.808	12.08	89.04		

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB							
STANDHYD (1203)							
ID= 1 DT= 5.0 min							
		Area (ha)=	1.54				
		Total Imp(%)=	28.10			Dir. Conn.(%)=	28.10

		IMPERVIOUS		PERVIOUS (i)			
Surface Area (ha)=		0.43	1.11				
Dep. Storage (mm)=		1.00	5.00				
Average Slope (%)=		1.00	2.00				
Length (m)=		101.32	40.00				
Mannings n =		0.013	0.250				

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

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---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN		
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr		
0.083	1.05	6.083	1.91	12.083	13.78	18.08	1.72		
0.167	1.05	6.167	1.91	12.167	13.77	18.17	1.72		
0.250	1.05	6.250	1.91	12.250	13.77	18.25	1.72		
0.333	1.05	6.333	1.91	12.333	13.77	18.33	1.72		
0.417	1.05	6.417	1.91	12.417	13.77	18.42	1.72		
0.500	1.05	6.500	1.91	12.500	13.77	18.50	1.72		
0.583	1.05	6.583	1.91	12.583	7.07	18.58	1.72		
0.667	1.05	6.667	1.91	12.667	7.07	18.67	1.72		
0.750	1.05	6.750	1.91	12.750	7.07	18.75	1.72		
0.833	1.05	6.833	1.91	12.833	7.07	18.83	1.72		
0.917	1.05	6.917	1.91	12.917	7.07	18.92	1.72		
1.000	1.05	7.000	1.91	13.000	7.07	19.00	1.72		
1.083	1.05	7.083	1.91	13.083	1.34	19.08	1.72		
1.167	1.05	7.167	1.91	13.167	1.34	19.17	1.72		
1.250	1.05	7.250	1.91	13.250	1.34	19.25	1.72		
1.333	1.05	7.333	1.91	13.333	1.34	19.33	1.72		
1.417	1.05	7.417	1.91	13.417	1.34	19.42	1.72		
1.500	1.05	7.500	1.91	13.500	1.34	19.50	1.72		
1.583	1.05	7.583	1.91	13.583	7.84	19.58	1.72		
1.667	1.05	7.667	1.91	13.667	7.84	19.67	1.72		
1.750	1.05	7.750	1.91	13.750	7.84	19.75	1.72		
1.833	1.05	7.833	1.91	13.833	7.84	19.83	1.72		
1.917	1.05	7.917	1.91	13.917	7.84	19.92	1.72		
2.000	1.05	8.000	1.91	14.000	7.84	20.00	1.72		
2.083	1.24	8.083	2.58	14.083	2.87	20.08	1.15		
2.167	1.24	8.167	2.58	14.167	2.87	20.17	1.15		
2.250	1.24	8.250	2.58	14.250	2.87	20.25	1.15		
2.333	1.24	8.333	2.58	14.333	2.87	20.33	1.15		
2.417	1.24	8.417	2.58	14.417	2.87	20.42	1.15		
2.500	1.24	8.500	2.58	14.500	2.87	20.50	1.15		
2.583	1.24	8.583	2.58	14.583	2.87	20.58	1.15		
2.667	1.24	8.667	2.58	14.667	2.87	20.67	1.15		
2.750	1.24	8.750	2.58	14.750	2.87	20.75	1.15		
2.833	1.24	8.833	2.58	14.833	2.87	20.83	1.15		
2.917	1.24	8.917	2.58	14.917	2.87	20.92	1.15		
3.000	1.24	9.000	2.58	15.000	2.87	21.00	1.15		
3.083	1.24	9.083	3.06	15.083	2.87	21.08	1.15		
3.167	1.24	9.167	3.06	15.167	2.87	21.17	1.15		
3.250	1.24	9.250	3.06	15.250	2.87	21.25	1.15		
3.333	1.24	9.333	3.06	15.333	2.87	21.33	1.15		
3.417	1.24	9.417	3.06	15.417	2.87	21.42	1.15		
3.500	1.24	9.500	3.06	15.500	2.87	21.50	1.15		
3.583	1.24	9.583	3.44	15.583	2.87	21.58	1.15		
3.667	1.24	9.667	3.44	15.667	2.87	21.67	1.15		
3.750	1.24	9.750	3.44	15.750	2.87	21.75	1.15		
3.833	1.24	9.833	3.44	15.833	2.87	21.83	1.15		

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3.917	1.24	9.917	3.44	15.917	2.87	21.92	1.15
4.000	1.24	10.000	3.44	16.000	2.87	22.00	1.15
4.083	1.53	10.083	4.40	16.083	1.72	22.08	1.15
4.167	1.53	10.167	4.40	16.167	1.72	22.17	1.15
4.250	1.53	10.250	4.40	16.250	1.72	22.25	1.15
4.333	1.53	10.333	4.40	16.333	1.72	22.33	1.15
4.417	1.53	10.417	4.40	16.417	1.72	22.42	1.15
4.500	1.53	10.500	4.40	16.500	1.72	22.50	1.15
4.583	1.53	10.583	5.93	16.583	1.72	22.58	1.15
4.667	1.53	10.667	5.93	16.667	1.72	22.67	1.15
4.750	1.53	10.750	5.93	16.750	1.72	22.75	1.15
4.833	1.53	10.833	5.93	16.833	1.72	22.83	1.15
4.917	1.53	10.917	5.93	16.917	1.72	22.92	1.15
5.000	1.53	11.000	5.93	17.000	1.72	23.00	1.15
5.083	1.53	11.083	9.18	17.083	1.72	23.08	1.15
5.167	1.53	11.167	9.18	17.167	1.72	23.17	1.15
5.250	1.53	11.250	9.18	17.250	1.72	23.25	1.15
5.333	1.53	11.333	9.18	17.333	1.72	23.33	1.15
5.417	1.53	11.417	9.18	17.417	1.72	23.42	1.15
5.500	1.53	11.500	9.18	17.500	1.72	23.50	1.15
5.583	1.53	11.583	39.77	17.583	1.72	23.58	1.15
5.667	1.53	11.667	39.77	17.667	1.72	23.67	1.15
5.750	1.53	11.750	39.77	17.750	1.72	23.75	1.15
5.833	1.53	11.833	105.53	17.833	1.72	23.83	1.15
5.917	1.53	11.917	105.54	17.917	1.72	23.92	1.15
6.000	1.53	12.000	105.54	18.000	1.72	24.00	1.15

```
| ADD HYD ( 1214)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 1203): AREA QPEAK TPEAK R.V.
              (ha) (cms) (hrs) (mm)
+ ID2= 2 ( 1213): 1.54 0.281 12.00 69.05
              9.45 0.808 12.08 89.04
=====
ID = 3 ( 1214): 10.99 1.009 12.08 86.23
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
V V I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y M M 0 0
0 0 T T H H Y Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\va570ff
3f-14e7-4df6-bd5a-ea29dda4aca4\scenar
Summary filename:
C:\Users\ZhouJ\AppData\Local\Civica\WH5\F67fe709-6b28-4175-8afc-bd306d6d118d\va570ff
3f-14e7-4df6-bd5a-ea29dda4aca4\scenar

DATE: 05-28-2026

TIME: 11:05:54

USER:

COMMENTS: _____

```
*****
** SIMULATION : Run2.5 50-yr 24-hr SCS (Wella **
*****
```

```
| READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\
|             | 7b238f43-dcf5-433e-b41e-e7c655d02d4d\da728ef3
| Ptotal=108.82 mm | Comments: 50-yr 24-hr SCS (Welland)
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	' TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	1.20	6.00	2.18	12.00	15.67	18.00	1.96
0.25	1.20	6.25	2.18	12.25	15.67	18.25	1.96
0.50	1.20	6.50	2.18	12.50	8.05	18.50	1.96
0.75	1.20	6.75	2.18	12.75	8.05	18.75	1.96
1.00	1.20	7.00	2.18	13.00	1.52	19.00	1.96
1.25	1.20	7.25	2.18	13.25	1.52	19.25	1.96
1.50	1.20	7.50	2.18	13.50	8.92	19.50	1.96
1.75	1.20	7.75	2.18	13.75	8.92	19.75	1.96
2.00	1.41	8.00	2.94	14.00	3.26	20.00	1.31
2.25	1.41	8.25	2.94	14.25	3.26	20.25	1.31
2.50	1.41	8.50	2.94	14.50	3.26	20.50	1.31
2.75	1.41	8.75	2.94	14.75	3.26	20.75	1.31
3.00	1.41	9.00	3.48	15.00	3.26	21.00	1.31
3.25	1.41	9.25	3.48	15.25	3.26	21.25	1.31
3.50	1.41	9.50	3.92	15.50	3.26	21.50	1.31
3.75	1.41	9.75	3.92	15.75	3.26	21.75	1.31
4.00	1.74	10.00	5.00	16.00	1.96	22.00	1.31
4.25	1.74	10.25	5.00	16.25	1.96	22.25	1.31
4.50	1.74	10.50	6.75	16.50	1.96	22.50	1.31
4.75	1.74	10.75	6.75	16.75	1.96	22.75	1.31
5.00	1.74	11.00	10.44	17.00	1.96	23.00	1.31
5.25	1.74	11.25	10.44	17.25	1.96	23.25	1.31
5.50	1.74	11.50	45.26	17.50	1.96	23.50	1.31
5.75	1.74	11.75	120.12	17.75	1.96	23.75	1.31

```
| CALIB |
| NASHYD ( 1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.75
```

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

```
----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN ' TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr ' hrs mm/hr hrs mm/hr
0.083 1.20 6.083 2.18 12.083 15.68 18.08 1.96
0.167 1.20 6.167 2.18 12.167 15.67 18.17 1.96
0.250 1.20 6.250 2.18 12.250 15.67 18.25 1.96
0.333 1.20 6.333 2.18 12.333 15.67 18.33 1.96
0.417 1.20 6.417 2.18 12.417 15.67 18.42 1.96
0.500 1.20 6.500 2.18 12.500 15.67 18.50 1.96
0.583 1.20 6.583 2.18 12.583 8.05 18.58 1.96
0.667 1.20 6.667 2.18 12.667 8.05 18.67 1.96
0.750 1.20 6.750 2.18 12.750 8.05 18.75 1.96
0.833 1.20 6.833 2.18 12.833 8.05 18.83 1.96
0.917 1.20 6.917 2.18 12.917 8.05 18.92 1.96
1.000 1.20 7.000 2.18 13.000 8.05 19.00 1.96
1.083 1.20 7.083 2.18 13.083 1.52 19.08 1.96
1.167 1.20 7.167 2.18 13.167 1.52 19.17 1.96
1.250 1.20 7.250 2.18 13.250 1.52 19.25 1.96
1.333 1.20 7.333 2.18 13.333 1.52 19.33 1.96
1.417 1.20 7.417 2.18 13.417 1.52 19.42 1.96
1.500 1.20 7.500 2.18 13.500 1.52 19.50 1.96
1.583 1.20 7.583 2.18 13.583 8.92 19.58 1.96
1.667 1.20 7.667 2.18 13.667 8.92 19.67 1.96
1.750 1.20 7.750 2.18 13.750 8.92 19.75 1.96
1.833 1.20 7.833 2.18 13.833 8.92 19.83 1.96
1.917 1.20 7.917 2.18 13.917 8.92 19.92 1.96
2.000 1.20 8.000 2.18 14.000 8.92 20.00 1.96
2.083 1.41 8.083 2.94 14.083 3.26 20.08 1.31
2.167 1.41 8.167 2.94 14.167 3.26 20.17 1.31
2.250 1.41 8.250 2.94 14.250 3.26 20.25 1.31
2.333 1.41 8.333 2.94 14.333 3.26 20.33 1.31
2.417 1.41 8.417 2.94 14.417 3.26 20.42 1.31
2.500 1.41 8.500 2.94 14.500 3.26 20.50 1.31
2.583 1.41 8.583 2.94 14.583 3.26 20.58 1.31
2.667 1.41 8.667 2.94 14.667 3.26 20.67 1.31
2.750 1.41 8.750 2.94 14.750 3.26 20.75 1.31
2.833 1.41 8.833 2.94 14.833 3.26 20.83 1.31
2.917 1.41 8.917 2.94 14.917 3.26 20.92 1.31
3.000 1.41 9.000 2.94 15.000 3.26 21.00 1.31
3.083 1.41 9.083 3.48 15.083 3.26 21.08 1.31
3.167 1.41 9.167 3.48 15.167 3.26 21.17 1.31
3.250 1.41 9.250 3.48 15.250 3.26 21.25 1.31
3.333 1.41 9.333 3.48 15.333 3.26 21.33 1.31
3.417 1.41 9.417 3.48 15.417 3.26 21.42 1.31
3.500 1.41 9.500 3.48 15.500 3.26 21.50 1.31
3.583 1.41 9.583 3.92 15.583 3.26 21.58 1.31
3.667 1.41 9.667 3.92 15.667 3.26 21.67 1.31
3.750 1.41 9.750 3.92 15.750 3.26 21.75 1.31
3.833 1.41 9.833 3.92 15.833 3.26 21.83 1.31
```

3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.12	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.212 (i)
TIME TO PEAK (hrs)= 12.667
RUNOFF VOLUME (mm)= 68.574
TOTAL RAINFALL (mm)= 108.820
RUNOFF COEFFICIENT = 0.630

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

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| CALIB |
| NASHYD ( 0304) | Area (ha)= 2.79 Curve Number (CN)= 84.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.47
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NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	' TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
-------------	---------------	-------------	---------------	---------------	---------------	-------------	---------------

0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31

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4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.12	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.276 (i)

TIME TO PEAK (hrs)= 12.333

RUNOFF VOLUME (mm)= 68.570

TOTAL RAINFALL (mm)= 108.820

RUNOFF COEFFICIENT = 0.630

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

ADD HYD (2318)				
1 + 2 = 3				

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1305):	3.00	0.212	12.67	68.57
+ ID2= 2 (0304):	2.79	0.276	12.33	68.57
=====				
ID = 3 (2318):	5.79	0.468	12.42	68.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (0305)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	2.15	
	Total Imp(%)=		25.00	Dir. Conn.(%)= 25.00

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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.54	1.61
Dep. Storage (mm)=	7.50	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	119.72	40.00
Mannings n =	0.013	0.250
NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.		

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31

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3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2319)
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2318):	5.79	0.468	12.42	68.57
+ ID2= 2 (0305):	2.15	0.497	12.00	78.44
ID = 3 (2319):	7.94	0.751	12.00	71.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD (1301)
ID= 1 DT= 5.0 min

Area (ha)= 3.68
Total Imp(%)= 85.30 Dir. Conn.(%)= 85.30

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.14	0.54
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	156.63	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96

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1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31

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5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00

Storage Coeff. (min)= 3.11 (ii) 6.35 (iii)

Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.27 0.15

PEAK FLOW (cms)= 1.04 0.12 1.164 (iii)

TIME TO PEAK (hrs)= 12.00 12.00 12.00

RUNOFF VOLUME (mm)= 107.82 70.82 102.38

TOTAL RAINFALL (mm)= 108.82 108.82 108.82

RUNOFF COEFFICIENT = 0.99 0.65 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2311)
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	0.1470	0.1190
0.0660	0.0830	0.1780	0.1310
0.0910	0.0960	0.2070	0.1410
0.1130	0.1060	0.3250	0.1860

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1301)	3.680	1.164	12.00	102.38
OUTFLOW: ID= 1 (2311)	3.680	0.277	12.17	102.30

PEAK FLOW REDUCTION [Qout/Qin](%)= 23.83

TIME SHIFT OF PEAK FLOW (min)= 10.00

MAXIMUM STORAGE USED (ha.m.)= 0.1685

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CALIB
STANDHYD (1302)
ID= 1 DT= 5.0 min

Area (ha)= 2.86
Total Imp(%)= 86.10 Dir. Conn.(%)= 86.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.46	0.40
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	138.08	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31

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2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31
Max. Eff. Inten. (mm/hr)= 120.12 94.63							
over (min) 5.00 10.00							
Storage Coeff. (min)= 2.88 (ii) 6.04 (ii)							
Unit Hyd. Tpeak (min)= 5.00 10.00							
Unit Hyd. peak (cms)= 0.28 0.15							
TOTALS							
PEAK FLOW (cms)= 0.82 0.09 0.910 (iii)							

TIME TO PEAK (hrs)= 12.00 12.00 12.00
 RUNOFF VOLUME (mm)= 107.82 70.82 102.68
 TOTAL RAINFALL (mm)= 108.82 108.82 108.82
 RUNOFF COEFFICIENT = 0.99 0.65 0.94

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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(2312) | 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	0.1140	0.0930
0.0510	0.0650	0.1380	0.1020
0.0710	0.0750	0.1610	0.1100
0.0880	0.0830	0.2520	0.1450

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1302)	2.860	0.910	12.00
OUTFLOW: ID= 1 (2312)	2.860	0.216	12.17

 PEAK FLOW REDUCTION [Qout/Qin](%)= 23.79
 TIME SHIFT OF PEAK FLOW (min)= 10.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1320

 | ADD HYD (2315) |
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2311):	3.68	0.277	12.17
+ ID2= 2 (2312):	2.86	0.216	12.17
=====			
ID = 3 (2315):	6.54	0.494	12.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

 | CALIB |
 | STANDHYD (1303) | Area (ha)= 3.47
 | ID= 1 DT= 5.0 min | Total Imp(%)= 86.30 Dir. Conn.(%)= 86.30

		IMPERVIOUS		PERVIOUS (i)			
Surface Area	(ha)=	2.99		0.48			
Dep. Storage	(mm)=	1.00		5.00			
Average Slope	(%)=	1.00		2.00			
Length	(m)=	152.10		40.00			
Mannings n	=	0.013		0.250			
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	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31

3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2313) 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	0.1300	0.1130
	0.0620	0.0790	0.1600	0.1240
	0.0860	0.0910	0.1950	0.1340
	0.1060	0.1010	0.3060	0.1760
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1303)	3.470	1.103	12.00	102.75
OUTFLOW: ID= 1 (2313)	3.470	0.262	12.17	102.66
PEAK FLOW REDUCTION [Qout/Qin](%)= 23.78				
TIME SHIFT OF PEAK FLOW (min)= 10.00				
MAXIMUM STORAGE USED (ha.m.)= 0.1601				

ADD HYD (2316)				
1 + 2 = 3				
ID1= 1 (2313):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (2315):	3.47	0.262	12.17	102.66
	6.54	0.494	12.17	102.41
ID = 3 (2316):	10.01	0.756	12.17	102.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1304)				
ID= 1 DT= 5.0 min				
	Area (ha)=	3.93		
	Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	3.54	0.39		
Dep. Storage (mm)=	1.00	5.00		
Average Slope (%)=	1.00	2.00		
Length (m)=	161.86	40.00		

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Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96		
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96		
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96		
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96		
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96		
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96		
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96		
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96		
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96		
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96		
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96		
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96		
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96		
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96		
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96		
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96		
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96		
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96		
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96		
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96		
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96		
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96		
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96		
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96		
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31		
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31		
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31		
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31		
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31		
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31		
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31		
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31		
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31		
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31		
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31		
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31		
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31		
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31		
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31		
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31		
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31		
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31		

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3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 3.17 (ii) 5.89 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

PEAK FLOW (cms)= 1.17 0.09 *TOTALS*
TIME TO PEAK (hrs)= 12.00 12.00 (iii)
RUNOFF VOLUME (mm)= 107.82 70.82 104.12
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.96

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2314) 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	0.1570	0.1320
	0.0700	0.0930	0.1900	0.1450
	0.0970	0.1070	0.2210	0.1560
	0.1210	0.1170	0.3470	0.2040
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1304)	3.930	1.264	12.00	104.12
OUTFLOW: ID= 1 (2314)	3.930	0.297	12.17	104.03
PEAK FLOW REDUCTION [Qout/Qin](%)= 23.52				
TIME SHIFT OF PEAK FLOW (min)= 10.00				
MAXIMUM STORAGE USED (ha.m.)= 0.1859				

ADD HYD (2317)				
1 + 2 = 3				
ID1= 1 (2314):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (2316):	3.93	0.297	12.17	104.03
	10.01	0.756	12.17	102.50
ID = 3 (2317):	13.94	1.053	12.17	102.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (2320)				
1 + 2 = 3				
ID1= 1 (2317):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
+ ID2= 2 (2319):	13.94	1.053	12.17	102.93
	7.94	0.751	12.00	71.24
ID = 3 (2320):	21.88	1.721	12.08	91.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1101)				
ID= 1 DT= 5.0 min				
	Area (ha)=	3.22		
	Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00

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IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=      2.90      0.32
Dep. Storage    (mm)=      1.00      5.00
Average Slope   (%)=      1.00      2.00
Length          (m)=     146.52     40.00
Mannings n     =       0.013     0.250

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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 1.20 | 6.083 2.18 | 12.083 15.68 | 18.08 1.96
0.167 1.20 | 6.167 2.18 | 12.167 15.67 | 18.17 1.96
0.250 1.20 | 6.250 2.18 | 12.250 15.67 | 18.25 1.96
0.333 1.20 | 6.333 2.18 | 12.333 15.67 | 18.33 1.96
0.417 1.20 | 6.417 2.18 | 12.417 15.67 | 18.42 1.96
0.500 1.20 | 6.500 2.18 | 12.500 15.67 | 18.50 1.96
0.583 1.20 | 6.583 2.18 | 12.583 8.05 | 18.58 1.96
0.667 1.20 | 6.667 2.18 | 12.667 8.05 | 18.67 1.96
0.750 1.20 | 6.750 2.18 | 12.750 8.05 | 18.75 1.96
0.833 1.20 | 6.833 2.18 | 12.833 8.05 | 18.83 1.96
0.917 1.20 | 6.917 2.18 | 12.917 8.05 | 18.92 1.96
1.000 1.20 | 7.000 2.18 | 13.000 8.05 | 19.00 1.96
1.083 1.20 | 7.083 2.18 | 13.083 1.52 | 19.08 1.96
1.167 1.20 | 7.167 2.18 | 13.167 1.52 | 19.17 1.96
1.250 1.20 | 7.250 2.18 | 13.250 1.52 | 19.25 1.96
1.333 1.20 | 7.333 2.18 | 13.333 1.52 | 19.33 1.96
1.417 1.20 | 7.417 2.18 | 13.417 1.52 | 19.42 1.96
1.500 1.20 | 7.500 2.18 | 13.500 1.52 | 19.50 1.96
1.583 1.20 | 7.583 2.18 | 13.583 8.92 | 19.58 1.96
1.667 1.20 | 7.667 2.18 | 13.667 8.92 | 19.67 1.96
1.750 1.20 | 7.750 2.18 | 13.750 8.92 | 19.75 1.96
1.833 1.20 | 7.833 2.18 | 13.833 8.92 | 19.83 1.96
1.917 1.20 | 7.917 2.18 | 13.917 8.92 | 19.92 1.96
2.000 1.20 | 8.000 2.18 | 14.000 8.92 | 20.00 1.96
2.083 1.41 | 8.083 2.94 | 14.083 3.26 | 20.08 1.31
2.167 1.41 | 8.167 2.94 | 14.167 3.26 | 20.17 1.31
2.250 1.41 | 8.250 2.94 | 14.250 3.26 | 20.25 1.31
2.333 1.41 | 8.333 2.94 | 14.333 3.26 | 20.33 1.31
2.417 1.41 | 8.417 2.94 | 14.417 3.26 | 20.42 1.31
2.500 1.41 | 8.500 2.94 | 14.500 3.26 | 20.50 1.31
2.583 1.41 | 8.583 2.94 | 14.583 3.26 | 20.58 1.31
2.667 1.41 | 8.667 2.94 | 14.667 3.26 | 20.67 1.31
2.750 1.41 | 8.750 2.94 | 14.750 3.26 | 20.75 1.31
2.833 1.41 | 8.833 2.94 | 14.833 3.26 | 20.83 1.31
2.917 1.41 | 8.917 2.94 | 14.917 3.26 | 20.92 1.31
3.000 1.41 | 9.000 2.94 | 15.000 3.26 | 21.00 1.31

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3.083 1.41 | 9.083 3.48 | 15.083 3.26 | 21.08 1.31
3.167 1.41 | 9.167 3.48 | 15.167 3.26 | 21.17 1.31
3.250 1.41 | 9.250 3.48 | 15.250 3.26 | 21.25 1.31
3.333 1.41 | 9.333 3.48 | 15.333 3.26 | 21.33 1.31
3.417 1.41 | 9.417 3.48 | 15.417 3.26 | 21.42 1.31
3.500 1.41 | 9.500 3.48 | 15.500 3.26 | 21.50 1.31
3.583 1.41 | 9.583 3.92 | 15.583 3.26 | 21.58 1.31
3.667 1.41 | 9.667 3.92 | 15.667 3.26 | 21.67 1.31
3.750 1.41 | 9.750 3.92 | 15.750 3.26 | 21.75 1.31
3.833 1.41 | 9.833 3.92 | 15.833 3.26 | 21.83 1.31
3.917 1.41 | 9.917 3.92 | 15.917 3.26 | 21.92 1.31
4.000 1.41 | 10.000 3.92 | 16.000 3.26 | 22.00 1.31
4.083 1.74 | 10.083 5.00 | 16.083 1.96 | 22.08 1.31
4.167 1.74 | 10.167 5.00 | 16.167 1.96 | 22.17 1.31
4.250 1.74 | 10.250 5.00 | 16.250 1.96 | 22.25 1.31
4.333 1.74 | 10.333 5.00 | 16.333 1.96 | 22.33 1.31
4.417 1.74 | 10.417 5.00 | 16.417 1.96 | 22.42 1.31
4.500 1.74 | 10.500 5.00 | 16.500 1.96 | 22.50 1.31
4.583 1.74 | 10.583 6.75 | 16.583 1.96 | 22.58 1.31
4.667 1.74 | 10.667 6.75 | 16.667 1.96 | 22.67 1.31
4.750 1.74 | 10.750 6.75 | 16.750 1.96 | 22.75 1.31
4.833 1.74 | 10.833 6.75 | 16.833 1.96 | 22.83 1.31
4.917 1.74 | 10.917 6.75 | 16.917 1.96 | 22.92 1.31
5.000 1.74 | 11.000 6.75 | 17.000 1.96 | 23.00 1.31
5.083 1.74 | 11.083 10.44 | 17.083 1.96 | 23.08 1.31
5.167 1.74 | 11.167 10.44 | 17.167 1.96 | 23.17 1.31
5.250 1.74 | 11.250 10.44 | 17.250 1.96 | 23.25 1.31
5.333 1.74 | 11.333 10.44 | 17.333 1.96 | 23.33 1.31
5.417 1.74 | 11.417 10.44 | 17.417 1.96 | 23.42 1.31
5.500 1.74 | 11.500 10.44 | 17.500 1.96 | 23.50 1.31
5.583 1.74 | 11.583 45.26 | 17.583 1.96 | 23.58 1.31
5.667 1.74 | 11.667 45.26 | 17.667 1.96 | 23.67 1.31
5.750 1.74 | 11.750 45.26 | 17.750 1.96 | 23.75 1.31
5.833 1.74 | 11.833 120.11 | 17.833 1.96 | 23.83 1.31
5.917 1.74 | 11.917 120.12 | 17.917 1.96 | 23.92 1.31
6.000 1.74 | 12.000 120.12 | 18.000 1.96 | 24.00 1.31

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Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 2.99 (ii) 5.71 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

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*TOTALS*
PEAK FLOW (cms)= 0.96 0.07 1.038 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82 104.12
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.96

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1111) | 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 | 0.2210 0.0950
0.0760 0.0700 | 0.2760 0.1030
0.1230 0.0800 | 0.3270 0.1100
0.1610 0.0860 | 0.6360 0.1400

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW: ID= 2 ( 1101) 3.220 1.038 12.00 104.12
OUTFLOW: ID= 1 ( 1111) 3.220 0.503 12.08 104.05

PEAK FLOW REDUCTION [Qout/Qin](%)= 48.46
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1294

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| CALIB |
| STANDHYD ( 1102) | Area (ha)= 2.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50
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IMPERVIOUS      PERVIOUS (i)
Surface Area    (ha)=      0.51      1.56
Dep. Storage    (mm)=      1.00      5.00
Average Slope   (%)=      1.00      2.00
Length          (m)=     117.47     40.00
Mannings n     =       0.013     0.250

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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 1.20 | 6.083 2.18 | 12.083 15.68 | 18.08 1.96
0.167 1.20 | 6.167 2.18 | 12.167 15.67 | 18.17 1.96
0.250 1.20 | 6.250 2.18 | 12.250 15.67 | 18.25 1.96
0.333 1.20 | 6.333 2.18 | 12.333 15.67 | 18.33 1.96

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0.417 1.20 | 6.417 2.18 | 12.417 15.67 | 18.42 1.96
0.500 1.20 | 6.500 2.18 | 12.500 15.67 | 18.50 1.96
0.583 1.20 | 6.583 2.18 | 12.583 8.05 | 18.58 1.96
0.667 1.20 | 6.667 2.18 | 12.667 8.05 | 18.67 1.96
0.750 1.20 | 6.750 2.18 | 12.750 8.05 | 18.75 1.96
0.833 1.20 | 6.833 2.18 | 12.833 8.05 | 18.83 1.96
0.917 1.20 | 6.917 2.18 | 12.917 8.05 | 18.92 1.96
1.000 1.20 | 7.000 2.18 | 13.000 8.05 | 19.00 1.96
1.083 1.20 | 7.083 2.18 | 13.083 1.52 | 19.08 1.96
1.167 1.20 | 7.167 2.18 | 13.167 1.52 | 19.17 1.96
1.250 1.20 | 7.250 2.18 | 13.250 1.52 | 19.25 1.96
1.333 1.20 | 7.333 2.18 | 13.333 1.52 | 19.33 1.96
1.417 1.20 | 7.417 2.18 | 13.417 1.52 | 19.42 1.96
1.500 1.20 | 7.500 2.18 | 13.500 1.52 | 19.50 1.96
1.583 1.20 | 7.583 2.18 | 13.583 8.92 | 19.58 1.96
1.667 1.20 | 7.667 2.18 | 13.667 8.92 | 19.67 1.96
1.750 1.20 | 7.750 2.18 | 13.750 8.92 | 19.75 1.96
1.833 1.20 | 7.833 2.18 | 13.833 8.92 | 19.83 1.96
1.917 1.20 | 7.917 2.18 | 13.917 8.92 | 19.92 1.96
2.000 1.20 | 8.000 2.18 | 14.000 8.92 | 20.00 1.96
2.083 1.41 | 8.083 2.94 | 14.083 3.26 | 20.08 1.31
2.167 1.41 | 8.167 2.94 | 14.167 3.26 | 20.17 1.31
2.250 1.41 | 8.250 2.94 | 14.250 3.26 | 20.25 1.31
2.333 1.41 | 8.333 2.94 | 14.333 3.26 | 20.33 1.31
2.417 1.41 | 8.417 2.94 | 14.417 3.26 | 20.42 1.31
2.500 1.41 | 8.500 2.94 | 14.500 3.26 | 20.50 1.31
2.583 1.41 | 8.583 2.94 | 14.583 3.26 | 20.58 1.31
2.667 1.41 | 8.667 2.94 | 14.667 3.26 | 20.67 1.31
2.750 1.41 | 8.750 2.94 | 14.750 3.26 | 20.75 1.31
2.833 1.41 | 8.833 2.94 | 14.833 3.26 | 20.83 1.31
2.917 1.41 | 8.917 2.94 | 14.917 3.26 | 20.92 1.31
3.000 1.41 | 9.000 2.94 | 15.000 3.26 | 21.00 1.31
3.083 1.41 | 9.083 3.48 | 15.083 3.26 | 21.08 1.31
3.167 1.41 | 9.167 3.48 | 15.167 3.26 | 21.17 1.31
3.250 1.41 | 9.250 3.48 | 15.250 3.26 | 21.25 1.31
3.333 1.41 | 9.333 3.48 | 15.333 3.26 | 21.33 1.31
3.417 1.41 | 9.417 3.48 | 15.417 3.26 | 21.42 1.31
3.500 1.41 | 9.500 3.48 | 15.500 3.26 | 21.50 1.31
3.583 1.41 | 9.583 3.92 | 15.583 3.26 | 21.58 1.31
3.667 1.41 | 9.667 3.92 | 15.667 3.26 | 21.67 1.31
3.750 1.41 | 9.750 3.92 | 15.750 3.26 | 21.75 1.31
3.833 1.41 | 9.833 3.92 | 15.833 3.26 | 21.83 1.31
3.917 1.41 | 9.917 3.92 | 15.917 3.26 | 21.92 1.31
4.000 1.41 | 10.000 3.92 | 16.000 3.26 | 22.00 1.31
4.083 1.74 | 10.083 5.00 | 16.083 1.96 | 22.08 1.31
4.167 1.74 | 10.167 5.00 | 16.167 1.96 | 22.17 1.31
4.250 1.74 | 10.250 5.00 | 16.250 1.96 | 22.25 1.31
4.333 1.74 | 10.333 5.00 | 16.333 1.96 | 22.33 1.31
4.417 1.74 | 10.417 5.00 | 16.417 1.96 | 22.42 1.31
4.500 1.74 | 10.500 5.00 | 16.500 1.96 | 22.50 1.31

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4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 2.61 (ii) 9.83 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.29 0.11

PEAK FLOW (cms)= 0.17 0.31
TIME TO PEAK (hrs)= 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82
TOTAL RAINFALL (mm)= 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65

TOTALS

0.478 (iii)

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1112) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 1102): 2.07 0.478 12.00 79.88
+ ID2= 2 ( 1111): 3.22 0.503 12.00 104.05
=====
ID = 3 ( 1112): 5.29 0.911 12.00 94.59

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NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB |
| STANDHYD ( 1201) | Area (ha)= 5.38
| ID= 1 DT= 5.0 min | Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00
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	IMPERVIOUS (i)	PERVIOUS (i)
Surface Area (ha)=	4.68	0.70
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	189.38	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31

2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63

over (min) 5.00 10.00

Storage Coeff. (min)= 3.48 (ii) 6.55 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.26 0.14

PEAK FLOW (cms)= 1.55 0.16

TOTALS

1.705 (iii)

TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82 103.01
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.95

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1211) | 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	0.2600	0.1600
0.1050	0.1200	0.3330	0.1830
0.1540	0.1380	0.3940	0.1960
0.1970	0.1510	0.7720	0.2500

INFLOW : ID= 2 (1201) 5.380 1.705 12.00 103.01
OUTFLOW: ID= 1 (1211) 5.380 0.626 12.08 102.96

PEAK FLOW REDUCTION [Qout/Qin](%)= 36.72
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.2297

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| CALIB |
| STANDHYD ( 1202) | Area (ha)= 4.07
| ID= 1 DT= 5.0 min | Total Imp(%)= 81.20 Dir. Conn.(%)= 81.20
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	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.30	0.77
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	164.72	40.00
Mannings n =	0.013	0.250

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	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96
0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31

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4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31
4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
over (min) 5.00 10.00
Storage Coeff. (min)= 3.20 (ii) 6.86 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.14

PEAK FLOW (cms)= 1.10 0.17 1.266 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 107.82 70.82 100.86
TOTAL RAINFALL (mm)= 108.82 108.82 108.82
RUNOFF COEFFICIENT = 0.99 0.65 0.93

TOTALS

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1212)	OVERFLOW IS OFF
IN= 2----> OUT= 1	
DT= 5.0 min	OUTFLOW STORAGE OUTFLOW STORAGE

-270-

	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.2030	0.1210
	0.0800	0.0860	0.2520	0.1320
	0.1170	0.0990	0.2980	0.1420
	0.1490	0.1080	0.5840	0.1820

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1202)	4.070	1.266	12.00	100.86
OUTFLOW: ID= 1 (1212)	4.070	0.473	12.08	100.80

PEAK FLOW REDUCTION [Qout/Qin](%)= 37.38
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1668

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1211):	5.38	0.626	12.08	102.96
+ ID2= 2 (1212):	4.07	0.473	12.08	100.80
ID = 3 (1213):	9.45	1.100	12.08	102.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD (1203)	Area (ha)= 1.54
ID= 1 DT= 5.0 min	Total Imp(%)= 28.10 Dir. Conn.(%)= 28.10

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.43	1.11
Dep. Storage (mm)=	1.00	5.00
Average Slope (%)=	1.00	2.00
Length (m)=	101.32	40.00
Mannings n	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.20	6.083	2.18	12.083	15.68	18.08	1.96
0.167	1.20	6.167	2.18	12.167	15.67	18.17	1.96
0.250	1.20	6.250	2.18	12.250	15.67	18.25	1.96
0.333	1.20	6.333	2.18	12.333	15.67	18.33	1.96

-271-

0.417	1.20	6.417	2.18	12.417	15.67	18.42	1.96
0.500	1.20	6.500	2.18	12.500	15.67	18.50	1.96
0.583	1.20	6.583	2.18	12.583	8.05	18.58	1.96
0.667	1.20	6.667	2.18	12.667	8.05	18.67	1.96
0.750	1.20	6.750	2.18	12.750	8.05	18.75	1.96
0.833	1.20	6.833	2.18	12.833	8.05	18.83	1.96
0.917	1.20	6.917	2.18	12.917	8.05	18.92	1.96
1.000	1.20	7.000	2.18	13.000	8.05	19.00	1.96
1.083	1.20	7.083	2.18	13.083	1.52	19.08	1.96
1.167	1.20	7.167	2.18	13.167	1.52	19.17	1.96
1.250	1.20	7.250	2.18	13.250	1.52	19.25	1.96
1.333	1.20	7.333	2.18	13.333	1.52	19.33	1.96
1.417	1.20	7.417	2.18	13.417	1.52	19.42	1.96
1.500	1.20	7.500	2.18	13.500	1.52	19.50	1.96
1.583	1.20	7.583	2.18	13.583	8.92	19.58	1.96
1.667	1.20	7.667	2.18	13.667	8.92	19.67	1.96
1.750	1.20	7.750	2.18	13.750	8.92	19.75	1.96
1.833	1.20	7.833	2.18	13.833	8.92	19.83	1.96
1.917	1.20	7.917	2.18	13.917	8.92	19.92	1.96
2.000	1.20	8.000	2.18	14.000	8.92	20.00	1.96
2.083	1.41	8.083	2.94	14.083	3.26	20.08	1.31
2.167	1.41	8.167	2.94	14.167	3.26	20.17	1.31
2.250	1.41	8.250	2.94	14.250	3.26	20.25	1.31
2.333	1.41	8.333	2.94	14.333	3.26	20.33	1.31
2.417	1.41	8.417	2.94	14.417	3.26	20.42	1.31
2.500	1.41	8.500	2.94	14.500	3.26	20.50	1.31
2.583	1.41	8.583	2.94	14.583	3.26	20.58	1.31
2.667	1.41	8.667	2.94	14.667	3.26	20.67	1.31
2.750	1.41	8.750	2.94	14.750	3.26	20.75	1.31
2.833	1.41	8.833	2.94	14.833	3.26	20.83	1.31
2.917	1.41	8.917	2.94	14.917	3.26	20.92	1.31
3.000	1.41	9.000	2.94	15.000	3.26	21.00	1.31
3.083	1.41	9.083	3.48	15.083	3.26	21.08	1.31
3.167	1.41	9.167	3.48	15.167	3.26	21.17	1.31
3.250	1.41	9.250	3.48	15.250	3.26	21.25	1.31
3.333	1.41	9.333	3.48	15.333	3.26	21.33	1.31
3.417	1.41	9.417	3.48	15.417	3.26	21.42	1.31
3.500	1.41	9.500	3.48	15.500	3.26	21.50	1.31
3.583	1.41	9.583	3.92	15.583	3.26	21.58	1.31
3.667	1.41	9.667	3.92	15.667	3.26	21.67	1.31
3.750	1.41	9.750	3.92	15.750	3.26	21.75	1.31
3.833	1.41	9.833	3.92	15.833	3.26	21.83	1.31
3.917	1.41	9.917	3.92	15.917	3.26	21.92	1.31
4.000	1.41	10.000	3.92	16.000	3.26	22.00	1.31
4.083	1.74	10.083	5.00	16.083	1.96	22.08	1.31
4.167	1.74	10.167	5.00	16.167	1.96	22.17	1.31
4.250	1.74	10.250	5.00	16.250	1.96	22.25	1.31
4.333	1.74	10.333	5.00	16.333	1.96	22.33	1.31
4.417	1.74	10.417	5.00	16.417	1.96	22.42	1.31
4.500	1.74	10.500	5.00	16.500	1.96	22.50	1.31

4.583	1.74	10.583	6.75	16.583	1.96	22.58	1.31
4.667	1.74	10.667	6.75	16.667	1.96	22.67	1.31
4.750	1.74	10.750	6.75	16.750	1.96	22.75	1.31
4.833	1.74	10.833	6.75	16.833	1.96	22.83	1.31
4.917	1.74	10.917	6.75	16.917	1.96	22.92	1.31
5.000	1.74	11.000	6.75	17.000	1.96	23.00	1.31
5.083	1.74	11.083	10.44	17.083	1.96	23.08	1.31
5.167	1.74	11.167	10.44	17.167	1.96	23.17	1.31
5.250	1.74	11.250	10.44	17.250	1.96	23.25	1.31
5.333	1.74	11.333	10.44	17.333	1.96	23.33	1.31
5.417	1.74	11.417	10.44	17.417	1.96	23.42	1.31
5.500	1.74	11.500	10.44	17.500	1.96	23.50	1.31
5.583	1.74	11.583	45.26	17.583	1.96	23.58	1.31
5.667	1.74	11.667	45.26	17.667	1.96	23.67	1.31
5.750	1.74	11.750	45.26	17.750	1.96	23.75	1.31
5.833	1.74	11.833	120.11	17.833	1.96	23.83	1.31
5.917	1.74	11.917	120.12	17.917	1.96	23.92	1.31
6.000	1.74	12.000	120.12	18.000	1.96	24.00	1.31

Max.Eff.Inten.(mm/hr)= 120.12 94.63
 over (min) 5.00 10.00
 Storage Coeff. (min)= 2.39 (ii) 9.61 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.30 0.11

PEAK FLOW (cms)= 0.14 0.22 0.365 (iii)
 TIME TO PEAK (hrs)= 12.00 12.00 12.00
 RUNOFF VOLUME (mm)= 107.82 70.82 81.21
 TOTAL RAINFALL (mm)= 108.82 108.82 108.82
 RUNOFF COEFFICIENT = 0.99 0.65 0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
 CN* = 84.0 Ia = Dep. 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 (1214)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (1203):	1.54	0.365	12.00	81.21
+ ID2= 2 (1213):	9.45	1.100	12.08	102.03
ID = 3 (1214):	10.99	1.342	12.08	99.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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V V I SSSS U U A L (v 6.2.2015)
V V I SS U U A A L
V V I SS U U A A A L
V V I SS U U A A A L
W I SSSS UUUU A A LLLL

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000 TTTT TTTT H H Y Y M M 000 TM
0 0 T T H H Y Y M M 0 0
0 0 T T H H Y Y M M 0 0
000 T T H H Y 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\vo.in.dat

Output filename:
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Summary filename:
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 d9-242b-4864-9435-0b1fe9eac70\scenar

DATE: 05-28-2026

TIME: 11:05:57

USER:

COMMENTS: _____

 ** SIMULATION : Run2.6 100-yr 24-hr SCS (well) **

READ STORM | Filename: C:\Users\ZhouJ\AppData\Local\Temp\7b238f43-dcf5-433e-b41e-e7c655d02d4d\9a6d5800
 Ptotal=120.00 mm | Comments: 100-yr 24-hr SCS (Welland)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	1.32	6.00	2.40	12.00	17.28	18.00	2.16
0.25	1.32	6.25	2.40	12.25	17.28	18.25	2.16
0.50	1.32	6.50	2.40	12.50	8.88	18.50	2.16
0.75	1.32	6.75	2.40	12.75	8.88	18.75	2.16
1.00	1.32	7.00	2.40	13.00	1.68	19.00	2.16
1.25	1.32	7.25	2.40	13.25	1.68	19.25	2.16
1.50	1.32	7.50	2.40	13.50	9.84	19.50	2.16
1.75	1.32	7.75	2.40	13.75	9.84	19.75	2.16
2.00	1.56	8.00	3.24	14.00	3.60	20.00	1.44
2.25	1.56	8.25	3.24	14.25	3.60	20.25	1.44
2.50	1.56	8.50	3.24	14.50	3.60	20.50	1.44
2.75	1.56	8.75	3.24	14.75	3.60	20.75	1.44
3.00	1.56	9.00	3.84	15.00	3.60	21.00	1.44
3.25	1.56	9.25	3.84	15.25	3.60	21.25	1.44
3.50	1.56	9.50	4.32	15.50	3.60	21.50	1.44
3.75	1.56	9.75	4.32	15.75	3.60	21.75	1.44
4.00	1.92	10.00	5.52	16.00	2.16	22.00	1.44
4.25	1.92	10.25	5.52	16.25	2.16	22.25	1.44
4.50	1.92	10.50	7.44	16.50	2.16	22.50	1.44
4.75	1.92	10.75	7.44	16.75	2.16	22.75	1.44
5.00	1.92	11.00	11.52	17.00	2.16	23.00	1.44
5.25	1.92	11.25	11.52	17.25	2.16	23.25	1.44
5.50	1.92	11.50	49.92	17.50	2.16	23.50	1.44
5.75	1.92	11.75	132.48	17.75	2.16	23.75	1.44

CALIB |
 NASHYD (1305) | Area (ha)= 3.00 Curve Number (CN)= 84.0
 ID= 1 DT= 5.0 min | Ia (mm)= 7.50 # of Linear Res. (N)= 3.00
 U.H. Tp(hrs)= 0.75

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16

0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44

4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.153

PEAK FLOW (cms)= 0.243 (i)
 TIME TO PEAK (hrs)= 12.667
 RUNOFF VOLUME (mm)= 78.667
 TOTAL RAINFALL (mm)= 120.000
 RUNOFF COEFFICIENT = 0.656

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

CALIB	Area (ha)	Curve Number (CN)
NASHYD (0304)	2.79	84.0
ID= 1 DT= 5.0 min	Ia (mm)= 7.50	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.47	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16

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0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44

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4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Unit Hyd Qpeak (cms)= 0.227

PEAK FLOW (cms)= 0.317 (i)
 TIME TO PEAK (hrs)= 12.333
 RUNOFF VOLUME (mm)= 78.663
 TOTAL RAINFALL (mm)= 120.000
 RUNOFF COEFFICIENT = 0.656

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

ADD HYD (2318)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 (1305):	3.00	0.243	12.67	78.67
+ ID2= 2 (0304):	2.79	0.317	12.33	78.66
ID = 3 (2318):	5.79	0.537	12.42	78.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	PERVIOUS (i)
STANDHYD (0305)	2.15	
ID= 1 DT= 5.0 min	Total Imp(%)= 25.00	Dir. Conn.(%)= 25.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 0.54	1.61
Dep. Storage (mm)= 7.50	5.00
Average Slope (%)= 1.00	2.00
Length (m)= 119.72	40.00
Mannings n = 0.013	0.250

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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	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56						

3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.47	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max. Eff. Inten. (mm/hr)=	132.48	107.47
over (min)	5.00	10.00
Storage Coeff. (min)=	2.54 (ii)	9.40 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.29	0.12

PEAK FLOW	(cms)=	0.20	0.37	0.567 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00	12.00
RUNOFF VOLUME	(mm)=	112.50	80.95	88.83
TOTAL RAINFALL	(mm)=	120.00	120.00	120.00
RUNOFF COEFFICIENT	=	0.94	0.67	0.74

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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
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- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (2319): 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 (2318):	5.79	0.537	12.42	78.67
+ ID2= 2 (2305):	2.15	0.567	12.00	88.83
ID = 3 (2319):	7.94	0.862	12.00	81.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1301)	Area (ha)=	3.68	
ID= 1 DT= 5.0 min	Total Imp(%)=	85.30	Dir. Conn.(%)= 85.30

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.14	0.54
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	156.63	40.00
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16

1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.833	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44

5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max.Eff.Inten.(mm/hr)=	132.48	107.47
over (min)	5.00	10.00
Storage Coeff. (min)=	2.99 (ii)	6.11 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.15

			TOTALS
PEAK FLOW	(cms)=	1.15	1.291 (iii)
TIME TO PEAK	(hrs)=	12.00	12.00
RUNOFF VOLUME	(mm)=	119.00	113.41
TOTAL RAINFALL	(mm)=	120.00	120.00
RUNOFF COEFFICIENT	=	0.99	0.95

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(233)	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	0.1470	0.1190
	0.0660	0.0830	0.1780	0.1310
	0.0910	0.0960	0.2070	0.1410
	0.1130	0.1060	0.3250	0.1860

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 (1301)	3.680	1.291	12.00	113.41
OUTFLOW: ID= 1 (2311)	3.680	0.320	12.17	113.32

PEAK FLOW REDUCTION [Qout/Qin](%)= 24.81
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.1852

CALIB			
STANDHYD (1302)	Area (ha)=	2.86	
ID= 1 DT= 5.0 min	Total Imp(%)=	86.10	Dir. Conn.(%)= 86.10

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 2.46 0.40
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 138.08 40.00
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44

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3.250 1.56 | 9.250 3.84 | 15.250 3.60 | 21.25 1.44
 3.333 1.56 | 9.333 3.84 | 15.333 3.60 | 21.33 1.44
 3.417 1.56 | 9.417 3.84 | 15.417 3.60 | 21.42 1.44
 3.500 1.56 | 9.500 3.84 | 15.500 3.60 | 21.50 1.44
 3.583 1.56 | 9.583 4.32 | 15.583 3.60 | 21.58 1.44
 3.667 1.56 | 9.667 4.32 | 15.667 3.60 | 21.67 1.44
 3.750 1.56 | 9.750 4.32 | 15.750 3.60 | 21.75 1.44
 3.833 1.56 | 9.833 4.32 | 15.833 3.60 | 21.83 1.44
 3.917 1.56 | 9.917 4.32 | 15.917 3.60 | 21.92 1.44
 4.000 1.56 | 10.000 4.32 | 16.000 3.60 | 22.00 1.44
 4.083 1.92 | 10.083 5.52 | 16.083 2.16 | 22.08 1.44
 4.167 1.92 | 10.167 5.52 | 16.167 2.16 | 22.17 1.44
 4.250 1.92 | 10.250 5.52 | 16.250 2.16 | 22.25 1.44
 4.333 1.92 | 10.333 5.52 | 16.333 2.16 | 22.33 1.44
 4.417 1.92 | 10.417 5.52 | 16.417 2.16 | 22.42 1.44
 4.500 1.92 | 10.500 5.52 | 16.500 2.16 | 22.50 1.44
 4.583 1.92 | 10.583 7.44 | 16.583 2.16 | 22.58 1.44
 4.667 1.92 | 10.667 7.44 | 16.667 2.16 | 22.67 1.44
 4.750 1.92 | 10.750 7.44 | 16.750 2.16 | 22.75 1.44
 4.833 1.92 | 10.833 7.44 | 16.833 2.16 | 22.83 1.44
 4.917 1.92 | 10.917 7.44 | 16.917 2.16 | 22.92 1.44
 5.000 1.92 | 11.000 7.44 | 17.000 2.16 | 23.00 1.44
 5.083 1.92 | 11.083 11.52 | 17.083 2.16 | 23.08 1.44
 5.167 1.92 | 11.167 11.52 | 17.167 2.16 | 23.17 1.44
 5.250 1.92 | 11.250 11.52 | 17.250 2.16 | 23.25 1.44
 5.333 1.92 | 11.333 11.52 | 17.333 2.16 | 23.33 1.44
 5.417 1.92 | 11.417 11.52 | 17.417 2.16 | 23.42 1.44
 5.500 1.92 | 11.500 11.52 | 17.500 2.16 | 23.50 1.44
 5.583 1.92 | 11.583 49.92 | 17.583 2.16 | 23.58 1.44
 5.667 1.92 | 11.667 49.92 | 17.667 2.16 | 23.67 1.44
 5.750 1.92 | 11.750 49.92 | 17.750 2.16 | 23.75 1.44
 5.833 1.92 | 11.833 132.47 | 17.833 2.16 | 23.83 1.44
 5.917 1.92 | 11.917 132.48 | 17.917 2.16 | 23.92 1.44
 6.000 1.92 | 12.000 132.48 | 18.000 2.16 | 24.00 1.44

Max. Eff. Inten. (mm/hr)= 132.48 107.47
 over (min)= 5.00 10.00
 Storage Coeff. (min)= 2.77 (ii) 5.81 (ii)
 Unit Hyd. Tpeak (min)= 5.00 10.00
 Unit Hyd. peak (cms)= 0.28 0.15

TOTALS
 PEAK FLOW (cms)= 0.90 0.10 1.008 (iii)
 TIME TO PEAK (hrs)= 12.00 12.00 12.00
 RUNOFF VOLUME (mm)= 119.00 80.95 113.71
 TOTAL RAINFALL (mm)= 120.00 120.00 120.00
 RUNOFF COEFFICIENT = 0.99 0.67 0.95

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

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CN* = 84.0 Ia = Dep. 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(2312) | 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	0.1140	0.0930
0.0510	0.0650	0.1380	0.1020
0.0710	0.0750	0.1610	0.1100
0.0880	0.0830	0.2520	0.1450

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.860	1.008	12.00	113.71
2.860	0.249	12.17	113.60

INFLOW : ID= 2 (1302) 2.860 1.008 12.00 113.71
 OUTFLOW: ID= 1 (2312) 2.860 0.249 12.17 113.60

PEAK FLOW REDUCTION [Qout/Qin](%)= 24.75
 TIME SHIFT OF PEAK FLOW (min)= 10.00
 MAXIMUM STORAGE USED (ha.m.)= 0.1450

ADD HYD (2315) |
 1 + 2 = 3 |

ID1= 1 (2311):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	3.68	0.320	12.17	113.32
+ ID2= 2 (2312):	2.86	0.249	12.17	113.60
=====				
ID = 3 (2315):	6.54	0.570	12.17	113.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |
 STANDHYD (1303) |
 ID= 1 DT= 5.0 min |

Area (ha)=	3.47
Total Imp(%)=	86.30
Dir. Conn.(%)=	86.30

IMPERVIOUS	PERVIOUS (i)
2.99	0.48
1.00	5.00
1.00	2.00
152.10	40.00
0.013	0.250

Surface Area (ha)= 2.99 0.48
 Dep. Storage (mm)= 1.00 5.00
 Average Slope (%)= 1.00 2.00
 Length (m)= 152.10 40.00
 Mannings n = 0.013 0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44

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3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max.Eff.Inten.(mm/hr)= 132.48 107.47
over (min) 5.00 10.00
Storage Coeff. (min)= 2.94 (ii) 5.96 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 1.10 0.12 *TOTALS*
TIME TO PEAK (hrs)= 12.00 12.00 12.00 (iii)
RUNOFF VOLUME (mm)= 119.00 80.95 113.79
TOTAL RAINFALL (mm)= 120.00 120.00 120.00
RUNOFF COEFFICIENT = 0.99 0.67 0.95

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2313)							
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	0.1300	0.1130
				0.0620	0.0790	0.1680	0.1240
				0.0860	0.0910	0.1950	0.1340
				0.1060	0.1010	0.3060	0.1760
				AREA	QPEAK	TPEAK	R.V.
				(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 (1303)				3.470	1.222	12.00	113.79
OUTFLOW: ID= 1 (2313)				3.470	0.303	12.17	113.69
PEAK FLOW REDUCTION [Qout/Qin](%)= 24.79							
TIME SHIFT OF PEAK FLOW (min)= 10.00							
MAXIMUM STORAGE USED (ha.m.)= 0.1759							

ADD HYD (2316)							
1 + 2 = 3							
				AREA	QPEAK	TPEAK	R.V.
				(ha)	(cms)	(hrs)	(mm)
ID1= 1 (2313):				3.47	0.303	12.17	113.69
+ ID2= 2 (2315):				6.54	0.570	12.17	113.44
ID = 3 (2316):							
				10.01	0.873	12.17	113.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD (1304)			
ID= 1 DT= 5.0 min			
Area	(ha)=	3.93	
Total Imp(%)=	90.00	Dir. Conn.(%)=	90.00
		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	3.54	0.39
Dep. Storage	(mm)=	1.00	5.00
Average Slope	(%)=	1.00	2.00
Length	(m)=	161.86	40.00
Mannings n	=	0.013	0.250

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

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

0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44

Max.Eff.Inten.(mm/hr)= 132.48 107.47
over (min) 5.00 10.00
Storage Coeff. (min)= 3.05 (ii) 5.67 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.27 0.15

PEAK FLOW (cms)= 1.30 0.10 *TOTALS*
TIME TO PEAK (hrs)= 12.00 12.00 12.00 (iii)
RUNOFF VOLUME (mm)= 119.00 80.95 115.19
TOTAL RAINFALL (mm)= 120.00 120.00 120.00
RUNOFF COEFFICIENT = 0.99 0.67 0.96

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(2314)							
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	0.1570	0.1320

```

0.0700    0.0930    |    0.1900    0.1450
0.0970    0.1070    |    0.2210    0.1560
0.1210    0.1170    |    0.3470    0.2040

```

```

          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 1304) 3.930    1.400    12.00    115.19
OUTFLOW: ID= 1 ( 2314) 3.930    0.343    12.17    115.11

```

```

PEAK FLOW REDUCTION [Qout/Qin](%)= 24.54
TIME SHIFT OF PEAK FLOW (min)= 10.00
MAXIMUM STORAGE USED (ha.m.)= 0.2039

```

```

-----
| ADD HYD ( 2317) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 2314): 3.93    0.343    12.17    115.11
+ ID2= 2 ( 2316): 10.01    0.873    12.17    113.53
=====
ID = 3 ( 2317): 13.94    1.216    12.17    113.97

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 2320) |
| 1 + 2 = 3 |
-----
          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
ID1= 1 ( 2317): 13.94    1.216    12.17    113.97
+ ID2= 2 ( 2319): 7.94    0.862    12.00    81.42
=====
ID = 3 ( 2320): 21.88    1.989    12.08    102.16

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 1101) |
| ID= 1 DT= 5.0 min |
-----
          Area (ha)= 3.22
          Total Imp(%)= 90.00 Dir. Conn.(%)= 90.00

```

```

          IMPERVIOUS      PERVIOUS (i)
          (ha)=          2.90    0.32
          Dep. Storage (mm)=          1.00    5.00
          Average Slope (%)=          1.00    2.00
          Length (m)=          146.52    40.00
          Mannings n =          0.013    0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 1.32 | 6.083 2.40 | 12.083 17.29 | 18.08 2.16
0.167 1.32 | 6.167 2.40 | 12.167 17.28 | 18.17 2.16
0.250 1.32 | 6.250 2.40 | 12.250 17.28 | 18.25 2.16
0.333 1.32 | 6.333 2.40 | 12.333 17.28 | 18.33 2.16
0.417 1.32 | 6.417 2.40 | 12.417 17.28 | 18.42 2.16
0.500 1.32 | 6.500 2.40 | 12.500 17.28 | 18.50 2.16
0.583 1.32 | 6.583 2.40 | 12.583 8.88 | 18.58 2.16
0.667 1.32 | 6.667 2.40 | 12.667 8.88 | 18.67 2.16
0.750 1.32 | 6.750 2.40 | 12.750 8.88 | 18.75 2.16
0.833 1.32 | 6.833 2.40 | 12.833 8.88 | 18.83 2.16
0.917 1.32 | 6.917 2.40 | 12.917 8.88 | 18.92 2.16
1.000 1.32 | 7.000 2.40 | 13.000 8.88 | 19.00 2.16
1.083 1.32 | 7.083 2.40 | 13.083 1.68 | 19.08 2.16
1.167 1.32 | 7.167 2.40 | 13.167 1.68 | 19.17 2.16
1.250 1.32 | 7.250 2.40 | 13.250 1.68 | 19.25 2.16
1.333 1.32 | 7.333 2.40 | 13.333 1.68 | 19.33 2.16
1.417 1.32 | 7.417 2.40 | 13.417 1.68 | 19.42 2.16
1.500 1.32 | 7.500 2.40 | 13.500 1.68 | 19.50 2.16
1.583 1.32 | 7.583 2.40 | 13.583 9.84 | 19.58 2.16
1.667 1.32 | 7.667 2.40 | 13.667 9.84 | 19.67 2.16
1.750 1.32 | 7.750 2.40 | 13.750 9.84 | 19.75 2.16
1.833 1.32 | 7.833 2.40 | 13.833 9.84 | 19.83 2.16
1.917 1.32 | 7.917 2.40 | 13.917 9.84 | 19.92 2.16
2.000 1.32 | 8.000 2.40 | 14.000 9.84 | 20.00 2.16
2.083 1.56 | 8.083 3.24 | 14.083 3.60 | 20.08 1.44
2.167 1.56 | 8.167 3.24 | 14.167 3.60 | 20.17 1.44
2.250 1.56 | 8.250 3.24 | 14.250 3.60 | 20.25 1.44
2.333 1.56 | 8.333 3.24 | 14.333 3.60 | 20.33 1.44
2.417 1.56 | 8.417 3.24 | 14.417 3.60 | 20.42 1.44
2.500 1.56 | 8.500 3.24 | 14.500 3.60 | 20.50 1.44
2.583 1.56 | 8.583 3.24 | 14.583 3.60 | 20.58 1.44
2.667 1.56 | 8.667 3.24 | 14.667 3.60 | 20.67 1.44
2.750 1.56 | 8.750 3.24 | 14.750 3.60 | 20.75 1.44
2.833 1.56 | 8.833 3.24 | 14.833 3.60 | 20.83 1.44
2.917 1.56 | 8.917 3.24 | 14.917 3.60 | 20.92 1.44
3.000 1.56 | 9.000 3.24 | 15.000 3.60 | 21.00 1.44
3.083 1.56 | 9.083 3.84 | 15.083 3.60 | 21.08 1.44
3.167 1.56 | 9.167 3.84 | 15.167 3.60 | 21.17 1.44
3.250 1.56 | 9.250 3.84 | 15.250 3.60 | 21.25 1.44
3.333 1.56 | 9.333 3.84 | 15.333 3.60 | 21.33 1.44
3.417 1.56 | 9.417 3.84 | 15.417 3.60 | 21.42 1.44
3.500 1.56 | 9.500 3.84 | 15.500 3.60 | 21.50 1.44
3.583 1.56 | 9.583 4.32 | 15.583 3.60 | 21.58 1.44
3.667 1.56 | 9.667 4.32 | 15.667 3.60 | 21.67 1.44

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3.750 1.56 | 9.750 4.32 | 15.750 3.60 | 21.75 1.44
3.833 1.56 | 9.833 4.32 | 15.833 3.60 | 21.83 1.44
3.917 1.56 | 9.917 4.32 | 15.917 3.60 | 21.92 1.44
4.000 1.56 | 10.000 4.32 | 16.000 3.60 | 22.00 1.44
4.083 1.92 | 10.083 5.52 | 16.083 2.16 | 22.08 1.44
4.167 1.92 | 10.167 5.52 | 16.167 2.16 | 22.17 1.44
4.250 1.92 | 10.250 5.52 | 16.250 2.16 | 22.25 1.44
4.333 1.92 | 10.333 5.52 | 16.333 2.16 | 22.33 1.44
4.417 1.92 | 10.417 5.52 | 16.417 2.16 | 22.42 1.44
4.500 1.92 | 10.500 5.52 | 16.500 2.16 | 22.50 1.44
4.583 1.92 | 10.583 7.44 | 16.583 2.16 | 22.58 1.44
4.667 1.92 | 10.667 7.44 | 16.667 2.16 | 22.67 1.44
4.750 1.92 | 10.750 7.44 | 16.750 2.16 | 22.75 1.44
4.833 1.92 | 10.833 7.44 | 16.833 2.16 | 22.83 1.44
4.917 1.92 | 10.917 7.44 | 16.917 2.16 | 22.92 1.44
5.000 1.92 | 11.000 7.44 | 17.000 2.16 | 23.00 1.44
5.083 1.92 | 11.083 11.52 | 17.083 2.16 | 23.08 1.44
5.167 1.92 | 11.167 11.52 | 17.167 2.16 | 23.17 1.44
5.250 1.92 | 11.250 11.52 | 17.250 2.16 | 23.25 1.44
5.333 1.92 | 11.333 11.52 | 17.333 2.16 | 23.33 1.44
5.417 1.92 | 11.417 11.52 | 17.417 2.16 | 23.42 1.44
5.500 1.92 | 11.500 11.52 | 17.500 2.16 | 23.50 1.44
5.583 1.92 | 11.583 49.92 | 17.583 2.16 | 23.58 1.44
5.667 1.92 | 11.667 49.92 | 17.667 2.16 | 23.67 1.44
5.750 1.92 | 11.750 49.92 | 17.750 2.16 | 23.75 1.44
5.833 1.92 | 11.833 132.47 | 17.833 2.16 | 23.83 1.44
5.917 1.92 | 11.917 132.48 | 17.917 2.16 | 23.92 1.44
6.000 1.92 | 12.000 132.48 | 18.000 2.16 | 24.00 1.44

```

```

Max.Eff.Inten.(mm/hr)= 132.48    107.47
over (min)          5.00    10.00
Storage Coeff. (min)= 2.87 (ii)    5.49 (ii)
Unit Hyd. Tpeak (min)= 5.00    10.00
Unit Hyd. peak (cms)= 0.28    0.16

```

```

          *TOTALS*
PEAK FLOW (cms)= 1.06    0.09    1.149 (iii)
TIME TO PEAK (hrs)= 12.00    12.00    12.00
RUNOFF VOLUME (mm)= 119.00    80.95    115.19
TOTAL RAINFALL (mm)= 120.00    120.00    120.00
RUNOFF COEFFICIENT = 0.99    0.67    0.96

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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( 1111) |
| IN= 2----> OUT= 1 |
| DT= 5.0 min |
-----
OVERFLOW IS OFF

OUTFLOW STORAGE | OUTFLOW STORAGE
(cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.2210 0.0950
0.0700 0.0700 | 0.2760 0.1030
0.1230 0.0800 | 0.3270 0.1100
0.1610 0.0860 | 0.3360 0.1400

          AREA      QPEAK      TPEAK      R.V.
          (ha)      (cms)      (hrs)      (mm)
INFLOW : ID= 2 ( 1101) 3.220    1.149    12.00    115.19
OUTFLOW: ID= 1 ( 1111) 3.220    0.598    12.08    115.12

PEAK FLOW REDUCTION [Qout/Qin](%)= 52.08
TIME SHIFT OF PEAK FLOW (min)= 5.00
MAXIMUM STORAGE USED (ha.m.)= 0.1397

```

```

-----
| CALIB |
| STANDHYD ( 1102) |
| ID= 1 DT= 5.0 min |
-----
          Area (ha)= 2.07
          Total Imp(%)= 24.50 Dir. Conn.(%)= 24.50

```

```

          IMPERVIOUS      PERVIOUS (i)
          (ha)=          0.51    1.56
          Dep. Storage (mm)=          1.00    5.00
          Average Slope (%)=          1.00    2.00
          Length (m)=          117.47    40.00
          Mannings n =          0.013    0.250

```

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

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | ' TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | ' hrs mm/hr | hrs mm/hr
0.083 1.32 | 6.083 2.40 | 12.083 17.29 | 18.08 2.16
0.167 1.32 | 6.167 2.40 | 12.167 17.28 | 18.17 2.16
0.250 1.32 | 6.250 2.40 | 12.250 17.28 | 18.25 2.16
0.333 1.32 | 6.333 2.40 | 12.333 17.28 | 18.33 2.16
0.417 1.32 | 6.417 2.40 | 12.417 17.28 | 18.42 2.16
0.500 1.32 | 6.500 2.40 | 12.500 17.28 | 18.50 2.16
0.583 1.32 | 6.583 2.40 | 12.583 8.88 | 18.58 2.16
0.667 1.32 | 6.667 2.40 | 12.667 8.88 | 18.67 2.16
0.750 1.32 | 6.750 2.40 | 12.750 8.88 | 18.75 2.16
0.833 1.32 | 6.833 2.40 | 12.833 8.88 | 18.83 2.16
0.917 1.32 | 6.917 2.40 | 12.917 8.88 | 18.92 2.16
1.000 1.32 | 7.000 2.40 | 13.000 8.88 | 19.00 2.16

```

1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44

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5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.48	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max.Eff.Inten.(mm/hr)= 132.48 107.47
over (min) 5.00 10.00
Storage Coeff. (min)= 2.51 (ii) 9.37 (iii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.29 0.12

TOTALS
PEAK FLOW (cms)= 0.19 0.36 0.545 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 119.00 80.95 90.27
TOTAL RAINFALL (mm)= 120.00 120.00 120.00
RUNOFF COEFFICIENT = 0.99 0.67 0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 (1112) |
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 (1102): 2.07 0.545 12.00 90.27
+ ID2= 2 (1111): 3.22 0.598 12.00 115.12
===== ID = 3 (1112): 5.29 1.083 12.00 105.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |
| STANDHYD (1201) |
ID= 1 DT= 5.0 min
Area (ha)= 5.38
Total Imp(%)= 87.00 Dir. Conn.(%)= 87.00

IMPERVIOUS PERVIOUS (i)

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Surface Area (ha)= 4.68 0.70
Dep. Storage (mm)= 1.00 5.00
Average Slope (%)= 1.00 2.00
Length (m)= 189.38 40.00
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44

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3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44
4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.48	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

- CN* = 84.0 Ia = Dep. 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(1211) 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	0.2600	0.1600	
0.1050	0.1200	0.3330	0.1830	
0.1540	0.1380	0.3940	0.1960	
0.1970	0.1510	0.7720	0.2500	
AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
INFLOW : ID= 2 (1201)	5.380	1.891	12.00	114.05
OUTFLOW: ID= 1 (1211)	5.380	0.762	12.08	114.00
PEAK FLOW REDUCTION [Qout/Qin](%)= 40.32				
TIME SHIFT OF PEAK FLOW (min)= 5.00				
MAXIMUM STORAGE USED (ha.m.)= 0.2493				

CALIB				
STANDHYD (1202)				
ID= 1 DT= 5.0 min				
Area	(ha)=	4.07		
Total Imp(%)=	81.20	Dir. Conn.(%)=	81.20	
IMPERVIOUS PERVIOUS (i)				
Surface Area	(ha)=	3.30	0.77	
Dep. Storage	(mm)=	1.00	5.00	
Average Slope	(%)=	1.00	2.00	
Length	(m)=	164.72	40.00	
Mannings n	=	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.32	6.083	2.40	12.083	17.29	18.08	2.16		
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16		
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16		
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16		
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16		
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16		

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0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16
1.083	1.32	7.083	2.40	13.083	1.68	19.08	2.16
1.167	1.32	7.167	2.40	13.167	1.68	19.17	2.16
1.250	1.32	7.250	2.40	13.250	1.68	19.25	2.16
1.333	1.32	7.333	2.40	13.333	1.68	19.33	2.16
1.417	1.32	7.417	2.40	13.417	1.68	19.42	2.16
1.500	1.32	7.500	2.40	13.500	1.68	19.50	2.16
1.583	1.32	7.583	2.40	13.583	9.84	19.58	2.16
1.667	1.32	7.667	2.40	13.667	9.84	19.67	2.16
1.750	1.32	7.750	2.40	13.750	9.84	19.75	2.16
1.833	1.32	7.833	2.40	13.833	9.84	19.83	2.16
1.917	1.32	7.917	2.40	13.917	9.84	19.92	2.16
2.000	1.32	8.000	2.40	14.000	9.84	20.00	2.16
2.083	1.56	8.083	3.24	14.083	3.60	20.08	1.44
2.167	1.56	8.167	3.24	14.167	3.60	20.17	1.44
2.250	1.56	8.250	3.24	14.250	3.60	20.25	1.44
2.333	1.56	8.333	3.24	14.333	3.60	20.33	1.44
2.417	1.56	8.417	3.24	14.417	3.60	20.42	1.44
2.500	1.56	8.500	3.24	14.500	3.60	20.50	1.44
2.583	1.56	8.583	3.24	14.583	3.60	20.58	1.44
2.667	1.56	8.667	3.24	14.667	3.60	20.67	1.44
2.750	1.56	8.750	3.24	14.750	3.60	20.75	1.44
2.833	1.56	8.833	3.24	14.833	3.60	20.83	1.44
2.917	1.56	8.917	3.24	14.917	3.60	20.92	1.44
3.000	1.56	9.000	3.24	15.000	3.60	21.00	1.44
3.083	1.56	9.083	3.84	15.083	3.60	21.08	1.44
3.167	1.56	9.167	3.84	15.167	3.60	21.17	1.44
3.250	1.56	9.250	3.84	15.250	3.60	21.25	1.44
3.333	1.56	9.333	3.84	15.333	3.60	21.33	1.44
3.417	1.56	9.417	3.84	15.417	3.60	21.42	1.44
3.500	1.56	9.500	3.84	15.500	3.60	21.50	1.44
3.583	1.56	9.583	4.32	15.583	3.60	21.58	1.44
3.667	1.56	9.667	4.32	15.667	3.60	21.67	1.44
3.750	1.56	9.750	4.32	15.750	3.60	21.75	1.44
3.833	1.56	9.833	4.32	15.833	3.60	21.83	1.44
3.917	1.56	9.917	4.32	15.917	3.60	21.92	1.44
4.000	1.56	10.000	4.32	16.000	3.60	22.00	1.44
4.083	1.92	10.083	5.52	16.083	2.16	22.08	1.44
4.167	1.92	10.167	5.52	16.167	2.16	22.17	1.44
4.250	1.92	10.250	5.52	16.250	2.16	22.25	1.44
4.333	1.92	10.333	5.52	16.333	2.16	22.33	1.44
4.417	1.92	10.417	5.52	16.417	2.16	22.42	1.44
4.500	1.92	10.500	5.52	16.500	2.16	22.50	1.44
4.583	1.92	10.583	7.44	16.583	2.16	22.58	1.44
4.667	1.92	10.667	7.44	16.667	2.16	22.67	1.44

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4.750	1.92	10.750	7.44	16.750	2.16	22.75	1.44
4.833	1.92	10.833	7.44	16.833	2.16	22.83	1.44
4.917	1.92	10.917	7.44	16.917	2.16	22.92	1.44
5.000	1.92	11.000	7.44	17.000	2.16	23.00	1.44
5.083	1.92	11.083	11.52	17.083	2.16	23.08	1.44
5.167	1.92	11.167	11.52	17.167	2.16	23.17	1.44
5.250	1.92	11.250	11.52	17.250	2.16	23.25	1.44
5.333	1.92	11.333	11.52	17.333	2.16	23.33	1.44
5.417	1.92	11.417	11.52	17.417	2.16	23.42	1.44
5.500	1.92	11.500	11.52	17.500	2.16	23.50	1.44
5.583	1.92	11.583	49.92	17.583	2.16	23.58	1.44
5.667	1.92	11.667	49.92	17.667	2.16	23.67	1.44
5.750	1.92	11.750	49.92	17.750	2.16	23.75	1.44
5.833	1.92	11.833	132.47	17.833	2.16	23.83	1.44
5.917	1.92	11.917	132.48	17.917	2.16	23.92	1.44
6.000	1.92	12.000	132.48	18.000	2.16	24.00	1.44

Max. Eff. Inten. (mm/hr)=	132.48	107.47
over (min)	5.00	10.00
Storage Coeff. (min)=	3.08 (ii)	6.59 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.27	0.14

TOTALS			
PEAK FLOW (cms)=	1.21	0.20	1.406 (iii)
TIME TO PEAK (hrs)=	12.00	12.00	12.00
RUNOFF VOLUME (mm)=	119.00	80.95	111.85
TOTAL RAINFALL (mm)=	120.00	120.00	120.00
RUNOFF COEFFICIENT =	0.99	0.67	0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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(1212) 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	0.2030	0.1210	
0.0800	0.0860	0.2520	0.1320	
0.1170	0.0990	0.2980	0.1420	
0.1490	0.1080	0.5840	0.1820	
AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	

INFLOW : ID= 2 (1202)	4.070	1.406	12.00	111.85
OUTFLOW: ID= 1 (1212)	4.070	0.576	12.08	111.78

PEAK FLOW REDUCTION [Qout/Qin](%)= 40.96	
TIME SHIFT OF PEAK FLOW (min)= 5.00	
MAXIMUM STORAGE USED (ha.m.)= 0.1814	

ADD HYD (1213)				
1 + 2 = 3				
AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 (1211):	5.38	0.762	12.08	114.00
+ ID2= 2 (1212):	4.07	0.576	12.08	111.78
ID = 3 (1213):	9.45	1.338	12.08	113.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD (1203)				
ID= 1 DT= 5.0 min				
Area	(ha)=	1.54		
Total Imp(%)=	28.10	Dir. Conn.(%)=	28.10	

IMPERVIOUS PERVIOUS (i)		
Surface Area	(ha)=	0.43
Dep. Storage	(mm)=	1.00
Average Slope	(%)=	1.00
Length	(m)=	101.32
Mannings n	=	0.013

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	1.32	6.083	2.40	12.083	17.29	18.08	2.16		
0.167	1.32	6.167	2.40	12.167	17.28	18.17	2.16		
0.250	1.32	6.250	2.40	12.250	17.28	18.25	2.16		
0.333	1.32	6.333	2.40	12.333	17.28	18.33	2.16		
0.417	1.32	6.417	2.40	12.417	17.28	18.42	2.16		
0.500	1.32	6.500	2.40	12.500	17.28	18.50	2.16		
0.583	1.32	6.583	2.40	12.583	8.88	18.58	2.16		
0.667	1.32	6.667	2.40	12.667	8.88	18.67	2.16		
0.750	1.32	6.750	2.40	12.750	8.88	18.75	2.16		
0.833	1.32	6.833	2.40	12.833	8.88	18.83	2.16		
0.917	1.32	6.917	2.40	12.917	8.88	18.92	2.16		
1.000	1.32	7.000	2.40	13.000	8.88	19.00	2.16		

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1.083 1.32 7.083 2.40 13.083 1.68 19.08 2.16
1.167 1.32 7.167 2.40 13.167 1.68 19.17 2.16
1.250 1.32 7.250 2.40 13.250 1.68 19.25 2.16
1.333 1.32 7.333 2.40 13.333 1.68 19.33 2.16
1.417 1.32 7.417 2.40 13.417 1.68 19.42 2.16
1.500 1.32 7.500 2.40 13.500 1.68 19.50 2.16
1.583 1.32 7.583 2.40 13.583 9.84 19.58 2.16
1.667 1.32 7.667 2.40 13.667 9.84 19.67 2.16
1.750 1.32 7.750 2.40 13.750 9.84 19.75 2.16
1.833 1.32 7.833 2.40 13.833 9.84 19.83 2.16
1.917 1.32 7.917 2.40 13.917 9.84 19.92 2.16
2.000 1.32 8.000 2.40 14.000 9.84 20.00 2.16
2.083 1.56 8.083 3.24 14.083 3.60 20.08 1.44
2.167 1.56 8.167 3.24 14.167 3.60 20.17 1.44
2.250 1.56 8.250 3.24 14.250 3.60 20.25 1.44
2.333 1.56 8.333 3.24 14.333 3.60 20.33 1.44
2.417 1.56 8.417 3.24 14.417 3.60 20.42 1.44
2.500 1.56 8.500 3.24 14.500 3.60 20.50 1.44
2.583 1.56 8.583 3.24 14.583 3.60 20.58 1.44
2.667 1.56 8.667 3.24 14.667 3.60 20.67 1.44
2.750 1.56 8.750 3.24 14.750 3.60 20.75 1.44
2.833 1.56 8.833 3.24 14.833 3.60 20.83 1.44
2.917 1.56 8.917 3.24 14.917 3.60 20.92 1.44
3.000 1.56 9.000 3.24 15.000 3.60 21.00 1.44
3.083 1.56 9.083 3.84 15.083 3.60 21.08 1.44
3.167 1.56 9.167 3.84 15.167 3.60 21.17 1.44
3.250 1.56 9.250 3.84 15.250 3.60 21.25 1.44
3.333 1.56 9.333 3.84 15.333 3.60 21.33 1.44
3.417 1.56 9.417 3.84 15.417 3.60 21.42 1.44
3.500 1.56 9.500 3.84 15.500 3.60 21.50 1.44
3.583 1.56 9.583 4.32 15.583 3.60 21.58 1.44
3.667 1.56 9.667 4.32 15.667 3.60 21.67 1.44
3.750 1.56 9.750 4.32 15.750 3.60 21.75 1.44
3.833 1.56 9.833 4.32 15.833 3.60 21.83 1.44
3.917 1.56 9.917 4.32 15.917 3.60 21.92 1.44
4.000 1.56 10.000 4.32 16.000 3.60 22.00 1.44
4.083 1.92 10.083 5.52 16.083 2.16 22.08 1.44
4.167 1.92 10.167 5.52 16.167 2.16 22.17 1.44
4.250 1.92 10.250 5.52 16.250 2.16 22.25 1.44
4.333 1.92 10.333 5.52 16.333 2.16 22.33 1.44
4.417 1.92 10.417 5.52 16.417 2.16 22.42 1.44
4.500 1.92 10.500 5.52 16.500 2.16 22.50 1.44
4.583 1.92 10.583 7.44 16.583 2.16 22.58 1.44
4.667 1.92 10.667 7.44 16.667 2.16 22.67 1.44
4.750 1.92 10.750 7.44 16.750 2.16 22.75 1.44
4.833 1.92 10.833 7.44 16.833 2.16 22.83 1.44
4.917 1.92 10.917 7.44 16.917 2.16 22.92 1.44
5.000 1.92 11.000 7.44 17.000 2.16 23.00 1.44
5.083 1.92 11.083 11.52 17.083 2.16 23.08 1.44
5.167 1.92 11.167 11.52 17.167 2.16 23.17 1.44

```

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5.250 1.92 11.250 11.52 17.250 2.16 23.25 1.44
5.333 1.92 11.333 11.52 17.333 2.16 23.33 1.44
5.417 1.92 11.417 11.52 17.417 2.16 23.42 1.44
5.500 1.92 11.500 11.52 17.500 2.16 23.50 1.44
5.583 1.92 11.583 49.92 17.583 2.16 23.58 1.44
5.667 1.92 11.667 49.92 17.667 2.16 23.67 1.44
5.750 1.92 11.750 49.92 17.750 2.16 23.75 1.44
5.833 1.92 11.833 132.47 17.833 2.16 23.83 1.44
5.917 1.92 11.917 132.48 17.917 2.16 23.92 1.44
6.000 1.92 12.000 132.48 18.000 2.16 24.00 1.44

```

```

Max.Eff.Inten.(mm/hr)= 132.48 107.47
over (min) 5.00 10.00
Storage Coeff. (min)= 2.30 (ii) 9.16 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.30 0.12

```

```

PEAK FLOW (cms)= 0.16 0.26 0.415 (iii)
TIME TO PEAK (hrs)= 12.00 12.00 12.00
RUNOFF VOLUME (mm)= 119.00 80.95 91.64
TOTAL RAINFALL (mm)= 120.00 120.00 120.00
RUNOFF COEFFICIENT = 0.99 0.67 0.76

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 84.0 Ia = Dep. 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 ( 1214) |
| 1 + 2 = 3 |
-----
          AREA   QPEAK   TPEAK   R.V.
          (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 1203): 1.54 0.415 12.00 91.64
+ ID2= 2 ( 1213): 9.45 1.338 12.08 113.04
=====
ID = 3 ( 1214): 10.99 1.614 12.08 110.04

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

FINISH

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=====
=====

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Township of West Lincoln

Fulton Rural Employment Land Use Plan | **Master Drainage and Stormwater management
Report**

C CONSTRAINTS MAP

FULTON RURAL EMPLOYMENT LANDS CONSTRAINTS REPORT

Legend

-  Study Area
-  Provincially Significant Wetland (PSW)
-  30m Vegetation Protection Zone from PSW
-  120m Adjacent Lands from PSW (EIS may apply)
-  Wetland (Non-Provincially Significant)
-  Watercourse Identified by NPCA (Approximate Location)
-  15m buffer from watercourse identified by NPCA
-  30m buffer from watercourse identified by NPCA

Constraint Feature	Area (ha)
Total Study Area	36.02
Provincially Significant Wetland (PSW)	1.11
30m Vegetation Protection Zone from PSW	1.64
30m Buffer from Watercourse Identified by NPCA <i>*to be refined through on-site investigation</i>	3.14
Net Developable Area	30.13

Constraints Map

Last Updated: August 21, 2025



D SOIL MAP FOR WEST LINCOLN

The Soils of The Regional Municipality of Niagara

Volume 1



Ministry of
Agriculture
and Food

David Ramsay, Minister



Agriculture
Canada

Research Branch Direction
de la recherche

poorly drained Brooke shallow phase (BOK.S), and very shallow phase (BOK.V) soils. Franktown shallow phase soils are usually classified as Gleyed Brunisolic Gray Brown Luvisols. Franktown very shallow phase soils have 20 to 50 cm of soil over bedrock, and often merge into Franktown shallow phase soils. They are also often associated with well-drained Farmington (FRM) soils. Franktown very shallow phase soils are usually classified as Gleyed Melanic Brunisols.

Land Use/Management Comments Franktown soils may be used for general field crops, but their suitability varies according to the thickness of soil over bedrock. Franktown very shallow phase (FKW.V) soils, which are rated Class 4R, are most suitable for forage crops. Franktown shallow phase (FKW.S) soils, which are rated Class 3R because of the greater soil depths, can be tile drained if necessary, and used for small grain crops, as well as for forage crops. Franktown soils are unsuitable for tree fruit crops, but have limited suitability for small fruits and grapes. Similarly, the deeper Franktown soils have some suitability for most vegetable crops.

Granby Soils (GNY)

Soil Moisture Characteristics Granby soils are poorly drained. Because of their sandy textures, they are usually rapidly permeable. Most subsoil horizons are saturated by groundwater for long periods each year, unless artificially drained. They have relatively low water-holding capacities and slow surface runoff.

General Soil Characteristics Granby soils have surface Ap horizons about 20 cm thick, with relatively high organic matter contents. Subsoil B horizons usually extend to at least 75 cm before ending at calcareous C horizons. Both B and C horizons are usually characterized by the presence of prominent, dark yellowish-brown mottles. Textures of loamy sand or sandy loam usually predominate. Soil classification is usually Orthic Humic Gleysol.

Soil Variability In the Port Colborne area, some Granby peaty phase (GNY.P) soils are mapped in association with organic soils. They differ from normal Granby soils by being very poorly drained, and having a surface organic horizon. Granby soils often merge into imperfectly drained Brady (BAY) soils.

Land Use/Management Comments If Granby soils are artificially drained, they are good soils for most vegetable crops; Class 2W for general field crops; and have poor to fair suitability for fruit crops. Regardless of crops grown, fertility must be maintained in these sandy soils.

Grimsby Soils (GMY)

Soil Moisture Characteristics Grimsby soils are usually well-drained and quite permeable. They have medium to low water-holding capacities. Surface runoff is generally slow but increases with slope.

General Soil Characteristics Surface Ap horizons average about 25 cm thick, and have about 2 percent organic matter. Subsoil B horizons often extend deeper than one metre in depth to the calcareous C horizons. Most Grimsby soils have reddish hues, because of the influence of Queenston shale, and textures of very fine sandy loam or loamy fine sand. Soil classification is Brunisolic Gray Brown Luvisol.

Soil Variability The textures of Grimsby soils range from very fine sandy loam, usually in the surface horizons, to fine sandy loam or loamy fine sand in the subsoil horizons. Bt horizons usually extend to depths that are often greater than one metre. A and B horizons range from acid to neutral in reaction. Grimsby brown phase (GMY.B) soils differ from the normal Grimsby soils in colour only. Grimsby soils are often found in close landscape association with imperfectly drained Vineland (VLD) and Brady (BAY) soils, and less often with poorly drained Flamborough (FMB), Flamborough brown phase (FMB.B), Colwood red phase (CWO.R) and Maplewood red phase (MPW.R) soils.

Land Use/Management Comments Grimsby soils are prime soils for tender fruit crops, but below the Niagara Escarpment, only a remnant has not yet been urbanized. They are quite suitable for virtually all fruit and vegetable crops, but because of inherent droughtiness limitations, require sprinkler or trickle irrigation. Like other sandy soils, close attention must be paid to the maintenance of optimum organic matter, pH and fertility levels.

Haldimand Soils (HIM)

Soil Moisture Characteristics Haldimand soils are imperfectly drained and slowly permeable. In addition to high seasonal groundwater levels, there is usually some temporary perching of groundwater in the upper horizons of Haldimand soils every year. Haldimand soils have medium to high water-holding capacities, but can be droughty during dry periods because of water retention by the clayey soil materials. Surface runoff is usually rapid, except where the surface is dry and occupied by numerous soil cracks.

General Soil Characteristics The thickness of surface horizons of Haldimand soils averages about 15 cm. The underlying B horizons usually extend to a depth of about 35 cm where the calcareous C horizons begin. Surface textures are usually silty clay or clay, whereas lower B and C horizon textures are almost always heavy clay. B and C horizons normally have angular blocky or prismatic structures, and distinct to prominent mottles, ranging from dark yellowish-brown to strong brown in colour. Soil reaction of the surface horizons is usually in the neutral range. The usual classification is Gleyed Brunisolic Gray Brown Luvisol.

Soil Variability The only Haldimand soil phases, in the Niagara Region, are the Haldimand coarse phase (HIM.C) and Haldimand loamy phase (HIM.L) soils. The former soils have 15 to 40 cm of sandy sediments over the clayey soil materials, while the latter soils have 15 to 40 cm of loamy sediments over clays. The pH values of the surface horizons usually range between 5.7 and 6.3. The most common landscape associates of Haldimand soils are the poorly drained Lincoln soils, which also have heavy clay textures within their profiles.

Land Use/Management Comments Haldimand soils are rated Class 3D for common field crops, because of their high clay contents. They are capable of producing acceptable yields if certain precautions are taken, such as tile drainage of wet spots, minimizing compaction from heavy machinery use on wet soils, and prevention of erosion. Haldimand soils are unsuitable for growing most horticultural crops.

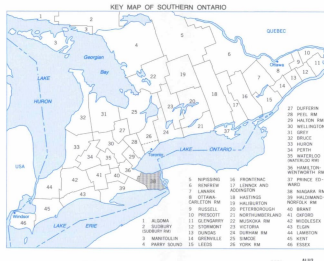
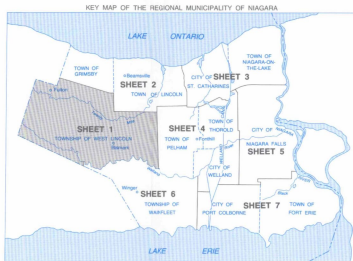
SOILS
OF
WEST LINCOLN
REGIONAL MUNICIPALITY
OF NIAGARA
ONTARIO

SHEET 1

To accompany "Soils of the Regional Municipality of Niagara" Soil Survey Report No. 60 of the Ontario Institute of Pedology

1:25,000

Map Symbols	International boundary
Main Highway	Provincial boundary
Secondary road	County boundary
Other roads	Township boundary
Cart track	Water course (see boundary, etc.)
Water	Power transmission line
Horizontal control point	Stream
Beach mark (see)	Contour interval 10 feet
Spot elevation (see)	Contours
Contour	Depression contours
Drain, sand pit	CR



MAP UNIT SYMBOL	MAP UNIT COMPONENTS No. 1 No. 2	PARENT MATERIALS No. 1 No. 2	Drainage No. 1 No. 2
ALU - Aluvium			
ALU 1	1-ALU	None	Variable
ALU 2	1-ALU	None	Variable
ALU 3	1-ALU	BFO	See BFO 1
ALU 5	1-ALU	SHV	See SHV 1
ALU 15	3-ALU	None	Variable
ALU 17	4-ALU	None	Variable
BFO - Brentford			
BFO 1	BFO	None	Moderately well
BFO 6	BFO	BVY	Moderately well
BFO 7	BFO	TLD	Moderately well
BFO 12	BFO	1-ALU	Moderately well
BFO 45	BFO	LIC	Moderately well
BFO 51	BFO	R	Moderately well
BOK - Brooks			
BOK 3	BOK	V	Poor
BOK 4	BOK	V	Poor
BOK 6	BOK	V	Poor
BVY - Beverly			
BVY 1	BVY	None	Imperfect
BVY 6	BVY	BFO	See BFO 1
BVY 8	BVY	TLD	See TLD 1
BVY 9	BVY	LIC	See LIC 1
BVY 16	BVY	1-ALU	See ALU 1
BVY 34	BVY	L	Imperfect
BVY 39	BVY	L	Imperfect
BVY 40	BVY	L	Imperfect
BVY 41	BVY	L	Imperfect
CGU - Chinguacousy			
CGU 1	CGU	None	Imperfect
CGU 5	CGU	None	Imperfect
CGU 8	CGU	OD	Imperfect
CGU 10	CGU	JDO	Imperfect

MAP UNIT SYMBOL	MAP UNIT COMPONENTS No. 1 No. 2	PARENT MATERIALS No. 1 No. 2	Drainage No. 1 No. 2
FKW - Franktown			
FKW 3	FKW	V	Imperfect
FKW 9	FKW	BOK	Imperfect
FRM - Farmington			
FRM 2	FRM	None	Rapid
FRM 4	FRM	None	Rapid
FRM 5	FRM	FRM	Rapid
HIM - Haldimand			
HIM 1	HIM	None	Imperfect
HIM 3	HIM	LIC	Imperfect
HIM 5	HIM	SHV	Imperfect
HIM 8	HIM	1-ALU	Imperfect
HIM 10	HIM	L	Imperfect
LIC - Lincoln			
LIC 1	LIC	None	Poor
LIC 5	LIC	SHV	Moderately well
LIC 6	LIC	SHV	Moderately well
LIC 13	LIC	HIM	Poor
MAT - Malton			
MAT 1	MAT	None	Poor
MAT 5	MAT	PEL	Imperfect
NGR - Niagara			
NGR 1	NGR	None	Imperfect
NGR 11	NGR	LIC	Imperfect

MAP UNIT SYMBOL	MAP UNIT COMPONENTS No. 1 No. 2	PARENT MATERIALS No. 1 No. 2	Drainage No. 1 No. 2
PEL - Peel			
PEL 1	PEL	None	Imperfect
PEL 9	PEL	MAT	Imperfect
SHV - Smithville			
SHV 1	SHV	None	Moderately well
SHV 4	SHV	HIM	Moderately well
SHV 5	SHV	LIC	Moderately well
SHV 8	SHV	1-ALU	Moderately well
SHV 19	SHV	L	Moderately well
TLD - Toledo			
TLD 1	TLD	None	Poor
TLD 6	TLD	BFO	Poor
TLD 7	TLD	BVY	Poor
TLD 30	TLD	None	Poor
TLD 33	TLD	BVY	Poor
TLD 42	TLD	BVY	Poor
MISCELLANEOUS LAND UNITS			
NM	Nat. map	Includes residential, industrial and recreational areas	Variable

MAP UNIT SYMBOL	MAP UNIT COMPONENTS No. 1 No. 2	PARENT MATERIALS No. 1 No. 2	Drainage No. 1 No. 2
TYK - Tavistock			
TYK 16	TYK	TLD	Imperfect
VLD - Vineland			
VLD 3	VLD	GMY	Imperfect

Key to the Map Unit Symbols

Examples: 1. BLY 2. BLY 3. BLY 4. BLY

Denominator (BLY, BLY, BLY, BLY) contains information on the map unit components, the soil parent materials and their drainage. This information is outlined on the map legend which is printed on each map sheet. In Examples 1 and 2, the BLY 1 units contain mainly Beverly soils, whereas in Examples 3 and 4 the BLY 8 units contain significant proportions of Toledo soils in addition to Beverly soils.

Example 1: Only one slope symbol appears in the denominator (C) which means there is only one main component in the map unit. In this case, the main component of the BLY 1 unit is the Beverly soil which occurs mainly on C slopes.

Example 2: 3 and 4, two slope symbols appear in the denominator (B-C, C-B, C-B) which means there are two main components in the map unit.

Example 3: In the BLY 1 unit where the denominator indicates B-C, approximately 50% of the Beverly soils occur on B slopes and 50% occur on C slopes.

Example 4: In the BLY 8 unit where the denominator indicates C-B, approximately 70% of the unit consists of C slopes which are occupied by Beverly soils, while the remaining 30% of the unit consists of Toledo soils on B slopes.

TOPOGRAPHIC CLASSES

SINGLE SLOPES	COMPLEX TOPOGRAPHY	SLOPE %
A smooth to level	a irregular very gently sloping	0-2
B smooth very gently sloping	b irregular gently sloping	2-5
C smooth gently sloping	c irregular moderately sloping	5-10
D smooth moderately sloping	d irregular steeply sloping	10-20
E smooth steeply sloping	e irregular very steeply sloping	20
F smooth very steeply sloping		

Considerations: Because of the map scale and nature of the soil mapping, the user should understand that many soil boundaries are only approximately located. Also there could be inclusions, up to several hectares in size, of undifferentiated soil components within any map unit. Most soils information is based on the examination of soil characteristics to a depth of about 100 cm below the surface.

Soil information by the Ontario Institute of Pedology (Field mapping 1981-1985).

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