FUNCTIONAL SERVICING & STORMWATER MANAGEMENT REPORT

GLENELG PHASE 3
DUNDALK VILLAGE TWO INC.

TOWNSHIP OF SOUTHGATE

PREPARED BY:

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AUGUST 2022

CFCA FILE NO. 1060-6220

CROZIER
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TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

1.0 INTRODUCTION

Crozier Consulting Engineers ("Crozier") has been retained by Dundalk Village Two Inc. ("the Developer") to prepare a Functional Servicing and Stormwater Management Report in support of a Draft Plan of Subdivision Application for Glenelg Phase 3 ("Subject Development") located in the north end of the Community of Dundalk, Township of Southgate, County of Grey. The proposed development is herein referred to as the Subject Development. Please refer to **Figure 1** for the Site Location.

The Developer's overall property is approximately 132 ha. The property is legally described as Lots 227, 226, 225, 224, 223, Concession 1, southwest of the Toronto and Sydenham Road as well as Lots 226, 225 Concession 2, southwest of the Toronto and Sydenham Road Geographic Township of Proton, Township of Southgate, County of Grey.

The Subject Development is approximately 33.3 ha and is bounded by CP Rail Trail to the west, wetlands to the east, farmland to the north and residential properties to the south. The Subject Development is located northeast of Glenelg Residential Development – Phase 2.

The Subject Development will consist of 369 single-detached units, 18 semi-detached units, 72 townhouse units, a park block, walkways/ trails, a stormwater management block, an environmental protection area, and approximately 7.45ha of urban Right-of-Way (ROW). The Draft Plan prepared by MHBC Planning (August 18, 2022) has been included in **Figure 2**.

The Developer has assembled a multi-disciplinary consulting team to assist with the technical studies in support of this development. The consulting team includes:

- SLR Consulting Ltd. (SLR) (environmental and hydrogeological)
- Soil Engineers Ltd. (SEL) (geotechnical)
- MHBC (planning)
- CF Crozier & Associates Inc. (civil and transportation engineering)

This report should be read in conjunction with the studies, plans and reports prepared by other members of the development team.

This report has been prepared to provide information concerning the servicing (water, sewer, utilities, and roads) and stormwater management strategy for the development.

2.0 DEVELOPMENT BACKGROUND

The Subject Development is currently designated as Neighborhood Area, within Schedule 'A' Map 2 of the Township of Southgate Official Plan (2022) and associated amendments. The hazard lands are taken into consideration in the Concept Plan as that area will be designated as Environmental Protection.

Nearby Draft Plan Approved developments currently undergoing the detailed design process include the 155-unit Glenelg Residential Development – Phase 2 bordering the west limits of the Subject Development and the 88-unit White Rose Park – Phase 3 Development located to the south.

3.0 SITE DESCRIPTION

The overall 33.3 ha Subject Development consists largely of agricultural fields, and a natural heritage area exists in the east portion of the site. The limits of the Natural Heritage area have been staked and an appropriate development setback has been applied from dripline through consultation with the Grand River and Saugeen Valley Conservation Authorities. The natural heritage constraints on site have been investigated in detail by SLR. Refer to the Environmental Impact Study (SLR, November 2021) which has been provided under separate cover for more information.

The property topography consists of rolling hills with a central depression with a low point at the northern property line. On site elevations range from 515.5 to 525.2 m. The site lies within the regulatory boundary of the Grand River and Saugeen Valley Conservation Authorities. Site drainage is further discussed in **Section 7.2**.

Preliminary desktop review of the soil by the Soil Survey Map of Grey County (1962) indicates that the site is underlain by Listowel Silty Loam soils. At this time SEL is undergoing a soil investigation which will be provided in support of future submissions.

4.0 ROAD STANDARD

Access to the Development is proposed to be provided through two entrances from Glenelg Residential Development – Phase 2, as well as an entrance on the southern boundary from Bradley Street. Roadways and entrances will be constructed in conformance with the Township of Southgate Engineering Standards.

A Traffic Impact Study has been prepared by our office under separate cover, which details transportation engineering considerations and mitigative measures related to the Development. Roadway slopes will range between 0.5% and 8% in conformance with Township of Southgate Engineering Standards. The general grading concept for the Development is presented in **Figure 3.**

Design criteria for the entrances will meet municipal guidelines as well as the applicable sections from the Ontario Building Code (i.e., fire routes).

The internal roadways of the Development will be assumed by the Municipality upon registration of the subdivision.

5.0 SANITARY SEWAGE SYSTEM

5.1 Existing Sanitary Sewer Infrastructure

5.1.1 Wastewater Treatment Plant Capacity

The existing wastewater treatment plant (WWTP) is located on Eco Parkway at the south end of Dundalk. The plant treats sewage and discharges the treated effluent to the Foley Drain/ Grand River. Per the Township of Southgate 2022 Reserve Capacity Study (Triton Engineering, 2022), the plant currently operates on average at 1,165 m^3/day. The uncommitted reserve capacity for the sewage treatment facility is 182 new development ERU's (Equivalent Residential Units). Since this reserve capacity will not be sufficient to service various potential developments that have been granted Draft Plan Approval the municipality is currently in the process of upgrading the wastewater treatment plant to increase capacity in Dundalk from 1,832 m^3/day to 3,025 m^3/day to support growth. Refer to **Appendix A** for relevant wastewater treatment plant capacity calculations.

The estimated completion dates of the wastewater treatment plant upgrades are early 2023, which coincides with the timing of building permit submission for the Subject Development. **Table 1** details the Township of Southgate '2022 Reserve Sewage Capacity' and project the wastewater treatment capacities after the 2023 upgrades have been completed.

Table 1: Township of Southgate Dundalk Sewage Treatment Facility Capacity Projections

Dundalk Sewage Treatment Facility Summary		
Description	**2021**	**2023**
Wastewater Treatment Facility Design Capacity (m^3/day)	1,832	3,025
Current Daily Average Flow (m^3/day)	1,165	
Available Capacity (m^3/day)	667	1,860
Average New Development Per Capita Flow [(1)]	0.350	0.350
Additional Population that can be Served	1905	5,314
Person Per ERU [(1)]	2.66	2.66
Additional ERU Capacity	716	1997
Committed ERUs	534	534
Available Uncommitted ERUs	182	1463

[(1)] Per 2017 DC Background Study

5.1.2 Existing Infrastructure

The existing sewage infrastructure within the vicinity of the Subject Development includes the following:

- Two (2) 250 mm diameter sanitary sewer stubs located at Aitchison Avenue and Corbett Street (Glenelg Residential Development – Phase 1 Lands).
- One (1) 200 mm diameter sanitary sewer that currently ends at a Maintenance Hole at the end of Bradley Street

5.1.3 Future Infrastructure

- Two (2) 250 mm diameter sanitary sewer stubs located at Corbett Street (Glenelg Residential Development – Phase 2 Lands).
- One (1) 200 mm diameter sanitary sewer that the Bradley Street Extension (White Rose Development – Phase 3)

5.2 Proposed Sanitary Sewer Infrastructure

Sanitary servicing for the development will be supplied by way of connection to the existing Dundalk sanitary sewer collection network. Flows from the Subject Development will ultimately be conveyed to the existing Dundalk Wastewater Treatment Plant.

The Subject Development will be serviced via a gravity sanitary sewer system that follows the alignment of the internal roadway network, with individual service connections to each lot. A substantial amount of fill will be required near portions of the site to ensure adequate cover over the

sanitary sewer. Options to reduce fill quantities will be explored. Upon subdivision registration, sewers and associated roadways will be assumed by the Municipality.

The proposed sanitary sewer for the development will connect to a 200 mm diameter sanitary sewer stub on Bradley Street as well as two 250 mm diameter connections from Glenelg Residential Development Phase 2. The estimated sanitary flow to Glenelg Phase 2 was found to be 12.32 L/s. The estimated flow to the Bradley Street connection was found to be 10.33 L/s. The conveyance capacity of downstream sanitary sewer network, through the Glenelg Residential Development – Phase 2, has been determined to be adequate. A preliminary assessment of the sewers downstream of the Bradley Street connection was completed, a section of 200 mm diameter pipe along Artemesia Street between Toronto Street and Owen Sound Street will be approaching 100% capacity under the proposed development conditions. This leg of sewer and roadway is proposed to be reconstructed to meet the service requirements of the subject development. The conveyance capacity of all downstream infrastructure will be subject to confirmation by the Township's Engineering Consultant. Sanitary infrastructure for the proposed development is illustrated in **Figure 4**. Refer to **Appendix A** for the sanitary flow calculations.

Sanitary flow estimates for the development were estimated in conjunction with the Township of Southgate Engineering Design Standards and the "New Development Unit Flow Rates" as described within the 2022 Reserve Capacity, prepared by the Township's Engineering Consultant.

6.0 POTABLE WATER SUPPLY

6.1 Existing Potable Water Supply Infrastructure

Potable water for the development will be supplied by the Township's municipal water distribution system.

The existing water treatment plant system in Dundalk includes three existing production wells. Per the 2022 Reserve Capacity Study, the well system operates at a maximum daily flow of 941 m^3/day. This value represents approximately 33% of the system's allowable withdrawal capacity of 2,817 m^3/day, as specified in the Township's Permit to Take Water. Based on this, the existing system has ample capacity to support Glenelg Phase 3 Development. Refer to **Appendix B** for relevant water capacity calculations.

The existing water distribution infrastructure within the vicinity of the Subject Development includes the following:

- Two (2) 150mm diameter watermain connection stubs located at Aitchison Avenue and Corbett Street (Glenelg Residential Development – Phase 1 Lands).
- One (1) 150mm diameter watermain that dead ends at Bradley Street.

6.2 Future Infrastructure

- Two (2) 150mm diameter watermain connection stubs located at Corbett Street (Glenelg Residential Development – Phase 2 Lands).
- One (1) 150mm diameter watermain that dead ends at Bradley Street Extension (White Rose Development – Phase 3).

6.3 Proposed Servicing Strategy

The Subject Development will be serviced via three future watermain connections. There will two watermain connections at the future ROWs within the Glenelg Residential Development – Phase 2. Additionally, there will be a connection to the watermain at the future White Rose Park – Phase 3.

Watermain with individual service connections for each unit will follow the alignment of the internal roadways according to Township Standards. Connections to the Glenelg Residential Development – Phase 2 and White Rose – Phase 3. This will facilitate a looped distribution network and satisfy the Township and Ministry of Environment, Conservation and Park's requirements for a looped water distribution system. The Draft Plan does not include any watermain dead-ends and therefore there should be no issue with respect to providing adequate water circulation and preventing the potential for stagnant potable water.

Fire hydrants will be spaced as required to provide the necessary fire protection per municipal standards. Required domestic water flows have been calculated in conformance with the Township of Southgate's Engineering Design Standards and the "New Development Unit Flow Rates" specified within the 2022 Reserve Capacity Study. The maximum day and peak hour water demands have been estimated to be 10.70 L/s and 16.07 L/s, respectively. Additional water supply considerations including fire suppression requirements will be determined during the detailed design phase. Internal watermain sizing will be subject to detailed design and confirmation by the Township's Engineering Consultant.

Refer to **Appendix B** for relevant water demand calculations. The proposed watermain layout is illustrated on **Figure 4.**

7.0 PROPOSED STORMWATER MANAGEMENT, SITE GRADING AND DRAINAGE

7.1 Stormwater Management (SWM) Criteria

The management of stormwater and site drainage for the proposed development must comply with the policies and standards of the various agencies including the Township of Southgate, Grand River Conservation Authority (GRCA), Saugeen Valley Conservation Authority (SVCA) and the Ministry of Environment, Conservation and Parks (MECP).

The stormwater management criteria for the Subject Development includes:

- Water Quantity Control
    - Control of post-development peak flows to pre-development levels for all storms up to and including the 100-year event.

- Water Quality Control
    - 80% removal efficiency of total suspended solids per MECP "enhanced protection" requirements.

- Erosion Control
    - Minimum 24-hour detention of the 25mm event.

- Development Standards
    - Urban cross section for public roadway with 5-year storm sewer system.
    - Lot grading at 2% optimum.

- Minor and major drainage system to convey frequent and infrequent rainfall/runoff events, respectively.

In meeting the applicable policies and standards of the aforementioned agencies, the development will also be required to meet the following criteria:

- Manage the internal stormwater by safely conveying peak flows to suitable outlets and provide the necessary water quality controls.
- Manage any external drainage entering the site by providing safe conveyance across the Subject Development.
- Ensuring the development lands are not susceptible to flood inundation during all storm events.

7.2 Existing Drainage Conditions

Topographic survey indicates that the terrain has rolling hills with a depression in the middle of the site and a low point at the north property line. There is a high point near the east corner of the site where runoff drains towards the natural heritage area and the east property line. The rest of the site drains towards a point on the southeast property line, towards the CP Rail Trail and to the residential lands to the south.

To the west of the development lies the CP Rail Trail. This trail represents an elevated linear structure bounding the property line and has been constructed with side ditches preventing external flows from entering the development site.

To facilitate the pre-development stormwater analysis, the following five (5) catchments have been delineated based on the existing drainage conditions.

- **Catchment PRE-1**: This catchment area is approximately 4.32 ha and is located along the west border of the site. It consists of active agricultural fields. Stormwater from this catchment drains to the west towards the CP trail (outlet #1). Flows entering the CP trail drain in the north direction to a tile drain located on a neighboring property to the north. The flows in the tile drain ultimately are discharged to the northeast wetland.
- **Catchment PRE-2**: This catchment area is approximately 13.33 ha and is in the middle of the site. It consists of active agricultural fields. Stormwater from this catchment drains to the north tile drain (outlet #2). The flows in the tile drain are discharged to the northeast wetland, the same wetland that PRE-1 ultimately discharges to.
- **Catchment PRE-3**: This catchment area is approximately 3.05 ha and is located along the eastern corner of the subject site. It consists of active agricultural fields. Stormwater from this catchment drains to the east tile drain (outlet #3). Flows entering the east tile drain are conveyed to a wetland located within the SVCA regulation area.
- **Catchment PRE-4**: This catchment area is approximately 2.29 ha and is located along the southeastern corner of the subject site. It consists of active agricultural fields. Stormwater from this catchment drains to the southeast tile drain (outlet #4). Flows entering the southeast tile drain are conveyed to a wetland located within the GRCA regulation area.
- **Catchment PRE-5**: This catchment area is approximately 3.00 ha and is located along the south boundary of the subject site. It consists of active agricultural fields. Stormwater from this catchment drains to the residential subdivision to the south.

The existing drainage patterns of the site and conservation authority regulation areas have been reflected in the Pre-Development Drainage Plan **(Figure 5)**. Additional information on the pre-development drainage and tile drain locations is provided in **Figure 6.** For the pre-development hydro parameter sheets, please refer to **Appendix C.**

7.3 Proposed Drainage Conditions

The Subject Development will be constructed to a fully urbanized system complete with curb and gutter and storm sewers. A dual drainage approach will consist of minor and major stormwater flow routes to ensure adequate conveyance for runoff. The minor drainage system will consist of storm sewers and catchbasins sized to convey the 5-year design storm event. The major drainage system will provide overland stormwater flow routes within the road allowance. Refer to **Figure 4** for proposed storm sewer layout.

To facilitate the post-development stormwater analysis, the following seven (7) catchments have been delineated based on the proposed drainage conditions.

- **Catchment POST-1:** This catchment area is approximately 0.50 ha and consists of a portion of the proposed developed area. The catchment consists of the backlots of the single-detached units. Runoff from this catchment will drain uncontrolled to the Grey County CP Trail (outlet #1). Flows entering the CP trail drain in the north direction to a tile drain located on a neighboring property to the north. The flows in the tile drain ultimately are discharged to the northeast wetland.
- **Catchment POST-2:** This catchment area is approximately 18.83 ha and consists of a large portion of the proposed developed area. The catchment consists of single-family residential, semi-detached residential, townhouses, walkways, and roads. Runoff from this catchment will drain to the SWM facility that discharges to outlet #2. The flows then enter the northeast wetland.
- **Catchment POST-3:** This catchment area is approximately 2.84 ha and consists of a portion of the proposed developed area. The catchment consists of single-family residential, parklands, walkways, and roads. Runoff from this catchment will drain ultimately to outlet #3 (east tile drain). Flows are then conveyed to the east wetland.
- **Catchment POST-4:** This catchment area is approximately 1.09 ha and consists of a portion of the proposed developed area. The catchment consists of the backlots of single-detached units. Runoff from this catchment will drain controlled and uncontrolled to outlet #4 (southeast tile drain).
- **SWMF:** This catchment represents the proposed 1.43 ha SWM Facility block. Runoff from this catchment will drain to the SWM Facility. The SWM Facility will then discharge flows to outlet #2 (north tile drain). Flows are then discharged to the northeast wetland.
- **Catchment POST-5:** This catchment area is approximately 1.28 ha and consists of front lots of single-detached residential units and road area. The minor system will be captured and conveyed to the SWMF. The major system will drain overland to the SWM Facility servicing the Glenelg Phase 2 Lands.
- **Catchment TR-1:** This catchment area is approximately 0.78 ha and consists of the backlots of the single-detached units in Glenelg Phase 2. Runoff from this external catchment will drain uncontrolled to the Grey County CP Trail (outlet #1). Flows entering the CP trail drain in the north direction to a tile drain located on a neighboring property to the north. The flows in the tile drain ultimately are discharged to the northeast wetland. This drainage was taken into consideration from the Glenelg Phase 2 Lands.

The post-development drainage conditions and catchment areas have been presented in **Figure 8.**

Under post-development conditions, the majority of the stormwater from the Subject Development is currently proposed to drain to the SWM facility and outlet to the north tile drain (outlet #2). A portion of the site will drain to each outlet to mimic pre-development conditions. The exception to this is the pre-development catchment draining into the southern residential subdivision (PRE-5). In post-development conditions, flows will not drain to the residential subdivision to the south, as the subdivision was not designed to accommodate the drainage. Additionally, it should be noted that a

portion of the subject site will drain overland to the Glenelg Phase 2 subdivision SWMF to alleviate grading issues associated with matching into the proposed right-of-way connections. The Glenelg Phase 2 SWM Facility is sufficiently sized to accept, treat, and control the major system drainage from this area. Excerpts from the Phase 2 SWM Facility modeling are included in **Appendix G**.

7.4 Proposed SWM Strategy

The stormwater management strategy varies for each of the seven (7) post-development catchment areas.

For catchment POST-1, backlots of the single-detached units will be conveyed via sheet flow into the CP Trail ditch (Outlet #1). The clean water from the backlots of the single-detached units is proposed to flow uncontrolled and will not require quality treatment. Flows entering outlet #1 (CP Trail) will be conveyed to the north in the CP trail ditch to a neighboring tile drain that ultimately discharges runoff to the northeast wetland.

For catchment POST-2, the drainage area will be routed through the SWMF (SWM pond). Flows from the front lots of the residential units and roadway area will be treated via catchbasin shields and tree pits prior to entering the SWMF. The SWMF is adequately sized to provide quantity, quality, and erosion control for the contributing drainage area. The conceptual proposed stormwater management facility has incorporated a permanent pool and a sediment forebay to provide appropriate water quality treatment. The SWMF will also incorporate extended detention of the 25mm storm event to provide erosion protection. An outlet from the facility will be provided to release flows through to the northeast wetland via outlet #2. Quantity control will be achieved to ensure pre-development peak flows are not exceeded to outlet #2 (north tile drain) and the northeast wetland.

For catchment POST-3, front lots of the single-detached units and road area will be directed to catchbasin shields and tree pits. Overflow from the front lots/road area and park runoff will be directed to the permeable pavement areas (walkways) and bioretention facilities within the park prior to being discharged to Outlet #3 (east tile drain). This treatment train approach will achieve quality control targets (enhanced 80% TSS removal). Clean water from the backlots of the single-detached units will drain controlled via a superpipe and uncontrolled via sheet flow to outlet #3. Quantity control will be achieved to ensure pre-development peak flows are not exceeded to outlet #3 (east tile drain) and the east wetland.

For catchment POST-4, clean water from the back lots of the residential units will drain to outlet #4. Runoff from the backlots will drain controlled via a superpipe and uncontrolled via sheet flow to outlet #4 and the southeast wetland. Quantity control will be achieved to ensure pre-development peak flows are not exceeded to outlet #4 (southeast tile drain) and the southeast wetland.

Catchment POST-5 has a separate outlet for the major and minor storm events. For the minor storm events (up to the 5-year design storm) the front lots of the single-detached units and road area will be directed to catchbasin shields and tree pits prior to entering the storm sewer network and being discharged to SWMF and ultimately Outlet #2. The SWMF has been designed to match pre-development peak flow rates at the outlet taking the POST-5 flows into consideration. For the major storm events (flow exceeding the 5-year design storm), flows will be conveyed through the two road connections to Glenelg Phase 2. Stormwater entering Glenelg Phase 2 will be conveyed through the road network into the stormwater management pond. The Glenelg Phase 2 pond has sufficient capacity to treat flows from POST-5. Quality treatment for the stormwater has been provided in the Glenelg Phase 3 SWMF.

For catchment SWMF, clean water will drain to the SWM Pond. The SWMF is adequately sized to provide quantity, quality, and erosion control for the contributing drainage area. The conceptual proposed stormwater management facility has incorporated a permanent pool and a sediment forebay to provide appropriate water quality treatment. The SWMF will also incorporate extended detention for erosion protection. An outlet from the facility will be provided to release flows through to outlet #2, the northeast wetland. Quantity control will be achieved to ensure pre-development peak flows are not exceeded to outlet #2.

For catchment TR-1, clean water from the residential backlots of the Glenelg Phase 2 Lands will drain uncontrolled via sheet flow to the Grey County CP Trail (outlet #1). These flows will not require quality control treatment. Quantity control will be achieved to ensure pre-development peak flows are not exceeded to outlet #1.

7.5 Hydrologic Analysis

A hydrologic model was prepared for the pre-development and post-development scenarios using the stormwater management hydrologic computer program Visual OTTHYMO 6.1 (VO6). The purpose of the modeling was to ensure that quantity control requirements are met (i.e., post-development peak flow rates do not exceed the pre-development flows to the respective drainage area).

To accurately assess the peak flows from the individual catchments, the NasHyd command in VO6 was used to model the pre-development drainage areas. Design storms were generated for the 2-year, 5-year, 10-year, 25-year, 50-year and 100-year events utilizing both 3-hour Chicago and 24-hour SCS Type II rainfall distributions. The Township of Southgate Engineering Standards requires only the modeling of the 3-hour Chicago distribution storms for quantity control facilities. Nevertheless, the 24-hour SCS distribution has been included in the design to ensure the provision of adequate and conservative quantity control. The 25mm Chicago quality event was also modeled within VO6. Intensity-Duration- Frequency (IDF) values were derived from the Ministry of Transportation IDF tool for the Community of Dundalk.

7.5.1 Pre-Development Model Setup

To establish the pre-development peak flows, the contributing drainage areas were modeled within VO6. Please refer to **Figure 5** for the Pre-Development Drainage Plan and **Appendix C** for the pre-development hydrological parameter sheets. **Table 2** summarizes the pre-development peak flows rates obtained from the VO6 model.

Table 2: Summary of Pre-Development Peak Flow Rates

Return Period	Pre-Development Peak Flow Rates (m^3/s)				
	PRE-1 Drainage to CP Trail (4.32ha)	**PRE-2 Drainage to North Tile Drain (13.33ha)**	**PRE-3 Drainage to East Tile Drain (3.05ha)**	**PRE-4 Drainage to South Residential (2.29ha)**	**PRE-5 Drainage to Southeast Tile Drain (3.0ha)**
3-Hour 10 min Chicago					
2-Year	0.044	0.100	0.041	0.022	0.047
5-Year	0.086	0.190	0.081	0.042	0.093
10-Year	0.119	0.261	0.115	0.059	0.131
25-Year	0.166	0.361	0.162	0.082	0.186

50-Year	0.204	0.442	0.200	0.101	0.230
100-Year	0.244	0.528	0.241	0.121	0.278
24-Hour 15 min SCS Type II					
2-Year	0.143	0.296	0.144	0.070	0.162
5-Year	0.239	0.495	0.241	0.117	0.269
10-Year	0.310	0.643	0.313	0.152	0.349
25-Year	0.404	0.839	0.407	0.199	0.455
50-Year	0.476	0.990	0.479	0.234	0.537
100-Year	0.551	1.146	0.554	0.271	0.621

7.5.2 Post-Development Model Setup

The post-development model was prepared by adding the post-development drainage catchments as referenced in **Section 7.3**. Refer to **Figure 8** for the Post-Development Drainage Plan and **Appendix C** for the post-development area breakdown calculations.

To model the post-development condition, the respective drainage areas were modelled via a combination of StandHyds, NasHyds, RouteReservoirs, DuHyds, and LID commands. Using these tools, the post-development peak flows were analyzed to ensure that quantity control targets were met in the post-development condition. The DuHyd commands were applied to separate the minor and major system flows entering the LIDs. The LIDs were sized based on a water balance analysis that is discussed further in **Section 7.6.** For additional information regarding the layout of the VO6 model, please refer to the VO schematic presented in **Appendix D**.

7.5.3 Quantity Control

'Post-to-Pre' peak flow control is proposed for the four outlets for all storm events up to and including the 100-year storm event.

Outlet #1
Table 3 presents the pre-development and post-development peak flows to outlet #1. As shown, the post-development flows are less than the pre-development flows for all storms.

Table 3: Summary of Pre- and Post-Development Peak Flows (Outlet #1)

Return Period	Pre-Development (m^3/s) [4.32 ha]	Post-Development (m^3/s) [1.28 ha] (1)
3-Hour 10 min Chicago		
2-Year	0.044	0.040
5-Year	0.086	0.073
10-Year	0.119	0.099
25-Year	0.166	0.133
50-Year	0.204	0.160
100-Year	0.244	0.188
24-Hour 15 min SCS Type II		
2-Year	0.143	0.098
5-Year	0.239	0.155
10-Year	0.310	0.195

25-Year	0.404	0.248
50-Year	0.476	0.288
100-Year	0.551	0.328

(1) Catchment area from TR-1 (0.78ha) and POST-1 (0.50ha)

Outlet #2

The proposed SWM Facility will be a stormwater management wet pond located on the north side of the development that will provide the required stormwater quantity, quality, and erosion controls. The SWM pond will discharge stormwater to outlet #2 into the northeast wetland.

A preliminary outlet structure has been designed as a multi-stage outlet to address both quality and quantity control requirements. The outlet structure will consist of a 200 mm diameter extended detention orifice set at the permanent pool elevation. A secondary orifice has been included above the extended detention storage elevation to control effluent from the pond for storms exceeding the 25 mm event.

Using the ROUTE RESERVOIR command in VO6, the volume of detention storage required in the SWMF to attenuate the post-development peak flows to pre-development was determined based on a storage – discharge relationship. The ROUTE RESERVOIR command was used to model the wet pond storage. To meet quantity control requirements, it was concluded that approximately 12,720 m^3 of active detention storage is required in the SWM Facility. **Table 4** presents the required storage volume for the SWMF. Please refer to **Appendix E** for detailed SWMF calculations. The preliminary design of the SWM Facility has been presented in **Figure 9.**

Table 4: Summary of SWM Facility – Required Storage Volumes

Return Period	Storage Volume (m^3)	
	3-Hour 10 min Chicago	24-Hour 15 min SCS Type II
2-Year	3914	5581
5-Year	5171	7520
10-Year	5883	8725
25-Year	6861	10340
50-Year	7548	11524
100-Year	8244	12720

Table 5 presents the pre-development and post-development peak flows to outlet #2. As shown, the post-development flows are less than the pre-development flows for all storms.

Table 5: Summary of Pre- and Post-Development Peak Flows (Outlet #2)

Return Period (Years)	Pre-Development (m^3/s) [13.33 ha]	Post-Development (m^3/s) [21.55 ha]
3-Hour 10 min Chicago		
2-Year	0.100	0.092
5-Year	0.190	0.186
10-Year	0.261	0.239
25-Year	0.361	0.327
50-Year	0.442	0.404
100-Year	0.528	0.481
24-Hour 15 min SCS Type II		

2-Year	0.296	0.216
5-Year	0.495	0.401
10-Year	0.643	0.535
25-Year	0.839	0.721
50-Year	0.990	0.868
100-Year	1.146	1.019

Outlet #3

Table 6 presents the pre-development and post-development peak flows to outlet #3. As shown, the post-development flows are less than the pre-development flows for all storms.

Table 6: Summary of Pre- and Post-Development Peak Flows (Outlet #3)

Return Period (Years)	Pre-Development (m^3/s) [3.05 ha]	Post-Development (m^3/s) [2.84 ha]
3-Hour 10 min Chicago		
2-Year	0.041	0.026
5-Year	0.081	0.044
10-Year	0.115	0.065
25-Year	0.162	0.112
50-Year	0.200	0.149
100-Year	0.241	0.186
24-Hour 15 min SCS Type II		
2-Year	0.144	0.116
5-Year	0.241	0.203
10-Year	0.313	0.251
25-Year	0.407	0.351
50-Year	0.479	0.446
100-Year	0.554	0.525

Outlet #4

Table 7 presents the pre-development and post-development peak flows to outlet #4. As shown, the post-development flows are less than the pre-development flows for all storms.

Table 7: Summary of Pre- and Post-Development Peak Flows (Outlet #4)

Return Period (Years)	Pre-Development (m^3/s) [2.29 ha]	Post-Development (m^3/s) [1.09 ha]
3-Hour 10 min Chicago		
2-Year	0.047	0.046
5-Year	0.093	0.087
10-Year	0.131	0.117
25-Year	0.186	0.157
50-Year	0.230	0.189
100-Year	0.278	0.222
24-Hour 15 min SCS Type II		
2-Year	0.162	0.107
5-Year	0.269	0.164

10-Year	0.349	0.206
25-Year	0.455	0.261
50-Year	0.537	0.303
100-Year	0.621	0.345

7.5.4 Stormwater Quality

As mentioned in **Section 7.4,** the SWM strategy varies based on the post-development drainage area. For catchment POST-3, a treatment train approach is proposed to provide the enhanced 80% TSS removal required. This treatment train approach includes catchbasin shields, tree pits, bioretention, and permeable pavement. The contributing area to POST-1, POST-4 and TR-1 requires no quality control due to clean water areas (roofs and backlots of residential units).

For POST-2, POST-5 and SWMF, quality control will be provided by the SWM Facility. The conceptual design of the proposed SWM Facility has incorporated a permanent pool and a sediment forebay to provide "enhanced protection" (*Stormwater Management Planning and Design Manual*, Ministry of the Environment, 2003). A sediment forebay has been provided to facilitate enhanced quality treatment in conformance with MECP forebay design guidelines. See **Appendix E** for forebay sizing calculations.

The Subject Development drainage area for the SWM Facility is 21.55 ha with an associated imperviousness of 67%. As such, the minimum water quality volume for the stormwater wet pond is 219 m^3/ha (*Stormwater Management Planning and Design Manual, Ministry of the Environment, 2003)*. The total water quality volume consists of 179 m^3/ha for the permanent pool and 40 m^3/ha for extended detention. Erosion control will be achieved within the SWMF facility via the detention of the 25mm event for a minimum drawdown of 24 hours.

The required and provided extended detention and permanent pool values have been summarized in **Table 8**. Refer to **Appendix E** for the water quality and extended detention calculations.

Table 8: Stormwater Management Facility Quality and Erosion Control

	SWM Facility	
	Required Volume (m^3)	**Provided Volume (m^3)**
Permanent Pool	3852	3990
MOE Extended Detention	862	3368
Erosion Control	3350	

7.5.5 Stormwater Management Facility Operating Conditions

Considering the water quantity and quality storage requirements for the POST-2, POST-5 and SWMF drainage areas, a preliminary design for the SWM Facility has been completed to demonstrate that the SWM block is adequately sized. A preliminary operating profile of the SWM facility is presented in **Table 9.**

Table 9: SWM Facility Operating Characteristics

Component	Elevation (m)	Storage Required (m^3)	Storage Provided (m^3)
Bottom	516.62	--	--
Permanent Pool	518.20	3852	3990
Extended Detention	519.03	3350	3368
100-Year High Water Level	520.45	12720	13041
Top of Berm	520.75	--	15858

As evidenced by Error! Reference source not found., the pond presented herein is sufficiently sized to p rovide the required stormwater quantity and quality controls. Permits and other regulatory instruments such as an Environmental Compliance Approval (MECP) and Conservation Authority approval will be secured at the detailed design stage.

7.6 Water Balance

A feature-based water balance was completed for the subject site due to the proximity of nearby wetland features. The pre-development subject site was delineated into five drainage areas as mentioned in **Section 7.2.** The pre-development water balance was then used to determine the annual pre-development runoff volumes to each drainage area.

In post-development conditions, runoff is increased by 147% annually over the entire subject site compared with pre-development conditions. To reduce the annual runoff in post-development conditions, mitigation measures were introduced on-site via the proposed LIDs. These mitigation measures are proposed to reduce the amount of runoff by volume draining to each of the outlets that feed downstream wetlands.

Due to the soil strata underlying the native soils and groundwater monitoring results, there are considerable constraints to implementing an infiltration system(s) across the subject site. Shallow low-impact development (LID) measures were explored for this reason.

To increase infiltration and reduce runoff, the following LID measures are proposed for the Subject Development. Please refer to **Appendix F** for the LID-specific calculations. The proposed LID locations have been presented in **Figure 10.**

- Tree Pits

Tree pits are proposed throughout the Subject Development within the road right of way between the sidewalk and the street. Runoff draining from the right of way and front lots will drain to the tree pits. Based on the proposed layout and contributing drainage area, the tree pits would mitigate 14,508 m^3 of infiltration per year in post-development conditions. A minimum clearance of 1m is provided between the bottom of the LID and groundwater elevation. In the sizing of the tree pits, a minimum infiltration rate of 12mm/hr was assumed with a safety factor of 2 giving a design infiltration rate of 6mm/hr.

- Bioretention Cells

Three bioretention cells are proposed within the park area. Runoff from the park will be directed to the bioretention cells where filtered runoff can infiltrate into the native soils. Based on the proposed sizing and contributing drainage area, the bioretention cells would mitigate 2,295m^3 of infiltration annually in post-development conditions. A minimum clearance of 1m is provided between the

bottom of the LID and groundwater elevation. In the sizing of the bioretention cells, a minimum infiltration rate of 12mm/hr was assumed with a safety factor of 2 giving a design infiltration rate of 6mm/hr.

- Permeable Pavement

Permeable pavement is proposed within the park area walkways and walkways along the north site boundary. For the park permeable pavement, runoff from the park will be directed to the permeable paver walkways where filtered runoff can infiltrate into the native soils. For the north walkway permeable pavers, single-residential backlots will be directed to the permeable pavement walkway where filtered runoff can infiltration into native soils. Based on the proposed sizing and contributing drainage area, the permeable pavement in the park would mitigate 2,489 m^3 of infiltration annually in post-development conditions. Based on the proposed sizing and contributing drainage area, the permeable pavement at the north site boundary would mitigate 2,316 m^3 of infiltration annually in post-development conditions. A minimum clearance of 1m is provided between the bottom of the LIDs and groundwater elevation. In the sizing of the permeable pavement, a minimum infiltration rate of 12mm/hr was assumed with a safety factor of 2 giving a design infiltration rate of 6mm/hr.

- Enhanced Topsoil Depth

The fourth mitigation strategy proposed for the Subject Development is the use of enhanced topsoil within pervious areas across the site to promote infiltration. A topsoil depth of 300 mm will be required across the pervious area thereby providing increased opportunities for infiltration in the topsoil layout. The expected increased topsoil depth (300 mm) is expected to reduce runoff volume by 25% based on HSG 'C' type soil as per the TRCA and CVC LID manual. The use of enhanced topsoil would mitigate 6,409 m^3 of infiltration annually in post-development conditions.

With the mitigation measures, the following annual runoff is expected in post-development conditions:

- Runoff draining to outlet #1 (CP Trail) decreased by 24% (2,634 m^3/year),
- Runoff draining to outlet #2 (north tile drain) increased by 233% (80,244 m^3/year),
- Runoff draining to outlet #3 (east tile drain) decreased by 0% (10 m^3/year), and,
- Runoff draining to outlet #4 (southeast tile drain) increased by 6% (344 m^3/year).

Due to site constraints, the runoff draining to outlet #2 in post-development conditions increased by 233% (by volume) compared to pre-development conditions. Due to the expected increase of runoff volume in post-development conditions, additional studies by a geomorphologist will be explored to analyze the receiving capacity of the northeast wetland.

8.0 UTILITIES

The development will be serviced with natural gas, telephone, cable TV and hydro. All such utilities are available in the area of development. Coordination for extension of and connection to existing services will be undertaken as development approvals advance. Utilities are proposed to follow the alignment of the internal road network, with individual service connections to each lot.

9.0 CONCLUSIONS & RECOMMENDATIONS

Based on the foregoing, we conclude that Glenelg Phase 3 Development can be adequately serviced.

- Access to the Subject Development will be provided by two entrances from Glenelg Residential Development – Phase 2 and one entrance through Bradley Street. The internal roadways will meet Township Standards and provide access for emergency vehicles.

- Gravity sanitary services for the Subject Development will be provided via three connections, one to the White Rose Phase 3 Development and two to the Glenelg Phase 2 Development, further refinement of the sanitary design detailed design may be required to reduce overall site fill requirements.
- An internal watermain will be a looped system and will be provided through two connections at Glenelg Residential Development – Phase 2 and one connection at White Rose Phase 3.
- The development will be fully serviced by hydro, natural gas, cable, and telecommunications.
- The proposed LID measures and the Stormwater Management Facility will provide quality control for the subject site. The proposed LID measures and SWM Facility is adequately sized to provide "enhanced protection" level treatment. Quantity control is met for the subject site by controlling post-development flows to pre-development levels for all storms up to the 100-year storm event. The SWM facility will incorporate a minimum 24-hour retention of the 25mm event to provide erosion control.
- Due to site constraints, the runoff draining to outlet #2 in post-development conditions increased by 233% (by volume) compared to pre-development conditions. Due to the expected increase of runoff volume in post-development conditions, additional studies by a geomorphologist will be explored to analyze the receiving capacity of the northeast wetland.
- Natural hazard constraints (floodplain) do not exist within the Subject Development.
- Further study of the impacts to the downstream drainage features including ecological and geomorphological investigations are underway to confirm SWM Facility outfall design.

Based on the above, we recommend approval of the Planning Applications for the Subject Lands from the perspective of engineering servicing requirements.

C.F. CROZIER & ASSOCIATES INC.

Justin L'Abbe, E.I.T.
Project Coordinator

C.F. CROZIER & ASSOCIATES INC.

Amanda West, P.Eng.
Project Engineer

JL'A/AM/KS/AW/NO

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APPENDICES

Appendix A: Sanitary Demand & WWTP Capacity Calculations

Appendix B: Water Demand & WTP Capacity Calculations

Appendix C: Hydrologic Parameter Sheets

Appendix D: VO6 Model Input & Output Files

Appendix E: SWM Facility Calculations

Appendix F: Water Balance Calculations

Appendix G: Glenelg Phase 2 Lands Design Excerpts

LIST OF FIGURES

APPENDIX A

Sanitary Demand &
WWTP Capacity Calculations

CROZIER CONSULTING ENGINEERS

Project: Glenelg Phase 3
Project No.: 1060-6220
Date: 26-Aug-22
By: AM
Check: JL'A

Dundalk Sanitary Capacity Evaluation

DESCRIPTION	MARCH 2022	POST WWTP UPGRADES	UNITS
Available Capacity	1,832	3,025	m3/day
Average Day Flow	1,165	1,165	m3/day
Reserve Capacity	667	1,860	m3/day
Serviced Households	1,144	1,144	ERUs
Persons Per New **Equivalent Residential Unit** (2017 DC Background Study)	2.66	2.66	Persons
Average New Development Per Capita Flow	0.35	0.35	m3/day
Equivalent Flow Per Residential Unit	0.931	0.931	m3/day
Additional ERUs that can be serviced	**716**	**1997**	**ERUs**

TOTAL EQUIVALENT RESIDENTIAL UNIT (ERU) SUMMARY OF OCCUPIDE, COMMITTED AND UNCOMMITTED UNITS

DEVELOPMENT	OCCUPIED UNITS 2021	COMMITTED UNITS	UNCOMMITTED UNITS
White Rose (Phase 1& 2)	63	3	0
Flato North (Phase 2A)	72	0	0
Flato North (Phase 3)	42	4	0
Flato North (Phase 4)	22	0	0
Flato North (Phase 5)	10	49	0
Flato North (Phase 6)	68	48	0
Glenelg (Phase 1)	0	183	0
Flato West Block 75	0	56	0
Flato East (Phase 7, 8 & 10)	0	188	0
Infill Lots	3	3	0
TOTAL COMMITTED UNITS 2021		**534**	**1463**
White Rose (Phase 3)	0	**0**	88
Flato East (Phase 9)	0	**0**	47
Flato East (Phase 11)	0	**0**	193
Glenelg (Phase 2)	0	**0**	155
Dundalk Commercial	0	**0**	11
Dundalk North (Glenelg Expansion)	0	**0**	453
TOTAL UNCOMMITTED UNITS			**1396**
Total Number of Available ERUs Upon Completion of WWTP Upgrades			**1997**
Total Projected ERUs of Reserve Capacity Available Upon Occupation of Committed Units			**1463**
Projected ERUs of Reserve Capacity Available Upon Occupation of The Above Uncommitted Units			**67**

CROZIER
CONSULTING ENGINEERS

File: 1060-6220
Date: 2022.08.26
By: AM
Check By: JL'A

Glenelg Phase 3 Development (Bradley Street Connection) - Sanitary Design Criteria

Developed Site Area		10.38	ha
Number of Residential Units			
Single Residential		134	units
Townhouse		72	units
	TOTAL:	**206**	**units**
Person Per Unit		2.66	persons/unit
Residential Population		548	persons

Unit Sewage flows

Residential (Per New Development Unit Flow Rates, Triton Engineering (2022))	350	L/C-day
Infiltration (typical)	0.15	L/s/ha

Total Design Sewage Flows

Infiltration/Inflow Residential		1.56	L/sec
Average Daily Residential Flow		2.22	L/sec
Residential Peak Factor	(Harmon Formula)	4.0	
Total Peak Daily Flow		**10.33**	**L/sec**

CROZIER CONSULTING ENGINEERS

File: 1060-6220
Date: 2022.08.26
By: AM
Check By: JL'A

Glenelg Phase 3 Development (Glenelg Connection) - Sanitary Design Criteria

Developed Site Area		12.76	ha
Number of Residential Units			
Single Residential		229	units
Semi		18	
Townhouse		-	units
	TOTAL:	**247**	**units**
Person Per Unit		2.66	persons/unit
Residential Population		657	persons

Unit Sewage flows

Residential (Per New Development Unit Flow Rates, Triton Engineering (2022))	350	L/C-day
Infiltration (typical)	0.15	L/s/ha

Total Design Sewage Flows

Infiltration/Inflow Residential	1.91	L/sec
Average Daily Residential Flow	2.66	L/sec
Residential Peak Factor (Harmon Formula)	3.9	
Total Peak Daily Flow	**12.32**	**L/sec**

CROZIER
CONSULTING ENGINEERS

GLENELG PHASE 3 RESIDENTIAL DEVELOPMENT - EXTERNAL

DESIGN: AM
CHECK: JL'A
SUBMISSION: 1st FSRSWM

Peak Factor (M) = 1+(14/4+(P/1000)^0.5) **N =** 0.013
Avg. Daily/Capita Flow = 350 L/cap.d **Population =** 2.66 p.p.u.
Q infiltration = 0.15 L/ha.s

	CATCHMENT AREA	FROM MH	TO MH	LENGTH (m)	INC. AREA (Ha)	CUM. AREA (Ha)	LOTS	INC. POP.	TOTAL POP.	PEAK FACTOR	AVG. FLOW (L/S)	MAX FLOW (L/S)	INFIL. (L/S)	TOTAL INFIL.	COMBINED (L/S)
Phase 2	1	SAN7-PH2	SAN6-PH2	13.4	0.18	0.18	3	8	8	4.42	0.03	0.14	0.03	0.03	**0.17**
	2	SAN6-PH2	SAN5-PH2	67.3	0.62	0.8	13	35	43	4.33	0.17	0.75	0.12	0.12	**0.87**
	3	SAN5-PH2	SAN4-PH2	16.6	0.19	0.99	0	0	43	4.33	0.17	0.75	0.15	0.15	**0.89**
	4	SAN4-PH2	SAN3-PH2	96.2	0.63	1.62	9	24	67	4.29	0.27	1.16	0.24	0.24	**1.40**
	5	SAN7-PH2	SAN8-PH2	37	0.19	0.19	4	11	11	4.41	0.04	0.19	0.03	0.03	**0.22**
	6	SAN8-PH2	SAN9-PH2	67	0.46	0.65	7	19	29	4.36	0.12	0.52	0.10	0.10	**0.61**
	10	SAN10-PH2	SAN9-PH2	83.3	0.38	0.38	6	16	16	4.39	0.06	0.28	0.06	0.06	**0.34**
	Phase 3	SANPLUG2-PH3	SAN9-PH2		6.65	6.65	122	325	325	4.06	1.31	5.34	1.00	1.00	**6.34**
	7	SAN9-PH2	SAN15-PH2	59.7	0.4	8.08	9	24	394	4.03	1.59	6.42	1.21	1.21	**7.63**
	8	SAN15-PH2	SAN3-PH2	58.9	0.42	8.5	11	29	423	4.01	1.71	6.87	1.28	1.28	**8.15**
	9	SAN3-PH2	SAN2-PH2	80	0.4	10.52	7	19	508	3.97	2.06	8.17	1.58	1.58	**9.75**
	11	SAN10-PH2	SAN14-PH2	87.7	0.62	0.62	19	51	51	4.31	0.20	0.88	0.09	0.09	**0.98**
	12	SAN14-PH2	SAN2-PH2	54.1	0.39	1.01	12	32	82	4.27	0.33	1.42	0.15	0.15	**1.58**
	13	SAN2-PH2	SAN1-PH2	80	0.35	11.88	6	16	606	3.93	2.46	9.65	1.78	1.78	**11.44**
	Phase 3	SANPLUG1-PH3	SAN11-PH2		6.1	6.1	125	333	333	4.06	1.35	5.47	0.92	0.92	**6.38**
	14	SAN10-PH2	SAN11-PH2	83.3	0.39	0.39	7	19	19	4.38	0.08	0.33	0.06	0.06	**0.39**
	19	SANMH13	SAN12-PH2	41.6	0.11	0.11	2	5	5	4.44	0.02	0.10	0.02	0.02	
	17	SAN12-PH2	SAN11-PH2	41.6	0.24	0.24	2	5	5	4.44	0.02	0.10	0.04	0.04	**0.13**
	15	SAN11-PH2	SAN13-PH2	88.1	0.62	7.35	15	40	396	4.02	1.61	6.46	1.10	1.10	**7.56**
	16	SAN13-PH2	SAN1-PH2	77.7	0.58	7.93	15	40	436	4.00	1.77	7.08	1.19	1.19	**8.27**
	18	SAN1-PH2	SAN PLUG1	61	0.34	20.15	6	16	1059	3.78	4.29	16.23	3.02	3.02	**19.25**

CROZIER
CONSULTING ENGINEERS

GLENELG PHASE 3 RESIDENTIAL DEVELOPMENT - EXTERNAL

DESIGN: AM
CHECK: JL'A
SUBMISSION: 1st FSRSWM

Peak Factor (M) = 1+(14/4+(P/1000)^0.5) **N =** 0.013
Avg. Daily/Capita Flow = 350 L/cap.d **Population =** 2.66 p.p.u.
Q infiltration = 0.15 L/ha.s

	CATCHMENT AREA	FROM MH	TO MH	LENGTH (m)	INC. AREA (Ha)	CUM. AREA (Ha)	LOTS	INC. POP.	TOTAL POP.	PEAK FACTOR	AVG. FLOW (L/S)	MAX FLOW (L/S)	INFIL. (L/S)	TOTAL INFIL.	COMBINED (L/S)
Phase 1	14, 15	SANMH13	SANMH6	83.29	1.18	1.18	11	29	29	4.36	0.12	0.52	0.18	0.18	**0.69**
	13	SANMH13	SANMH1	93.96	0.6	0.6	14	37	37	4.34	0.15	0.65	0.09	0.09	**0.74**
	1	SANMH1	SANMH2	95.07	0.58	1.18	14	37	74	4.28	0.30	1.29	0.18	0.18	**1.47**
	All of Phase 2 and some Phase 3	SANPLUG 1	SANMH2	19	20.15	20.15	0	0	1059	3.78	4.29	16.23	3.02	3.02	**19.25**
	2	SANMH2	SANMH3	80	0.79	22.12	12	32	1165	3.76	4.72	17.73	3.32	3.32	**21.05**
	16	SANMH14	SANMH6	87.81	0.58	0.58	11	29	29	4.36	0.12	0.52	0.09	0.09	**0.60**
	5A	SANMH6	SANMH5A	26.09	0.1	1.86	1	3	61	4.30	0.25	1.06	0.28	0.28	**1.34**
	5	SANMH5A	SANMH5	57.2	0.37	2.23	8	21	82	4.27	0.33	1.42	0.33	0.33	**1.76**
	4	SANMH5	SANMH4	64.46	0.38	2.61	12	32	114	4.23	0.46	1.96	0.39	0.39	**2.35**
	3	SANMH4	SANMH3	64.46	0.26	2.87	7	19	133	4.21	0.54	2.27	0.43	0.43	**2.70**
	7	SANMH3	SANMH8	80	0.56	25.55	10	27	1325	3.72	5.37	19.95	3.83	3.83	**23.78**
	17	SANMH14	SANMH15	87.66	0.64	0.64	12	32	32	4.35	0.13	0.56	0.10	0.10	**0.66**
	18	SANMH15	SANMH16	18.59	0.11	0.75	0	0	32	4.35	0.13	0.56	0.11	0.11	**0.68**
	19	SANMH16	SANMH12	66.74	0.43	1.18	4	11	43	4.33	0.17	0.75	0.18	0.18	**0.92**
	21	SANMH18	SANMH17	25.8	0.33	0.33	6	16	16	4.39	0.06	0.28	0.05	0.05	**0.33**
	20	SANMH17	SANMH12	24.74	0.16	0.49	2	5	21	4.38	0.09	0.38	0.07	0.07	**0.45**
	12	SANMH12	SANMH11	58.04	0.34	2.01	6	16	80	4.27	0.32	1.38	0.30	0.30	**1.68**
	11	SANMH11	SANMH7	58.03	0.32	2.33	5	13	93	4.25	0.38	1.60	0.35	0.35	**1.95**
	6	SANMH5	SANMH7	83.29	0.48	0.48	7	19	19	4.38	0.08	0.33	0.07	0.07	**0.40**
	10	SANMH7	SANMH10	76.05	0.46	3.27	13	35	146	4.19	0.59	2.49	0.49	0.49	**2.98**
	9	SANMH10	SANMH8	76.05	0.43	3.7	12	32	178	4.17	0.72	3.01	0.56	0.56	**3.56**
	8	SANMH8	SANMH9	65.5	0.43	29.68	8	21	1524	3.67	6.17	22.69	4.45	4.45	**27.14**
	8A	SANMH9	*SANMH106*	69.95	0.45	30.13	8	21	1545	3.67	6.26	22.98	4.52	4.52	**27.50**
External	MH153	*SANMH106*	*SANMH105*	65.85	0.00	30.13	0	0	1545	3.67	6.26	22.98	4.52	4.52	**27.50**

NOTE: SANITARY MH 100 SERIES REPRESENT EXTERNAL MANHOLES

TOWNSHIP OF SOUTHGATE

Township of Southgate

LEGEND:

PROPERTY
- EXISTING PROPERTY LINE
- DRAFT PLAN APPROVED DEVELOPMENT PARCEL
- DRAFT PLAN APPROVED DEVELOPMENT PHASES
- WATERCOURSES
- WETLAND (GRCA)

MANHOLES
- SANITARY MANHOLE
- MH-159 MUNICIPALLY OWNED MANHOLE NUMBER
- PMH-200 MANHOLE NOT YET ADOPTED BY MUNICIPALITY

FLOW/CAPACITY (%)
- < = 20.0
- < = 40.0
- < = 60.0
- < = 80.0
- < = 100.0

PIPE MATERIAL
- AC ASBESTOS CEMENT
- CONC CONCRETE
- PVC POLYVINYL CHLORIDE

DIAMETER / MATERIAL / LENGTH @ SLOPE — FLOW/CAPACITY

- IN-LINE CLEAN OUT AND SHUT-OFF VALVE
- FORCEMAIN

MCKENZIE ST. · FENNELL ST. · MIDDLETON ST. · MITCHISON AVE. · CORBETT ST. · COLDSTREAM AVE. · SWMF · TODD CR. · GREY COUNTY CP RAIL TRAIL · DUKE ST. · GREY ST. · BRADLEY ST. · PINE ST. · WILSON CRT. · HIGHPOINT ST. · GLENELG ST. · KEPPEL (ROW) · HIGH POINT PUBLIC SCHOOL · McAULEY (ROW) · TORONTO ST. · DUNDALK ST. · PROTON ST. · ROLLAND ST. · OWEN SOUND ST. · ALTIMESH ST. · HUSSEMAN ST. · McGREGOR CRT. · BRAEMORE ST. W. · BRAEMORE ST. E. · BRAEMORE (ROW) · MILL ST. · McCHESNEY ST. · KINGS HIGHWAY No. 10 · MAIN ST. WEST · MAIN ST. EAST · McAULEY ST. · YOUNG ST. · VICTORIA ST. · ALICE ST. · SINCLAIR ST. · SHEFFIELD ST. · RUSSELL LN. · NIKON ST. · ELM ST. · GREY COUNTY CP RAIL TRAIL · ROWE'S LN. · HANBURY ST. · GOLD ST. · HAGAN ST. · MORROW CIR. · BELL CIR. · 15.25 m EASEMENT · PRIVATE MH · PLUG · WERRY AVE. · RIDLEY CR. · SEELEY AVE. · JEZEROY AVE. · VANDUSEN AVE. · VAN DUSEN AVE. · MOODY ST. · PHASE 6 · PHASE 7 · PHASE 8 · PHASE 9 · PHASE 10 · PHASE 11 · PARK · SPS · STOCKS AVE. · COLGAN CR. · MORGAN AVE. · WRIGHT AVE. · RUSSELL ST. · McALISTER ST. · SYMINGTON ST. · MILLINER AVE. · SWMF · IDA ST. · PROTON COMMUNITY SCHOOL · FOLEY · FOLEY DRAIN · ECO-PARKWAY · 300 HDPE "DOUBLE" FORCEMAIN · WASTEWATER TREATMENT FACILITY · FUTURE ROW

NOTES:

This is a schematic representation of the sanitary sewer distribution system. While this drawing and its detail views are shown to a scale, symbols and sanitary sewers are not plotted to scale. This mapping should be used for general purposes only.

DUNDALK SANITARY COLLECTION SYSTEM

FEBRUARY 2022
SCALE 1:3,000
A4179 R02 / A4160 R44/R45

DRAFT

TRITON ENGINEERING SERVICES LIMITED
Consulting Engineers
Fergus, Ontario

CROZIER
CONSULTING ENGINEERS

DESIGNED BY: AM
REVIEWED BY: JL'A
DATE: 2022.08.26

DOWN STREAM SANITARY SEWER CAPACITY ANALYSIS - GLENELG PHASE 3

CATCHMENT AREA	FROM MH	TO MH	LENGTH (m)	COMBINED (L/S)	Combined + additional	DIA. (mm)	SLOPE (%)	CAP. (l/s)	VEL. (m/s)	Percent Full
Additional flow coming into MH-32										
From Hwy 10	MH-32	MH-31	93	0	0	250	0.25%	**29.73**	0.61	0%
	MH-31	MH-30	93	0.1	0.1	250	0.26%	**30.32**	0.62	0%
	MH-30	MH-29	99.4	0.5	0.5	250	0.26%	**30.32**	0.62	2%
	MH-29	**MH-88**	105.8	1.2	1.2	250	0.29%	**32.02**	0.65	4%
Additional flow coming into MH-120										
From Braemore St E	MH-120	MH-119	85	0.3	0.3	250	0.28%	**31.47**	0.64	1%
	MH-119	MH-118	71.6	0.3	0.3	250	0.29%	**32.02**	0.65	1%
	MH-118	**MH-88**	10.4	0.4	0.4	250	2.03%	**84.73**	1.73	0%
	MH-88	MH-28	77.1	1.6	1.6	250	0.23%	**28.52**	0.58	6%
	MH-28	MH-27	118.9	1.9	1.9	250	0.42%	**38.54**	0.79	5%
	MH-27	MH-26	118.6	2.2	2.2	250	0.40%	**37.61**	0.77	6%
	MH-26	MH-25	119.5	2.4	2.4	250	0.43%	**39.00**	0.79	6%
	MH-25	MH-22	118.9	2.7	2.7	250	0.45%	**39.89**	0.81	7%
	MH-22	MH-21	118.6	5.6	5.6	250	1.43%	**71.11**	1.45	8%
	MH-21	MH-20	118.3	5.9	5.9	300	0.26%	**49.31**	0.70	12%
	MH-20	**MH-19**	117.7	6.2	6.2	300	0.45%	**64.87**	0.92	10%
Additional flow coming into MH-152										
From Braemore St W	MH-152	MH-146	104.2	0.2	0.2	250	0.42%	**38.54**	0.79	1%
	MH-146	MH-82	74.1	0.4	0.4	250	0.46%	**40.33**	0.82	1%
	MH-82	MH-49	126.2	0.6	0.6	250	0.27%	**30.90**	0.63	2%
	MH-49	MH-48	95.7	0.9	0.9	250	0.22%	**27.89**	0.57	3%
	MH-48	**MH-47**	94.5	1.2	1.2	250	0.33%	**34.16**	0.70	4%
Additional flow coming into MH-134										
From Highpoint St	MH-134	MH-133	38	0.1	0.1	200	1.29%	**37.25**	1.19	0%
	MH-133	MH-130	81.5	0.4	0.4	200	0.59%	**25.19**	0.80	2%
	MH-130	MH-135	94.1	1.2	1.2	200	0.45%	**22.00**	0.70	5%
	MH-135	MH-137	57.1	1.5	1.5	200	0.49%	**22.96**	0.73	7%
	MH-137	MH-138	48.4	1.6	1.6	200	0.37%	**19.95**	0.64	8%
	MH-138	MH-139	99.2	1.6	1.6	200	0.36%	**19.68**	0.63	8%
	MH-139	MH-140	61.5	1.6	1.6	200	0.44%	**21.76**	0.69	7%
	MH-140	MH-141	53.5	1.6	1.6	200	0.41%	**21.00**	0.67	8%
	MH-141	MH-75	14.4	1.6	1.6	200	0.21%	**15.03**	0.48	11%
	MH-75	MH-74	91.4	1.8	1.8	200	0.39%	**20.48**	0.65	9%
	MH-74	**MH-47**	20.7	2.4	2.4	200	0.77%	**28.78**	0.92	8%
	MH-47	MH-46	79.3	3.8	3.8	250	0.42%	**38.54**	0.79	10%
	MH-46	MH-45	71.6	3.9	3.9	250	0.40%	**37.61**	0.77	10%
	MH-45	**MH-19**	124.1	4.1	4.1	250	0.40%	**37.61**	0.77	11%
	MH-19	MH-18	87.8	10.2	10.2	375	0.42%	**113.63**	1.03	9%
	MH-18	**MH-17**	110.6	10.7	10.7	375	0.41%	**112.27**	1.02	10%
Additional flow coming from Glenelg Phase 3					10.33					
From White Rose Phase 3					3.26					
From Bradely St	MH-126	MH-125	64	3.46	13.79	200	0.44%	**21.76**	0.69	63%
	MH-125	MH-124	75	3.66	13.99	200	0.52%	**23.65**	0.75	59%
	MH-124	MH-123	36	3.76	14.09	200	0.42%	**21.26**	0.68	66%
	MH-123	MH-86	43.3	4.36	14.69	200	0.46%	**22.24**	0.71	66%
	MH-86	MH-85	71.9	4.56	14.89	200	0.47%	**22.49**	0.72	66%
	MH-85	MH-80	129.5	4.56	14.89	200	0.41%	**21.00**	0.67	71%
	MH-80	MH-69	112.2	5.46	15.79	200	0.43%	**21.51**	0.68	73%
Toronto Street to Owen Sound Street Leg	MH-69	MH-68	124.7	9.16	19.49	200	0.37%	**19.95**	0.64	98%
	MH-68	MH-67	71	9.56	19.89	250	0.23%	**28.52**	0.58	70%
	MH-67	MH-43	69.8	9.56	19.89	250	0.26%	**30.32**	0.62	66%
	MH-43	MH-42	112.5	9.66	19.99	250	0.38%	**36.66**	0.75	55%
	MH-42	**MH-17**	128.6	10.16	20.49	250	0.43%	**39.00**	0.79	53%
	MH-17	MH-16	93	17.1	27.43	450	0.40%	**180.32**	1.13	15%
	MH-16	**MH-15**	93.9	17.3	27.63	450	0.39%	**178.05**	1.12	16%

CROZIER CONSULTING ENGINEERS

DESIGNED BY: AM
REVIEWED BY: JL'A
DATE: 2022.08.26

DOWN STREAM SANITARY SEWER CAPACITY ANALYSIS - GLENELG PHASE 3

CATCHMENT AREA	FROM MH	TO MH	LENGTH (m)	COMBINED (L/S)	Combined + additional	DIA. (mm)	SLOPE (%)	CAP. (l/s)	VEL. (m/s)	Percent Full
Additional flow coming into MH-153					27.5					
From Glenelg	MH-153	MH-108	65.9	0	27.5	250	0.29%	**32.02**	0.65	86%
	MH-108	MH-107	100	0	27.5	250	0.30%	**32.57**	0.66	84%
	MH-107	MH-105	100	0.1	27.6	250	0.30%	**32.57**	0.66	85%
	MH-105	MH-104	100	0.1	27.6	250	0.30%	**32.57**	0.66	85%
	MH-104	MH-154	92	0.2	27.7	250	0.30%	**32.57**	0.66	85%
	MH-154	MH-51	97	0.2	27.7	250	0.30%	**32.57**	0.66	85%
	MH-51	MH-50	89.6	1.5	29	300	0.15%	**37.45**	0.53	77%
	MH-50	MH-38	99.1	1.6	29.1	300	0.22%	**45.36**	0.64	64%
	MH-38	**MH-15**	122.2	1.9	29.4	300	0.36%	**58.02**	0.82	51%
	MH-15	MH-83	71.9	25.6	63.43	525	0.39%	**268.57**	1.24	24%
	MH-83	MH-14	75.9	25.8	63.63	525	0.20%	**192.33**	0.89	33%
	MH-14	MH-13	68	26.4	64.23	525	0.29%	**231.60**	1.07	28%
	MH-13	MH-12	126.2	35.9	73.73	525	0.36%	**258.04**	1.19	29%
	MH-12	MH-11	125.9	36.4	74.23	525	0.37%	**261.60**	1.21	28%
	MH-11	MH-10A	80.2	36.4	74.23	600	0.22%	**288.00**	1.02	26%
	MH-10A	MH-10B	13.3	36.5	74.33	600	0.08%	**173.67**	0.61	43%
From Hanbury St	MH-201	MH-202	100.6	0.3	0.3	200	0.71%	**27.64**	0.88	1%
	MH-202	MH-204	72.5	0.5	0.5	250	0.28%	**31.47**	0.64	2%
	MH-204	MH-205	72.8	0.5	0.5	250	0.27%	**30.90**	0.63	2%
	MH-205	MH206	46.6	0.6	0.6	250	0.28%	**31.47**	0.64	2%
	MH-206	MH-207	104.2	0.7	0.7	250	0.28%	**31.47**	0.64	2%
	MH-207	MH-208	82.3	0.8	0.8	250	0.27%	**30.90**	0.63	3%
	MH-208	MH-10B	82.3	0.8	0.8	250	0.28%	**31.47**	0.64	3%
	MH-10B	MH-9	95.8	37.3	149.46	600	0.22%	**288.00**	1.02	52%
	MH-9	MH-8	92.7	37.4	149.56	600	0.25%	**307.01**	1.09	49%
	MH-8	MH-7	102.7	37.5	149.66	600	0.18%	**260.50**	0.92	57%
	MH-7	MH-6	104.5	37.6	149.76	600	0.14%	**229.74**	0.81	65%
	MH-6	MH-5	99.4	37.7	149.86	600	0.22%	**288.00**	1.02	52%
	MH-5	MH-4	104.6	37.8	149.96	600	0.25%	**307.01**	1.09	49%
	MH-4	MH-3	111.9	37.9	150.06	600	0.18%	**260.50**	0.92	58%
	MH-3	MH-2	106.4	38.1	150.26	600	0.24%	**300.80**	1.06	50%
	MH-2	MH-1	94.8	39.2	151.36	600	0.25%	**307.01**	1.09	49%
Wastewater Treatment Facility	MH-1	WWTF	110	39.3	151.46	600	0.19%	**267.64**	0.95	57%

APPENDIX B

Water Demand &
WTP Capacity Calculations

CROZIER
CONSULTING ENGINEERS

File: 1060-6220
Date: 2022.08.26
By: AM
Check By: JL'A

Glenelg Phase 3 Development - Domestic Water Design Criteria

Developed Site Area	25.93	ha
Number of Residential Units- Single Detached	363	units
Number of Residential Units- Semi Detached	18	
Number of Residential Units- Townhouse	72	units
Total Number of Units	453	units
Persons Per Unit	2.66	persons/unit
Residential Population	1,205	persons
Domestic Water Design Flows		
Residential [Per New Development Unit Flow Rates, Triton Engineering (2022)]	279	L/C-day
Total Domestic Water Design Flows		
Average Residential Daily Flow	3.89	L/sec
Max Day Peak Factor	2.75	
Max Day Demand Flow	**10.70**	L/sec
Peak Hour Factor	4.13	
Peak Hour Flow	**16.07**	L/sec

CROZIER
CONSULTING ENGINEERS

Project: Glenelg Expansion
Project No.: 1060-6220
Date: 25-Aug-22
By: AM
Check: JL'A

Dundalk Water System Capacity Evaluation

DESCRIPTION	2022	UNITS
Available Capacity	2,817	m3/day
Max Day Flow	941	m3/day
Reserve Capacity	1,876	m3/day
Serviced Households	1,299	ERUs
Persons Per Existing Residential Unit (2016 Census Data)	2.6	Persons
Maximum Day Per Capita Flow	0.279	m3/day
Persons Per New **Equivalent Residential Unit** (2017 DC Background Study)	2.66	Persons
Addditional population that can be served	6724	Persons
Additional ERUs that can be served	**2528**	**ERUs**

TOTAL EQUIVALENT RESIDENTIAL UNIT (ERU) SUMMARY OF OCCUPIDE, COMMITTED AND UNCOMMITTED UNITS

DEVELOPMENT	OCCUPIED UNITS 2021	COMMITTED UNITS	UNCOMMITTED UNITS
White Rose (Phase 1& 2)	63	3	0
Flato North (Phase 2A)	72	0	0
Flato North (Phase 3)	42	4	0
Flato North (Phase 4)	22	0	0
Flato North (Phase 5)	10	49	0
Flato North (Phase 6)	20	48	0
Glenelg (Phase 1)	0	183	0
Flato West Block 75	0	56	0
Flato East (Phase 7, 8 & 10)	0	188	0
Infill Lots	3	3	0
TOTAL COMMITTED UNITS 2021		**534**	**0**
White Rose (Phase 3)	0	**0**	88
Flato East (Phase 9)	0	**0**	47
Flato East (Phase 11)	0	**0**	193
Glenelg (Phase 2)	0	**0**	155
Dundalk Commercial	0	**0**	11
Dundalk North (Glenelg Expansion)	0	**0**	453
TOTAL UNCOMMITTED UNITS			**1396**
Total Number of Available ERUs			**2528**
Total Projected ERUs of Reserve Capacity Available Upon Occupation of Committed Units			**1994**
Projected ERUs of Reserve Capacity Available Upon Occupation of The Above Uncommitted Units			**598**

APPENDIX C

Hydrologic Parameter Sheets

Project Name: Glenelg Expansion Lands
Project Number: 1060-6220
Date: 2022-08-11
By: KS

D.A. NAME **PRE-1**
D.A. AREA (ha) **4.32**

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment PRE-1
Pre-Dev to CP Trail

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowel Silt Loam	LTW	B	100.0%	4.3
				0
				0
				0
Total Area				4.3

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0	98	0	98	0	98	0.000	98	0	98	0.00	0.00
0	0	98	0	98	0	98	0	98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0		0		0			

Pervious Landuses Present:

	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0.00		0.00		0.00		0.00		4.3	74	4.32	319.68
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area	0.00		0.00		0.00		0.00		4.3			

Composite Area Calculations		
	Total Pervious Area	4.3
	Total Impervious Area	0.0
	% Impervious	0.0%
	Composite Curve Number	74.0
	Total Area Check	4.3

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
				Listowel Silt		0		0		0		
Landuse	IA (mm)	Area (ha)	A * IA	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0.000
Cultivated	7	4	30.24	0.35	4		0		0		0	1.512
Impervious	2	0	0		0		0		0		0	0.000
Composite IA		4.32	7	Composite Runoff Coefficient								0.350

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	184.5	2	1.08%	2.7	0.28	0.18	0.12	0.12	0.15	0.10	0.54	0.36

Appropriate calculated time to	0.36	Appropriate Method:	Airport

CROZIER & ASSOCIATES Consulting Engineers

Project Name: Glenelg Expansion Lands
Project Number: 1060-6220
Date: 2022-08-11
By: KS

D.A. NAME **PRE-2**
D.A. AREA (ha) **13.33**

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment PRE-2
Pre-Dev to North Tile

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowel Silt Loam	LTW	B	100.0%	13.3
				0
				0
				0
Total Area				13.3

Impervious Landuses Present:

		Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils		Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW		0	98	0	98	0	98	0.000	98	0	98	0.00	0.00
	0	0	98	0	98	0	98	0	98		98	0	0
	0		98		98		98		98		98	0	0
	0		98		98		98		98		98	0	0
Subtotal Area		0		0		0		0		0			

Pervious Landuses Present:

		Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils		Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW		0.00		0.00		0.00		0.00		13.3	74	13.33	986.42
	0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
	0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
	0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area		0.00		0.00		0.00		0.00		13.3			

Composite Area Calculations		
	Total Pervious Area	13.3
	Total Impervious Area	0.0
	% Impervious	0.0%
	Composite Curve Number	74.0
	Total Area Check	13.3

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
				Listowel Silt		0		0		0		
Landuse	IA (mm)	Area (ha)	A * IA	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0.000
Cultivated	7	13	93.31	0.35	13		0		0		0	4.666
Impervious	2	0	0		0		0		0		0	0.000
Composite IA		13.33	7	Composite Runoff Coefficient								0.350

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	552.64	6	1.09%	2.7	0.28	0.55	0.37	0.37	0.40	0.27	0.93	0.62

Appropriate calculated time to	0.62	Appropriate Method:	Airport

Project Name: Glenelg Expansion Lands
Project Number: 1060-6220
Date: 2022-08-11
By: KS

D.A. NAME **PRE-3**
D.A. AREA (ha) **3.05**

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment PRE-3
Pre-Dev to East Tile

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowel Silt Loam	LTW	B	100.0%	3.1
				0
				0
				0
Total Area				3.1

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0	98	0	98	0	98	0.000	98	0	98	0.00	0.00
0	0	98	0	98	0	98	0	98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0		0		0			

Pervious Landuses Present:

	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0.00		0.00		0.00		0.00		3.1	74	3.05	225.70
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area	0.00		0.00		0.00		0.00		3.1			

Composite Area Calculations		
	Total Pervious Area	3.1
	Total Impervious Area	0.0
	% Impervious	0.0%
	Composite Curve Number	74.0
	Total Area Check	3.1

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
				Listowel Silt		0		0		0		
Landuse	IA (mm)	Area (ha)	A * IA	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0.000
Cultivated	7	3	21.35	0.35	3		0		0		0	1.068
Impervious	2	0	0		0		0		0		0	0.000
Composite IA		3.05	7	Composite Runoff Coefficient								0.350

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	158.58	6.5	4.10%	2.7	0.55	0.08	0.05	0.05	0.10	0.07	0.32	0.22

Appropriate calculated time to	0.22	Appropriate Method:	Airport

Project Name: Glenelg Expansion Lands
Project Number: 1060-6220
Date: 2022-08-11
By: KS

D.A. NAME **PRE-4**
D.A. AREA (ha) **2.29**

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment PRE-4
Pre-Dev to South Residential

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowel Silt Loam	LTW	B	100.0%	2.3
				0
				0
				0
Total Area				2.3

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0	98	0	98	0	98	0.000	98	0	98	0.00	0.00
0	0	98	0	98	0	98	0	98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0		0		0			

Pervious Landuses Present:

	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0.00		0.00		0.00		0.00		2.3	74	2.29	169.46
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area	0.00		0.00		0.00		0.00		2.3			

Composite Area Calculations		
	Total Pervious Area	2.3
	Total Impervious Area	0.0
	% Impervious	0.0%
	Composite Curve Number	74.0
	Total Area Check	2.3

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
				Listowel Silt		0		0		0		
Landuse	IA (mm)	Area (ha)	A * IA	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0.000
Cultivated	7	2	16.03	0.35	2		0		0		0	0.802
Impervious	2	0	0		0		0		0		0	0.000
Composite IA		2.29	7	Composite Runoff Coefficient								0.350

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	208.86	2	0.96%	2.7	0.26	0.22	0.15	0.15	0.18	0.12	0.60	0.40

Appropriate calculated time to	0.40	Appropriate Method:	Airport

Project Name: Glenelg Expansion Lands
Project Number: 1060-6220
Date: 2022-08-11
By: KS

D.A. NAME **PRE-5**
D.A. AREA (ha) **3.00**

Hydrologic Parameters: CALIB NASHYD Command
Pre Development Drainage Area: Catchment PRE-5
Pre-Dev to Southeast Tile

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowel Silt Loam	LTW	B	100.0%	3.0
				0
				0
				0
Total Area				3.0

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0	98	0	98	0	98	0.000	98	0	98	0.00	0.00
0	0	98	0	98	0	98	0	98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0		0		0		0			

Pervious Landuses Present:

	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0.00		0.00		0.00		0.00		3.0	74	3.00	222.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area	0.00		0.00		0.00		0.00		3.0			

Composite Area Calculations		
	Total Pervious Area	3.0
	Total Impervious Area	0.0
	% Impervious	0.0%
	Composite Curve Number	74.0
	Total Area Check	3.0

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
				Listowel Silt		0		0		0		
Landuse	IA (mm)	Area (ha)	A * IA	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	0	0		0		0		0		0	0.000
Cultivated	7	3	21	0.35	3		0		0		0	1.050
Impervious	2	0	0		0		0		0		0	0.000
Composite IA		3.00	7	Composite Runoff Coefficient								0.350

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	105.7	4.5	4.26%	2.7	0.56	0.05	0.04	0.04	0.07	0.05	0.26	0.17

Appropriate calculated time to	0.17	Appropriate Method:	Airport

CROZIER
CONSULTING ENGINEERS

PROJECT: Glenelg Expansion Lands
PROJECT No.: 1060-6220
FILE: Post-Development Breakdown
DATE: 2022.08.22
DESIGN: K. Swain
CHECK: A. West

Drainage Areas

Post-Development Breakdown

Description	Area (sqm)	Area (ha)	Runoff Coeff.	TIMP	A*TIMP	XIMP	A*XIMP
Single Family Residential	96660	9.67	0.59	55%	5.32	45%	4.35
Semi-Detached Residential	4751	0.48	0.66	65%	0.31	45%	0.21
Townhouses	16596	1.66	0.73	75%	1.24	55%	0.91
SWM Facility	14329	1.43	0.55	50%	0.72	50%	0.72
Park	13915	1.39	0.30	14%	0.20	14%	0.19
Roads	76081	7.61	0.75	79%	5.98	79%	5.98
Walkways	3441	0.34	0.90	100%	0.34	100%	0.34
Total	259900	25.99	0.63	62%	16.05	52%	13.51

CROZIER & ASSOCIATES Consulting Engineers

Project Name: Glenelg Expansion Lands
Project Number: 1060-6220
Date: 2022-08-11
By: KS

D.A. NAME NYHD185
D.A. AREA (ha) 1.66

Hydrologic Parameters: CALIB NASHYD Command
Post-Development Drainage Area: Catchment NYHD185
Draining to Bioretention and PP

Curve Number Calculation

Soil Types Present:				
Type	ID	Hydrologic	% Area	Area
Listowel Silt Loam	LTW	B	100.0%	1.7
				0
				0
				0
Total Area				1.7

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0	98	0.01447	98	0.05788	98	0.217	98	0	98	0.29	28.36
0	0	98	0	98	0	98	0	98		98	0	0
0		98		98		98		98		98	0	0
0		98		98		98		98		98	0	0
Subtotal Area	0		0.01447		0.05788		0.21705		0			

Pervious Landuses Present:

	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area	CN	Area	CN	Area	CN	Area (ha)	CN	Area	CN	Area	A*CN
LTW	0.00		0.00		0.00		1.27	69	0.0	74	1.27	87.42
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
0	0.00		0.00		0.00		0.00		0.00		0.00	0.00
Subtotal Area	0.00		0.00		0.00		1.27		0.0			

Composite Area Calculations		
	Total Pervious Area	1.3
	Total Impervious Area	0.4
	% Impervious	23.9%
	Composite Curve Number	69.6
	Total Area Check	1.7

Initial Abstraction and Tp Calculations

Initial Abstraction				Composite Curve Number								
				Listowel Silt		0		0		0		
Landuse	IA (mm)	Area (ha)	A * IA	RC	Area	RC	Area	RC	Area	RC	Area	A*RC
Woodland	10	0.00	0		0		0		0		0	0
Meadow	8	0	0		0		0		0		0	0
Wetland	16	0	0		0		0		0		0	0
Lawn	5	1.2669	6.3345	0.25	1.3		0		0		0	0.317
Cultivated	7	0	0		0		0		0		0	0.000
Impervious	2	0.2894	0.5788	0.90	0.29		0		0		0	0.260
Composite IA		1.56	4.44214	Composite Runoff Coefficient								0.347

Time to Peak Inputs						Uplands			Bransby Williams		Airport	
Flow Path Description	Length (m)	Drop (m)	Slope (%)	$V/S^{0.5}$	Velocity (m/s)	Tc (hr)	Tp(hr)	TOTAL Tp (hr)	Tc (hr)	Tp(hr)	Tc (hr)	Tp(hr)
Overland	121	2.42	2.00%	2.7	0.38	0.09	0.06	0.06	0.10	0.06	0.36	0.24

Appropriate calculated time to	0.24	Appropriate Method:	Airport

APPENDIX D

VO6 Model Input & Output Files

CROZIER & ASSOCIATES
Consulting Engineers

Project: Glenelg Expansion Lands
Project No.: 1060-6220
File: Model Schematic (Pre-Development)
Design by: K. Swain
Date: 2022-08-23

Visual OTTHYMO 6.0 Model Schematic

Pre-Development

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\6f6bb
d7d-7403-423d-925d-c82993f4def1\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\6f6bb
d7d-7403-423d-925d-c82993f4def1\scena


DATE: 08-23-2022                          TIME: 11:44:29

USER:


COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : 25mm                          **
  ************************************************


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|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

```
|                  |              ac87f79d-69e0-48a7-b484-801844eb7b93\a4c52d15
| Ptotal= 24.99 mm |    Comments: 25mm
-------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.00    1.36 |  1.00    6.91 |  2.00    4.18 |  3.00    1.86
                0.08    1.45 |  1.08   11.02 |  2.08    3.77 |  3.08    1.78
                0.17    1.55 |  1.17   26.16 |  2.17    3.43 |  3.17    1.71
                0.25    1.67 |  1.25   76.07 |  2.25    3.16 |  3.25    1.64
                0.33    1.81 |  1.33   33.71 |  2.33    2.92 |  3.33    1.58
                0.42    1.99 |  1.42   18.64 |  2.42    2.72 |  3.42    1.52
                0.50    2.20 |  1.50   12.61 |  2.50    2.55 |  3.50    1.47
                0.58    2.47 |  1.58    9.46 |  2.58    2.39 |  3.58    1.43
                0.67    2.82 |  1.67    7.55 |  2.67    2.26 |  3.67    1.38
                0.75    3.29 |  1.75    6.28 |  2.75    2.14 |  3.75    1.34
                0.83    3.97 |  1.83    5.38 |  2.83    2.04 |  3.83    1.30
                0.92    5.03 |  1.92    4.70 |  2.92    1.94 |  3.92    1.26

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

--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.36

     Unit Hyd Qpeak  (cms)=   0.458

     PEAK FLOW       (cms)=   0.024 (i)
     TIME TO PEAK    (hrs)=   1.917
     RUNOFF VOLUME    (mm)=   3.018
     TOTAL RAINFALL   (mm)=  24.991
     RUNOFF COEFFICIENT   =   0.121

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.62

     Unit Hyd Qpeak  (cms)=   0.821

     PEAK FLOW       (cms)=   0.054 (i)
     TIME TO PEAK    (hrs)=   2.250
     RUNOFF VOLUME    (mm)=   3.018
     TOTAL RAINFALL   (mm)=  24.991
     RUNOFF COEFFICIENT   =   0.121
```

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   3.05   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

     Unit Hyd Qpeak  (cms)=   0.530

     PEAK FLOW       (cms)=   0.022 (i)
     TIME TO PEAK    (hrs)=   1.667
     RUNOFF VOLUME    (mm)=   3.014
     TOTAL RAINFALL   (mm)=  24.991
     RUNOFF COEFFICIENT   =   0.121

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=   3.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.674

     PEAK FLOW       (cms)=   0.024 (i)
     TIME TO PEAK    (hrs)=   1.583
     RUNOFF VOLUME    (mm)=   3.007
     TOTAL RAINFALL   (mm)=  24.991
     RUNOFF COEFFICIENT   =   0.120

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0005)|   Area    (ha)=   2.29   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.40

     Unit Hyd Qpeak  (cms)=   0.219

     PEAK FLOW       (cms)=   0.012 (i)
     TIME TO PEAK    (hrs)=   1.917
     RUNOFF VOLUME    (mm)=   3.018
     TOTAL RAINFALL   (mm)=  24.991
```

```
     RUNOFF COEFFICIENT   =   0.121

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

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 FINISH
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
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7fc-248e-41ed-aed5-12089c5bbc2f\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\1ed6f
7fc-248e-41ed-aed5-12089c5bbc2f\scena


DATE: 08-23-2022                          TIME: 11:41:13

USER:



COMMENTS: _____


--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : A. 2yr 3hr 10min Chicago      **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 404.147
| Ptotal= 32.13 mm |                          B=   0.000
--------------------                          C=   0.699
```

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

                        Duration of storm  =  3.00 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    3.76 |  0.83   80.82 |  1.67    5.83 |  2.50    3.63
                   0.17    4.42 |  1.00   17.11 |  1.83    5.15 |  2.67    3.39
                   0.33    5.48 |  1.17   10.79 |  2.00    4.63 |  2.83    3.20
                   0.50    7.50 |  1.33    8.23 |  2.17    4.23 |
                   0.67   13.95 |  1.50    6.78 |  2.33    3.90 |


--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.36

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


                              ---- TRANSFORMED HYETOGRAPH ----
                   TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                    hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.083    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                  0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                  0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                  0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                  0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                  0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
                  0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                  0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                  0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20

     Unit Hyd Qpeak  (cms)=   0.458

     PEAK FLOW       (cms)=   0.044 (i)
     TIME TO PEAK    (hrs)=   1.417
     RUNOFF VOLUME    (mm)=   5.521
     TOTAL RAINFALL   (mm)=  32.132
     RUNOFF COEFFICIENT   =   0.172

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

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

```
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.62

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


                              ---- TRANSFORMED HYETOGRAPH ----
                   TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                    hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.083    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                  0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                  0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                  0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                  0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                  0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
                  0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                  0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                  0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20

     Unit Hyd Qpeak  (cms)=   0.821

     PEAK FLOW       (cms)=   0.100 (i)
     TIME TO PEAK    (hrs)=   1.917
     RUNOFF VOLUME    (mm)=   5.522
     TOTAL RAINFALL   (mm)=  32.132
     RUNOFF COEFFICIENT   =   0.172

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   3.05   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

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


                              ---- TRANSFORMED HYETOGRAPH ----
                   TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                    hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.083    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                  0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                  0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                  0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                  0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                  0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
```

```
                  0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                  0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                  0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20

     Unit Hyd Qpeak  (cms)=   0.530

     PEAK FLOW       (cms)=   0.041 (i)
     TIME TO PEAK    (hrs)=   1.250
     RUNOFF VOLUME    (mm)=   5.515
     TOTAL RAINFALL   (mm)=  32.132
     RUNOFF COEFFICIENT   =   0.172

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=   3.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

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


                              ---- TRANSFORMED HYETOGRAPH ----
                   TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                    hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.083    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                  0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                  0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                  0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                  0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                  0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
                  0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                  0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                  0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20

     Unit Hyd Qpeak  (cms)=   0.674

     PEAK FLOW       (cms)=   0.047 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=   5.502
     TOTAL RAINFALL   (mm)=  32.132
     RUNOFF COEFFICIENT   =   0.171

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
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| NASHYD (0005) | Area (ha)= 2.29 Curve Number (CN)= 74.0
|ID= 1 DT= 5.0 min | Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.40

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	3.76	0.833	13.95	1.583	6.78	2.33	4.23
0.167	3.76	0.917	80.82	1.667	6.78	2.42	3.90
0.250	4.42	1.000	80.82	1.750	5.83	2.50	3.90
0.333	4.42	1.083	17.11	1.833	5.83	2.58	3.63
0.417	5.48	1.167	17.11	1.917	5.15	2.67	3.63
0.500	5.48	1.250	10.79	2.000	5.15	2.75	3.39
0.583	7.50	1.333	10.79	2.083	4.63	2.83	3.39
0.667	7.50	1.417	8.23	2.167	4.63	2.92	3.20
0.750	13.95	1.500	8.23	2.250	4.23	3.00	3.20

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.022 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 5.521
TOTAL RAINFALL (mm)= 32.132
RUNOFF COEFFICIENT = 0.172

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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DATE: 08-23-2022                          TIME: 11:41:14

USER:



COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : B. 5yr 3hr 10min Chicago      **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 535.364
| Ptotal= 42.56 mm |                          B=   0.000
--------------------                          C=   0.699
```

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

                          Duration of storm  =  3.00 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    4.98 |  0.83  107.07 |  1.67    7.72 |  2.50    4.80
                    0.17    5.86 |  1.00   22.67 |  1.83    6.82 |  2.67    4.50
                    0.33    7.26 |  1.17   14.30 |  2.00    6.14 |  2.83    4.24
                    0.50    9.93 |  1.33   10.90 |  2.17    5.60 |
                    0.67   18.47 |  1.50    8.98 |  2.33    5.16 |


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-------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.36

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
                   0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
                   0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
                   0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
                   0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
                   0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
                   0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
                   0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
                   0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

    Unit Hyd Qpeak  (cms)=   0.458

    PEAK FLOW       (cms)=   0.086 (i)
    TIME TO PEAK    (hrs)=   1.417
    RUNOFF VOLUME    (mm)=  10.132
    TOTAL RAINFALL   (mm)=  42.565
    RUNOFF COEFFICIENT   =   0.238

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

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```
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.62

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
                   0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
                   0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
                   0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
                   0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
                   0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
                   0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
                   0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
                   0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

    Unit Hyd Qpeak  (cms)=   0.821

    PEAK FLOW       (cms)=   0.190 (i)
    TIME TO PEAK    (hrs)=   1.833
    RUNOFF VOLUME    (mm)=  10.134
    TOTAL RAINFALL   (mm)=  42.565
    RUNOFF COEFFICIENT   =   0.238

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   3.05   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
                   0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
                   0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
                   0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
                   0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
                   0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
```

```
                   0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
                   0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
                   0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

    Unit Hyd Qpeak  (cms)=   0.530

    PEAK FLOW       (cms)=   0.081 (i)
    TIME TO PEAK    (hrs)=   1.167
    RUNOFF VOLUME    (mm)=  10.121
    TOTAL RAINFALL   (mm)=  42.565
    RUNOFF COEFFICIENT   =   0.238

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=   3.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
                   0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
                   0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
                   0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
                   0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
                   0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
                   0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
                   0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
                   0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

    Unit Hyd Qpeak  (cms)=   0.674

    PEAK FLOW       (cms)=   0.093 (i)
    TIME TO PEAK    (hrs)=   1.167
    RUNOFF VOLUME    (mm)=  10.098
    TOTAL RAINFALL   (mm)=  42.565
    RUNOFF COEFFICIENT   =   0.237

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
```

| NASHYD (0005) | Area (ha)= 2.29 Curve Number (CN)= 74.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.40

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	4.98	0.833	18.47	1.583	8.98	2.33	5.60
0.167	4.98	0.917	107.07	1.667	8.98	2.42	5.16
0.250	5.86	1.000	107.07	1.750	7.72	2.50	5.16
0.333	5.86	1.083	22.67	1.833	7.72	2.58	4.80
0.417	7.26	1.167	22.67	1.917	6.82	2.67	4.80
0.500	7.26	1.250	14.30	2.000	6.82	2.75	4.50
0.583	9.93	1.333	14.30	2.083	6.14	2.83	4.50
0.667	9.93	1.417	10.90	2.167	6.14	2.92	4.24
0.750	18.47	1.500	10.90	2.250	5.60	3.00	4.24

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.042 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 10.133
TOTAL RAINFALL (mm)= 42.565
RUNOFF COEFFICIENT = 0.238

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

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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d4b-b0a5-4ee8-938e-92ef2ca0db10\scena


DATE: 08-23-2022                          TIME: 11:41:14

USER:



COMMENTS: _____________________________________________________


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-------------------------
  ************************************************
  ** SIMULATION : C. 10yr 3hr 10min Chicago     **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 622.842
| Ptotal= 49.52 mm |                          B=   0.000
--------------------                          C=   0.699
```

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

                          Duration of storm  =  3.00 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    5.79 |  0.83  124.56 |  1.67    8.98 |  2.50    5.59
                    0.17    6.82 |  1.00   26.38 |  1.83    7.93 |  2.67    5.23
                    0.33    8.45 |  1.17   16.63 |  2.00    7.14 |  2.83    4.93
                    0.50   11.56 |  1.33   12.68 |  2.17    6.51 |
                    0.67   21.49 |  1.50   10.45 |  2.33    6.01 |


--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.36

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
                   0.167    5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
                   0.250    6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
                   0.333    6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
                   0.417    8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
                   0.500    8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
                   0.583   11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
                   0.667   11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
                   0.750   21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93

     Unit Hyd Qpeak  (cms)=   0.458

     PEAK FLOW       (cms)=   0.119 (i)
     TIME TO PEAK    (hrs)=   1.417
     RUNOFF VOLUME    (mm)=  13.718
     TOTAL RAINFALL   (mm)=  49.520
     RUNOFF COEFFICIENT   =   0.277

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

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```
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.62

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
                   0.167    5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
                   0.250    6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
                   0.333    6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
                   0.417    8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
                   0.500    8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
                   0.583   11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
                   0.667   11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
                   0.750   21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93

     Unit Hyd Qpeak  (cms)=   0.821

     PEAK FLOW       (cms)=   0.261 (i)
     TIME TO PEAK    (hrs)=   1.833
     RUNOFF VOLUME    (mm)=  13.721
     TOTAL RAINFALL   (mm)=  49.520
     RUNOFF COEFFICIENT   =   0.277

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

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--------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   3.05   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
                   0.167    5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
                   0.250    6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
                   0.333    6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
                   0.417    8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
                   0.500    8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
```

```
                   0.583   11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
                   0.667   11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
                   0.750   21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93

     Unit Hyd Qpeak  (cms)=   0.530

     PEAK FLOW       (cms)=   0.115 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=  13.703
     TOTAL RAINFALL   (mm)=  49.520
     RUNOFF COEFFICIENT   =   0.277

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=   3.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

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


                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
                   0.167    5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
                   0.250    6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
                   0.333    6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
                   0.417    8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
                   0.500    8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
                   0.583   11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
                   0.667   11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
                   0.750   21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93

     Unit Hyd Qpeak  (cms)=   0.674

     PEAK FLOW       (cms)=   0.131 (i)
     TIME TO PEAK    (hrs)=   1.083
     RUNOFF VOLUME    (mm)=  13.672
     TOTAL RAINFALL   (mm)=  49.520
     RUNOFF COEFFICIENT   =   0.276

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

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--------------------
| CALIB            |
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| NASHYD (0005) | Area (ha)= 2.29 Curve Number (CN)= 74.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.40

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	5.79	0.833	21.49	1.583	10.45	2.33	6.51
0.167	5.79	0.917	124.56	1.667	10.45	2.42	6.01
0.250	6.82	1.000	124.56	1.750	8.98	2.50	6.01
0.333	6.82	1.083	26.38	1.833	8.98	2.58	5.59
0.417	8.45	1.167	26.38	1.917	7.93	2.67	5.59
0.500	8.45	1.250	16.63	2.000	7.93	2.75	5.23
0.583	11.56	1.333	16.63	2.083	7.14	2.83	5.23
0.667	11.56	1.417	12.68	2.167	7.14	2.92	4.93
0.750	21.49	1.500	12.68	2.250	6.51	3.00	4.93

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.059 (i)
TIME TO PEAK (hrs)= 1.500
RUNOFF VOLUME (mm)= 13.719
TOTAL RAINFALL (mm)= 49.520
RUNOFF COEFFICIENT = 0.277

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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DATE: 08-23-2022                          TIME: 11:41:14

USER:



COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : D. 25yr 3hr 10min Chicago     **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 731.314
| Ptotal= 58.14 mm |                          B=   0.000
--------------------                          C=   0.699
```

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

                        Duration of storm  =  3.00 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    6.80 |  0.83  146.25 |  1.67   10.54 |  2.50    6.56
                  0.17    8.01 |  1.00   30.97 |  1.83    9.31 |  2.67    6.14
                  0.33    9.92 |  1.17   19.53 |  2.00    8.38 |  2.83    5.79
                  0.50   13.57 |  1.33   14.89 |  2.17    7.65 |
                  0.67   25.24 |  1.50   12.27 |  2.33    7.05 |


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-------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.36

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                 0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                 0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                 0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                 0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                 0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                 0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                 0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                 0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Unit Hyd Qpeak  (cms)=   0.458

     PEAK FLOW       (cms)=   0.166 (i)
     TIME TO PEAK    (hrs)=   1.417
     RUNOFF VOLUME    (mm)=  18.628
     TOTAL RAINFALL   (mm)=  58.144
     RUNOFF COEFFICIENT   =   0.320

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.62

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                 0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                 0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                 0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                 0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                 0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                 0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                 0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                 0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Unit Hyd Qpeak  (cms)=   0.821

     PEAK FLOW       (cms)=   0.361 (i)
     TIME TO PEAK    (hrs)=   1.750
     RUNOFF VOLUME    (mm)=  18.631
     TOTAL RAINFALL   (mm)=  58.144
     RUNOFF COEFFICIENT   =   0.320

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   3.05   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                 0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                 0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                 0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                 0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                 0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
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                 0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                 0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                 0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Unit Hyd Qpeak  (cms)=   0.530

     PEAK FLOW       (cms)=   0.162 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=  18.607
     TOTAL RAINFALL   (mm)=  58.144
     RUNOFF COEFFICIENT   =   0.320

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

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-------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=   3.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                 0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                 0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                 0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                 0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                 0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                 0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                 0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                 0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Unit Hyd Qpeak  (cms)=   0.674

     PEAK FLOW       (cms)=   0.186 (i)
     TIME TO PEAK    (hrs)=   1.083
     RUNOFF VOLUME    (mm)=  18.565
     TOTAL RAINFALL   (mm)=  58.144
     RUNOFF COEFFICIENT   =   0.319

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

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| CALIB            |
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| NASHYD (0005) | Area (ha)= 2.29 Curve Number (CN)= 74.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
---------- U.H. Tp(hrs)= 0.40

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	6.80	0.833	25.24	1.583	12.27	2.33	7.65
0.167	6.80	0.917	146.25	1.667	12.27	2.42	7.05
0.250	8.01	1.000	146.25	1.750	10.54	2.50	7.05
0.333	8.01	1.083	30.97	1.833	10.54	2.58	6.56
0.417	9.92	1.167	30.97	1.917	9.31	2.67	6.56
0.500	9.92	1.250	19.53	2.000	9.31	2.75	6.14
0.583	13.57	1.333	19.53	2.083	8.38	2.83	6.14
0.667	13.57	1.417	14.89	2.167	8.38	2.92	5.79
0.750	25.24	1.500	14.89	2.250	7.65	3.00	5.79

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.082 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 18.629
TOTAL RAINFALL (mm)= 58.144
RUNOFF COEFFICIENT = 0.320

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

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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7e4-5d43-485b-9fd7-58c9707dae8e\scena


DATE: 08-23-2022                          TIME: 11:41:14

USER:



COMMENTS: _____


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  ************************************************
  ** SIMULATION : E. 50yr 3hr 10min Chicago     **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 811.794
| Ptotal= 64.54 mm |                          B=   0.000
--------------------                          C=   0.699
```

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

                          Duration of storm  =  3.00 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    7.55 |  0.83  162.35 |  1.67   11.70 |  2.50    7.28
                  0.17    8.89 |  1.00   34.38 |  1.83   10.34 |  2.67    6.82
                  0.33   11.01 |  1.17   21.68 |  2.00    9.30 |  2.83    6.42
                  0.50   15.06 |  1.33   16.53 |  2.17    8.49 |
                  0.67   28.01 |  1.50   13.62 |  2.33    7.83 |


--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.36

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                 0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                 0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                 0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                 0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                 0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                 0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                 0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                 0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Unit Hyd Qpeak  (cms)=   0.458

     PEAK FLOW       (cms)=   0.204 (i)
     TIME TO PEAK    (hrs)=   1.417
     RUNOFF VOLUME    (mm)=  22.553
     TOTAL RAINFALL   (mm)=  64.542
     RUNOFF COEFFICIENT   =   0.349

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

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```
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.62

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                 0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                 0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                 0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                 0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                 0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                 0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                 0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                 0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Unit Hyd Qpeak  (cms)=   0.821

     PEAK FLOW       (cms)=   0.442 (i)
     TIME TO PEAK    (hrs)=   1.750
     RUNOFF VOLUME    (mm)=  22.557
     TOTAL RAINFALL   (mm)=  64.542
     RUNOFF COEFFICIENT   =   0.349

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

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-------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   3.05   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                 0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                 0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                 0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                 0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                 0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
```

```
                 0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                 0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                 0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Unit Hyd Qpeak  (cms)=   0.530

     PEAK FLOW       (cms)=   0.200 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=  22.528
     TOTAL RAINFALL   (mm)=  64.542
     RUNOFF COEFFICIENT   =   0.349

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=   3.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                 0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                 0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                 0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                 0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                 0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                 0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                 0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                 0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Unit Hyd Qpeak  (cms)=   0.674

     PEAK FLOW       (cms)=   0.230 (i)
     TIME TO PEAK    (hrs)=   1.083
     RUNOFF VOLUME    (mm)=  22.477
     TOTAL RAINFALL   (mm)=  64.542
     RUNOFF COEFFICIENT   =   0.348

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

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| CALIB            |
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| NASHYD (0005) | Area (ha)= 2.29 Curve Number (CN)= 74.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.40

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	7.55	0.833	28.01	1.583	13.62	2.33	8.49
0.167	7.55	0.917	162.35	1.667	13.62	2.42	7.83
0.250	8.89	1.000	162.35	1.750	11.70	2.50	7.83
0.333	8.89	1.083	34.38	1.833	11.70	2.58	7.28
0.417	11.01	1.167	34.38	1.917	10.34	2.67	7.28
0.500	11.01	1.250	21.68	2.000	10.34	2.75	6.82
0.583	15.06	1.333	21.68	2.083	9.30	2.83	6.82
0.667	15.06	1.417	16.53	2.167	9.30	2.92	6.42
0.750	28.01	1.500	16.53	2.250	8.49	3.00	6.42

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.101 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 22.554
TOTAL RAINFALL (mm)= 64.542
RUNOFF COEFFICIENT = 0.349

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
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d95-4301-4ff3-8e1d-3d4cf191cfd4\scena
  Summary filename:
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d95-4301-4ff3-8e1d-3d4cf191cfd4\scena


DATE: 08-23-2022                          TIME: 11:41:14

USER:



COMMENTS: _____


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  ************************************************
  ** SIMULATION : F. 100yr 3hr 10min Chicago    **
  ************************************************

--------------------
| CHICAGO STORM    |    IDF curve parameters: A= 892.273
| Ptotal= 70.94 mm |                          B=   0.000
--------------------                          C=   0.699
```

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

                          Duration of storm  =  3.00 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    8.30 |  0.83  178.44 |  1.67   12.86 |  2.50    8.00
                  0.17    9.77 |  1.00   37.79 |  1.83   11.36 |  2.67    7.50
                  0.33   12.10 |  1.17   23.83 |  2.00   10.23 |  2.83    7.06
                  0.50   16.55 |  1.33   18.17 |  2.17    9.33 |
                  0.67   30.79 |  1.50   14.97 |  2.33    8.61 |


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-------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.36

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
                 0.167    8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
                 0.250    9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
                 0.333    9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
                 0.417   12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
                 0.500   12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
                 0.583   16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
                 0.667   16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
                 0.750   30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

     Unit Hyd Qpeak  (cms)=   0.458

     PEAK FLOW       (cms)=   0.244 (i)
     TIME TO PEAK    (hrs)=   1.333
     RUNOFF VOLUME    (mm)=  26.684
     TOTAL RAINFALL   (mm)=  70.941
     RUNOFF COEFFICIENT   =   0.376

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.62

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
                 0.167    8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
                 0.250    9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
                 0.333    9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
                 0.417   12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
                 0.500   12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
                 0.583   16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
                 0.667   16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
                 0.750   30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

     Unit Hyd Qpeak  (cms)=   0.821

     PEAK FLOW       (cms)=   0.528 (i)
     TIME TO PEAK    (hrs)=   1.750
     RUNOFF VOLUME    (mm)=  26.689
     TOTAL RAINFALL   (mm)=  70.941
     RUNOFF COEFFICIENT   =   0.376

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0003)|   Area    (ha)=   3.05   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.22

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
                 0.167    8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
                 0.250    9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
                 0.333    9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
                 0.417   12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
                 0.500   12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
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                 0.583   16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
                 0.667   16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
                 0.750   30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

     Unit Hyd Qpeak  (cms)=   0.530

     PEAK FLOW       (cms)=   0.241 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=  26.654
     TOTAL RAINFALL   (mm)=  70.941
     RUNOFF COEFFICIENT   =   0.376

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

--------------------------------------------------------------------------------
-------------------
| CALIB            |
| NASHYD   (  0004)|   Area    (ha)=   3.00   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

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


                              ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
                 0.167    8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
                 0.250    9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
                 0.333    9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
                 0.417   12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
                 0.500   12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
                 0.583   16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
                 0.667   16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
                 0.750   30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

     Unit Hyd Qpeak  (cms)=   0.674

     PEAK FLOW       (cms)=   0.278 (i)
     TIME TO PEAK    (hrs)=   1.083
     RUNOFF VOLUME    (mm)=  26.594
     TOTAL RAINFALL   (mm)=  70.941
     RUNOFF COEFFICIENT   =   0.375

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

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| CALIB            |
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| NASHYD (0005) | Area (ha)= 2.29 Curve Number (CN)= 74.0
| ID= 1 DT= 5.0 min | Ia (mm)= 7.00 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.40

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	8.30	0.833	30.79	1.583	14.97	2.33	9.33
0.167	8.30	0.917	178.44	1.667	14.97	2.42	8.61
0.250	9.77	1.000	178.44	1.750	12.86	2.50	8.61
0.333	9.77	1.083	37.79	1.833	12.86	2.58	8.00
0.417	12.10	1.167	37.79	1.917	11.36	2.67	8.00
0.500	12.10	1.250	23.83	2.000	11.36	2.75	7.50
0.583	16.55	1.333	23.83	2.083	10.23	2.83	7.50
0.667	16.55	1.417	18.17	2.167	10.23	2.92	7.06
0.750	30.79	1.500	18.17	2.250	9.33	3.00	7.06

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.121 (i)
TIME TO PEAK (hrs)= 1.417
RUNOFF VOLUME (mm)= 26.686
TOTAL RAINFALL (mm)= 70.941
RUNOFF COEFFICIENT = 0.376

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

FINISH

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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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  Output  filename:
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DATE: 08-23-2022                          TIME: 11:47:06

USER:


COMMENTS: _____


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


--------------------
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|                  |              ata\Local\Temp\
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|                  |              8ab56956-7981-44cd-9ed6-5a18ca9f22ac\16ec51c6
| Ptotal= 60.13 mm |    Comments: G. 2yr 24hr 15min SCS Type II
-------------------
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.08	12.50	8.66	18.75	1.08
0.25	0.66	6.50	1.08	12.75	4.45	19.00	1.08
0.50	0.66	6.75	1.08	13.00	4.45	19.25	1.08
0.75	0.66	7.00	1.08	13.25	3.25	19.50	1.08
1.00	0.66	7.25	1.32	13.50	3.25	19.75	1.08
1.25	0.66	7.50	1.32	13.75	2.53	20.00	1.08
1.50	0.66	7.75	1.32	14.00	2.53	20.25	0.72
1.75	0.66	8.00	1.32	14.25	1.80	20.50	0.72
2.00	0.66	8.25	1.56	14.50	1.80	20.75	0.72
2.25	0.78	8.50	1.56	14.75	1.80	21.00	0.72
2.50	0.78	8.75	1.68	15.00	1.80	21.25	0.72
2.75	0.78	9.00	1.68	15.25	1.80	21.50	0.72
3.00	0.78	9.25	1.92	15.50	1.80	21.75	0.72
3.25	0.78	9.50	1.92	15.75	1.80	22.00	0.72
3.50	0.78	9.75	2.16	16.00	1.80	22.25	0.72
3.75	0.78	10.00	2.16	16.25	1.08	22.50	0.72
4.00	0.78	10.25	2.77	16.50	1.08	22.75	0.72
4.25	0.96	10.50	2.77	16.75	1.08	23.00	0.72
4.50	0.96	10.75	3.73	17.00	1.08	23.25	0.72
4.75	0.96	11.00	3.73	17.25	1.08	23.50	0.72
5.00	0.96	11.25	5.77	17.50	1.08	23.75	0.72
5.25	0.96	11.50	5.77	17.75	1.08	24.00	0.72
5.50	0.96	11.75	17.80	18.00	1.08		
5.75	0.96	12.00	73.60	18.25	1.08		
6.00	0.96	12.25	8.66	18.50	1.08		

```
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--------------------
| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.36

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


                        ---- TRANSFORMED HYETOGRAPH ----
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

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    Unit Hyd Qpeak  (cms)=   0.458

    PEAK FLOW       (cms)=   0.143 (i)
    TIME TO PEAK    (hrs)=  12.500
    RUNOFF VOLUME    (mm)=  19.823
    TOTAL RAINFALL   (mm)=  60.130
    RUNOFF COEFFICIENT   =   0.330

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.62

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


                        ---- TRANSFORMED HYETOGRAPH ----
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08

0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 0.821

PEAK FLOW (cms)= 0.296 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 19.826
TOTAL RAINFALL (mm)= 60.130
RUNOFF COEFFICIENT = 0.330

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

CALIB							
NASHYD (0003)	Area (ha)=	3.05	Curve Number (CN)= 74.0				
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00				
	U.H. Tp(hrs)=	0.22					

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08

1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 0.530

PEAK FLOW (cms)= 0.144 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 19.801
TOTAL RAINFALL (mm)= 60.130
RUNOFF COEFFICIENT = 0.329

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

CALIB							
NASHYD (0004)	Area (ha)=	3.00	Curve Number (CN)= 74.0				
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00				
	U.H. Tp(hrs)=	0.17					

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08

1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08
1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72
5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 0.674

PEAK FLOW (cms)= 0.162 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 19.756
TOTAL RAINFALL (mm)= 60.130
RUNOFF COEFFICIENT = 0.329

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

CALIB			
NASHYD (0005)	Area (ha)= 2.29	Curve Number (CN)= 74.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.40		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	0.96	12.250	73.60	18.33	1.08
0.167	0.00	6.250	0.96	12.333	8.67	18.42	1.08
0.250	0.00	6.333	1.08	12.417	8.66	18.50	1.08
0.333	0.66	6.417	1.08	12.500	8.66	18.58	1.08
0.417	0.66	6.500	1.08	12.583	8.66	18.67	1.08
0.500	0.66	6.583	1.08	12.667	8.66	18.75	1.08
0.583	0.66	6.667	1.08	12.750	8.66	18.83	1.08
0.667	0.66	6.750	1.08	12.833	4.45	18.92	1.08
0.750	0.66	6.833	1.08	12.917	4.45	19.00	1.08
0.833	0.66	6.917	1.08	13.000	4.45	19.08	1.08
0.917	0.66	7.000	1.08	13.083	4.45	19.17	1.08
1.000	0.66	7.083	1.08	13.167	4.45	19.25	1.08
1.083	0.66	7.167	1.08	13.250	4.45	19.33	1.08
1.167	0.66	7.250	1.08	13.333	3.25	19.42	1.08
1.250	0.66	7.333	1.32	13.417	3.25	19.50	1.08
1.333	0.66	7.417	1.32	13.500	3.25	19.58	1.08
1.417	0.66	7.500	1.32	13.583	3.25	19.67	1.08

1.500	0.66	7.583	1.32	13.667	3.25	19.75	1.08
1.583	0.66	7.667	1.32	13.750	3.25	19.83	1.08
1.667	0.66	7.750	1.32	13.833	2.53	19.92	1.08
1.750	0.66	7.833	1.32	13.917	2.53	20.00	1.08
1.833	0.66	7.917	1.32	14.000	2.53	20.08	1.08
1.917	0.66	8.000	1.32	14.083	2.53	20.17	1.08
2.000	0.66	8.083	1.32	14.167	2.53	20.25	1.08
2.083	0.66	8.167	1.32	14.250	2.53	20.33	0.72
2.167	0.66	8.250	1.32	14.333	1.80	20.42	0.72
2.250	0.66	8.333	1.56	14.417	1.80	20.50	0.72
2.333	0.78	8.417	1.56	14.500	1.80	20.58	0.72
2.417	0.78	8.500	1.56	14.583	1.80	20.67	0.72
2.500	0.78	8.583	1.56	14.667	1.80	20.75	0.72
2.583	0.78	8.667	1.56	14.750	1.80	20.83	0.72
2.667	0.78	8.750	1.56	14.833	1.80	20.92	0.72
2.750	0.78	8.833	1.68	14.917	1.80	21.00	0.72
2.833	0.78	8.917	1.68	15.000	1.80	21.08	0.72
2.917	0.78	9.000	1.68	15.083	1.80	21.17	0.72
3.000	0.78	9.083	1.68	15.167	1.80	21.25	0.72
3.083	0.78	9.167	1.68	15.250	1.80	21.33	0.72
3.167	0.78	9.250	1.68	15.333	1.80	21.42	0.72
3.250	0.78	9.333	1.92	15.417	1.80	21.50	0.72
3.333	0.78	9.417	1.92	15.500	1.80	21.58	0.72
3.417	0.78	9.500	1.92	15.583	1.80	21.67	0.72
3.500	0.78	9.583	1.92	15.667	1.80	21.75	0.72
3.583	0.78	9.667	1.92	15.750	1.80	21.83	0.72
3.667	0.78	9.750	1.92	15.833	1.80	21.92	0.72
3.750	0.78	9.833	2.16	15.917	1.80	22.00	0.72
3.833	0.78	9.917	2.16	16.000	1.80	22.08	0.72
3.917	0.78	10.000	2.16	16.083	1.80	22.17	0.72
4.000	0.78	10.083	2.16	16.167	1.80	22.25	0.72
4.083	0.78	10.167	2.16	16.250	1.80	22.33	0.72
4.167	0.78	10.250	2.16	16.333	1.08	22.42	0.72
4.250	0.78	10.333	2.77	16.417	1.08	22.50	0.72
4.333	0.96	10.417	2.77	16.500	1.08	22.58	0.72
4.417	0.96	10.500	2.77	16.583	1.08	22.67	0.72
4.500	0.96	10.583	2.77	16.667	1.08	22.75	0.72
4.583	0.96	10.667	2.77	16.750	1.08	22.83	0.72
4.667	0.96	10.750	2.77	16.833	1.08	22.92	0.72
4.750	0.96	10.833	3.73	16.917	1.08	23.00	0.72
4.833	0.96	10.917	3.73	17.000	1.08	23.08	0.72
4.917	0.96	11.000	3.73	17.083	1.08	23.17	0.72
5.000	0.96	11.083	3.73	17.167	1.08	23.25	0.72
5.083	0.96	11.167	3.73	17.250	1.08	23.33	0.72
5.167	0.96	11.250	3.73	17.333	1.08	23.42	0.72
5.250	0.96	11.333	5.77	17.417	1.08	23.50	0.72
5.333	0.96	11.417	5.77	17.500	1.08	23.58	0.72
5.417	0.96	11.500	5.77	17.583	1.08	23.67	0.72
5.500	0.96	11.583	5.77	17.667	1.08	23.75	0.72
5.583	0.96	11.667	5.77	17.750	1.08	23.83	0.72

5.667	0.96	11.750	5.77	17.833	1.08	23.92	0.72
5.750	0.96	11.833	17.80	17.917	1.08	24.00	0.72
5.833	0.96	11.917	17.80	18.000	1.08	24.08	0.72
5.917	0.96	12.000	17.80	18.083	1.08	24.17	0.72
6.000	0.96	12.083	73.59	18.167	1.08	24.25	0.72
6.083	0.96	12.167	73.60	18.250	1.08		

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.070 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 19.824
TOTAL RAINFALL (mm)= 60.130
RUNOFF COEFFICIENT = 0.330

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\a4e86
fb0-1ea3-43b7-9518-2160a4ec80a1\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\a4e86
fb0-1ea3-43b7-9518-2160a4ec80a1\scena


DATE: 08-23-2022                          TIME: 11:47:06

USER:


COMMENTS: _____


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


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|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

```
|                  |              8ab56956-7981-44cd-9ed6-5a18ca9f22ac\44344e77
| Ptotal= 79.65 mm |    Comments: H. 5yr 24hr 15min SCS Type II
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.43	12.50	11.47	18.75	1.43
0.25	0.88	6.50	1.43	12.75	5.89	19.00	1.43
0.50	0.88	6.75	1.43	13.00	5.89	19.25	1.43
0.75	0.88	7.00	1.43	13.25	4.30	19.50	1.43
1.00	0.88	7.25	1.75	13.50	4.30	19.75	1.43
1.25	0.88	7.50	1.75	13.75	3.35	20.00	1.43
1.50	0.88	7.75	1.75	14.00	3.35	20.25	0.96
1.75	0.88	8.00	1.75	14.25	2.39	20.50	0.96
2.00	0.88	8.25	2.07	14.50	2.39	20.75	0.96
2.25	1.04	8.50	2.07	14.75	2.39	21.00	0.96
2.50	1.04	8.75	2.23	15.00	2.39	21.25	0.96
2.75	1.04	9.00	2.23	15.25	2.39	21.50	0.96
3.00	1.04	9.25	2.55	15.50	2.39	21.75	0.96
3.25	1.04	9.50	2.55	15.75	2.39	22.00	0.96
3.50	1.04	9.75	2.87	16.00	2.39	22.25	0.96
3.75	1.04	10.00	2.87	16.25	1.43	22.50	0.96
4.00	1.04	10.25	3.66	16.50	1.43	22.75	0.96
4.25	1.27	10.50	3.66	16.75	1.43	23.00	0.96
4.50	1.27	10.75	4.94	17.00	1.43	23.25	0.96
4.75	1.27	11.00	4.94	17.25	1.43	23.50	0.96
5.00	1.27	11.25	7.65	17.50	1.43	23.75	0.96
5.25	1.27	11.50	7.65	17.75	1.43	24.00	0.96
5.50	1.27	11.75	23.58	18.00	1.43		
5.75	1.27	12.00	97.49	18.25	1.43		
6.00	1.27	12.25	11.47	18.50	1.43		

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.36

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


                        ---- TRANSFORMED HYETOGRAPH ----
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

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    Unit Hyd Qpeak  (cms)=   0.458

    PEAK FLOW       (cms)=   0.239 (i)
    TIME TO PEAK    (hrs)=  12.500
    RUNOFF VOLUME    (mm)=  32.596
    TOTAL RAINFALL   (mm)=  79.650
    RUNOFF COEFFICIENT   =   0.409

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.62

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


                        ---- TRANSFORMED HYETOGRAPH ----
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43

0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 0.821

PEAK FLOW (cms)= 0.495 (i)
TIME TO PEAK (hrs)= 12.833
RUNOFF VOLUME (mm)= 32.601
TOTAL RAINFALL (mm)= 79.650
RUNOFF COEFFICIENT = 0.409

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

CALIB					
NASHYD (0003)	Area (ha)=	3.05	Curve Number (CN)=	74.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.22			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43

1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 0.530

PEAK FLOW (cms)= 0.241 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 32.559
TOTAL RAINFALL (mm)= 79.650
RUNOFF COEFFICIENT = 0.409

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

CALIB					
NASHYD (0004)	Area (ha)=	3.00	Curve Number (CN)=	74.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.17			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43

1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 0.674

PEAK FLOW (cms)= 0.269 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 32.486
TOTAL RAINFALL (mm)= 79.650
RUNOFF COEFFICIENT = 0.408

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

CALIB			
NASHYD (0005)	Area (ha)= 2.29	Curve Number (CN)= 74.0	
ID= 1 DT= 5.0 min	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.40		

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.27	12.250	97.49	18.33	1.43
0.167	0.00	6.250	1.27	12.333	11.48	18.42	1.43
0.250	0.00	6.333	1.43	12.417	11.47	18.50	1.43
0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43

1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96
4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96

5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.117 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 32.598
TOTAL RAINFALL (mm)= 79.650
RUNOFF COEFFICIENT = 0.409

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\1e611
a0a-0fbb-42e3-a386-83a6276abfcb\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\1e611
a0a-0fbb-42e3-a386-83a6276abfcb\scena


DATE: 08-23-2022                          TIME: 11:47:06

USER:


COMMENTS: _____


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  ************************************************
  ** SIMULATION : I. 10yr 24hr 15min SCS Type I **
  ************************************************


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|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

```
|                  |              8ab56956-7981-44cd-9ed6-5a18ca9f22ac\94443e77
| Ptotal= 92.66 mm |    Comments: I. 10yr 24hr 15min SCS Type II
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.67	12.50	13.34	18.75	1.67
0.25	1.02	6.50	1.67	12.75	6.86	19.00	1.67
0.50	1.02	6.75	1.67	13.00	6.86	19.25	1.67
0.75	1.02	7.00	1.67	13.25	5.00	19.50	1.67
1.00	1.02	7.25	2.04	13.50	5.00	19.75	1.67
1.25	1.02	7.50	2.04	13.75	3.89	20.00	1.67
1.50	1.02	7.75	2.04	14.00	3.89	20.25	1.11
1.75	1.02	8.00	2.04	14.25	2.78	20.50	1.11
2.00	1.02	8.25	2.41	14.50	2.78	20.75	1.11
2.25	1.20	8.50	2.41	14.75	2.78	21.00	1.11
2.50	1.20	8.75	2.59	15.00	2.78	21.25	1.11
2.75	1.20	9.00	2.59	15.25	2.78	21.50	1.11
3.00	1.20	9.25	2.97	15.50	2.78	21.75	1.11
3.25	1.20	9.50	2.97	15.75	2.78	22.00	1.11
3.50	1.20	9.75	3.34	16.00	2.78	22.25	1.11
3.75	1.20	10.00	3.34	16.25	1.67	22.50	1.11
4.00	1.20	10.25	4.26	16.50	1.67	22.75	1.11
4.25	1.48	10.50	4.26	16.75	1.67	23.00	1.11
4.50	1.48	10.75	5.74	17.00	1.67	23.25	1.11
4.75	1.48	11.00	5.74	17.25	1.67	23.50	1.11
5.00	1.48	11.25	8.90	17.50	1.67	23.75	1.11
5.25	1.48	11.50	8.90	17.75	1.67	24.00	1.11
5.50	1.48	11.75	27.43	18.00	1.67		
5.75	1.48	12.00	113.42	18.25	1.67		
6.00	1.48	12.25	13.34	18.50	1.67		

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.36

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67

0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11

4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

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    Unit Hyd Qpeak  (cms)=   0.458

    PEAK FLOW       (cms)=   0.310 (i)
    TIME TO PEAK    (hrs)=  12.500
    RUNOFF VOLUME    (mm)=  41.944
    TOTAL RAINFALL   (mm)=  92.660
    RUNOFF COEFFICIENT   =   0.453

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.62

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67

0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67

0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.821

PEAK FLOW (cms)= 0.643 (i)
TIME TO PEAK (hrs)= 12.750
RUNOFF VOLUME (mm)= 41.952
TOTAL RAINFALL (mm)= 92.660
RUNOFF COEFFICIENT = 0.453

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

CALIB			
NASHYD (0003)	Area (ha)=	3.05	Curve Number (CN)= 74.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.22	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.530

PEAK FLOW (cms)= 0.313 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 41.897
TOTAL RAINFALL (mm)= 92.660
RUNOFF COEFFICIENT = 0.452

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

CALIB			
NASHYD (0004)	Area (ha)=	3.00	Curve Number (CN)= 74.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.17	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67

1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67
1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.674

PEAK FLOW (cms)= 0.349 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 41.803
TOTAL RAINFALL (mm)= 92.660
RUNOFF COEFFICIENT = 0.451

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

CALIB			
NASHYD (0005)	Area (ha)=	2.29	Curve Number (CN)= 74.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.40	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.48	12.250	113.42	18.33	1.67
0.167	0.00	6.250	1.48	12.333	13.36	18.42	1.67
0.250	0.00	6.333	1.67	12.417	13.34	18.50	1.67
0.333	1.02	6.417	1.67	12.500	13.34	18.58	1.67
0.417	1.02	6.500	1.67	12.583	13.34	18.67	1.67
0.500	1.02	6.583	1.67	12.667	13.34	18.75	1.67
0.583	1.02	6.667	1.67	12.750	13.34	18.83	1.67
0.667	1.02	6.750	1.67	12.833	6.86	18.92	1.67
0.750	1.02	6.833	1.67	12.917	6.86	19.00	1.67
0.833	1.02	6.917	1.67	13.000	6.86	19.08	1.67
0.917	1.02	7.000	1.67	13.083	6.86	19.17	1.67
1.000	1.02	7.083	1.67	13.167	6.86	19.25	1.67
1.083	1.02	7.167	1.67	13.250	6.86	19.33	1.67
1.167	1.02	7.250	1.67	13.333	5.00	19.42	1.67
1.250	1.02	7.333	2.04	13.417	5.00	19.50	1.67
1.333	1.02	7.417	2.04	13.500	5.00	19.58	1.67
1.417	1.02	7.500	2.04	13.583	5.00	19.67	1.67

1.500	1.02	7.583	2.04	13.667	5.00	19.75	1.67
1.583	1.02	7.667	2.04	13.750	5.00	19.83	1.67
1.667	1.02	7.750	2.04	13.833	3.89	19.92	1.67
1.750	1.02	7.833	2.04	13.917	3.89	20.00	1.67
1.833	1.02	7.917	2.04	14.000	3.89	20.08	1.67
1.917	1.02	8.000	2.04	14.083	3.89	20.17	1.67
2.000	1.02	8.083	2.04	14.167	3.89	20.25	1.67
2.083	1.02	8.167	2.04	14.250	3.89	20.33	1.11
2.167	1.02	8.250	2.04	14.333	2.78	20.42	1.11
2.250	1.02	8.333	2.41	14.417	2.78	20.50	1.11
2.333	1.20	8.417	2.41	14.500	2.78	20.58	1.11
2.417	1.20	8.500	2.41	14.583	2.78	20.67	1.11
2.500	1.20	8.583	2.41	14.667	2.78	20.75	1.11
2.583	1.20	8.667	2.41	14.750	2.78	20.83	1.11
2.667	1.20	8.750	2.41	14.833	2.78	20.92	1.11
2.750	1.20	8.833	2.59	14.917	2.78	21.00	1.11
2.833	1.20	8.917	2.59	15.000	2.78	21.08	1.11
2.917	1.20	9.000	2.59	15.083	2.78	21.17	1.11
3.000	1.20	9.083	2.59	15.167	2.78	21.25	1.11
3.083	1.20	9.167	2.59	15.250	2.78	21.33	1.11
3.167	1.20	9.250	2.59	15.333	2.78	21.42	1.11
3.250	1.20	9.333	2.97	15.417	2.78	21.50	1.11
3.333	1.20	9.417	2.97	15.500	2.78	21.58	1.11
3.417	1.20	9.500	2.97	15.583	2.78	21.67	1.11
3.500	1.20	9.583	2.97	15.667	2.78	21.75	1.11
3.583	1.20	9.667	2.97	15.750	2.78	21.83	1.11
3.667	1.20	9.750	2.97	15.833	2.78	21.92	1.11
3.750	1.20	9.833	3.34	15.917	2.78	22.00	1.11
3.833	1.20	9.917	3.34	16.000	2.78	22.08	1.11
3.917	1.20	10.000	3.34	16.083	2.78	22.17	1.11
4.000	1.20	10.083	3.34	16.167	2.78	22.25	1.11
4.083	1.20	10.167	3.34	16.250	2.78	22.33	1.11
4.167	1.20	10.250	3.34	16.333	1.67	22.42	1.11
4.250	1.20	10.333	4.26	16.417	1.67	22.50	1.11
4.333	1.48	10.417	4.26	16.500	1.67	22.58	1.11
4.417	1.48	10.500	4.26	16.583	1.67	22.67	1.11
4.500	1.48	10.583	4.26	16.667	1.67	22.75	1.11
4.583	1.48	10.667	4.26	16.750	1.67	22.83	1.11
4.667	1.48	10.750	4.26	16.833	1.67	22.92	1.11
4.750	1.48	10.833	5.74	16.917	1.67	23.00	1.11
4.833	1.48	10.917	5.74	17.000	1.67	23.08	1.11
4.917	1.48	11.000	5.74	17.083	1.67	23.17	1.11
5.000	1.48	11.083	5.74	17.167	1.67	23.25	1.11
5.083	1.48	11.167	5.74	17.250	1.67	23.33	1.11
5.167	1.48	11.250	5.74	17.333	1.67	23.42	1.11
5.250	1.48	11.333	8.90	17.417	1.67	23.50	1.11
5.333	1.48	11.417	8.90	17.500	1.67	23.58	1.11
5.417	1.48	11.500	8.90	17.583	1.67	23.67	1.11
5.500	1.48	11.583	8.90	17.667	1.67	23.75	1.11
5.583	1.48	11.667	8.90	17.750	1.67	23.83	1.11
5.667	1.48	11.750	8.90	17.833	1.67	23.92	1.11
5.750	1.48	11.833	27.43	17.917	1.67	24.00	1.11
5.833	1.48	11.917	27.43	18.000	1.67	24.08	1.11
5.917	1.48	12.000	27.43	18.083	1.67	24.17	1.11
6.000	1.48	12.083	113.41	18.167	1.67	24.25	1.11
6.083	1.48	12.167	113.42	18.250	1.67		

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.152 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 41.947
TOTAL RAINFALL (mm)= 92.660
RUNOFF COEFFICIENT = 0.453

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\2d543
248-4dd9-46be-b608-32ce2c7c14d5\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\2d543
248-4dd9-46be-b608-32ce2c7c14d5\scena


DATE: 08-23-2022                          TIME: 11:47:07

USER:



COMMENTS: _____


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  ************************************************
  ** SIMULATION : J. 25yr 24hr 15min SCS Type I **
  ************************************************


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|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

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|                  |              8ab56956-7981-44cd-9ed6-5a18ca9f22ac\28d28256
| Ptotal=108.80 mm |    Comments: J. 25yr 24hr 15min SCS Type II
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	1.96	12.50	15.67	18.75	1.96
0.25	1.20	6.50	1.96	12.75	8.05	19.00	1.96
0.50	1.20	6.75	1.96	13.00	8.05	19.25	1.96
0.75	1.20	7.00	1.96	13.25	5.88	19.50	1.96
1.00	1.20	7.25	2.39	13.50	5.88	19.75	1.96
1.25	1.20	7.50	2.39	13.75	4.57	20.00	1.96
1.50	1.20	7.75	2.39	14.00	4.57	20.25	1.31
1.75	1.20	8.00	2.39	14.25	3.26	20.50	1.31
2.00	1.20	8.25	2.83	14.50	3.26	20.75	1.31
2.25	1.41	8.50	2.83	14.75	3.26	21.00	1.31
2.50	1.41	8.75	3.05	15.00	3.26	21.25	1.31
2.75	1.41	9.00	3.05	15.25	3.26	21.50	1.31
3.00	1.41	9.25	3.48	15.50	3.26	21.75	1.31
3.25	1.41	9.50	3.48	15.75	3.26	22.00	1.31
3.50	1.41	9.75	3.92	16.00	3.26	22.25	1.31
3.75	1.41	10.00	3.92	16.25	1.96	22.50	1.31
4.00	1.41	10.25	5.00	16.50	1.96	22.75	1.31
4.25	1.74	10.50	5.00	16.75	1.96	23.00	1.31
4.50	1.74	10.75	6.75	17.00	1.96	23.25	1.31
4.75	1.74	11.00	6.75	17.25	1.96	23.50	1.31
5.00	1.74	11.25	10.44	17.50	1.96	23.75	1.31
5.25	1.74	11.50	10.44	17.75	1.96	24.00	1.31
5.50	1.74	11.75	32.20	18.00	1.96		
5.75	1.74	12.00	133.17	18.25	1.96		
6.00	1.74	12.25	15.67	18.50	1.96		

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.36

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


                        ---- TRANSFORMED HYETOGRAPH ----
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

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    Unit Hyd Qpeak  (cms)=   0.458

    PEAK FLOW       (cms)=   0.404 (i)
    TIME TO PEAK    (hrs)=  12.500
    RUNOFF VOLUME    (mm)=  54.235
    TOTAL RAINFALL   (mm)= 108.800
    RUNOFF COEFFICIENT   =   0.498

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.62

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


                        ---- TRANSFORMED HYETOGRAPH ----
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TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96

0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 0.821

PEAK FLOW (cms)= 0.839 (i)
TIME TO PEAK (hrs)= 12.750
RUNOFF VOLUME (mm)= 54.244
TOTAL RAINFALL (mm)= 108.800
RUNOFF COEFFICIENT = 0.499

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

CALIB					
NASHYD (0003)	Area (ha)=	3.05	Curve Number (CN)=	74.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.22			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 0.530

PEAK FLOW (cms)= 0.407 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 54.174
TOTAL RAINFALL (mm)= 108.800
RUNOFF COEFFICIENT = 0.498

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

CALIB					
NASHYD (0004)	Area (ha)=	3.00	Curve Number (CN)=	74.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.17			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96

1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96
1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 0.674

PEAK FLOW (cms)= 0.455 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 54.052
TOTAL RAINFALL (mm)= 108.800
RUNOFF COEFFICIENT = 0.497

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

CALIB							
NASHYD (0005)	Area (ha)=	2.29	Curve Number (CN)= 74.0				
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00				
	U.H. Tp(hrs)=	0.40					

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.74	12.250	133.17	18.33	1.96
0.167	0.00	6.250	1.74	12.333	15.68	18.42	1.96
0.250	0.00	6.333	1.96	12.417	15.67	18.50	1.96
0.333	1.20	6.417	1.96	12.500	15.67	18.58	1.96
0.417	1.20	6.500	1.96	12.583	15.67	18.67	1.96
0.500	1.20	6.583	1.96	12.667	15.67	18.75	1.96
0.583	1.20	6.667	1.96	12.750	15.67	18.83	1.96
0.667	1.20	6.750	1.96	12.833	8.05	18.92	1.96
0.750	1.20	6.833	1.96	12.917	8.05	19.00	1.96
0.833	1.20	6.917	1.96	13.000	8.05	19.08	1.96
0.917	1.20	7.000	1.96	13.083	8.05	19.17	1.96
1.000	1.20	7.083	1.96	13.167	8.05	19.25	1.96
1.083	1.20	7.167	1.96	13.250	8.05	19.33	1.96
1.167	1.20	7.250	1.96	13.333	5.88	19.42	1.96
1.250	1.20	7.333	2.39	13.417	5.88	19.50	1.96
1.333	1.20	7.417	2.39	13.500	5.88	19.58	1.96
1.417	1.20	7.500	2.39	13.583	5.88	19.67	1.96

1.500	1.20	7.583	2.39	13.667	5.88	19.75	1.96
1.583	1.20	7.667	2.39	13.750	5.88	19.83	1.96
1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.199 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 54.238
TOTAL RAINFALL (mm)= 108.800
RUNOFF COEFFICIENT = 0.499

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

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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\38446
1d6-a562-4a70-a749-780bc480b325\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\38446
1d6-a562-4a70-a749-780bc480b325\scena


DATE: 08-23-2022                          TIME: 11:47:07

USER:



COMMENTS: _____


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  ************************************************
  ** SIMULATION : K. 50yr 24hr 15min SCS Type I **
  ************************************************


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|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

```
|                  |              8ab56956-7981-44cd-9ed6-5a18ca9f22ac\61904e13
| Ptotal=120.77 mm |    Comments: K. 50yr 24hr 15min SCS Type II
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```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.17	12.50	17.39	18.75	2.17
0.25	1.33	6.50	2.17	12.75	8.94	19.00	2.17
0.50	1.33	6.75	2.17	13.00	8.94	19.25	2.17
0.75	1.33	7.00	2.17	13.25	6.52	19.50	2.17
1.00	1.33	7.25	2.66	13.50	6.52	19.75	2.17
1.25	1.33	7.50	2.66	13.75	5.07	20.00	2.17
1.50	1.33	7.75	2.66	14.00	5.07	20.25	1.45
1.75	1.33	8.00	2.66	14.25	3.62	20.50	1.45
2.00	1.33	8.25	3.14	14.50	3.62	20.75	1.45
2.25	1.57	8.50	3.14	14.75	3.62	21.00	1.45
2.50	1.57	8.75	3.38	15.00	3.62	21.25	1.45
2.75	1.57	9.00	3.38	15.25	3.62	21.50	1.45
3.00	1.57	9.25	3.86	15.50	3.62	21.75	1.45
3.25	1.57	9.50	3.86	15.75	3.62	22.00	1.45
3.50	1.57	9.75	4.35	16.00	3.62	22.25	1.45
3.75	1.57	10.00	4.35	16.25	2.17	22.50	1.45
4.00	1.57	10.25	5.56	16.50	2.17	22.75	1.45
4.25	1.93	10.50	5.56	16.75	2.17	23.00	1.45
4.50	1.93	10.75	7.49	17.00	2.17	23.25	1.45
4.75	1.93	11.00	7.49	17.25	2.17	23.50	1.45
5.00	1.93	11.25	11.59	17.50	2.17	23.75	1.45
5.25	1.93	11.50	11.59	17.75	2.17	24.00	1.45
5.50	1.93	11.75	35.75	18.00	2.17		
5.75	1.93	12.00	147.82	18.25	2.17		
6.00	1.93	12.25	17.39	18.50	2.17		

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.36

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

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    Unit Hyd Qpeak  (cms)=   0.458

    PEAK FLOW       (cms)=   0.476 (i)
    TIME TO PEAK    (hrs)=  12.500
    RUNOFF VOLUME    (mm)=  63.745
    TOTAL RAINFALL   (mm)= 120.770
    RUNOFF COEFFICIENT   =   0.528

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

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| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.62

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17

0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 0.821

PEAK FLOW (cms)= 0.990 (i)
TIME TO PEAK (hrs)= 12.750
RUNOFF VOLUME (mm)= 63.756
TOTAL RAINFALL (mm)= 120.770
RUNOFF COEFFICIENT = 0.528

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

CALIB							
NASHYD (0003)	Area (ha)= 3.05	Curve Number (CN)= 74.0					
ID= 1 DT= 5.0 min	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00					
	U.H. Tp(hrs)= 0.22						

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 0.530

PEAK FLOW (cms)= 0.479 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 63.674
TOTAL RAINFALL (mm)= 120.770
RUNOFF COEFFICIENT = 0.527

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

CALIB							
NASHYD (0004)	Area (ha)= 3.00	Curve Number (CN)= 74.0					
ID= 1 DT= 5.0 min	Ia (mm)= 7.00	# of Linear Res.(N)= 3.00					
	U.H. Tp(hrs)= 0.17						

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17

1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17
1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 0.674

PEAK FLOW (cms)= 0.537 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 63.530
TOTAL RAINFALL (mm)= 120.770
RUNOFF COEFFICIENT = 0.526

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

CALIB			
NASHYD (0005)	Area (ha)=	2.29	Curve Number (CN)= 74.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.40	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	1.93	12.250	147.82	18.33	2.17
0.167	0.00	6.250	1.93	12.333	17.41	18.42	2.17
0.250	0.00	6.333	2.17	12.417	17.39	18.50	2.17
0.333	1.33	6.417	2.17	12.500	17.39	18.58	2.17
0.417	1.33	6.500	2.17	12.583	17.39	18.67	2.17
0.500	1.33	6.583	2.17	12.667	17.39	18.75	2.17
0.583	1.33	6.667	2.17	12.750	17.39	18.83	2.17
0.667	1.33	6.750	2.17	12.833	8.94	18.92	2.17
0.750	1.33	6.833	2.17	12.917	8.94	19.00	2.17
0.833	1.33	6.917	2.17	13.000	8.94	19.08	2.17
0.917	1.33	7.000	2.17	13.083	8.94	19.17	2.17
1.000	1.33	7.083	2.17	13.167	8.94	19.25	2.17
1.083	1.33	7.167	2.17	13.250	8.94	19.33	2.17
1.167	1.33	7.250	2.17	13.333	6.52	19.42	2.17
1.250	1.33	7.333	2.66	13.417	6.52	19.50	2.17
1.333	1.33	7.417	2.66	13.500	6.52	19.58	2.17
1.417	1.33	7.500	2.66	13.583	6.52	19.67	2.17

1.500	1.33	7.583	2.66	13.667	6.52	19.75	2.17
1.583	1.33	7.667	2.66	13.750	6.52	19.83	2.17
1.667	1.33	7.750	2.66	13.833	5.07	19.92	2.17
1.750	1.33	7.833	2.66	13.917	5.07	20.00	2.17
1.833	1.33	7.917	2.66	14.000	5.07	20.08	2.17
1.917	1.33	8.000	2.66	14.083	5.07	20.17	2.17
2.000	1.33	8.083	2.66	14.167	5.07	20.25	2.17
2.083	1.33	8.167	2.66	14.250	5.07	20.33	1.45
2.167	1.33	8.250	2.66	14.333	3.62	20.42	1.45
2.250	1.33	8.333	3.14	14.417	3.62	20.50	1.45
2.333	1.57	8.417	3.14	14.500	3.62	20.58	1.45
2.417	1.57	8.500	3.14	14.583	3.62	20.67	1.45
2.500	1.57	8.583	3.14	14.667	3.62	20.75	1.45
2.583	1.57	8.667	3.14	14.750	3.62	20.83	1.45
2.667	1.57	8.750	3.14	14.833	3.62	20.92	1.45
2.750	1.57	8.833	3.38	14.917	3.62	21.00	1.45
2.833	1.57	8.917	3.38	15.000	3.62	21.08	1.45
2.917	1.57	9.000	3.38	15.083	3.62	21.17	1.45
3.000	1.57	9.083	3.38	15.167	3.62	21.25	1.45
3.083	1.57	9.167	3.38	15.250	3.62	21.33	1.45
3.167	1.57	9.250	3.38	15.333	3.62	21.42	1.45
3.250	1.57	9.333	3.86	15.417	3.62	21.50	1.45
3.333	1.57	9.417	3.86	15.500	3.62	21.58	1.45
3.417	1.57	9.500	3.86	15.583	3.62	21.67	1.45
3.500	1.57	9.583	3.86	15.667	3.62	21.75	1.45
3.583	1.57	9.667	3.86	15.750	3.62	21.83	1.45
3.667	1.57	9.750	3.86	15.833	3.62	21.92	1.45
3.750	1.57	9.833	4.35	15.917	3.62	22.00	1.45
3.833	1.57	9.917	4.35	16.000	3.62	22.08	1.45
3.917	1.57	10.000	4.35	16.083	3.62	22.17	1.45
4.000	1.57	10.083	4.35	16.167	3.62	22.25	1.45
4.083	1.57	10.167	4.35	16.250	3.62	22.33	1.45
4.167	1.57	10.250	4.35	16.333	2.17	22.42	1.45
4.250	1.57	10.333	5.56	16.417	2.17	22.50	1.45
4.333	1.93	10.417	5.56	16.500	2.17	22.58	1.45
4.417	1.93	10.500	5.56	16.583	2.17	22.67	1.45
4.500	1.93	10.583	5.56	16.667	2.17	22.75	1.45
4.583	1.93	10.667	5.56	16.750	2.17	22.83	1.45
4.667	1.93	10.750	5.56	16.833	2.17	22.92	1.45
4.750	1.93	10.833	7.49	16.917	2.17	23.00	1.45
4.833	1.93	10.917	7.49	17.000	2.17	23.08	1.45
4.917	1.93	11.000	7.49	17.083	2.17	23.17	1.45
5.000	1.93	11.083	7.49	17.167	2.17	23.25	1.45
5.083	1.93	11.167	7.49	17.250	2.17	23.33	1.45
5.167	1.93	11.250	7.49	17.333	2.17	23.42	1.45
5.250	1.93	11.333	11.59	17.417	2.17	23.50	1.45
5.333	1.93	11.417	11.59	17.500	2.17	23.58	1.45
5.417	1.93	11.500	11.59	17.583	2.17	23.67	1.45
5.500	1.93	11.583	11.59	17.667	2.17	23.75	1.45
5.583	1.93	11.667	11.59	17.750	2.17	23.83	1.45
5.667	1.93	11.750	11.59	17.833	2.17	23.92	1.45
5.750	1.93	11.833	35.75	17.917	2.17	24.00	1.45
5.833	1.93	11.917	35.75	18.000	2.17	24.08	1.45
5.917	1.93	12.000	35.75	18.083	2.17	24.17	1.45
6.000	1.93	12.083	147.81	18.167	2.17	24.25	1.45
6.083	1.93	12.167	147.82	18.250	2.17		

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.234 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 63.749
TOTAL RAINFALL (mm)= 120.770
RUNOFF COEFFICIENT = 0.528

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

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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\fe2af
437-9abb-43fb-8232-acddf4b89f00\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\5e7e8f9f-3516-4350-9cc9-216f91ea9b42\fe2af
437-9abb-43fb-8232-acddf4b89f00\scena


DATE: 08-23-2022                          TIME: 11:47:07

USER:



COMMENTS: _____________________________________________________


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  ************************************************
  ** SIMULATION : l. 100yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

```
|                  |              8ab56956-7981-44cd-9ed6-5a18ca9f22ac\6c20e7fa
| Ptotal=132.74 mm |    Comments: l. 100yr 24hr 15min SCS Type II
-------------------
```

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	0.00	6.25	2.39	12.50	19.11	18.75	2.39
0.25	1.46	6.50	2.39	12.75	9.82	19.00	2.39
0.50	1.46	6.75	2.39	13.00	9.82	19.25	2.39
0.75	1.46	7.00	2.39	13.25	7.17	19.50	2.39
1.00	1.46	7.25	2.92	13.50	7.17	19.75	2.39
1.25	1.46	7.50	2.92	13.75	5.58	20.00	2.39
1.50	1.46	7.75	2.92	14.00	5.58	20.25	1.59
1.75	1.46	8.00	2.92	14.25	3.98	20.50	1.59
2.00	1.46	8.25	3.45	14.50	3.98	20.75	1.59
2.25	1.73	8.50	3.45	14.75	3.98	21.00	1.59
2.50	1.73	8.75	3.72	15.00	3.98	21.25	1.59
2.75	1.73	9.00	3.72	15.25	3.98	21.50	1.59
3.00	1.73	9.25	4.25	15.50	3.98	21.75	1.59
3.25	1.73	9.50	4.25	15.75	3.98	22.00	1.59
3.50	1.73	9.75	4.78	16.00	3.98	22.25	1.59
3.75	1.73	10.00	4.78	16.25	2.39	22.50	1.59
4.00	1.73	10.25	6.11	16.50	2.39	22.75	1.59
4.25	2.12	10.50	6.11	16.75	2.39	23.00	1.59
4.50	2.12	10.75	8.23	17.00	2.39	23.25	1.59
4.75	2.12	11.00	8.23	17.25	2.39	23.50	1.59
5.00	2.12	11.25	12.74	17.50	2.39	23.75	1.59
5.25	2.12	11.50	12.74	17.75	2.39	24.00	1.59
5.50	2.12	11.75	39.29	18.00	2.39		
5.75	2.12	12.00	162.47	18.25	2.39		
6.00	2.12	12.25	19.11	18.50	2.39		

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| CALIB            |
| NASHYD   (  0001)|   Area    (ha)=   4.32   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.36

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

```
    Unit Hyd Qpeak  (cms)=   0.458

    PEAK FLOW       (cms)=   0.551 (i)
    TIME TO PEAK    (hrs)=  12.500
    RUNOFF VOLUME    (mm)=  73.530
    TOTAL RAINFALL   (mm)= 132.740
    RUNOFF COEFFICIENT   =   0.554

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

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--------------------
| CALIB            |
| NASHYD   (  0002)|   Area    (ha)=  13.33   Curve Number   (CN)= 74.0
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.62

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39

0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 0.821

PEAK FLOW (cms)= 1.146 (i)
TIME TO PEAK (hrs)= 12.750
RUNOFF VOLUME (mm)= 73.542
TOTAL RAINFALL (mm)= 132.740
RUNOFF COEFFICIENT = 0.554

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

CALIB					
NASHYD (0003)	Area (ha)=	3.05	Curve Number (CN)=	74.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.22			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 0.530

PEAK FLOW (cms)= 0.554 (i)
TIME TO PEAK (hrs)= 12.333
RUNOFF VOLUME (mm)= 73.447
TOTAL RAINFALL (mm)= 132.740
RUNOFF COEFFICIENT = 0.553

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

CALIB					
NASHYD (0004)	Area (ha)=	3.00	Curve Number (CN)=	74.0	
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	0.17			

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39

1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 0.674

PEAK FLOW (cms)= 0.621 (i)
TIME TO PEAK (hrs)= 12.250
RUNOFF VOLUME (mm)= 73.281
TOTAL RAINFALL (mm)= 132.740
RUNOFF COEFFICIENT = 0.552

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

CALIB			
NASHYD (0005)	Area (ha)=	2.29	Curve Number (CN)= 74.0
ID= 1 DT= 5.0 min	Ia (mm)=	7.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.40	

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

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	0.00	6.167	2.12	12.250	162.47	18.33	2.39
0.167	0.00	6.250	2.12	12.333	19.13	18.42	2.39
0.250	0.00	6.333	2.39	12.417	19.11	18.50	2.39
0.333	1.46	6.417	2.39	12.500	19.11	18.58	2.39
0.417	1.46	6.500	2.39	12.583	19.11	18.67	2.39
0.500	1.46	6.583	2.39	12.667	19.11	18.75	2.39
0.583	1.46	6.667	2.39	12.750	19.11	18.83	2.39
0.667	1.46	6.750	2.39	12.833	9.82	18.92	2.39
0.750	1.46	6.833	2.39	12.917	9.82	19.00	2.39
0.833	1.46	6.917	2.39	13.000	9.82	19.08	2.39
0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

Unit Hyd Qpeak (cms)= 0.219

PEAK FLOW (cms)= 0.271 (i)
TIME TO PEAK (hrs)= 12.500
RUNOFF VOLUME (mm)= 73.534
TOTAL RAINFALL (mm)= 132.740
RUNOFF COEFFICIENT = 0.554

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

FINISH

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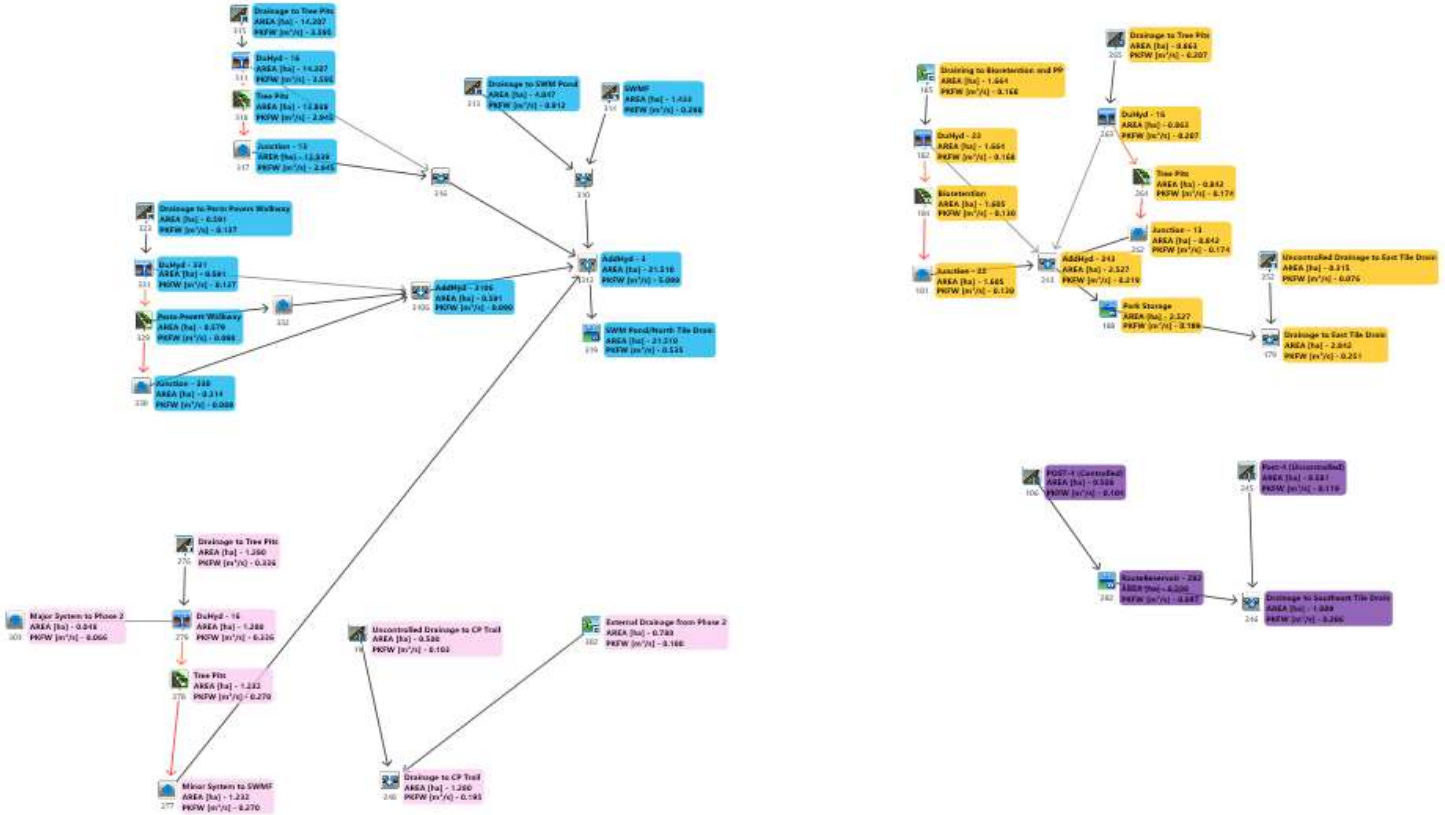
CROZIER & ASSOCIATES
Consulting Engineers

Project: Glenelg Expansion Lands
Project No.: 1060-6220
File: Model Schematic (Post-Development)
Design by: K. Swain
Date: 2022-08-23

Visual OTTHYMO 6.0 Model Schematic

Post-Development (Major System)

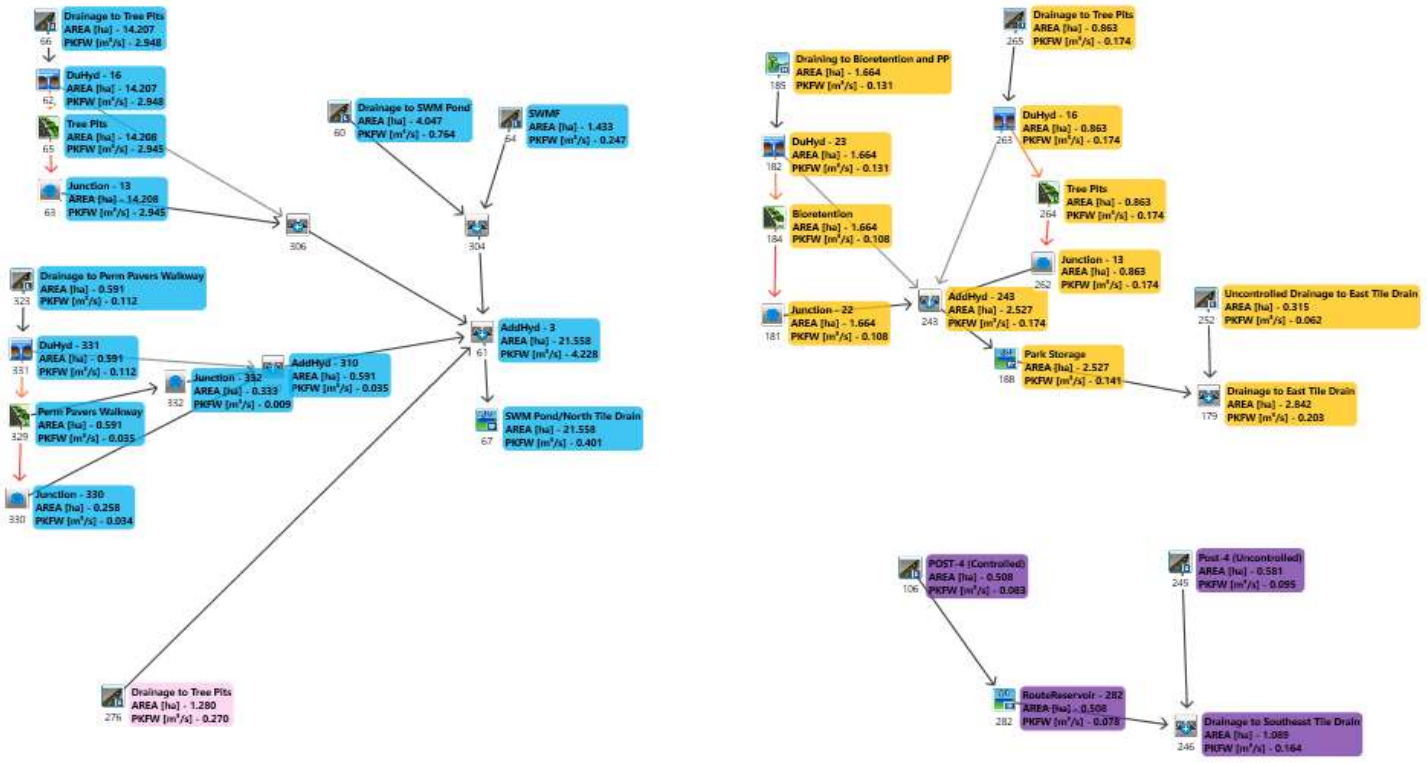


CROZIER & ASSOCIATES
Consulting Engineers

Project: Glenelg Expansion Lands
Project No.: 1060-6220
File: Model Schematic (Post-Development)
Design by: K. Swain
Date: 2022-08-23

Visual OTTHYMO 6.0 Model Schematic

Post-Development (Minor System)



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

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


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DATE: 08-28-2022                          TIME: 02:36:03

USER:


COMMENTS: _____________________________________________

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  ************************************************
  ** SIMULATION : 25mm                          **
  ************************************************


--------------------
|     READ STORM     |     Filename: C:\Users\kswain\AppD
|                    |               ata\Local\Temp\
```

```
|                    |               8397b39b-3436-4fc2-b953-d488413a7757\6945257d
| Ptotal= 24.99 mm |    Comments: 25mm
-------------------
                  TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
                  0.00    1.36 |  1.00    6.91 |  2.00    4.18 |  3.00    1.86
                  0.08    1.45 |  1.08   11.02 |  2.08    3.77 |  3.08    1.78
                  0.17    1.55 |  1.17   26.16 |  2.17    3.43 |  3.17    1.71
                  0.25    1.67 |  1.25   76.07 |  2.25    3.16 |  3.25    1.64
                  0.33    1.81 |  1.33   33.71 |  2.33    2.92 |  3.33    1.58
                  0.42    1.99 |  1.42   18.64 |  2.42    2.72 |  3.42    1.52
                  0.50    2.20 |  1.50   12.61 |  2.50    2.55 |  3.50    1.47
                  0.58    2.47 |  1.58    9.46 |  2.58    2.39 |  3.58    1.43
                  0.67    2.82 |  1.67    7.55 |  2.67    2.26 |  3.67    1.38
                  0.75    3.29 |  1.75    6.28 |  2.75    2.14 |  3.75    1.34
                  0.83    3.97 |  1.83    5.38 |  2.83    2.04 |  3.83    1.30
                  0.92    5.03 |  1.92    4.70 |  2.92    1.94 |  3.92    1.26

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD   (  0185)|   Area    (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.24

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW      (cms)=   0.016 (i)
     TIME TO PEAK   (hrs)=   1.667
     RUNOFF VOLUME   (mm)=   3.908
     TOTAL RAINFALL  (mm)=  24.991
     RUNOFF COEFFICIENT   =   0.156

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

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-------------------
| DUHYD    (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=     1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
-------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.66      0.02      1.67    3.91
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.66      0.02      1.67    3.91

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

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--------------------------------------------------------------------------------
--------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2---> OUT= 3    |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE       AREA          |  STAGE      AREA
                       (m)        (m2)          |   (m)       (m2)
                      0.000     100.000         |  1.500     100.000
                      0.500     100.000         |  0.000       0.000
                      1.000     100.000         |  0.000       0.000

                     MULCH LAYER:
                     Depth      (m)=    0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    21.60

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth           (m)=  0.72
                     Width      (m)=  180.00  Length          (m)=  3.00
                     Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                     STORAGE LAYER:
                     Depth      (m)=    0.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   108.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                        AREA         QPEAK           TPEAK          R.V.
                        (ha)         (cms)           (hrs)          (mm)
           INFLOW:ID= 2     1.66         0.016            1.67         3.91
         OVERFLOW:ID= 3     0.00         0.000            0.00         0.00

                  Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      100.00
                  Time to reach Max Ponding storage       (Hr)=        0.00
                  Volume of water for drawdown in LID  (cu.m.)=      116.76
                  Volume of Max. Water Storage         (cu.m.)=        0.00
                  Maximum Surface Ponding And Mulch Vol(cu.m.)=       54.58
                  Maximum Engineered Soil Volume       (cu.m.)=       64.19
                  ***** After simulation, water volume is not zero.
```

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  -------------------------
  | Junction Command(0181) |
  -------------------------

                          AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 3(  0184)    0.00     0.00     0.00     0.00
  OUTFLOW: ID= 2(  0181)    0.00     0.00     0.00     0.00

  --------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0265)|   Area    (ha)=   0.86
|ID= 1 DT= 5.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.56         0.30
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      75.87        40.00
     Mannings n             =   0.013        0.250

     Max.Eff.Inten.(mm/hr)=      76.07         4.33
               over (min)        5.00        30.00
     Storage Coeff.  (min)=       2.41 (ii)   27.19 (ii)
     Unit Hyd. Tpeak (min)=       5.00        30.00
     Unit Hyd. peak  (cms)=       0.30         0.04
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.11         0.00          0.108 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.92           1.33
     RUNOFF VOLUME    (mm)=      23.99         3.66          16.85
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.15           0.67

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| DUHYD    (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=     1|
| Total(cms)=   0.2|      AREA     QPEAK     TPEAK    R.V.
-------------------      (ha)     (cms)     (hrs)    (mm)
```

```
     TOTAL HYD.(ID= 1):   0.86      0.11      1.33   16.85
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   0.86      0.11      1.33   16.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2---> OUT= 3    |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE       AREA          |  STAGE      AREA
                       (m)        (m2)          |   (m)       (m2)
                      0.000     100.000         |  1.500     100.000
                      0.500     100.000         |  0.000       0.000
                      1.000     100.000         |  0.000       0.000

                     MULCH LAYER:
                     Depth      (m)=    0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=     3.20

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth           (m)=  0.67
                     Width      (m)=   40.00  Length          (m)=  2.00
                     Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                     STORAGE LAYER:
                     Depth      (m)=    1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=    48.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                        AREA         QPEAK           TPEAK          R.V.
                        (ha)         (cms)           (hrs)          (mm)
           INFLOW:ID= 2     0.86         0.108            1.33         16.85
         OVERFLOW:ID= 3     0.00         0.000            0.00         0.00
```

```
                  Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      100.00
                  Time to reach Max Ponding storage       (Hr)=        0.00
                  Volume of water for drawdown in LID  (cu.m.)=      152.64
                  Volume of Max. Water Storage         (cu.m.)=        0.00
                  Maximum Surface Ponding And Mulch Vol(cu.m.)=      143.47
                  Maximum Engineered Soil Volume       (cu.m.)=        9.21
                  ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                          AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 3(  0264)    0.00     0.00     0.00     0.00
  OUTFLOW: ID= 2(  0262)    0.00     0.00     0.00     0.00

  --------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0181 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0182 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0243 <ID= 3> IS ALSO DRY
--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0243 <ID= 3> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0262 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0243 <ID= 1> IS ALSO DRY
--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0243 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0263 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0243 <ID= 3> IS ALSO DRY
--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0188)|     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   |  0.4800      0.0190

                     AREA     QPEAK     TPEAK       R.V.
                     (ha)     (cms)     (hrs)       (mm)
  INFLOW : ID= 2 (  0243)     0.000     0.000      0.00        0.00
  OUTFLOW: ID= 1 (  0188)     0.000     0.000      0.00         NaN

                PEAK   FLOW   REDUCTION [Qout/Qin](%)=   NaN
                TIME SHIFT OF PEAK FLOW          (min)=  0.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0000
                MAXIMUM  STORAGE   USED       (cu.m.)=  0.000000

    **** WARNING : SELECTED ROUTING TIME STEP DENIED.
    **** WARNING : HYDROGRAPH PEAK WAS NOT REDUCED.
                   CHECK OUTFLOW/STORAGE TABLE  OR REDUCE DT.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.22         0.10
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      45.84        40.00
     Mannings n             =   0.013        0.250

     Max.Eff.Inten.(mm/hr)=      76.07        32.49
               over (min)        5.00        15.00
     Storage Coeff.  (min)=       1.78 (ii)   12.85 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.32         0.08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.01          0.021 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.58           1.33
     RUNOFF VOLUME    (mm)=      23.99         8.33          13.00
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.33           0.52

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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  (  0179)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0188 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0179 = HYDROGRAPH 0252
          ID1= 1 (  0188):      0.00   0.000     0.00      NaN
        + ID2= 2 (  0252):      0.32   0.021     1.33    13.00
          ==============================================
          ID = 3 (  0179):      0.32   0.000     0.00      NaN

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.28         0.23
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      58.22        40.00
     Mannings n             =   0.013        0.250

     Max.Eff.Inten.(mm/hr)=      76.07        30.92
               over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.06 (ii)   13.35 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.31         0.08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.01          0.012 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.58           1.58
     RUNOFF VOLUME    (mm)=      23.99         8.16           8.30
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.33           0.33

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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(  0282)|     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   |  0.1000      0.0020

                     AREA     QPEAK     TPEAK       R.V.
                     (ha)     (cms)     (hrs)       (mm)
  INFLOW : ID= 2 (  0106)     0.508     0.012      1.58        8.30
  OUTFLOW: ID= 1 (  0282)     0.508     0.012      1.67        8.30

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 95.73
                TIME SHIFT OF PEAK FLOW          (min)=  5.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0002

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-------------------
| CALIB             |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.32         0.26
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      62.24        40.00
     Mannings n             =   0.013        0.250

     Max.Eff.Inten.(mm/hr)=      76.07        30.92
               over (min)        5.00        15.00
     Storage Coeff.  (min)=       2.14 (ii)   13.43 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.31         0.08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.01          0.014 (iii)
     TIME TO PEAK    (hrs)=       1.33         1.58           1.58
     RUNOFF VOLUME    (mm)=      23.99         8.16           8.30
     TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
     RUNOFF COEFFICIENT   =       0.96         0.33           0.33

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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  (  0246)|
|   1 +  2 =  3    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0245):    0.58   0.014     1.58     8.30
     + ID2= 2 (  0282):    0.51   0.012     1.67     8.30
       ================================================
       ID = 3 (  0246):    1.09   0.026     1.58     8.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       0.90         0.38
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      92.38        40.00
      Mannings n            =      0.013        0.250

      Max.Eff.Inten.(mm/hr)=      76.07         4.33
                 over (min)         5.00        30.00
      Storage Coeff.  (min)=       2.72 (ii)   27.49 (ii)
      Unit Hyd. Tpeak (min)=       5.00        30.00
      Unit Hyd. peak  (cms)=       0.29         0.04
                                                      *TOTALS*
      PEAK FLOW       (cms)=       0.17         0.00          0.169 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.92           1.33
      RUNOFF VOLUME    (mm)=      23.99         3.66          17.88
      TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
      RUNOFF COEFFICIENT   =       0.96         0.15           0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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 (  0060)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
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```

```
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       2.43         1.62
      Dep. Storage     (mm)=       5.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=     164.25        40.00
      Mannings n            =      0.013        0.250

      Max.Eff.Inten.(mm/hr)=      76.07         4.33
                 over (min)         5.00        30.00
      Storage Coeff.  (min)=       3.84 (ii)   28.61 (ii)
      Unit Hyd. Tpeak (min)=       5.00        30.00
      Unit Hyd. peak  (cms)=       0.25         0.04
                                                      *TOTALS*
      PEAK FLOW       (cms)=       0.39         0.01          0.392 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.92           1.33
      RUNOFF VOLUME    (mm)=      19.99         3.66          13.45
      TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
      RUNOFF COEFFICIENT   =       0.80         0.15           0.54

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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 (  0064)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       0.72         0.72
      Dep. Storage     (mm)=       2.00         5.00
      Average Slope     (%)=       0.50         2.00
      Length            (m)=      97.74        30.00
      Mannings n            =      0.013        0.250

      Max.Eff.Inten.(mm/hr)=      76.07         4.84
                 over (min)         5.00        25.00
      Storage Coeff.  (min)=       3.46 (ii)   23.40 (ii)
      Unit Hyd. Tpeak (min)=       5.00        25.00
      Unit Hyd. peak  (cms)=       0.26         0.05
                                                      *TOTALS*
      PEAK FLOW       (cms)=       0.13         0.00          0.127 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.83           1.33
      RUNOFF VOLUME    (mm)=      22.99         3.66          13.32
      TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
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      RUNOFF COEFFICIENT   =       0.92         0.15           0.53

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0304)|
|   1 +  2 =  3    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0060):    4.05   0.392     1.33    13.45
     + ID2= 2 (  0064):    1.43   0.127     1.33    13.32
       ================================================
       ID = 3 (  0304):    5.48   0.519     1.33    13.42

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0066)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      10.09         4.12
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=     307.76        40.00
      Mannings n            =      0.013        0.250

      Max.Eff.Inten.(mm/hr)=      76.07         4.33
                 over (min)         5.00        35.00
      Storage Coeff.  (min)=       5.59 (ii)   30.37 (ii)
      Unit Hyd. Tpeak (min)=       5.00        35.00
      Unit Hyd. peak  (cms)=       0.20         0.04
                                                      *TOTALS*
      PEAK FLOW       (cms)=       1.48         0.02          1.480 (iii)
      TIME TO PEAK    (hrs)=       1.33         2.00           1.33
      RUNOFF VOLUME    (mm)=      23.99         3.66          18.09
      TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
      RUNOFF COEFFICIENT   =       0.96         0.15           0.72


       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
```

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

-------------------------------------------------------------------------------
-------------------
| DUHYD    (  0062)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=  2.9|     AREA     QPEAK     TPEAK    R.V.
-------------------      (ha)     (cms)     (hrs)    (mm)
    TOTAL HYD.(ID= 1):  14.21     1.48      1.33    18.09
    ================================================
    MAJOR SYS.(ID= 2):   0.00     0.00      0.00    0.00
    MINOR SYS.(ID= 3):  14.21     1.48      1.33    18.09

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
-------------------
|Bioretention(  0065)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                    Max. Ponding Storage(cu.m.)=      149.95

                   STAGE        AREA           |   STAGE       AREA
                    (m)         (m2)           |    (m)        (m2)
                   0.000       100.000         |   1.500      100.000
                   0.500       100.000         |   0.000        0.000
                   1.000       100.000         |   0.000        0.000

                  MULCH LAYER:
                  Depth      (m)=    0.10  Porosity           =  0.40
                  Maximum Mulch layer Volume (cu.m.)=    62.40

                  ENGINEERED SOIL LAYER:
                  Soil moisture =    0.30  Depth            (m)=  0.67
                  Width      (m)=  780.00  Length           (m)=  2.00
                  Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                  Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                  STORAGE LAYER:
                  Depth      (m)=    1.50  Porosity           =  0.40
                  Seepage (m/hr) = 0.0010
                  Maximum Storage layer Volume(cu.m.)=   936.00

                  TOTAL AVAILABLE STORAGE:
```

```
                                TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      1636.46

                                NATIVE SOIL LAYER:
                                Infiltration (m/hr) = 0.0060

                                  AREA         QPEAK           TPEAK          R.V.
                                   (ha)         (cms)           (hrs)          (mm)
                      INFLOW:ID= 2    14.21          1.480           1.33         18.09
                     OVERFLOW:ID= 3    14.21          1.477           1.33         16.29

                                Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       9.94
                                Time to reach Max Ponding storage       (Hr)=       0.00
                                Volume of water for drawdown in LID  (cu.m.)=     391.94
                                Volume of Max. Water Storage         (cu.m.)=       0.00
                                Maximum Surface Ponding And Mulch Vol(cu.m.)=     212.35
                                Maximum Engineered Soil Volume       (cu.m.)=     191.16
                                ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0063) |
  -------------------------

                                  AREA     QPEAK   TPEAK    R.V.
                                   (ha)     (cms)   (hrs)    (mm)
  INFLOW : ID= 3(  0065)  14.21    1.48    1.33    16.29
  OUTFLOW: ID= 2(  0063)  14.21    1.48    1.33    16.29

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

-------------------
| ADD HYD  (  0306)|
|   1 +  2 =  3    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0062 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0306 = HYDROGRAPH 0063
       ID1= 1 (  0062):    0.00   0.000     0.00     0.00
     + ID2= 2 (  0063):   14.21   1.477     1.33    16.29
       ================================================
       ID = 3 (  0306):   14.21   1.477     1.33    16.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       0.39         0.20
```

```
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      62.78        40.00
      Mannings n            =      0.013        0.250

      Max.Eff.Inten.(mm/hr)=      76.07        31.08
                 over (min)         5.00        15.00
      Storage Coeff.  (min)=       2.16 (ii)   13.42 (ii)
      Unit Hyd. Tpeak (min)=       5.00        15.00
      Unit Hyd. peak  (cms)=       0.31         0.08
                                                      *TOTALS*
      PEAK FLOW       (cms)=       0.03         0.01          0.032 (iii)
      TIME TO PEAK    (hrs)=       1.33         1.58           1.33
      RUNOFF VOLUME    (mm)=      23.99         8.17          12.11
      TOTAL RAINFALL   (mm)=      24.99        24.99          24.99
      RUNOFF COEFFICIENT   =       0.96         0.33           0.48

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
-------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=    1|
| Total(cms)=  0.1|     AREA     QPEAK     TPEAK    R.V.
-------------------      (ha)     (cms)     (hrs)    (mm)
    TOTAL HYD.(ID= 1):   0.59      0.03      1.33   12.11
    ================================================
    MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
    MINOR SYS.(ID= 3):   0.59      0.03      1.33   12.11

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
-------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                    Max. Ponding Storage(cu.m.)=      149.95

                   STAGE        AREA           |   STAGE       AREA
                    (m)         (m2)           |    (m)        (m2)
```

```
                   0.000       100.000         |   1.500      100.000
                   0.500       100.000         |   0.000        0.000
                   1.000       100.000         |   0.000        0.000

                  MULCH LAYER:
                  Depth      (m)=    0.00  Porosity           =  0.40
                  Maximum Mulch layer Volume (cu.m.)=     0.00

                  ENGINEERED SOIL LAYER:
                  Soil moisture =    0.30  Depth            (m)=  0.72
                  Width      (m)=    3.00  Length           (m)=240.00
                  Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                  Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                    DEPTH       DISCHARGE         |   DEPTH      DISCHARGE
                     (m)          (cms)           |    (m)         (cms)
                    0.000        0.000           |   0.559        0.030
                    0.279        0.010           |   0.762        0.040
                    0.406        0.020           |   1.300        0.050

                  STORAGE LAYER:
                  Depth      (m)=    1.00  Porosity           =  0.40
                  Seepage (m/hr) = 0.0010
                  Maximum Storage layer Volume(cu.m.)=   288.00

                  TOTAL AVAILABLE STORAGE:

                  TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04

                  NATIVE SOIL LAYER:
                  Infiltration (m/hr) = 0.0060

                    AREA         QPEAK           TPEAK          R.V.
                     (ha)         (cms)           (hrs)          (mm)
       INFLOW:ID= 2    0.59          0.032           1.33         12.11
      OUTFLOW:ID= 1    0.59          0.009           0.08         12.13
     OVERFLOW:ID= 3    0.00          0.000           0.00          0.00

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      -0.13
              Time to reach Max Ponding storage       (Hr)=       0.00
              Volume of water for drawdown in LID  (cu.m.)=      69.17
              Volume of Max. Water Storage         (cu.m.)=       0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=      56.03
              Maximum Engineered Soil Volume       (cu.m.)=      69.86
              ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0330) |
  -------------------------
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                                  AREA     QPEAK   TPEAK    R.V.
                                   (ha)     (cms)   (hrs)    (mm)
  INFLOW : ID= 3(  0329)   0.00    0.00    0.00    0.00
  OUTFLOW: ID= 2(  0330)   0.00    0.00    0.00    0.00

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

  -------------------------
  | Junction Command(0332) |
  -------------------------

                                  AREA     QPEAK   TPEAK    R.V.
                                   (ha)     (cms)   (hrs)    (mm)
  INFLOW : ID= 1(  0329)    0.59    0.01    0.08    12.13
  OUTFLOW: ID= 2(  0332)    0.59    0.01    0.08    12.13

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

-------------------
| ADD HYD  (  0310)|
|   1 +  2 =  3    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0330 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0331 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0310 <ID= 3> IS ALSO DRY
-------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0310)|
|   3 +  2 =  1    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0310 <ID= 3> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0310 = HYDROGRAPH 0332
       ID1= 3 (  0310):    0.00   0.000     0.00     0.00
     + ID2= 2 (  0332):    0.59   0.009     0.08    12.13
       ================================================
       ID = 1 (  0310):    0.59   0.009     0.08    12.13

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0276):    1.28   0.169     1.33    17.88
     + ID2= 2 (  0304):    5.48   0.519     1.33    13.42
       ================================================
       ID = 3 (  0061):    6.76   0.688     1.33    14.26
```

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

-------------------
| ADD HYD  (  0061)|
|   3 +  2 =  1    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0061):    6.76   0.688     1.33    14.26
     + ID2= 2 (  0306):   14.21   1.477     1.33    16.29
       ================================================
       ID = 1 (  0061):   20.97   2.165     1.33    15.64

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |     AREA    QPEAK    TPEAK     R.V.
-------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0061):   20.97   2.165     1.33    15.64
     + ID2= 2 (  0310):    0.59   0.009     0.08    12.13
       ================================================
       ID = 3 (  0061):   21.56   2.170     1.33    15.54

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

-------------------
| RESERVOIR(  0067)|    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     |   0.6610     0.9850
                         0.0400     0.1140     |   1.0960     1.3320
                         0.0760     0.3690     |   1.4260     1.5860
                         0.2810     0.6450     |   0.0000     0.0000

                              AREA     QPEAK    TPEAK       R.V.
                               (ha)     (cms)    (hrs)       (mm)
  INFLOW : ID= 2 (  0061)    21.558     2.170     1.33      15.54
  OUTFLOW: ID= 1 (  0067)    21.558     0.063     3.92      15.51

              PEAK   FLOW   REDUCTION [Qout/Qin](%)=  2.89
              TIME SHIFT OF PEAK FLOW         (min)=155.00
              MAXIMUM  STORAGE   USED       (ha.m.)=  0.2746

-------------------------------------------------------------------------------
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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U A   A  L
          VV    I    SSSSS  UUUUU A   A  LLLLL

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

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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\fed2d
6b2-eac8-4bc3-9c61-e89b26edbb42\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\fed2d
6b2-eac8-4bc3-9c61-e89b26edbb42\scena

DATE: 08-28-2022                          TIME: 02:36:03

USER:


COMMENTS: _____________________________________________

--------------------------------------------------------------------------------
---------------------
  ************************************************
  ** SIMULATION : A. 2yr 3hr 10min Chicago      **
  ************************************************

-------------------
| CHICAGO STORM     |    IDF curve parameters: A= 404.147
| Ptotal= 32.13 mm  |                          B=   0.000
-------------------                          C=   0.699
```

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

                                Duration of storm   =  3.00 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    3.76 |  0.83   80.82 |  1.67    5.83 |  2.50    3.63
                    0.17    4.42 |  1.00   17.11 |  1.83    5.15 |  2.67    3.39
                    0.33    5.48 |  1.17   10.79 |  2.00    4.63 |  2.83    3.20
                    0.50    7.50 |  1.33    8.23 |  2.17    4.23 |
                    0.67   13.95 |  1.50    6.78 |  2.33    3.90 |


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-------------------
| CALIB             |
| NASHYD   (  0185) |  Area    (ha)=   1.66   Curve Number    (CN)= 74.4
|ID= 1 DT= 5.0 min  |  Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------  U.H. Tp(hrs)=   0.24

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

                                ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
                    0.083    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                    0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                    0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                    0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                    0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                    0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
                    0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                    0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                    0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20

          Unit Hyd Qpeak  (cms)=   0.265

          PEAK FLOW      (cms)=   0.028 (i)
          TIME TO PEAK   (hrs)=   1.250
          RUNOFF VOLUME   (mm)=   6.656
          TOTAL RAINFALL  (mm)=  32.132
          RUNOFF COEFFICIENT   =   0.207

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

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```
| DUHYD    (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=     1|
| Total(cms)=  0.1 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   1.66      0.03      1.25     6.66
      ==========================================================
      MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
      MINOR SYS.(ID= 3):   1.66      0.03      1.25     6.66

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE        AREA          |   STAGE      AREA
                         (m)         (m2)          |    (m)       (m2)
                        0.000      100.000         |   1.500      100.000
                        0.500      100.000         |   0.000        0.000
                        1.000      100.000         |   0.000        0.000

                      MULCH LAYER:
                      Depth      (m)=    0.10  Porosity           =  0.40
                      Maximum Mulch layer Volume (cu.m.)=    21.60

                      ENGINEERED SOIL LAYER:
                      Soil moisture =    0.30  Depth            (m)=  0.72
                      Width      (m)=  100.00  Length           (m)=  3.00
                      Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                      Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                      STORAGE LAYER:
                      Depth      (m)=    0.50  Porosity           =  0.40
                      Seepage (m/hr) = 0.0010
                      Maximum Storage layer Volume(cu.m.)=   108.00

                      TOTAL AVAILABLE STORAGE:

                      TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                      NATIVE SOIL LAYER:
                      Infiltration (m/hr) = 0.0060
```

```
                      AREA         QPEAK           TPEAK         R.V.
                      (ha)         (cms)           (hrs)         (mm)
     INFLOW:ID= 2     1.66         0.028            1.25         6.66
   OVERFLOW:ID= 3     0.00         0.000            0.00         0.00

            Volume Reduction Rate[(RVin-RVout)/RVin] (%)=     100.00
            Time to reach Max Ponding storage      (Hr)=       0.00
            Volume of water for drawdown in LID  (cu.m.)=    162.93
            Volume of Max. Water Storage         (cu.m.)=      0.00
            Maximum Surface Ponding And Mulch Vol(cu.m.)=    101.58
            Maximum Engineered Soil Volume       (cu.m.)=     63.28
            ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0181) |
  ------------------------

                        AREA     QPEAK   TPEAK     R.V.
                        (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 3(  0184)   0.00     0.00    0.00     0.00
  OUTFLOW: ID= 2(  0181)   0.00     0.00    0.00     0.00

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-------------------
| CALIB             |
| STANDHYD (  0265) |  Area    (ha)=   0.86
|ID= 1 DT= 5.0 min  |  Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.56         0.30
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     75.87        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    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                    0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                    0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                    0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                    0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                    0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
                    0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                    0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                    0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20
```

```
     Max.Eff.Inten.(mm/hr)=      80.82         8.29
                   over (min)        5.00        25.00
     Storage Coeff.  (min)=      2.36 (ii)   21.47 (ii)
     Unit Hyd. Tpeak (min)=      5.00        25.00
     Unit Hyd. peak  (cms)=      0.30         0.05
                                                  *TOTALS*
     PEAK FLOW       (cms)=      0.12         0.00          0.125 (iii)
     TIME TO PEAK    (hrs)=      1.00         1.33           1.00
     RUNOFF VOLUME    (mm)=     31.13         6.33          22.44
     TOTAL RAINFALL   (mm)=     32.13        32.13          32.13
     RUNOFF COEFFICIENT   =      0.97         0.20           0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| DUHYD    (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=     1|
| Total(cms)=  0.2 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   0.86      0.13      1.00     22.44
      ==========================================================
      MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
      MINOR SYS.(ID= 3):   0.86      0.13      1.00     22.44

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE        AREA          |   STAGE      AREA
                         (m)         (m2)          |    (m)       (m2)
                        0.000      100.000         |   1.500      100.000
                        0.500      100.000         |   0.000        0.000
                        1.000      100.000         |   0.000        0.000
```

```
                      MULCH LAYER:
                      Depth      (m)=    0.10  Porosity           =  0.40
                      Maximum Mulch layer Volume (cu.m.)=     3.20

                      ENGINEERED SOIL LAYER:
                      Soil moisture =    0.30  Depth            (m)=  0.67
                      Width      (m)=   40.00  Length           (m)=  2.00
                      Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                      Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                      STORAGE LAYER:
                      Depth      (m)=    1.50  Porosity           =  0.40
                      Seepage (m/hr) = 0.0010
                      Maximum Storage layer Volume(cu.m.)=    48.00

                      TOTAL AVAILABLE STORAGE:

                      TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                      NATIVE SOIL LAYER:
                      Infiltration (m/hr) = 0.0060

                        AREA         QPEAK           TPEAK         R.V.
                        (ha)         (cms)           (hrs)         (mm)
     INFLOW:ID= 2     0.86         0.125            1.00         22.44
   OVERFLOW:ID= 3     0.86         0.011            1.83          4.49

            Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      80.01
            Time to reach Max Ponding storage      (Hr)=       0.00
            Volume of water for drawdown in LID  (cu.m.)=    162.16
            Volume of Max. Water Storage         (cu.m.)=      0.00
            Maximum Surface Ponding And Mulch Vol(cu.m.)=    153.15
            Maximum Engineered Soil Volume       (cu.m.)=      9.06
            ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0262) |
  ------------------------

                        AREA     QPEAK   TPEAK     R.V.
                        (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 3(  0264)   0.86     0.01    1.83     4.49
  OUTFLOW: ID= 2(  0262)   0.86     0.01    1.83     4.49

--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |        AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
```

```
                        (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0181 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0182 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0243 <ID= 3> IS ALSO DRY
--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|  3 +  2 =  1     |        AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0243 <ID= 3> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0243 = HYDROGRAPH 0262
       ID1= 3 (  0243):     0.00    0.000     0.00     4.49
     + ID2= 2 (  0262):     0.86    0.011     1.83     4.49
       ==========================================================
       ID = 1 (  0243):     0.86    0.011     1.83     4.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |        AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0263 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
       ID1= 1 (  0243):     0.86    0.011     1.83     4.49
     + ID2= 2 (  0263):     0.00    0.000     0.00     0.00
       ==========================================================
       ID = 3 (  0243):     0.86    0.011     1.83     4.49

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0188)|     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      |  0.4800     0.0190

                              AREA     QPEAK     TPEAK        R.V.
                              (ha)     (cms)     (hrs)        (mm)
    INFLOW : ID= 2 (  0243)     0.863     0.011      1.83      4.49
    OUTFLOW: ID= 1 (  0188)     0.863     0.009      2.08      4.49

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 83.17
                    TIME SHIFT OF PEAK FLOW          (min)= 15.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

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-------------------
| CALIB             |
| STANDHYD (  0252) |  Area    (ha)=   0.32
|ID= 1 DT= 5.0 min  |  Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.22         0.10
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     45.84        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    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                    0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                    0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                    0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                    0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                    0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
                    0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                    0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                    0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20

     Max.Eff.Inten.(mm/hr)=      80.82        65.87
                   over (min)        5.00        15.00
     Storage Coeff.  (min)=      1.74 (ii)   10.08 (ii)
     Unit Hyd. Tpeak (min)=      5.00        15.00
     Unit Hyd. peak  (cms)=      0.32         0.10
                                                  *TOTALS*
     PEAK FLOW       (cms)=      0.02         0.01          0.026 (iii)
     TIME TO PEAK    (hrs)=      1.00         1.17           1.00
     RUNOFF VOLUME    (mm)=     31.13        12.89          18.34
     TOTAL RAINFALL   (mm)=     32.13        32.13          32.13
     RUNOFF COEFFICIENT   =      0.97         0.40           0.57

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. 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  (  0179)|
|  1 +  2 =  3     |        AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
       ID1= 1 (  0188):     0.86    0.009     2.08     4.49
     + ID2= 2 (  0252):     0.32    0.026     1.00    18.34
       ==========================================================
       ID = 3 (  0179):     1.18    0.026     1.00     8.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0106) |  Area    (ha)=   0.51
|ID= 1 DT= 5.0 min  |  Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.28         0.23
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     58.22        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    3.76 | 0.833   13.95 | 1.583    6.78 |  2.33    4.23
                    0.167    3.76 | 0.917   80.82 | 1.667    6.78 |  2.42    3.90
                    0.250    4.42 | 1.000   80.82 | 1.750    5.83 |  2.50    3.90
                    0.333    4.42 | 1.083   17.11 | 1.833    5.83 |  2.58    3.63
                    0.417    5.48 | 1.167   17.11 | 1.917    5.15 |  2.67    3.63
                    0.500    5.48 | 1.250   10.79 | 2.000    5.15 |  2.75    3.39
                    0.583    7.50 | 1.333   10.79 | 2.083    4.63 |  2.83    3.39
                    0.667    7.50 | 1.417    8.23 | 2.167    4.63 |  2.92    3.20
                    0.750   13.95 | 1.500    8.23 | 2.250    4.23 |  3.00    3.20

     Max.Eff.Inten.(mm/hr)=      80.82        62.77
                   over (min)        5.00        15.00
     Storage Coeff.  (min)=      2.01 (ii)   10.51 (ii)
     Unit Hyd. Tpeak (min)=      5.00        15.00
     Unit Hyd. peak  (cms)=      0.31         0.09
                                                  *TOTALS*
     PEAK FLOW       (cms)=      0.00         0.02          0.023 (iii)
     TIME TO PEAK    (hrs)=      1.00         1.17           1.17
     RUNOFF VOLUME    (mm)=     31.13        12.66          12.83
     TOTAL RAINFALL   (mm)=     32.13        32.13          32.13
     RUNOFF COEFFICIENT   =      0.97         0.39           0.40
```

```
***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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(  0282)|     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     |  0.1000     0.0020

                                AREA     QPEAK      TPEAK       R.V.
                                 (ha)     (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (  0106)      0.508     0.023      1.17       12.83
   OUTFLOW: ID= 1 (  0282)      0.508     0.021      1.25       12.83

                     PEAK   FLOW   REDUCTION [Qout/Qin](%)= 90.37
                     TIME SHIFT OF PEAK FLOW       (min)=  5.00
                     MAXIMUM  STORAGE   USED       (ha.m.)=  0.0004

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------------------
| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=  0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=  1.00
------------------

                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      0.32         0.26
      Dep. Storage     (mm)=      1.00         5.00
      Average Slope     (%)=      1.00         2.00
      Length           (m)=     62.24        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    3.76  | 0.833   13.95  | 1.583    6.78  |  2.33    4.23
         0.167    3.76  | 0.917   80.82  | 1.667    6.78  |  2.42    3.90
         0.250    4.42  | 1.000   80.82  | 1.750    5.83  |  2.50    3.90
```

```
                          0.333    4.42  | 1.083   17.11  | 1.833    5.83  |  2.58    3.63
                          0.417    5.48  | 1.167   17.11  | 1.917    5.15  |  2.67    3.63
                          0.500    5.48  | 1.250   10.79  | 2.000    5.15  |  2.75    3.39
                          0.583    7.50  | 1.333   10.79  | 2.083    4.63  |  2.83    3.39
                          0.667    7.50  | 1.417    8.23  | 2.167    4.63  |  2.92    3.20
                          0.750   13.95  | 1.500    8.23  | 2.250    4.23  |  3.00    3.20

      Max.Eff.Inten.(mm/hr)=     80.82        62.77
                 over (min)=      5.00        15.00
      Storage Coeff.  (min)=     2.09 (ii)   10.60 (ii)
      Unit Hyd. Tpeak (min)=     5.00        15.00
      Unit Hyd. peak  (cms)=     0.31         0.09
                                                        *TOTALS*
      PEAK FLOW       (cms)=     0.00         0.03        0.026 (iii)
      TIME TO PEAK    (hrs)=     1.00         1.17         1.17
      RUNOFF VOLUME    (mm)=    31.13        12.66        12.83
      TOTAL RAINFALL   (mm)=    32.13        32.13        32.13
      RUNOFF COEFFICIENT   =     0.97         0.39         0.40

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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  (  0246)|
|  1 +  2 =  3     |        AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0245):    0.58    0.026    1.17     12.83
     + ID2= 2 (  0282):    0.51    0.021    1.25     12.83
       ================================================
       ID = 3 (  0246):    1.09    0.046    1.17     12.83

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
------------------
| CALIB            |
| STANDHYD (  0276)|   Area    (ha)=  1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
------------------

                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      0.90         0.38
      Dep. Storage     (mm)=      1.00         5.00
```

```
      Average Slope     (%)=      1.00         2.00
      Length           (m)=     92.38        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    3.76  | 0.833   13.95  | 1.583    6.78  |  2.33    4.23
         0.167    3.76  | 0.917   80.82  | 1.667    6.78  |  2.42    3.90
         0.250    4.42  | 1.000   80.82  | 1.750    5.83  |  2.50    3.90
         0.333    4.42  | 1.083   17.11  | 1.833    5.83  |  2.58    3.63
         0.417    5.48  | 1.167   17.11  | 1.917    5.15  |  2.67    3.63
         0.500    5.48  | 1.250   10.79  | 2.000    5.15  |  2.75    3.39
         0.583    7.50  | 1.333   10.79  | 2.083    4.63  |  2.83    3.39
         0.667    7.50  | 1.417    8.23  | 2.167    4.63  |  2.92    3.20
         0.750   13.95  | 1.500    8.23  | 2.250    4.23  |  3.00    3.20

      Max.Eff.Inten.(mm/hr)=     80.82        63.08
                 over (min)=      5.00        15.00
      Storage Coeff.  (min)=     2.10 (ii)   10.59 (ii)
      Unit Hyd. Tpeak (min)=     5.00        15.00
      Unit Hyd. peak  (cms)=     0.31         0.09
                                                        *TOTALS*
      PEAK FLOW       (cms)=     0.03         0.02        0.043 (iii)
      TIME TO PEAK    (hrs)=     1.00         1.17         1.00
      RUNOFF VOLUME    (mm)=    31.13        12.68        17.29
      TOTAL RAINFALL   (mm)=    32.13        32.13        32.13
      RUNOFF COEFFICIENT   =     0.97         0.39         0.54

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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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------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=   1  |
| Total(cms)=  0.1 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.59      0.04      1.00   17.29
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   0.59      0.04      1.00   17.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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      Length           (m)=     164.25        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    3.76  | 0.833   13.95  | 1.583    6.78  |  2.33    4.23
         0.167    3.76  | 0.917   80.82  | 1.667    6.78  |  2.42    3.90
         0.250    4.42  | 1.000   80.82  | 1.750    5.83  |  2.50    3.90
         0.333    4.42  | 1.083   17.11  | 1.833    5.83  |  2.58    3.63
         0.417    5.48  | 1.167   17.11  | 1.917    5.15  |  2.67    3.63
         0.500    5.48  | 1.250   10.79  | 2.000    5.15  |  2.75    3.39
         0.583    7.50  | 1.333   10.79  | 2.083    4.63  |  2.83    3.39
         0.667    7.50  | 1.417    8.23  | 2.167    4.63  |  2.92    3.20
         0.750   13.95  | 1.500    8.23  | 2.250    4.23  |  3.00    3.20

      Max.Eff.Inten.(mm/hr)=     80.82        29.00
                 over (min)=      5.00        25.00
      Storage Coeff.  (min)=      3.75 (ii)   22.85 (ii)
      Unit Hyd. Tpeak (min)=     5.00        25.00
      Unit Hyd. peak  (cms)=     0.25         0.05
                                                        *TOTALS*
      PEAK FLOW       (cms)=     0.51         0.02        0.515 (iii)
      TIME TO PEAK    (hrs)=     1.00         1.33         1.00
      RUNOFF VOLUME    (mm)=    27.13         6.33        18.81
      TOTAL RAINFALL   (mm)=    32.13        32.13        32.13
      RUNOFF COEFFICIENT   =     0.84         0.20         0.59

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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 (  0064)|   Area    (ha)=  1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
------------------

                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      0.72         0.72
      Dep. Storage     (mm)=      2.00         5.00
      Average Slope     (%)=      0.50         2.00
      Length           (m)=     97.74        30.00
```

```
      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    3.76  | 0.833   13.95  | 1.583    6.78  |  2.33    4.23
         0.167    3.76  | 0.917   80.82  | 1.667    6.78  |  2.42    3.90
         0.250    4.42  | 1.000   80.82  | 1.750    5.83  |  2.50    3.90
         0.333    4.42  | 1.083   17.11  | 1.833    5.83  |  2.58    3.63
         0.417    5.48  | 1.167   17.11  | 1.917    5.15  |  2.67    3.63
         0.500    5.48  | 1.250   10.79  | 2.000    5.15  |  2.75    3.39
         0.583    7.50  | 1.333   10.79  | 2.083    4.63  |  2.83    3.39
         0.667    7.50  | 1.417    8.23  | 2.167    4.63  |  2.92    3.20
         0.750   13.95  | 1.500    8.23  | 2.250    4.23  |  3.00    3.20

      Max.Eff.Inten.(mm/hr)=     80.82        29.00
                 over (min)=      5.00        20.00
      Storage Coeff.  (min)=      3.38 (ii)   19.46 (ii)
      Unit Hyd. Tpeak (min)=     5.00        20.00
      Unit Hyd. peak  (cms)=     0.26         0.06
                                                        *TOTALS*
      PEAK FLOW       (cms)=     0.15         0.01        0.157 (iii)
      TIME TO PEAK    (hrs)=     1.00         1.25         1.00
      RUNOFF VOLUME    (mm)=    30.13         6.33        18.22
      TOTAL RAINFALL   (mm)=    32.13        32.13        32.13
      RUNOFF COEFFICIENT   =     0.94         0.20         0.57

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

------------------
| ADD HYD  (  0304)|
|  1 +  2 =  3     |        AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0060):    4.05    0.515    1.00     18.81
     + ID2= 2 (  0064):    1.43    0.157    1.00     18.22
       ================================================
       ID = 3 (  0304):    5.48    0.671    1.00     18.65

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

```
-------------------------------------------------------------------------------
------------------
| CALIB            |
| STANDHYD (  0066)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
------------------

                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      10.09         4.12
      Dep. Storage     (mm)=      1.00         5.00
      Average Slope     (%)=      1.00         2.00
      Length           (m)=     307.76        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    3.76  | 0.833   13.95  | 1.583    6.78  |  2.33    4.23
         0.167    3.76  | 0.917   80.82  | 1.667    6.78  |  2.42    3.90
         0.250    4.42  | 1.000   80.82  | 1.750    5.83  |  2.50    3.90
         0.333    4.42  | 1.083   17.11  | 1.833    5.83  |  2.58    3.63
         0.417    5.48  | 1.167   17.11  | 1.917    5.15  |  2.67    3.63
         0.500    5.48  | 1.250   10.79  | 2.000    5.15  |  2.75    3.39
         0.583    7.50  | 1.333   10.79  | 2.083    4.63  |  2.83    3.39
         0.667    7.50  | 1.417    8.23  | 2.167    4.63  |  2.92    3.20
         0.750   13.95  | 1.500    8.23  | 2.250    4.23  |  3.00    3.20

      Max.Eff.Inten.(mm/hr)=     80.82        29.00
                 over (min)=      5.00        25.00
      Storage Coeff.  (min)=      5.46 (ii)   24.57 (ii)
      Unit Hyd. Tpeak (min)=     5.00        25.00
      Unit Hyd. peak  (cms)=     0.20         0.05
                                                        *TOTALS*
      PEAK FLOW       (cms)=     1.96         0.05        1.969 (iii)
      TIME TO PEAK    (hrs)=     1.00         1.33         1.00
      RUNOFF VOLUME    (mm)=    31.13         6.33        23.94
      TOTAL RAINFALL   (mm)=    32.13        32.13        32.13
      RUNOFF COEFFICIENT   =     0.97         0.20         0.74

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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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```

```
| DUHYD    (  0062)|
| Inlet Cap.= 2.948|
| #of Inlets=   1  |
| Total(cms)=  2.9 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):  14.21      1.97      1.00   23.94
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):  14.21      1.97      1.00   23.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
------------------
|Bioretention(  0065)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE        AREA           |  STAGE      AREA
                         (m)         (m2)           |   (m)       (m2)
                        0.000      100.000          |  1.500    100.000
                        0.500      100.000          |  0.000      0.000
                        1.000      100.000          |  0.000      0.000

                       MULCH LAYER:
                       Depth      (m)=    0.10  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=    62.40

                       ENGINEERED SOIL LAYER:
                       Soil moisture =    0.30  Depth            (m)=  0.67
                       Width      (m)=  780.00  Length           (m)=  2.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                       STORAGE LAYER:
                       Depth      (m)=    1.50  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=   936.00

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060
```

```
                          AREA         QPEAK          TPEAK         R.V.
                           (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2    14.21          1.969            1.00         23.94
    OVERFLOW:ID= 3   14.21          1.967            1.00         22.17

                     Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      7.37
                     Time to reach Max Ponding storage      (hr)=      0.00
                     Volume of water for drawdown in LID  (cu.m.)=    388.66
                     Volume of Max. Water Storage         (cu.m.)=      0.00
                     Maximum Surface Ponding And Mulch Vol(cu.m.)=    212.35
                     Maximum Engineered Soil Volume       (cu.m.)=    185.69
                     ***** After simulation, water volume is not zero.

  ----------------------
  | Junction Command(0063) |
  ----------------------

                          AREA     QPEAK   TPEAK    R.V.
                           (ha)     (cms)   (hrs)    (mm)
  INFLOW : ID= 3(  0065)  14.21    1.97    1.00    22.17
  OUTFLOW: ID= 2(  0063)  14.21    1.97    1.00    22.17

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

------------------
| ADD HYD  (  0306)|
|  1 +  2 =  3     |        AREA    QPEAK    TPEAK     R.V.
-------------------        (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0062 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0306 = HYDROGRAPH 0063
       ID1= 1 (  0062):     0.00    0.000    0.00     0.00
     + ID2= 2 (  0063):    14.21    1.967    1.00    22.17
       ================================================
       ID = 3 (  0306):    14.21    1.967    1.00    22.17

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
------------------
| CALIB            |
| STANDHYD (  0323)|   Area    (ha)=  0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
------------------

                           IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=      0.39         0.20
      Dep. Storage     (mm)=      1.00         5.00
      Average Slope     (%)=      1.00         2.00
      Length           (m)=     62.78        40.00
      Mannings n             =   0.013        0.250

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

```
-----------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
-----------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                        STAGE        AREA          |  STAGE      AREA
                         (m)         (m2)          |   (m)       (m2)
                        0.000       100.000        |  1.500      100.000
                        0.500       100.000        |  0.000        0.000
                        1.000       100.000        |  0.000        0.000

                       MULCH LAYER:
                       Depth       (m)=    0.00  Porosity            =  0.40
                       Maximum Mulch layer Volume (cu.m.)=     0.00

                       ENGINEERED SOIL LAYER:
                       Soil moisture =    0.30  Depth             (m)=  0.72
                       Width         (m)=    3.00  Length          (m)=240.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                         DEPTH       DISCHARGE     |  DEPTH       DISCHARGE
                          (m)          (cms)       |   (m)          (cms)
                         0.000        0.000        |  0.559        0.030
                         0.279        0.010        |  0.762        0.040
                         0.406        0.020        |  1.300        0.050

                       STORAGE LAYER:
                       Depth       (m)=    1.00  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=   288.00

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060

                          AREA          QPEAK            TPEAK          R.V.
                          (ha)          (cms)            (hrs)          (mm)
      INFLOW:ID= 2     0.59          0.043             1.00         17.29
     OUTFLOW:ID= 1     0.59          0.009             0.08         11.13
   OVERFLOW:ID= 3      0.00          0.000             0.00          0.00

                Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       35.61
```

```
                         Time to reach Max Ponding storage       (Hr)=       0.00
                         Volume of water for drawdown in LID  (cu.m.)=     106.32
                         Volume of Max. Water Storage         (cu.m.)=       0.00
                         Maximum Surface Ponding And Mulch Vol(cu.m.)=      88.68
                         Maximum Engineered Soil Volume       (cu.m.)=      69.86
                         ***** After simulation, water volume is not zero.

                        -------------------------
                        | Junction Command(0330) |
                        -------------------------

                                                  AREA     QPEAK   TPEAK     R.V.
                                                  (ha)     (cms)    (hrs)    (mm)
                        INFLOW : ID= 3(  0329)    0.00      0.00    0.00     0.00
                        OUTFLOW: ID= 2(  0330)    0.00      0.00    0.00     0.00

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

                        -------------------------
                        | Junction Command(0332) |
                        -------------------------

                                                  AREA     QPEAK   TPEAK     R.V.
                                                  (ha)     (cms)    (hrs)    (mm)
                        INFLOW : ID= 1(  0329)    0.59      0.01    0.08    11.13
                        OUTFLOW: ID= 2(  0332)    0.59      0.01    0.08    11.13

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

                       -------------------
                       | ADD HYD  (  0310)|
                       |   1 +  2 =  3    |        AREA     QPEAK    TPEAK     R.V.
                       -------------------        (ha)     (cms)    (hrs)     (mm)
                       *** W A R N I N G :  HYDROGRAPH   0330 <ID= 1> IS DRY.
                       *** W A R N I N G :  HYDROGRAPH   0331 <ID= 2> IS DRY.
                       *** W A R N I N G :  HYDROGRAPH   0310 <ID= 3> IS ALSO DRY
                       ------------------------------------------------------------------------------

                       -------------------
                       | ADD HYD  (  0310)|
                       |   3 +  2 =  1    |        AREA     QPEAK    TPEAK     R.V.
                       -------------------        (ha)     (cms)    (hrs)     (mm)
                       *** W A R N I N G :  HYDROGRAPH   0310 <ID= 3> IS DRY.
                       *** W A R N I N G :  HYDROGRAPH   0310 = HYDROGRAPH 0332
                             ID1= 3 (  0310):     0.00   0.000     0.00     0.00
                           + ID2= 2 (  0332):     0.59   0.009     0.08    11.13
                             ==========================================
                             ID = 1 (  0310):     0.59   0.009     0.08    11.13

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

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |        AREA     QPEAK    TPEAK     R.V.
-------------------        (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0276):     1.28   0.198     1.00    23.68
     + ID2= 2 (  0304):     5.48   0.671     1.00    18.65
       ==========================================
       ID = 3 (  0061):     6.76   0.870     1.00    19.60

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

-------------------
| ADD HYD  (  0061)|
|   3 +  2 =  1    |        AREA     QPEAK    TPEAK     R.V.
-------------------        (ha)     (cms)    (hrs)     (mm)
       ID1= 3 (  0061):     6.76   0.870     1.00    19.60
     + ID2= 2 (  0306):    14.21   1.967     1.00    22.17
       ==========================================
       ID = 1 (  0061):    20.97   2.836     1.00    21.35

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |        AREA     QPEAK    TPEAK     R.V.
-------------------        (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0061):    20.97   2.836     1.00    21.35
     + ID2= 2 (  0310):     0.59   0.009     0.08    11.13
       ==========================================
       ID = 3 (  0061):    21.56   2.842     1.00    21.07

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

-------------------
| RESERVOIR(  0067)|    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    |  0.6610     0.9850
                        0.0400    0.1140    |  1.0960     1.3320
                        0.0760    0.3690    |  1.4260     1.5860
                        0.2810    0.6450    |  0.0000     0.0000

                                    AREA      QPEAK     TPEAK       R.V.
                                    (ha)      (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0061)     21.558       2.842      1.00       21.07
```

```
   OUTFLOW: ID= 1 (  0067)     21.558      0.092      3.08      21.03

                       PEAK   FLOW   REDUCTION [Qout/Qin](%)=  3.25
                       TIME SHIFT OF PEAK FLOW          (min)=125.00
                       MAXIMUM  STORAGE   USED        (ha.m.)=  0.3914

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 FINISH
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U A   A  L
          VV    I    SSSSS  UUUUU A   A  LLLLL

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

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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\b77c8
d24-4b04-40d3-a015-5c2cb7b8471e\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\b77c8
d24-4b04-40d3-a015-5c2cb7b8471e\scena

DATE: 08-28-2022                          TIME: 02:36:02

USER:


COMMENTS: _____

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  ************************************************
  ** SIMULATION : B. 5yr 3hr 10min Chicago      **
  ************************************************

-------------------
| CHICAGO STORM     |    IDF curve parameters: A= 535.364
| Ptotal= 42.56 mm  |                          B=   0.000
-------------------                          C=   0.699
```

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

                                  Duration of storm   =  3.00 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    4.98  |  0.83   107.07  |  1.67    7.72  |  2.50    4.80
                0.17    5.86  |  1.00    22.67  |  1.83    6.82  |  2.67    4.50
                0.33    7.26  |  1.17    14.30  |  2.00    6.14  |  2.83    4.24
                0.50    9.93  |  1.33    10.90  |  2.17    5.60  |
                0.67   18.47  |  1.50     8.98  |  2.33    5.16  |


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-------------------
| CALIB             |
| NASHYD   (  0185) |  Area    (ha)=   1.66   Curve Number    (CN)= 74.4
|ID= 1 DT= 5.0 min  |  Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------  U.H. Tp(hrs)=   0.24

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

                                  ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN
                 hrs    mm/hr |   hrs    mm/hr |   hrs    mm/hr |   hrs    mm/hr
                0.083   4.98  | 0.833   18.47  | 1.583   8.98  |  2.33    5.60
                0.167   4.98  | 0.917  107.07  | 1.667   8.98  |  2.42    5.16
                0.250   5.86  | 1.000  107.07  | 1.750   7.72  |  2.50    5.16
                0.333   5.86  | 1.083   22.67  | 1.833   7.72  |  2.58    4.80
                0.417   7.26  | 1.167   22.67  | 1.917   6.82  |  2.67    4.80
                0.500   7.26  | 1.250   14.30  | 2.000   6.82  |  2.75    4.50
                0.583   9.93  | 1.333   14.30  | 2.083   6.14  |  2.83    4.50
                0.667   9.93  | 1.417   10.90  | 2.167   6.14  |  2.92    4.24
                0.750  18.47  | 1.500   10.90  | 2.250   5.60  |  3.00    4.24

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW      (cms)=   0.051 (i)
     TIME TO PEAK   (hrs)=   1.250
     RUNOFF VOLUME  (mm)=  11.568
     TOTAL RAINFALL (mm)=  42.565
     RUNOFF COEFFICIENT  =   0.272

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

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```
| DUHYD    (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=     1|
| Total(cms)=  0.1 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.66      0.05      1.25    11.57
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.66      0.05      1.25    11.57

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                            Max. Ponding Storage(cu.m.)=      149.95

                          STAGE        AREA          |   STAGE      AREA
                           (m)         (m2)          |    (m)       (m2)
                          0.000       100.000        |   1.500      100.000
                          0.500       100.000        |   0.000        0.000
                          1.000       100.000        |   0.000        0.000

                        MULCH LAYER:
                        Depth      (m)=    0.10  Porosity           =  0.40
                        Maximum Mulch layer Volume (cu.m.)=    21.60

                        ENGINEERED SOIL LAYER:
                        Soil moisture =    0.30  Depth            (m)=  0.72
                        Width      (m)=  100.00  Length           (m)=  3.00
                        Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                        Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                        STORAGE LAYER:
                        Depth      (m)=    0.50  Porosity           =  0.40
                        Seepage (m/hr) = 0.0010
                        Maximum Storage layer Volume(cu.m.)=   108.00

                        TOTAL AVAILABLE STORAGE:

                        TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                        NATIVE SOIL LAYER:
                        Infiltration (m/hr) = 0.0060
```

```
                        AREA         QPEAK          TPEAK         R.V.
                        (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2     1.66         0.051           1.25         11.57
   OVERFLOW:ID= 3     1.66         0.010           3.00          0.68

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      94.15
              Time to reach Max Ponding storage      (Hr)=       0.00
              Volume of water for drawdown in LID  (cu.m.)=    233.35
              Volume of Max. Water Storage         (cu.m.)=      0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=    171.55
              Maximum Engineered Soil Volume       (cu.m.)=     63.74
              ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                       AREA     QPEAK   TPEAK     R.V.
                       (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0184)   1.66     0.01    3.00     0.68
  OUTFLOW: ID= 2(  0181)   1.66     0.01    3.00     0.68

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0265) |  Area    (ha)=   0.86
|ID= 1 DT= 5.0 min  |  Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=    0.56         0.30
     Dep. Storage     (mm)=    1.00         5.00
     Average Slope     (%)=    1.00         2.00
     Length           (m)=   75.87        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   4.98  | 0.833   18.47  | 1.583   8.98  |  2.33    5.60
                0.167   4.98  | 0.917  107.07  | 1.667   8.98  |  2.42    5.16
                0.250   5.86  | 1.000  107.07  | 1.750   7.72  |  2.50    5.16
                0.333   5.86  | 1.083   22.67  | 1.833   7.72  |  2.58    4.80
                0.417   7.26  | 1.167   22.67  | 1.917   6.82  |  2.67    4.80
                0.500   7.26  | 1.250   14.30  | 2.000   6.82  |  2.75    4.50
                0.583   9.93  | 1.333   14.30  | 2.083   6.14  |  2.83    4.50
                0.667   9.93  | 1.417   10.90  | 2.167   6.14  |  2.92    4.24
                0.750  18.47  | 1.500   10.90  | 2.250   5.60  |  3.00    4.24
```

```
     Max.Eff.Inten.(mm/hr)=     107.07       17.77
                over (min)=       5.00       20.00
     Storage Coeff.  (min)=       2.11 (ii)  16.19 (ii)
     Unit Hyd. Tpeak (min)=       5.00       20.00
     Unit Hyd. peak  (cms)=       0.31        0.06
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.17        0.01        0.168 (iii)
     TIME TO PEAK    (hrs)=       1.00        1.25         1.00
     RUNOFF VOLUME    (mm)=      41.56       11.13        30.90
     TOTAL RAINFALL   (mm)=      42.56       42.56        42.56
     RUNOFF COEFFICIENT   =       0.98        0.26         0.73

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

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
              THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| DUHYD    (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=     1|
| Total(cms)=  0.2 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.86      0.17      1.00     30.90
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   0.86      0.17      1.00     30.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                            Max. Ponding Storage(cu.m.)=      149.95

                          STAGE        AREA          |   STAGE      AREA
                           (m)         (m2)          |    (m)       (m2)
                          0.000       100.000        |   1.500      100.000
                          0.500       100.000        |   0.000        0.000
                          1.000       100.000        |   0.000        0.000
```

```
                        MULCH LAYER:
                        Depth      (m)=    0.10  Porosity           =  0.40
                        Maximum Mulch layer Volume (cu.m.)=     3.20

                        ENGINEERED SOIL LAYER:
                        Soil moisture =    0.30  Depth            (m)=  0.67
                        Width      (m)=   40.00  Length           (m)=  2.00
                        Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                        Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                        STORAGE LAYER:
                        Depth      (m)=    1.50  Porosity           =  0.40
                        Seepage (m/hr) = 0.0010
                        Maximum Storage layer Volume(cu.m.)=    48.00

                        TOTAL AVAILABLE STORAGE:

                        TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                        NATIVE SOIL LAYER:
                        Infiltration (m/hr) = 0.0060

                          AREA         QPEAK          TPEAK         R.V.
                          (ha)         (cms)          (hrs)         (mm)
       INFLOW:ID= 2     0.86         0.168           1.00         30.90
     OVERFLOW:ID= 3     0.86         0.032           1.25         12.96

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       58.07
              Time to reach Max Ponding storage      (Hr)=        0.00
              Volume of water for drawdown in LID  (cu.m.)=     162.13
              Volume of Max. Water Storage         (cu.m.)=       0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
              Maximum Engineered Soil Volume       (cu.m.)=       9.03
              ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                       AREA     QPEAK   TPEAK     R.V.
                       (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0264)   0.86     0.03    1.25    12.96
  OUTFLOW: ID= 2(  0262)   0.86     0.03    1.25    12.96

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-------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     ID1= 1 (  0262):     1.66      0.010     3.00      0.68
   + ID2= 2 (  0263):     0.86      0.032     1.25     12.96
     ================================================
     ID = 3 (  0243):     2.53      0.032     1.25      4.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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                        (ha)     (cms)     (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0182 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
     ID1= 1 (  0181):     1.66    0.010     3.00     0.68
   + ID2= 2 (  0182):     0.00    0.000     0.00     0.00
     ================================================
     ID = 3 (  0243):     1.66    0.010     3.00     0.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD  (  0243)|
|   3 +  2 =  1    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     ID1= 3 (  0243):     1.66      0.010     3.00      0.68
   + ID2= 2 (  0262):     0.86      0.032     1.25     12.96
     ================================================
     ID = 1 (  0243):     2.53      0.032     1.25      4.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0263 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
     ID1= 1 (  0243):     2.53      0.032     1.25      4.87
   + ID2= 2 (  0263):     0.00      0.000     0.00      0.00
     ================================================
     ID = 3 (  0243):     2.53      0.032     1.25      4.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| RESERVOIR(  0188) |     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     |  0.4800     0.0190

                        AREA     QPEAK     TPEAK     R.V.
                        (ha)     (cms)     (hrs)     (mm)
   INFLOW : ID= 2 (  0243)     2.527     0.032     1.25      4.87
   OUTFLOW: ID= 1 (  0188)     2.527     0.027     1.42      4.87

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 84.16
                  TIME SHIFT OF PEAK FLOW         (min)= 10.00
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                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0011

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| CALIB             |
| STANDHYD (  0252) |  Area    (ha)=   0.32
|ID= 1 DT= 5.0 min  |  Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=    0.22         0.10
     Dep. Storage     (mm)=    1.00         5.00
     Average Slope     (%)=    1.00         2.00
     Length           (m)=   45.84        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   4.98  | 0.833   18.47  | 1.583   8.98  |  2.33    5.60
                0.167   4.98  | 0.917  107.07  | 1.667   8.98  |  2.42    5.16
                0.250   5.86  | 1.000  107.07  | 1.750   7.72  |  2.50    5.16
                0.333   5.86  | 1.083   22.67  | 1.833   7.72  |  2.58    4.80
                0.417   7.26  | 1.167   22.67  | 1.917   6.82  |  2.67    4.80
                0.500   7.26  | 1.250   14.30  | 2.000   6.82  |  2.75    4.50
                0.583   9.93  | 1.333   14.30  | 2.083   6.14  |  2.83    4.50
                0.667   9.93  | 1.417   10.90  | 2.167   6.14  |  2.92    4.24
                0.750  18.47  | 1.500   10.90  | 2.250   5.60  |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07      108.53
                over (min)=       5.00       10.00
     Storage Coeff.  (min)=       1.56 (ii)   8.39 (ii)
     Unit Hyd. Tpeak (min)=       5.00       10.00
     Unit Hyd. peak  (cms)=       0.33        0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.03        0.02        0.044 (iii)
     TIME TO PEAK    (hrs)=       1.00        1.08         1.00
     RUNOFF VOLUME    (mm)=      41.56       20.38        26.72
     TOTAL RAINFALL   (mm)=      42.56       42.56        42.56
     RUNOFF COEFFICIENT   =       0.98        0.48         0.63

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

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. 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  (  0179)|
|   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     ID1= 1 (  0188):     2.53    0.027     1.42      4.87
   + ID2= 2 (  0252):     0.32    0.044     1.00     26.72
     ================================================
     ID = 3 (  0179):     2.84    0.044     1.00      7.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB             |
| STANDHYD (  0106) |  Area    (ha)=   0.51
|ID= 1 DT= 5.0 min  |  Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=    0.28         0.23
     Dep. Storage     (mm)=    1.00         5.00
     Average Slope     (%)=    1.00         2.00
     Length           (m)=   58.22        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   4.98  | 0.833   18.47  | 1.583   8.98  |  2.33    5.60
                0.167   4.98  | 0.917  107.07  | 1.667   8.98  |  2.42    5.16
                0.250   5.86  | 1.000  107.07  | 1.750   7.72  |  2.50    5.16
                0.333   5.86  | 1.083   22.67  | 1.833   7.72  |  2.58    4.80
                0.417   7.26  | 1.167   22.67  | 1.917   6.82  |  2.67    4.80
                0.500   7.26  | 1.250   14.30  | 2.000   6.82  |  2.75    4.50
                0.583   9.93  | 1.333   14.30  | 2.083   6.14  |  2.83    4.50
                0.667   9.93  | 1.417   10.90  | 2.167   6.14  |  2.92    4.24
                0.750  18.47  | 1.500   10.90  | 2.250   5.60  |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07      103.78
                over (min)=       5.00       10.00
     Storage Coeff.  (min)=       1.80 (ii)   8.75 (ii)
     Unit Hyd. Tpeak (min)=       5.00       10.00
     Unit Hyd. peak  (cms)=       0.32        0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.00        0.04        0.044 (iii)
     TIME TO PEAK    (hrs)=       1.00        1.08         1.08
```

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     RUNOFF VOLUME    (mm)=      41.56        20.08          20.28
     TOTAL RAINFALL   (mm)=      42.56        42.56          42.56
     RUNOFF COEFFICIENT   =       0.98         0.47           0.48

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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(  0282)|     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    |  0.1000     0.0020

                                  AREA     QPEAK     TPEAK       R.V.
                                   (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0106)      0.508     0.044     1.08         20.28
   OUTFLOW: ID= 1 (  0282)      0.508     0.038     1.17         20.28

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 87.71
                    TIME SHIFT OF PEAK FLOW          (min)=  5.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0008

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-------------------
| CALIB             |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------
                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.32         0.26
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     62.24        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    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
               0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
               0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
               0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
               0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
               0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
               0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
               0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
               0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07       103.78
                over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.87 (ii)    8.82 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.32         0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=     0.00         0.05          0.050 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08          1.08
     RUNOFF VOLUME    (mm)=    41.56        20.08         20.28
     TOTAL RAINFALL   (mm)=    42.56        42.56         42.56
     RUNOFF COEFFICIENT   =     0.98         0.47          0.48

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0246)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
-------------------           (ha)     (cms)     (hrs)      (mm)
       ID1= 1 (  0245):      0.58     0.050     1.08     20.28
     + ID2= 2 (  0282):      0.51     0.038     1.17     20.28
       ================================================
       ID = 3 (  0246):      1.09     0.087     1.08     20.28

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------
                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.90         0.38
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     92.38        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    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
               0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
               0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
               0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
               0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
               0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
               0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
               0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
               0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07       104.26
                over (min)        5.00        10.00
     Storage Coeff.  (min)=     2.37 (ii)    7.26 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.30         0.14
                                                        *TOTALS*
     PEAK FLOW       (cms)=     0.26         0.02          0.276 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08          1.00
     RUNOFF VOLUME    (mm)=    41.56        11.13         32.43
     TOTAL RAINFALL   (mm)=    42.56        42.56         42.56
     RUNOFF COEFFICIENT   =     0.98         0.26          0.76

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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 (  0060)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
-------------------
                         IMPERVIOUS    PERVIOUS (i)
```

```
     Surface Area     (ha)=      2.43         1.62
     Dep. Storage     (mm)=      5.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    164.25        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    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
               0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
               0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
               0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
               0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
               0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
               0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
               0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
               0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07        17.77
                over (min)        5.00        20.00
     Storage Coeff.  (min)=     3.35 (ii)    17.43 (ii)
     Unit Hyd. Tpeak (min)=     5.00        20.00
     Unit Hyd. peak  (cms)=     0.26         0.06
                                                        *TOTALS*
     PEAK FLOW       (cms)=     0.69         0.04          0.704 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.25          1.00
     RUNOFF VOLUME    (mm)=    37.56        11.13         26.99
     TOTAL RAINFALL   (mm)=    42.56        42.56         42.56
     RUNOFF COEFFICIENT   =     0.88         0.26          0.63

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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 (  0064)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
-------------------
                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.72         0.72
```

```
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=      0.50         2.00
     Length            (m)=     97.74        30.00
     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    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
               0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
               0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
               0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
               0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
               0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
               0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
               0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
               0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07        17.77
                over (min)        5.00        15.00
     Storage Coeff.  (min)=     3.02 (ii)    14.87 (ii)
     Unit Hyd. Tpeak (min)=     5.00        15.00
     Unit Hyd. peak  (cms)=     0.27         0.08
                                                        *TOTALS*
     PEAK FLOW       (cms)=     0.21         0.02          0.216 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.17          1.00
     RUNOFF VOLUME    (mm)=    40.56        11.13         25.84
     TOTAL RAINFALL   (mm)=    42.56        42.56         42.56
     RUNOFF COEFFICIENT   =     0.95         0.26          0.61

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0304)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
-------------------           (ha)     (cms)     (hrs)      (mm)
       ID1= 1 (  0060):      4.05     0.704     1.00     26.99
     + ID2= 2 (  0064):      1.43     0.216     1.00     25.84
       ================================================
```

```
       ID = 3 (  0304):     5.48   0.920     1.00     26.69

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0066)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
-------------------
                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     10.09         4.12
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    307.76        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    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
               0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
               0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
               0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
               0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
               0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
               0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
               0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
               0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07       ********
                over (min)        5.00        10.00
     Storage Coeff.  (min)=     4.88 (ii)    9.68 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.22         0.11
                                                        *TOTALS*
     PEAK FLOW       (cms)=     2.68         0.17          2.795 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08          1.00
     RUNOFF VOLUME    (mm)=    41.56        11.13         32.74
     TOTAL RAINFALL   (mm)=    42.56        42.56         42.56
     RUNOFF COEFFICIENT   =     0.98         0.26          0.77

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
```

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

--------------------------------------------------------------------------------
-------------------
| DUHYD     (  0062)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=   2.9|      AREA     QPEAK     TPEAK     R.V.
-------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   14.21      2.79      1.00    32.74
     ================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   14.21      2.79      1.00    32.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-------------------
|Bioretention(  0065)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2---> OUT= 3    |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE       AREA          |  STAGE      AREA
                        (m)        (m2)          |   (m)       (m2)
                       0.000     100.000         |  1.500     100.000
                       0.500     100.000         |  0.000       0.000
                       1.000     100.000         |  0.000       0.000

                     MULCH LAYER:
                     Depth      (m)=    0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    62.40

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth            (m)=  0.67
                     Width      (m)=  780.00  Length           (m)=  2.00
                     Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                     STORAGE LAYER:
                     Depth      (m)=    1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   936.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46
```

```
                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                                AREA         QPEAK           TPEAK        R.V.
                                 (ha)         (cms)           (hrs)        (mm)
          INFLOW:ID= 2    14.21        2.792           1.00         32.74
       OVERFLOW:ID= 3    14.21        2.792           1.00         31.02

                     Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       5.25
                     Time to reach Max Ponding storage       (hr)=       0.00
                     Volume of water for drawdown in LID  (cu.m.)=     384.20
                     Volume of Max. Water Storage         (cu.m.)=       0.00
                     Maximum Surface Ponding And Mulch Vol(cu.m.)=     212.35
                     Maximum Engineered Soil Volume       (cu.m.)=     176.07
                     ***** After simulation, water volume is not zero.

   -------------------------
   | Junction Command(0063) |
   -------------------------

                                AREA     QPEAK    TPEAK     R.V.
                                 (ha)     (cms)    (hrs)     (mm)
     INFLOW : ID= 3(  0065)    14.21     2.79     1.00     31.02
     OUTFLOW: ID= 2(  0063)    14.21     2.79     1.00     31.02

   --------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0306)|
|   1 +  2 =  3    |          AREA     QPEAK     TPEAK      R.V.
-------------------           (ha)     (cms)     (hrs)      (mm)
*** W A R N I N G :  HYDROGRAPH   0062 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0306 = HYDROGRAPH 0063
       ID1= 1 (  0062):     0.00    0.000     0.00     0.00
     + ID2= 2 (  0063):    14.21    2.792     1.00    31.02
       ================================================
       ID = 3 (  0306):    14.21    2.792     1.00    31.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
-------------------
                         IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.39         0.20
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
```

```
     Length            (m)=     62.78        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    4.98 | 0.833   18.47 | 1.583    8.98 |  2.33    5.60
               0.167    4.98 | 0.917  107.07 | 1.667    8.98 |  2.42    5.16
               0.250    5.86 | 1.000  107.07 | 1.750    7.72 |  2.50    5.16
               0.333    5.86 | 1.083   22.67 | 1.833    7.72 |  2.58    4.80
               0.417    7.26 | 1.167   22.67 | 1.917    6.82 |  2.67    4.80
               0.500    7.26 | 1.250   14.30 | 2.000    6.82 |  2.75    4.50
               0.583    9.93 | 1.333   14.30 | 2.083    6.14 |  2.83    4.50
               0.667    9.93 | 1.417   10.90 | 2.167    6.14 |  2.92    4.24
               0.750   18.47 | 1.500   10.90 | 2.250    5.60 |  3.00    4.24

     Max.Eff.Inten.(mm/hr)=     107.07       104.26
                over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.88 (ii)    8.82 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.32         0.12
                                                        *TOTALS*
     PEAK FLOW       (cms)=     0.04         0.04          0.074 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08          1.00
     RUNOFF VOLUME    (mm)=    41.56        20.11         25.47
     TOTAL RAINFALL   (mm)=    42.56        42.56         42.56
     RUNOFF COEFFICIENT   =     0.98         0.47          0.60

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| DUHYD     (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
-------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):    0.59      0.07      1.00    25.47
     ================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):    0.59      0.07      1.00    25.47
```

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

------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE       AREA          |  STAGE      AREA
                        (m)        (m2)          |   (m)       (m2)
                       0.000       100.000       |  1.500      100.000
                       0.500       100.000       |  0.000        0.000
                       1.000       100.000       |  0.000        0.000

                       MULCH LAYER:
                       Depth      (m)=    0.00  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=     0.00

                       ENGINEERED SOIL LAYER:
                       Soil moisture =    0.30  Depth            (m)=  0.72
                       Width         (m)=    3.00  Length           (m)=240.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                         DEPTH       DISCHARGE     |  DEPTH       DISCHARGE
                          (m)          (cms)       |   (m)          (cms)
                         0.000        0.000        |  0.559        0.030
                         0.279        0.010        |  0.762        0.040
                         0.406        0.020        |  1.300        0.050

                       STORAGE LAYER:
                       Depth       (m)=    1.00  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=   288.00

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060

                          AREA          QPEAK           TPEAK          R.V.
                          (ha)          (cms)           (hrs)          (mm)
          INFLOW:ID= 2     0.59          0.074            1.00         25.47
```

```
    OUTFLOW:ID= 1     0.59         0.009             0.08        11.05
   OVERFLOW:ID= 3     0.00         0.000             0.00         0.00

                      Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      56.60
                      Time to reach Max Ponding storage       (Hr)=       0.00
                      Volume of water for drawdown in LID  (cu.m.)=     155.20
                      Volume of Max. Water Storage         (cu.m.)=       0.00
                      Maximum Surface Ponding And Mulch Vol(cu.m.)=     136.90
                      Maximum Engineered Soil Volume       (cu.m.)=      69.86
                      ***** After simulation, water volume is not zero.

 -------------------------
 | Junction Command(0330) |
 -------------------------

                                 AREA     QPEAK   TPEAK     R.V.
                                 (ha)     (cms)    (hrs)    (mm)
 INFLOW : ID= 3(  0329)    0.00     0.00    0.00     0.00
 OUTFLOW: ID= 2(  0330)    0.00     0.00    0.00     0.00

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

 -------------------------
 | Junction Command(0332) |
 -------------------------

                                 AREA     QPEAK   TPEAK     R.V.
                                 (ha)     (cms)    (hrs)    (mm)
 INFLOW : ID= 1(  0329)    0.59     0.01    0.08    11.05
 OUTFLOW: ID= 2(  0332)    0.59     0.01    0.08    11.05

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

-------------------
| ADD HYD  (  0310)|
|   1 +  2 =  3    |        AREA     QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0330 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0331 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0310 <ID= 3> IS ALSO DRY
------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0310)|
|   3 +  2 =  1    |        AREA     QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0310 <ID= 3> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0310 = HYDROGRAPH 0332
          ID1= 3 (  0310):     0.00   0.000     0.00     0.00
       + ID2= 2 (  0332):     0.59   0.009     0.08    11.05
```

```
        ================================================
        ID = 1 (  0310):     0.59   0.009     0.08    11.05

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |        AREA     QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0276):     1.28   0.276     1.00     32.43
     + ID2= 2 (  0304):     5.48   0.920     1.00     26.69
       ================================================
       ID = 3 (  0061):     6.76   1.197     1.00     27.78

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

-------------------
| ADD HYD  (  0061)|
|   3 +  2 =  1    |        AREA     QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0061):     6.76   1.197     1.00     27.78
     + ID2= 2 (  0306):    14.21   2.792     1.00     31.02
       ================================================
       ID = 1 (  0061):    20.97   3.989     1.00     29.97

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |        AREA     QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0061):    20.97   3.989     1.00     29.97
     + ID2= 2 (  0310):     0.59   0.009     0.08     11.05
       ================================================
       ID = 3 (  0061):    21.56   3.995     1.00     29.45

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0067)|    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    |  0.6610      0.9850
                        0.0400    0.1140    |  1.0960      1.3320
                        0.0760    0.3690    |  1.4260      1.5860
                        0.2810    0.6450    |  0.0000      0.0000
```

```
                           AREA     QPEAK     TPEAK       R.V.
                           (ha)     (cms)     (hrs)       (mm)
 INFLOW : ID= 2 (  0061)     21.558     3.995     1.00      29.45
 OUTFLOW: ID= 1 (  0067)     21.558     0.186     3.00      29.42

              PEAK   FLOW   REDUCTION [Qout/Qin](%)=  4.65
              TIME SHIFT OF PEAK FLOW       (min)=120.00
              MAXIMUM  STORAGE  USED       (ha.m.)=  0.5171

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

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================================================================================
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U A   A  L
          VV    I    SSSSS  UUUUU A   A  LLLLL

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

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

  Output  filename:
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c5b-16c8-4fbd-8648-c093fe3fe0aa\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\c0fc6
c5b-16c8-4fbd-8648-c093fe3fe0aa\scena

DATE: 08-28-2022                          TIME: 02:37:54

USER:


COMMENTS: _____

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  ********************************************
  ** SIMULATION : C. 10yr 3hr 10min Chicago     **
  ********************************************

-------------------
| CHICAGO STORM     |    IDF curve parameters: A= 622.842
| Ptotal= 49.52 mm  |                          B=   0.000
-------------------                          C=   0.699
```

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

                                Duration of storm   =  3.00 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    5.79  |  0.83  124.56  |  1.67    8.98  |  2.50    5.59
                    0.17    6.82  |  1.00   26.38  |  1.83    7.93  |  2.67    5.23
                    0.33    8.45  |  1.17   16.63  |  2.00    7.14  |  2.83    4.93
                    0.50   11.56  |  1.33   12.68  |  2.17    6.51  |
                    0.67   21.49  |  1.50   10.45  |  2.33    6.01  |


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-------------------
| CALIB             |
| NASHYD   (  0185)|   Area    (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min  |   Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.24

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

                                    ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN
                     hrs    mm/hr |   hrs    mm/hr |   hrs    mm/hr |   hrs    mm/hr
                   0.083    5.79  | 0.833   21.49  | 1.583   10.45  |  2.33    6.51
                   0.167    5.79  | 0.917  124.56  | 1.667   10.45  |  2.42    6.01
                   0.250    6.82  | 1.000  124.56  | 1.750    8.98  |  2.50    6.01
                   0.333    6.82  | 1.083   26.38  | 1.833    8.98  |  2.58    5.59
                   0.417    8.45  | 1.167   26.38  | 1.917    7.93  |  2.67    5.59
                   0.500    8.45  | 1.250   16.63  | 2.000    7.93  |  2.75    5.23
                   0.583   11.56  | 1.333   16.63  | 2.083    7.14  |  2.83    5.23
                   0.667   11.56  | 1.417   12.68  | 2.167    7.14  |  2.92    4.93
                   0.750   21.49  | 1.500   12.68  | 2.250    6.51  |  3.00    4.93

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW      (cms)=   0.069 (i)
     TIME TO PEAK   (hrs)=   1.167
     RUNOFF VOLUME  (mm)=  15.325
     TOTAL RAINFALL (mm)=  49.520
     RUNOFF COEFFICIENT  =   0.309

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

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| DUHYD    (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=     1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.66      0.07      1.17   15.33
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   1.66      0.07      1.17   15.33

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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----------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA          |   STAGE       AREA
                        (m)         (m2)          |    (m)        (m2)
                       0.000       100.000        |   1.500      100.000
                       0.500       100.000        |   0.000        0.000
                       1.000       100.000        |   0.000        0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    21.60

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth           (m)=  0.72
                    Width      (m)=  100.00  Length          (m)=  3.00
                    Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                    STORAGE LAYER:
                    Depth      (m)=    0.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   108.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060
```

```
                    AREA         QPEAK          TPEAK          R.V.
                    (ha)         (cms)          (hrs)          (mm)
     INFLOW:ID= 2    1.66         0.069           1.17         15.33
    OVERFLOW:ID= 3   1.66         0.021           2.08          4.42

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      71.18
              Time to reach Max Ponding storage      (Hr)=       0.00
              Volume of water for drawdown in LID  (cu.m.)=    233.60
              Volume of Max. Water Storage         (cu.m.)=      0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=    171.55
              Maximum Engineered Soil Volume       (cu.m.)=     64.12
              ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                        AREA     QPEAK   TPEAK     R.V.
                        (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0184)   1.66     0.02    2.08     4.42
  OUTFLOW: ID= 2(  0181)   1.66     0.02    2.08     4.42

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-------------------
| CALIB             |
| STANDHYD (  0265)|   Area    (ha)=   0.86
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                        IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.56         0.30
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      75.87        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    5.79  | 0.833   21.49  | 1.583   10.45  |  2.33    6.51
                   0.167    5.79  | 0.917  124.56  | 1.667   10.45  |  2.42    6.01
                   0.250    6.82  | 1.000  124.56  | 1.750    8.98  |  2.50    6.01
                   0.333    6.82  | 1.083   26.38  | 1.833    8.98  |  2.58    5.59
                   0.417    8.45  | 1.167   26.38  | 1.917    7.93  |  2.67    5.59
                   0.500    8.45  | 1.250   16.63  | 2.000    7.93  |  2.75    5.23
                   0.583   11.56  | 1.333   16.63  | 2.083    7.14  |  2.83    5.23
                   0.667   11.56  | 1.417   12.68  | 2.167    7.14  |  2.92    4.93
                   0.750   21.49  | 1.500   12.68  | 2.250    6.51  |  3.00    4.93
```

```
     Max.Eff.Inten.(mm/hr)=     124.56       24.35
                  over (min)=       5.00       15.00
     Storage Coeff.  (min)=      1.98 (ii)   14.40 (ii)
     Unit Hyd. Tpeak (min)=      5.00       15.00
     Unit Hyd. peak  (cms)=      0.31        0.08
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.19        0.01       0.199 (iii)
     TIME TO PEAK    (hrs)=      1.00        1.17        1.00
     RUNOFF VOLUME    (mm)=     48.52       14.82       36.71
     TOTAL RAINFALL   (mm)=     49.52       49.52       49.52
     RUNOFF COEFFICIENT   =      0.98        0.30        0.74

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
              THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
----------
| DUHYD    (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=     1|
| Total(cms)=   0.2|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.86      0.20      1.00   36.71
     ================================================
     MAJOR SYS.(ID= 2):   0.03      0.02      1.00   36.71
     MINOR SYS.(ID= 3):   0.84      0.17      0.92   36.71

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
----------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA          |   STAGE       AREA
                        (m)         (m2)          |    (m)        (m2)
                       0.000       100.000        |   1.500      100.000
                       0.500       100.000        |   0.000        0.000
                       1.000       100.000        |   0.000        0.000
```

```
                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     3.20

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth           (m)=  0.67
                    Width      (m)=   40.00  Length          (m)=  2.00
                    Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                    STORAGE LAYER:
                    Depth      (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=    48.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                      AREA         QPEAK          TPEAK          R.V.
                      (ha)         (cms)          (hrs)          (mm)
       INFLOW:ID= 2    0.84         0.174           0.92         36.71
      OVERFLOW:ID= 3   0.84         0.055           1.17         18.18

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      50.48
              Time to reach Max Ponding storage      (Hr)=       0.00
              Volume of water for drawdown in LID  (cu.m.)=    162.10
              Volume of Max. Water Storage         (cu.m.)=      0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=    153.15
              Maximum Engineered Soil Volume       (cu.m.)=      9.00
              ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                        AREA     QPEAK   TPEAK     R.V.
                        (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0264)   0.84     0.05    1.17     18.18
  OUTFLOW: ID= 2(  0262)   0.84     0.05    1.17     18.18

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

-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
```

```
                         (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0182 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
       ID1= 1 (  0181):     1.66    0.021     2.08     4.42
     + ID2= 2 (  0182):     0.00    0.000     0.00     0.00
       ================================================
       ID = 3 (  0243):     1.66    0.021     2.08     4.42

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|  3 +  2 =  1     |      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)     (cms)     (hrs)     (mm)
       ID1= 3 (  0243):     1.66    0.021     2.08     4.42
     + ID2= 2 (  0262):     0.84    0.055     1.17    18.18
       ================================================
       ID = 1 (  0243):     2.50    0.055     1.17     9.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)     (cms)     (hrs)     (mm)
       ID1= 1 (  0243):     2.50    0.055     1.17     9.02
     + ID2= 2 (  0263):     0.03    0.025     1.00    36.71
       ================================================
       ID = 3 (  0243):     2.53    0.055     1.17     9.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0188)|     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     |  0.4800     0.0190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0243)     2.527     0.055     1.17        9.32
   OUTFLOW: ID= 1 (  0188)     2.527     0.043     1.25        9.32

              PEAK   FLOW   REDUCTION [Qout/Qin](%)= 78.82
              TIME SHIFT OF PEAK FLOW          (min)=  5.00
              MAXIMUM  STORAGE   USED       (ha.m.)=  0.0018
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-------------------
| CALIB             |
| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  30.00   Dir. Conn.(%)=  30.00
-------------------

                        IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.22         0.10
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      45.84        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    5.79  | 0.833   21.49  | 1.583   10.45  |  2.33    6.51
                   0.167    5.79  | 0.917  124.56  | 1.667   10.45  |  2.42    6.01
                   0.250    6.82  | 1.000  124.56  | 1.750    8.98  |  2.50    6.01
                   0.333    6.82  | 1.083   26.38  | 1.833    8.98  |  2.58    5.59
                   0.417    8.45  | 1.167   26.38  | 1.917    7.93  |  2.67    5.59
                   0.500    8.45  | 1.250   16.63  | 2.000    7.93  |  2.75    5.23
                   0.583   11.56  | 1.333   16.63  | 2.083    7.14  |  2.83    5.23
                   0.667   11.56  | 1.417   12.68  | 2.167    7.14  |  2.92    4.93
                   0.750   21.49  | 1.500   12.68  | 2.250    6.51  |  3.00    4.93

     Max.Eff.Inten.(mm/hr)=     124.56      139.90
                  over (min)=       5.00       10.00
     Storage Coeff.  (min)=      1.47 (ii)    7.64 (ii)
     Unit Hyd. Tpeak (min)=      5.00       10.00
     Unit Hyd. peak  (cms)=      0.33        0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.03        0.03       0.054 (iii)
     TIME TO PEAK    (hrs)=      1.00        1.08        1.00
     RUNOFF VOLUME    (mm)=     48.52       25.77       32.58
     TOTAL RAINFALL   (mm)=     49.52       49.52       49.52
     RUNOFF COEFFICIENT   =      0.98        0.52        0.66

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. 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  (  0179)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)     (cms)     (hrs)     (mm)
       ID1= 1 (  0188):     2.53    0.043     1.25     9.32
     + ID2= 2 (  0252):     0.32    0.054     1.00    32.58
       ================================================
       ID = 3 (  0179):     2.84    0.065     1.17    11.90

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.28         0.23
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      58.22        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    5.79  | 0.833   21.49  | 1.583   10.45  |  2.33    6.51
                   0.167    5.79  | 0.917  124.56  | 1.667   10.45  |  2.42    6.01
                   0.250    6.82  | 1.000  124.56  | 1.750    8.98  |  2.50    6.01
                   0.333    6.82  | 1.083   26.38  | 1.833    8.98  |  2.58    5.59
                   0.417    8.45  | 1.167   26.38  | 1.917    7.93  |  2.67    5.59
                   0.500    8.45  | 1.250   16.63  | 2.000    7.93  |  2.75    5.23
                   0.583   11.56  | 1.333   16.63  | 2.083    7.14  |  2.83    5.23
                   0.667   11.56  | 1.417   12.68  | 2.167    7.14  |  2.92    4.93
                   0.750   21.49  | 1.500   12.68  | 2.250    6.51  |  3.00    4.93

     Max.Eff.Inten.(mm/hr)=     124.56      134.01
                  over (min)=       5.00       10.00
     Storage Coeff.  (min)=      1.69 (ii)    7.97 (ii)
     Unit Hyd. Tpeak (min)=      5.00       10.00
     Unit Hyd. peak  (cms)=      0.32        0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.00        0.06       0.058 (iii)
     TIME TO PEAK    (hrs)=      1.00        1.08        1.08
     RUNOFF VOLUME    (mm)=     48.52       25.42       25.64
     TOTAL RAINFALL   (mm)=     49.52       49.52       49.52
```

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     RUNOFF COEFFICIENT   =       0.98         0.51           0.52

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0     Ia = Dep. 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(  0282)|     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    |  0.1000     0.0020

                                  AREA     QPEAK     TPEAK       R.V.
                                   (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (  0106)      0.508     0.058     1.08       25.64
     OUTFLOW: ID= 1 (  0282)      0.508     0.051     1.17       25.64

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 86.58
                    TIME SHIFT OF PEAK FLOW          (min)=  5.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0011

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  -------------------
 | CALIB             |
 | STANDHYD (  0245)|   Area     (ha)=   0.58
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
  -------------------

                             IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.32          0.26
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope    (%)=        1.00          2.00
     Length           (m)=       62.24         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   5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
     0.167   5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
     0.250   6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
     0.333   6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
     0.417   8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
     0.500   8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
     0.583  11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
     0.667  11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
     0.750  21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93

     Max.Eff.Inten.(mm/hr)=    124.56       134.01
               over (min)=       5.00        10.00
     Storage Coeff.  (min)=    1.76 (ii)    8.04 (ii)
     Unit Hyd. Tpeak (min)=    5.00        10.00
     Unit Hyd. peak  (cms)=    0.32         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=    0.00         0.07       0.066 (iii)
     TIME TO PEAK    (hrs)=    1.00         1.08        1.08
     RUNOFF VOLUME    (mm)=   48.52        25.42       25.64
     TOTAL RAINFALL   (mm)=   49.52        49.52       49.52
     RUNOFF COEFFICIENT   =    0.98         0.51        0.52

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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  (  0248)|
 |   1 +  2 =  3    |       AREA    QPEAK    TPEAK     R.V.
  -------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0019):    0.50    0.057     1.08    25.64
     + ID2= 2 (  0302):    0.78    0.043     1.17    17.72
       ========================================================
       ID = 3 (  0248):    1.28    0.099     1.08    20.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  -------------------
 | CALIB             |
 | STANDHYD (  0276)|   Area     (ha)=   1.28
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
  -------------------

                             IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.90          0.38
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope    (%)=        1.00          2.00
     Length           (m)=       92.38         40.00
     Mannings n             =     0.013         0.250

                    AREA         QPEAK          TPEAK         R.V.
                     (ha)         (cms)          (hrs)         (mm)
       INFLOW:ID= 2     1.22         0.270          0.92         38.41
     OVERFLOW:ID= 3     1.22         0.257          1.00         25.57

          Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      33.42
          Time to reach Max Ponding Storage      (Hr)=       0.00
          Volume of water for drawdown in LID  (cu.m.)=    167.31
          Volume of Max. Water Storage         (cu.m.)=      0.00
          Maximum Surface Ponding And Mulch Vol(cu.m.)=    154.59
          Maximum Engineered Soil Volume       (cu.m.)=     12.80
          ***** After simulation, water volume is not zero.

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 | Junction Command(0277) |
  -------------------

                         AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)   (hrs)     (mm)
     INFLOW : ID= 3(  0278)    1.22     0.26    1.00    25.57
     OUTFLOW: ID= 2(  0277)    1.22     0.26    1.00    25.57

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  -------------------
 | CALIB             |
 | STANDHYD (  0313)|   Area     (ha)=   4.05
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
  -------------------

                             IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       2.43          1.62
     Dep. Storage     (mm)=       5.00          5.00
     Average Slope    (%)=        1.00          2.00
     Length           (m)=      164.25         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   5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
     0.167   5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
     0.250   6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
     0.333   6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
     0.417   8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
     0.500   8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
     0.583  11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
     0.667  11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
     0.750  21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93
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     0.583  11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
     0.667  11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
     0.750  21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93

     Max.Eff.Inten.(mm/hr)=    124.56       134.01
               over (min)=       5.00        10.00
     Storage Coeff.  (min)=    1.68 (ii)    7.96 (ii)
     Unit Hyd. Tpeak (min)=    5.00        10.00
     Unit Hyd. peak  (cms)=    0.32         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=    0.00         0.06       0.057 (iii)
     TIME TO PEAK    (hrs)=    1.00         1.08        1.08
     RUNOFF VOLUME    (mm)=   48.52        25.42       25.64
     TOTAL RAINFALL   (mm)=   49.52        49.52       49.52
     RUNOFF COEFFICIENT   =    0.98         0.51        0.52

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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  (  0248)|
 |   1 +  2 =  3    |       AREA    QPEAK    TPEAK     R.V.
  -------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0019):    0.50    0.057     1.08    25.64
     + ID2= 2 (  0302):    0.78    0.043     1.17    17.72
       ========================================================
       ID = 3 (  0248):    1.28    0.099     1.08    20.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
  -------------------
 | CALIB             |
 | STANDHYD (  0276)|   Area     (ha)=   1.28
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
  -------------------

                             IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.90          0.38
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope    (%)=        1.00          2.00
     Length           (m)=       92.38         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   5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
     0.167   5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
     0.250   6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
     0.333   6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
     0.417   8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
     0.500   8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
     0.583  11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
     0.667  11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
     0.750  21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93
```

```
     Max.Eff.Inten.(mm/hr)=    124.56       134.01
               over (min)=       5.00        10.00
     Storage Coeff.  (min)=    1.68 (ii)    7.96 (ii)
     Unit Hyd. Tpeak (min)=    5.00        10.00
     Unit Hyd. peak  (cms)=    0.32         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=    0.00         0.06       0.057 (iii)
     TIME TO PEAK    (hrs)=    1.00         1.08        1.08
     RUNOFF VOLUME    (mm)=   48.52        25.42       25.64
     TOTAL RAINFALL   (mm)=   49.52        49.52       49.52
     RUNOFF COEFFICIENT   =    0.98         0.51        0.52

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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  (  0248)|
 |   1 +  2 =  3    |       AREA    QPEAK    TPEAK     R.V.
  -------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0019):    0.50    0.057     1.08    25.64
     + ID2= 2 (  0302):    0.78    0.043     1.17    17.72
       ========================================================
       ID = 3 (  0248):    1.28    0.099     1.08    20.81

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
  -------------------
 | CALIB             |
 | STANDHYD (  0276)|   Area     (ha)=   1.28
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
  -------------------

                             IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.90          0.38
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope    (%)=        1.00          2.00
     Length           (m)=       92.38         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   5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
     0.167   5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
     0.250   6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
     0.333   6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
     0.417   8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
     0.500   8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
     0.583  11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
     0.667  11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
     0.750  21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93
```

```
     Max.Eff.Inten.(mm/hr)=    124.56       24.35
               over (min)=       5.00       20.00
     Storage Coeff.  (min)=    3.15 (ii)   15.57 (ii)
     Unit Hyd. Tpeak (min)=    5.00       20.00
     Unit Hyd. peak  (cms)=    0.27        0.07
                                                    *TOTALS*
     PEAK FLOW       (cms)=    0.81        0.06       0.831 (iii)
     TIME TO PEAK    (hrs)=    1.00        1.25        1.00
     RUNOFF VOLUME    (mm)=   44.52       14.82       32.64
     TOTAL RAINFALL   (mm)=   49.52       49.52       49.52
     RUNOFF COEFFICIENT   =    0.90        0.30        0.66

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

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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 (  0314)|   Area     (ha)=   1.43
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
  -------------------

                             IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.72          0.72
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope    (%)=        0.50          2.00
     Length           (m)=       97.74         30.00
     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   5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
     0.167   5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
     0.250   6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
     0.333   6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
     0.417   8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
     0.500   8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
     0.583  11.56 | 1.333   16.63 | 2.083    7.14 |  2.83    5.23
     0.667  11.56 | 1.417   12.68 | 2.167    7.14 |  2.92    4.93
     0.750  21.49 | 1.500   12.68 | 2.250    6.51 |  3.00    4.93
```

```
     Max.Eff.Inten.(mm/hr)=    124.56       31.27
               over (min)=       5.00       15.00
     Storage Coeff.  (min)=    2.84 (ii)   12.30 (ii)
     Unit Hyd. Tpeak (min)=    5.00       15.00
     Unit Hyd. peak  (cms)=    0.28        0.09
                                                    *TOTALS*
     PEAK FLOW       (cms)=    0.24        0.03       0.257 (iii)
     TIME TO PEAK    (hrs)=    1.00        1.17        1.00
     RUNOFF VOLUME    (mm)=   47.52       14.82       31.16
     TOTAL RAINFALL   (mm)=   49.52       49.52       49.52
     RUNOFF COEFFICIENT   =    0.96        0.30        0.63

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

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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  (  0310)|
 |   1 +  2 =  3    |       AREA    QPEAK    TPEAK     R.V.
  -------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0313):    4.05    0.831     1.00    32.64
     + ID2= 2 (  0314):    1.43    0.257     1.00    31.16
       ========================================================
       ID = 3 (  0310):    5.48    1.087     1.00    32.25

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  -------------------
 | CALIB             |
 | STANDHYD (  0315)|   Area     (ha)=   14.21
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
  -------------------

                             IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=      10.09          4.12
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope    (%)=        1.00          2.00
     Length           (m)=      307.76         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
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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   5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
     0.167   5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
     0.250   6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
     0.333   6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
     0.417   8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
     0.500   8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
```

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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   5.79 | 0.833   21.49 | 1.583   10.45 |  2.33    6.51
     0.167   5.79 | 0.917  124.56 | 1.667   10.45 |  2.42    6.01
     0.250   6.82 | 1.000  124.56 | 1.750    8.98 |  2.50    6.01
     0.333   6.82 | 1.083   26.38 | 1.833    8.98 |  2.58    5.59
     0.417   8.45 | 1.167   26.38 | 1.917    7.93 |  2.67    5.59
     0.500   8.45 | 1.250   16.63 | 2.000    7.93 |  2.75    5.23
```

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  -------------------------
 | Junction Command(0303) |
  -------------------------

                         AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)   (hrs)     (mm)
     INFLOW : ID= 8(  0279)    0.06     0.06    1.00    38.41
     OUTFLOW: ID= 2(  0303)    0.06     0.06    1.00    38.41

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  --------------------
 |Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
 |IN= 2---> OUT= 3    |
 | DT=  5.0 min       |
  --------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                       STAGE       AREA          |   STAGE       AREA
                        (m)        (m2)          |    (m)        (m2)
                       0.000      100.000        |   1.500      100.000
                       0.500      100.000        |   0.000        0.000
                       1.000      100.000        |   0.000        0.000

                       MULCH LAYER:
                       Depth       (m)=    0.10  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=     4.64

                       ENGINEERED SOIL LAYER:
                       Soil moisture =    0.30  Depth           (m)=  0.67
                       Width       (m)=   58.00  Length          (m)=  2.00
                       Porosity        =   0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=   36.30

                       STORAGE LAYER:
                       Depth       (m)=    1.50  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=    69.60

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060
```

```
                  hrs   mm/hr  |  hrs   mm/hr  |  hrs   mm/hr  |  hrs   mm/hr
                0.083   5.79  | 0.833   21.49 | 1.583   10.45 |  2.33   6.51
                0.167   5.79  | 0.917  124.56 | 1.667   10.45 |  2.42   6.01
                0.250   6.82  | 1.000  124.56 | 1.750    8.98 |  2.50   6.01
                0.333   6.82  | 1.083   26.38 | 1.833    8.98 |  2.58   5.59
                0.417   8.45  | 1.167   26.38 | 1.917    7.93 |  2.67   5.59
                0.500   8.45  | 1.250   16.63 | 2.000    7.93 |  2.75   5.23
                0.583  11.56  | 1.333   16.63 | 2.083    7.14 |  2.83   5.23
                0.667  11.56  | 1.417   12.68 | 2.167    7.14 |  2.92   4.93
                0.750  21.49  | 1.500   12.68 | 2.250    6.51 |  3.00   4.93

     Max.Eff.Inten.(mm/hr)=     124.56     ********
               over (min)        5.00       10.00
     Storage Coeff.  (min)=      4.59 (ii)    9.11 (ii)
     Unit Hyd. Tpeak (min)=      5.00       10.00
     Unit Hyd. peak  (cms)=      0.23        0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=      3.16        0.24       3.332 (iii)
     TIME TO PEAK    (hrs)=      1.00        1.08        1.00
     RUNOFF VOLUME    (mm)=     48.52       14.82       38.75
     TOTAL RAINFALL   (mm)=     49.52       49.52       49.52
     RUNOFF COEFFICIENT   =      0.98        0.30        0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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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--------------------
| DUHYD     (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=     1|
| Total(cms)=   2.9|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):  14.21      3.33      1.00   38.75
     ================================================
     MAJOR SYS.(ID= 2):   0.30      0.38      1.00   38.75
     MINOR SYS.(ID= 3):  13.91      2.95      1.00   38.75

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
```

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----------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA           |   STAGE      AREA
                       (m)         (m2)           |    (m)       (m2)
                      0.000      100.000          |   1.500     100.000
                      0.500      100.000          |   0.000       0.000
                      1.000      100.000          |   0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    62.40

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width       (m)=   780.00  Length           (m)=  2.00
                    Porosity      =     0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                    STORAGE LAYER:
                    Depth       (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   936.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                      AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2    13.91        2.948           1.00         38.75
       OVERFLOW:ID= 3    13.91        2.945           1.00         36.99

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       4.53
                    Time to reach Max Ponding storage       (Hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     384.22
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     212.35
                    Maximum Engineered Soil Volume       (cu.m.)=     176.07
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0317) |
  ------------------------
```

```
                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0318)    13.91     2.95    1.00    36.99
  OUTFLOW: ID= 2(  0317)    13.91     2.95    1.00    36.99

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

--------------------
| ADD HYD  (  0316)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0311):     0.30   0.384     1.00    38.75
     + ID2= 2 (  0317):    13.91   2.945     1.00    36.99
       ================================================
       ID = 3 (  0316):    14.21   3.329     1.00    37.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.39        0.20
     Dep. Storage     (mm)=       1.00        5.00
     Average Slope     (%)=       1.00        2.00
     Length            (m)=      62.78       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   5.79  | 0.833   21.49 | 1.583   10.45 |  2.33   6.51
         0.167   5.79  | 0.917  124.56 | 1.667   10.45 |  2.42   6.01
         0.250   6.82  | 1.000  124.56 | 1.750    8.98 |  2.50   6.01
         0.333   6.82  | 1.083   26.38 | 1.833    8.98 |  2.58   5.59
         0.417   8.45  | 1.167   26.38 | 1.917    7.93 |  2.67   5.59
         0.500   8.45  | 1.250   16.63 | 2.000    7.93 |  2.75   5.23
         0.583  11.56  | 1.333   16.63 | 2.083    7.14 |  2.83   5.23
         0.667  11.56  | 1.417   12.68 | 2.167    7.14 |  2.92   4.93
         0.750  21.49  | 1.500   12.68 | 2.250    6.51 |  3.00   4.93

     Max.Eff.Inten.(mm/hr)=     124.56      134.60
               over (min)        5.00       10.00
     Storage Coeff.  (min)=      1.77 (ii)    8.04 (ii)
     Unit Hyd. Tpeak (min)=      5.00       10.00
```

```
     Unit Hyd. peak  (cms)=      0.32        0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=      0.05        0.05       0.093 (iii)
     TIME TO PEAK    (hrs)=      1.00        1.08        1.00
     RUNOFF VOLUME    (mm)=     48.52       25.46       31.21
     TOTAL RAINFALL   (mm)=     49.52       49.52       49.52
     RUNOFF COEFFICIENT   =      0.98        0.51        0.63

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=     1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.09      1.00   31.21
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   0.59      0.09      1.00   31.21

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA           |   STAGE      AREA
                       (m)         (m2)           |    (m)       (m2)
                      0.000      100.000          |   1.500     100.000
                      0.500      100.000          |   0.000       0.000
                      1.000      100.000          |   0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=    0.00  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     0.00

                    ENGINEERED SOIL LAYER:
```

```
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width       (m)=    3.00  Length           (m)=240.00
                    Porosity      =     0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                      DEPTH      DISCHARGE      |   DEPTH      DISCHARGE
                       (m)         (cms)        |    (m)         (cms)
                      0.000         0.000       |   0.559         0.030
                      0.279         0.010       |   0.762         0.040
                      0.406         0.020       |   1.300         0.050

                    STORAGE LAYER:
                    Depth       (m)=    1.00  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   288.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                      AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     0.59        0.093           1.00         31.21
        OUTFLOW:ID= 1     0.45        0.009           0.08         14.47
       OVERFLOW:ID= 3     0.14        0.008           2.33         14.47

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      53.65
                    Time to reach Max Ponding storage       (Hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     169.06
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     149.95
                    Maximum Engineered Soil Volume       (cu.m.)=      69.86
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0330) |
  ------------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0329)    0.14     0.01    2.33    14.47
  OUTFLOW: ID= 2(  0330)    0.14     0.01    2.33    14.47

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

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```

```
  | Junction Command(0332) |
  ------------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 1(  0329)    0.45     0.01    0.08    14.47
  OUTFLOW: ID= 2(  0332)    0.45     0.01    0.08    14.47

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

--------------------
| ADD HYD  (  3106)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0331 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
       ID1= 1 (  0330):     0.14   0.008     2.33    14.47
     + ID2= 2 (  0331):     0.00   0.000     0.00     0.00
       ================================================
       ID = 3 (  3106):     0.14   0.008     2.33    14.47

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  3106)|
|  3 +  2 =  1     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  3106):     0.14   0.008     2.33    14.47
     + ID2= 2 (  0332):     0.45   0.009     0.08    14.47
       ================================================
       ID = 1 (  3106):     0.59   0.012     2.33    14.47

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0312)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0277):     1.22   0.257     1.00    25.57
     + ID2= 2 (  0310):     5.48   1.087     1.00    32.25
       ================================================
       ID = 3 (  0312):     6.70   1.344     1.00    31.03

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

--------------------
| ADD HYD  (  0312)|
```

```
|  3 +  2 =  1     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0312):     6.70   1.344     1.00    31.03
     + ID2= 2 (  3106):     0.59   0.012     2.33    14.47
       ================================================
       ID = 1 (  0312):     7.29   1.350     1.00    29.69

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

--------------------
| ADD HYD  (  0312)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0312):     7.29   1.350     1.00    29.69
     + ID2= 2 (  0316):    14.21   3.329     1.00    37.03
       ================================================
       ID = 3 (  0312):    21.50   4.680     1.00    34.54

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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    |  0.6610     0.9850
                         0.0400     0.1140    |  1.0960     1.3320
                         0.0760     0.3690    |  1.4260     1.5860
                         0.2810     0.6450    |  0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0312)     21.500      4.680      1.00       34.54
   OUTFLOW: ID= 1 (  0319)     21.500      0.239      3.00       34.51

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.10
                    TIME SHIFT OF PEAK FLOW          (min)=120.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.5883

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

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U A   A  L
          VV    I    SSSSS  UUUUU A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\d6c12
988-d14d-4c17-b46c-6482e30df544\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\d6c12
988-d14d-4c17-b46c-6482e30df544\scena


DATE: 08-28-2022                          TIME: 02:37:55

USER:


COMMENTS: _____________________________________________

--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : D. 25yr 3hr 10min Chicago     **
  ************************************************

-------------------
| CHICAGO STORM     |   IDF curve parameters: A= 731.314
| Ptotal= 58.14 mm  |                         B=   0.000
-------------------                         C=   0.699
```

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

                                Duration of storm   =  3.00 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    6.80 |  0.83  146.25 |  1.67   10.54 |  2.50    6.56
                    0.17    8.01 |  1.00   30.97 |  1.83    9.31 |  2.67    6.14
                    0.33    9.92 |  1.17   19.53 |  2.00    8.38 |  2.83    5.79
                    0.50   13.57 |  1.33   14.89 |  2.17    7.65 |
                    0.67   25.24 |  1.50   12.27 |  2.33    7.05 |


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-------------------
| CALIB             |
| NASHYD   (  0185) |   Area    (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min  |   Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.24

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


                                  ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
                   0.083    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                   0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                   0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                   0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                   0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                   0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                   0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                   0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                   0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

      Unit Hyd Qpeak  (cms)=   0.265

      PEAK FLOW      (cms)=   0.094 (i)
      TIME TO PEAK   (hrs)=   1.167
      RUNOFF VOLUME   (mm)=  20.420
      TOTAL RAINFALL  (mm)=  58.144
      RUNOFF COEFFICIENT   =   0.351

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

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```

```
| DUHYD    (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=     1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   1.66      0.09      1.17   20.42
      ==========================================================
      MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
      MINOR SYS.(ID= 3):   1.66      0.09      1.17   20.42

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA           |   STAGE       AREA
                        (m)         (m2)           |    (m)        (m2)
                       0.000       100.000         |   1.500       100.000
                       0.500       100.000         |   0.000         0.000
                       1.000       100.000         |   0.000         0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    21.60

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width      (m)=  100.00  Length           (m)=  3.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                    STORAGE LAYER:
                    Depth      (m)=    0.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   108.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060
```

```
                                AREA         QPEAK           TPEAK         R.V.
                                (ha)         (cms)           (hrs)         (mm)
                  INFLOW:ID= 2     1.66        0.094            1.17        20.42
               OVERFLOW:ID= 3      1.66        0.047            1.67         9.49

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       53.51
                    Time to reach Max Ponding storage      (Hr)=        0.00
                    Volume of water for drawdown in LID  (cu.m.)=     233.91
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     171.55
                    Maximum Engineered Soil Volume       (cu.m.)=      64.32
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0181) |
  ------------------------

                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0184)   1.66      0.05    1.67     9.49
  OUTFLOW: ID= 2(  0181)   1.66      0.05    1.67     9.49

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0265) |   Area    (ha)=   0.86
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.56         0.30
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      75.87        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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                   0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                   0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                   0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                   0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                   0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                   0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                   0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                   0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79
```

```
      Max.Eff.Inten.(mm/hr)=     146.25       ********
                  over (min)=       5.00         10.00
      Storage Coeff.  (min)=       1.86 (ii)     6.59 (ii)
      Unit Hyd. Tpeak (min)=       5.00         10.00
      Unit Hyd. peak  (cms)=       0.32          0.14
                                                        *TOTALS*
      PEAK FLOW       (cms)=       0.23          0.03       0.248 (iii)
      TIME TO PEAK    (hrs)=       1.00          1.08        1.00
      RUNOFF VOLUME    (mm)=      57.14         19.84       44.08
      TOTAL RAINFALL   (mm)=      58.14         58.14       58.14
      RUNOFF COEFFICIENT   =       0.98          0.34        0.76

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
         (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
              THAN THE STORAGE COEFFICIENT.
        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
---------------------
| DUHYD    (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=     1|
| Total(cms)=  0.2 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   0.86      0.25      1.00   44.08
      ==========================================================
      MAJOR SYS.(ID= 2):   0.08      0.07      1.00   44.08
      MINOR SYS.(ID= 3):   0.78      0.17      0.92   44.08

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA           |   STAGE       AREA
                        (m)         (m2)           |    (m)        (m2)
                       0.000       100.000         |   1.500       100.000
                       0.500       100.000         |   0.000         0.000
                       1.000       100.000         |   0.000         0.000
```

```
                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     3.20

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width      (m)=   40.00  Length           (m)=  2.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                    STORAGE LAYER:
                    Depth      (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=    48.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                       AREA         QPEAK           TPEAK         R.V.
                       (ha)         (cms)           (hrs)         (mm)
          INFLOW:ID= 2     0.78        0.174            0.92        44.08
       OVERFLOW:ID= 3      0.78        0.088            1.08        24.25

                Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       44.99
                Time to reach Max Ponding storage      (Hr)=        0.00
                Volume of water for drawdown in LID  (cu.m.)=     161.97
                Volume of Max. Water Storage         (cu.m.)=       0.00
                Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
                Maximum Engineered Soil Volume       (cu.m.)=       8.87
                ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0262) |
  ------------------------

                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0264)   0.78      0.09    1.08     24.25
  OUTFLOW: ID= 2(  0262)   0.78      0.09    1.08     24.25

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

-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |       AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)      (cms)     (hrs)     (mm)
```

```
                           (ha)     (cms)     (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0182 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
      ID1= 1 (  0181):     1.66    0.047     1.67     9.49
    + ID2= 2 (  0182):     0.00    0.000     0.00     0.00
      ==========================================================
      ID = 3 (  0243):     1.66    0.047     1.67     9.49

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

-------------------
| ADD HYD  (  0243)|
|  3 +  2 =  1     |       AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)      (cms)     (hrs)     (mm)
      ID1= 3 (  0243):     1.66    0.047     1.67     9.49
    + ID2= 2 (  0262):     0.78    0.088     1.08    24.25
      ==========================================================
      ID = 1 (  0243):     2.44    0.088     1.08    14.20

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

-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |       AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)      (cms)     (hrs)     (mm)
      ID1= 1 (  0243):     2.44    0.088     1.08    14.20
    + ID2= 2 (  0263):     0.08    0.074     1.00    44.08
      ==========================================================
      ID = 3 (  0243):     2.53    0.088     1.00    15.19

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0188)|     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    |  0.4800     0.0190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0243)     2.527     0.088     1.00      15.19
   OUTFLOW: ID= 1 (  0188)     2.527     0.073     1.17      15.19

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 83.09
                TIME SHIFT OF PEAK FLOW          (min)= 10.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0030
```

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--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0252) |   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
-------------------

                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.22         0.10
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      45.84        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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                   0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                   0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                   0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                   0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                   0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                   0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                   0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                   0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

      Max.Eff.Inten.(mm/hr)=     146.25       181.22
                  over (min)=       5.00         10.00
      Storage Coeff.  (min)=       1.37 (ii)     6.94 (ii)
      Unit Hyd. Tpeak (min)=       5.00         10.00
      Unit Hyd. peak  (cms)=       0.33          0.14
                                                        *TOTALS*
      PEAK FLOW       (cms)=       0.04          0.03       0.068 (iii)
      TIME TO PEAK    (hrs)=       1.00          1.08        1.00
      RUNOFF VOLUME    (mm)=      57.14         32.77       40.07
      TOTAL RAINFALL   (mm)=      58.14         58.14       58.14
      RUNOFF COEFFICIENT   =       0.98          0.56        0.69

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. 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  (  0179)|
|  1 +  2 =  3     |       AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)      (cms)     (hrs)     (mm)
      ID1= 1 (  0188):     2.53    0.073     1.17    15.19
    + ID2= 2 (  0252):     0.32    0.068     1.00    40.07
      ==========================================================
      ID = 3 (  0179):     2.84    0.112     1.08    17.95

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0106) |   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                             IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.28         0.23
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      58.22        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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                   0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                   0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                   0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                   0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                   0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                   0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                   0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                   0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

      Max.Eff.Inten.(mm/hr)=     146.25       173.89
                  over (min)=       5.00         10.00
      Storage Coeff.  (min)=       1.59 (ii)     7.24 (ii)
      Unit Hyd. Tpeak (min)=       5.00         10.00
      Unit Hyd. peak  (cms)=       0.33          0.14
                                                        *TOTALS*
      PEAK FLOW       (cms)=       0.00          0.08       0.078 (iii)
      TIME TO PEAK    (hrs)=       1.00          1.08        1.08
      RUNOFF VOLUME    (mm)=      57.14         32.37       32.61
      TOTAL RAINFALL   (mm)=      58.14         58.14       58.14
```

```
    RUNOFF COEFFICIENT   =       0.98         0.56           0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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(  0282)|     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   |   0.1000     0.0020

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0106)      0.508     0.078      1.08      32.61
   OUTFLOW: ID= 1 (  0282)      0.508     0.068      1.08      32.61

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 87.62
                   TIME SHIFT OF PEAK FLOW         (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0015

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.32         0.26
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      62.24        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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                  0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
```

```
                  0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                  0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                  0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                  0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                  0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                  0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                  0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Max.Eff.Inten.(mm/hr)=     146.25       173.89
               over (min)       5.00        10.00
     Storage Coeff.  (min)=       1.65 (ii)    7.31 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.13
                                                           *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09          0.089 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.08
     RUNOFF VOLUME    (mm)=      57.14        32.37          32.61
     TOTAL RAINFALL   (mm)=      58.14        58.14          58.14
     RUNOFF COEFFICIENT   =       0.98         0.56           0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0246)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0245):     0.58   0.089     1.08    32.61
      + ID2= 2 (  0282):     0.51   0.068     1.08    32.61
        ===================================================
        ID = 3 (  0246):     1.09   0.157     1.08    32.61

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0302)|   Area    (ha)=   0.78   Curve Number   (CN)= 78.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

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

```
                             ---- TRANSFORMED HYETOGRAPH ----
                   TIME    RAIN | TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                    hrs   mm/hr |  hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.083    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                  0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                  0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                  0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                  0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                  0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                  0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                  0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                  0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Unit Hyd Qpeak  (cms)=   0.149

     PEAK FLOW       (cms)=   0.058 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=  23.378
     TOTAL RAINFALL   (mm)=  58.144
     RUNOFF COEFFICIENT   =   0.402

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   0.50
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.28         0.22
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      57.74        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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                  0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                  0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                  0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                  0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                  0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
```

```
                  0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                  0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                  0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Max.Eff.Inten.(mm/hr)=     146.25       173.89
               over (min)       5.00        10.00
     Storage Coeff.  (min)=       1.58 (ii)    7.23 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.33         0.14
                                                           *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.08          0.077 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.08
     RUNOFF VOLUME    (mm)=      57.14        32.37          32.61
     TOTAL RAINFALL   (mm)=      58.14        58.14          58.14
     RUNOFF COEFFICIENT   =       0.98         0.56           0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0248)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0019):     0.50   0.077     1.08    32.61
      + ID2= 2 (  0302):     0.78   0.058     1.17    23.38
        ===================================================
        ID = 3 (  0248):     1.28   0.133     1.08    26.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.90         0.38
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      92.38        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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                  0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                  0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                  0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                  0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                  0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                  0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                  0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                  0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79

     Max.Eff.Inten.(mm/hr)=     146.25      ********
               over (min)       5.00        10.00
     Storage Coeff.  (min)=       2.09 (ii)    6.41 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.14
                                                           *TOTALS*
     PEAK FLOW       (cms)=       0.36         0.04          0.389 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.00
     RUNOFF VOLUME    (mm)=      57.14        19.84          45.95
     TOTAL RAINFALL   (mm)=      58.14        58.14          58.14
     RUNOFF COEFFICIENT   =       0.98         0.34           0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0279)|
| Inlet Cap.= 0.270|
| #of Inlets=     1|
| Total(cms)=   0.3|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.28      0.39      1.00   45.95
     ====================================================
     MAJOR SYS.(ID= 2):   0.13      0.12      1.00   45.95
     MINOR SYS.(ID= 3):   1.15      0.27      0.92   45.95

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

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  | Junction Command(0303) |
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                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 8(  0279)    0.13     0.12    1.00    45.95
  OUTFLOW: ID= 2(  0303)    0.13     0.12    1.00    45.95

  --------------------------------------------------------------------------------
----------------------
|Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA         |  STAGE      AREA
                       (m)         (m2)         |   (m)       (m2)
                      0.000        100.000      |  1.500      100.000
                      0.500        100.000      |  0.000        0.000
                      1.000        100.000      |  0.000        0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     4.64

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth             (m)=  0.67
                    Width      (m)=   58.00  Length            (m)=  2.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=   36.30

                    STORAGE LAYER:
                    Depth       (m)=    1.50  Porosity          =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=    69.60

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060
```

```
                      AREA        QPEAK            TPEAK         R.V.
                      (ha)        (cms)            (hrs)         (mm)
     INFLOW:ID= 2     1.15        0.270             0.92        45.95
   OVERFLOW:ID= 3     1.15        0.270             1.00        32.35

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       29.60
              Time to reach Max Ponding storage       (Hr)=        0.00
              Volume of water for drawdown in LID  (cu.m.)=      167.37
              Volume of Max. Water Storage         (cu.m.)=        0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=      154.59
              Maximum Engineered Soil Volume       (cu.m.)=       12.86
              ***** After simulation, water volume is not zero.

  --------------------------
  | Junction Command(0277) |
  --------------------------

                        AREA     QPEAK   TPEAK     R.V.
                        (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 3(  0278)    1.15     0.27    1.00    32.35
  OUTFLOW: ID= 2(  0277)    1.15     0.27    1.00    32.35

  --------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0313)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.43         1.62
     Dep. Storage     (mm)=       5.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     164.25        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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                  0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                  0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                  0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                  0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                  0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                  0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                  0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                  0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79
```

```
     Max.Eff.Inten.(mm/hr)=     146.25        43.21
               over (min)       5.00        15.00
     Storage Coeff.  (min)=       2.96 (ii)   12.83 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.28         0.08
                                                           *TOTALS*
     PEAK FLOW       (cms)=       0.96         0.10          1.005 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.17           1.00
     RUNOFF VOLUME    (mm)=      53.14        19.84          39.82
     TOTAL RAINFALL   (mm)=      58.14        58.14          58.14
     RUNOFF COEFFICIENT   =       0.91         0.34           0.68

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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 (  0314)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.72         0.72
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       0.50         2.00
     Length            (m)=      97.74        30.00
     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    6.80 | 0.833   25.24 | 1.583   12.27 |  2.33    7.65
                  0.167    6.80 | 0.917  146.25 | 1.667   12.27 |  2.42    7.05
                  0.250    8.01 | 1.000  146.25 | 1.750   10.54 |  2.50    7.05
                  0.333    8.01 | 1.083   30.97 | 1.833   10.54 |  2.58    6.56
                  0.417    9.92 | 1.167   30.97 | 1.917    9.31 |  2.67    6.56
                  0.500    9.92 | 1.250   19.53 | 2.000    9.31 |  2.75    6.14
                  0.583   13.57 | 1.333   19.53 | 2.083    8.38 |  2.83    6.14
                  0.667   13.57 | 1.417   14.89 | 2.167    8.38 |  2.92    5.79
                  0.750   25.24 | 1.500   14.89 | 2.250    7.65 |  3.00    5.79
```

```
     Max.Eff.Inten.(mm/hr)=     146.25        43.21
               over (min)       5.00        15.00
     Storage Coeff.  (min)=       2.66 (ii)   10.97 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.29         0.09
                                                           *TOTALS*
     PEAK FLOW       (cms)=       0.29         0.05          0.308 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.17           1.00
     RUNOFF VOLUME    (mm)=      56.14        19.84          37.98
     TOTAL RAINFALL   (mm)=      58.14        58.14          58.14
     RUNOFF COEFFICIENT   =       0.97         0.34           0.65

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0310)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0313):     4.05   1.005     1.00    39.82
      + ID2= 2 (  0314):     1.43   0.308     1.00    37.98
        ===================================================
        ID = 3 (  0310):     5.48   1.314     1.00    39.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0315)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.09         4.12
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     307.76        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   6.80  | 0.833   25.24 | 1.583   12.27 |  2.33   7.65
 0.167   6.80  | 0.917  146.25 | 1.667   12.27 |  2.42   7.05
 0.250   8.01  | 1.000  146.25 | 1.750   10.54 |  2.50   7.05
 0.333   8.01  | 1.083   30.97 | 1.833   10.54 |  2.58   6.56
 0.417   9.92  | 1.167   30.97 | 1.917   9.31  |  2.67   6.56
 0.500   9.92  | 1.250   19.53 | 2.000   9.31  |  2.75   6.14
 0.583  13.57  | 1.333   19.53 | 2.083   8.38  |  2.83   6.14
 0.667  13.57  | 1.417   14.89 | 2.167   8.38  |  2.92   5.79
 0.750  25.24  | 1.500   14.89 | 2.250   7.65  |  3.00   5.79

     Max.Eff.Inten.(mm/hr)=     146.25      ********
               over (min)          5.00        10.00
     Storage Coeff.  (min)=        4.31 (ii)    8.54 (ii)
     Unit Hyd. Tpeak (min)=        5.00        10.00
     Unit Hyd. peak  (cms)=        0.23         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=        3.76         0.33         4.014 (iii)
     TIME TO PEAK    (hrs)=        1.00         1.08          1.00
     RUNOFF VOLUME    (mm)=      57.14        19.84         46.32
     TOTAL RAINFALL   (mm)=      58.14        58.14         58.14
     RUNOFF COEFFICIENT   =       0.98         0.34          0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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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--------------------
| DUHYD    (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=  2.9|      AREA     QPEAK     TPEAK    R.V.
--------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):  14.21      4.01      1.00   46.32
     ================================================
     MAJOR SYS.(ID= 2):   0.79      1.07      1.00   46.32
     MINOR SYS.(ID= 3):  13.42      2.95      0.92   46.32

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
```

```
----------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                      STAGE       AREA           |  STAGE      AREA
                       (m)        (m2)           |   (m)       (m2)
                      0.000      100.000         |  1.500     100.000
                      0.500      100.000         |  0.000       0.000
                      1.000      100.000         |  0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    62.40

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width       (m)=   780.00  Length           (m)=  2.00
                    Porosity      =     0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                    STORAGE LAYER:
                    Depth       (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   936.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                      AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2    13.42         2.948           0.92        46.32
       OVERFLOW:ID= 3    13.42         2.945           0.92        44.50

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      3.94
                    Time to reach Max Ponding storage       (Hr)=      0.00
                    Volume of water for drawdown in LID  (cu.m.)=    385.09
                    Volume of Max. Water Storage         (cu.m.)=      0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=    212.35
                    Maximum Engineered Soil Volume       (cu.m.)=    176.20
                    ***** After simulation, water volume is not zero.

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  | Junction Command(0317) |
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                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0318)    13.42      2.95     0.92     44.50
  OUTFLOW: ID= 2(  0317)    13.42      2.95     0.92     44.50

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--------------------
| ADD HYD  (  0316)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0311):     0.79   1.066     1.00    46.32
     + ID2= 2 (  0317):    13.42   2.945     0.92    44.50
       ================================================
       ID = 3 (  0316):    14.21   4.012     1.00    44.60

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area      (ha)=      0.39         0.20
     Dep. Storage      (mm)=      1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      62.78        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   6.80  | 0.833   25.24 | 1.583   12.27 |  2.33   7.65
         0.167   6.80  | 0.917  146.25 | 1.667   12.27 |  2.42   7.05
         0.250   8.01  | 1.000  146.25 | 1.750   10.54 |  2.50   7.05
         0.333   8.01  | 1.083   30.97 | 1.833   10.54 |  2.58   6.56
         0.417   9.92  | 1.167   30.97 | 1.917   9.31  |  2.67   6.56
         0.500   9.92  | 1.250   19.53 | 2.000   9.31  |  2.75   6.14
         0.583  13.57  | 1.333   19.53 | 2.083   8.38  |  2.83   6.14
         0.667  13.57  | 1.417   14.89 | 2.167   8.38  |  2.92   5.79
         0.750  25.24  | 1.500   14.89 | 2.250   7.65  |  3.00   5.79

     Max.Eff.Inten.(mm/hr)=     146.25      174.63
               over (min)          5.00       10.00
     Storage Coeff.  (min)=        1.66 (ii)    7.31 (ii)
     Unit Hyd. Tpeak (min)=        5.00       10.00
```

```
     Unit Hyd. peak  (cms)=       0.32         0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.07         0.117 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08          1.00
     RUNOFF VOLUME    (mm)=      57.14        32.41         38.59
     TOTAL RAINFALL   (mm)=      58.14        58.14         58.14
     RUNOFF COEFFICIENT   =       0.98         0.56          0.66

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------------------------------------------------------------------------
--------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=    1|
| Total(cms)=  0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------       (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.12      1.00   38.59
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.01      1.00   38.59
     MINOR SYS.(ID= 3):   0.59      0.11      1.00   38.59

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                      STAGE       AREA           |  STAGE      AREA
                       (m)        (m2)           |   (m)       (m2)
                      0.000      100.000         |  1.500     100.000
                      0.500      100.000         |  0.000       0.000
                      1.000      100.000         |  0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=    0.00  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     0.00

                    ENGINEERED SOIL LAYER:
```

```
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width       (m)=   3.00  Length           (m)=240.00
                    Porosity      =     0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                      DEPTH      DISCHARGE      |   DEPTH      DISCHARGE
                       (m)         (cms)        |    (m)        (cms)
                      0.000         0.000       |   0.559       0.030
                      0.279         0.010       |   0.762       0.040
                      0.406         0.020       |   1.300       0.050

                    STORAGE LAYER:
                    Depth       (m)=    1.00  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   288.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                      AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2    0.59         0.112           1.00        38.59
        OUTFLOW:ID= 1     0.30         0.009           0.08        21.71
       OVERFLOW:ID= 3     0.29         0.019           1.58        21.71

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      43.73
                    Time to reach Max Ponding storage       (Hr)=      0.00
                    Volume of water for drawdown in LID  (cu.m.)=    169.10
                    Volume of Max. Water Storage         (cu.m.)=      0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=    149.95
                    Maximum Engineered Soil Volume       (cu.m.)=     69.86
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0330) |
  ------------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0329)    0.29     0.02    1.58    21.71
  OUTFLOW: ID= 2(  0330)    0.29     0.02    1.58    21.71

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```

```
  | Junction Command(0332) |
  ------------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 1(  0329)    0.30     0.01    0.08    21.71
  OUTFLOW: ID= 2(  0332)    0.30     0.01    0.08    21.71

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

--------------------
| ADD HYD  (  3106)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0330):     0.29   0.019     1.58    21.71
     + ID2= 2 (  0331):     0.00   0.005     1.00    38.59
       ================================================
       ID = 3 (  3106):     0.29   0.019     1.58    21.95

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

--------------------
| ADD HYD  (  3106)|
|  3 +  2 =  1     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  3106):     0.29   0.019     1.58    21.95
     + ID2= 2 (  0332):     0.30   0.009     0.08    21.71
       ================================================
       ID = 1 (  3106):     0.59   0.024     1.58    21.83

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

--------------------
| ADD HYD  (  0312)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0277):     1.15   0.270     1.00    32.35
     + ID2= 2 (  0310):     5.48   1.314     1.00    39.34
       ================================================
       ID = 3 (  0312):     6.63   1.583     1.00    38.12

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

--------------------
| ADD HYD  (  0312)|
|  3 +  2 =  1     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
```

```
       ID1= 3 (  0312):     6.63   1.583     1.00    38.12
     + ID2= 2 (  3106):     0.59   0.024     1.58    21.83
       ================================================
       ID = 1 (  0312):     7.22   1.595     1.00    36.79

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

--------------------
| ADD HYD  (  0312)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0312):     7.22   1.595     1.00    36.79
     + ID2= 2 (  0316):    14.21   4.012     1.00    44.60
       ================================================
       ID = 3 (  0312):    21.43   5.607     1.00    41.97

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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    |  0.6610     0.9850
                           0.0400     0.1140    |  1.0960     1.3320
                           0.0760     0.3690    |  1.4260     1.5860
                           0.2810     0.6450    |  0.0000     0.0000


                              AREA     QPEAK     TPEAK        R.V.
                               (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (  0312)    21.432     5.607      1.00        41.97
     OUTFLOW: ID= 1 (  0319)    21.432     0.327      2.83        41.93

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  5.83
                    TIME SHIFT OF PEAK FLOW          (min)=110.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.6861

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

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

       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
         V V    I      SS   U   U A   A  L
          VV    I    SSSSS  UUUUU A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\eadd0
518-c681-4421-9ef6-f4dd29d51ef4\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\eadd0
518-c681-4421-9ef6-f4dd29d51ef4\scena


DATE: 08-28-2022                          TIME: 02:37:55

USER:


COMMENTS: _____

--------------------------------------------------------------------------------
----------------------
  ************************************************
  ** SIMULATION : E. 50yr 3hr 10min Chicago     **
  ************************************************

-------------------
| CHICAGO STORM     |    IDF curve parameters: A= 811.794
| Ptotal= 64.54 mm  |                          B=   0.000
-------------------                          C=   0.699
```

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

                                Duration of storm   =  3.00 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    7.55 |  0.83  162.35 |'  1.67   11.70 |  2.50    7.28
                    0.17    8.89 |  1.00   34.38 |'  1.83   10.34 |  2.67    6.82
                    0.33   11.01 |  1.17   21.68 |'  2.00    9.30 |  2.83    6.42
                    0.50   15.06 |  1.33   16.53 |'  2.17    8.49 |
                    0.67   28.01 |  1.50   13.62 |'  2.33    7.83 |


--------------------------------------------------------------------------------
-------------------
| CALIB             |
| NASHYD   (  0185)|   Area    (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.24

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


                                  ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

      Unit Hyd Qpeak  (cms)=   0.265

      PEAK FLOW      (cms)=   0.115 (i)
      TIME TO PEAK   (hrs)=   1.167
      RUNOFF VOLUME   (mm)=  24.467
      TOTAL RAINFALL  (mm)=  64.542
      RUNOFF COEFFICIENT   =   0.379

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

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

```
| DUHYD    (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=     1|
| Total(cms)=  0.1|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   1.66      0.11      1.17   24.47
      ==========================================================
      MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
      MINOR SYS.(ID= 3):   1.66      0.11      1.17   24.47

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
----------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA           |   STAGE       AREA
                        (m)         (m2)           |    (m)        (m2)
                       0.000       100.000         |   1.500      100.000
                       0.500       100.000         |   0.000        0.000
                       1.000       100.000         |   0.000        0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    21.60

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth           (m)=  0.72
                    Width      (m)=  100.00  Length          (m)=  3.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                    STORAGE LAYER:
                    Depth      (m)=    0.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   108.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060
```

```
                                AREA         QPEAK           TPEAK         R.V.
                                (ha)         (cms)           (hrs)         (mm)
                  INFLOW:ID= 2     1.66        0.115            1.17        24.47
               OVERFLOW:ID= 3      1.66        0.076            1.50        13.53

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       44.70
                    Time to reach Max Ponding storage      (Hr)=        0.00
                    Volume of water for drawdown in LID  (cu.m.)=     234.08
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     171.55
                    Maximum Engineered Soil Volume       (cu.m.)=      64.41
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0181) |
  ------------------------

                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0184)   1.66      0.08    1.50    13.53
  OUTFLOW: ID= 2(  0181)   1.66      0.08    1.50    13.53

--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0265)|   Area    (ha)=   0.86
|ID= 1 DT= 5.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                           IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.56         0.30
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      75.87        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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42
```

```
      Max.Eff.Inten.(mm/hr)=     162.35       ********
                  over (min)=       5.00         10.00
      Storage Coeff.  (min)=       1.78 (ii)     6.32 (ii)
      Unit Hyd. Tpeak (min)=       5.00         10.00
      Unit Hyd. peak  (cms)=       0.32          0.15
                                                        *TOTALS*
      PEAK FLOW       (cms)=       0.25          0.03         0.279 (iii)
      TIME TO PEAK    (hrs)=       1.00          1.08          1.00
      RUNOFF VOLUME    (mm)=      63.54         23.83         49.64
      TOTAL RAINFALL   (mm)=      64.54         64.54         64.54
      RUNOFF COEFFICIENT   =       0.98          0.37          0.77

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
              THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
----------
| DUHYD    (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=     1|
| Total(cms)=  0.2|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   0.86      0.28      1.00   49.64
      ==========================================================
      MAJOR SYS.(ID= 2):   0.11      0.11      1.00   49.64
      MINOR SYS.(ID= 3):   0.75      0.17      0.92   49.64

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
----------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA           |   STAGE       AREA
                        (m)         (m2)           |    (m)        (m2)
                       0.000       100.000         |   1.500      100.000
                       0.500       100.000         |   0.000        0.000
                       1.000       100.000         |   0.000        0.000
```

```
                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     3.20

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth           (m)=  0.67
                    Width      (m)=   40.00  Length          (m)=  2.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                    STORAGE LAYER:
                    Depth      (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=    48.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                      AREA         QPEAK           TPEAK         R.V.
                      (ha)         (cms)           (hrs)         (mm)
         INFLOW:ID= 2     0.75        0.174            0.92        49.64
      OVERFLOW:ID= 3      0.75        0.099            1.08        29.13

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       41.32
              Time to reach Max Ponding storage      (Hr)=        0.00
              Volume of water for drawdown in LID  (cu.m.)=     161.97
              Volume of Max. Water Storage         (cu.m.)=       0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
              Maximum Engineered Soil Volume       (cu.m.)=       8.87
              ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0262) |
  ------------------------

                         AREA     QPEAK   TPEAK     R.V.
                         (ha)     (cms)   (hrs)     (mm)
    INFLOW : ID= 3(  0264)   0.75      0.10    1.08    29.13
    OUTFLOW: ID= 2(  0262)   0.75      0.10    1.08    29.13

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

-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
```

```
--------------------      (ha)      (cms)     (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0182 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
      ID1= 1 (  0181):     1.66    0.076     1.50    13.53
    + ID2= 2 (  0182):     0.00    0.000     0.00     0.00
      ==========================================================
      ID = 3 (  0243):     1.66    0.076     1.50    13.53

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

-------------------
| ADD HYD  (  0243)|
|  3 +  2 =  1     |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      ID1= 3 (  0243):     1.66    0.076     1.50    13.53
    + ID2= 2 (  0262):     0.75    0.099     1.08    29.13
      ==========================================================
      ID = 1 (  0243):     2.42    0.111     1.50    18.40

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

-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      ID1= 1 (  0243):     2.42    0.111     1.50    18.40
    + ID2= 2 (  0263):     0.11    0.105     1.00    49.64
      ==========================================================
      ID = 3 (  0243):     2.53    0.142     1.00    19.74

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
----------
| RESERVOIR(  0188)|     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    |  0.4800     0.0190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0243)     2.527     0.142     1.00      19.74
   OUTFLOW: ID= 1 (  0188)     2.527     0.097     1.08      19.74

                PEAK   FLOW    REDUCTION [Qout/Qin](%)= 68.62
                TIME SHIFT OF PEAK FLOW          (min)=  5.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0039
```

```
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
-------------------

                           IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.22         0.10
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      45.84        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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

      Max.Eff.Inten.(mm/hr)=     162.35       213.26
                  over (min)=       5.00         10.00
      Storage Coeff.  (min)=       1.32 (ii)     6.53 (ii)
      Unit Hyd. Tpeak (min)=       5.00         10.00
      Unit Hyd. peak  (cms)=       0.33          0.14
                                                        *TOTALS*
      PEAK FLOW       (cms)=       0.04          0.04         0.079 (iii)
      TIME TO PEAK    (hrs)=       1.00          1.08          1.00
      RUNOFF VOLUME    (mm)=      63.54         38.14         45.75
      TOTAL RAINFALL   (mm)=      64.54         64.54         64.54
      RUNOFF COEFFICIENT   =       0.98          0.59          0.71

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
              THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

```
-------------------
| ADD HYD  (  0179)|
|  1 +  2 =  3     |         AREA     QPEAK     TPEAK     R.V.
--------------------         (ha)      (cms)     (hrs)     (mm)
      ID1= 1 (  0188):      2.53    0.097     1.08     19.74
    + ID2= 2 (  0252):      0.32    0.079     1.00     45.75
      ==========================================================
      ID = 3 (  0179):      2.84    0.149     1.08     22.63

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                           IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.28         0.23
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      58.22        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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

      Max.Eff.Inten.(mm/hr)=     162.35       204.85
                  over (min)=       5.00         10.00
      Storage Coeff.  (min)=       1.52 (ii)     6.82 (ii)
      Unit Hyd. Tpeak (min)=       5.00         10.00
      Unit Hyd. peak  (cms)=       0.33          0.14
                                                        *TOTALS*
      PEAK FLOW       (cms)=       0.00          0.09         0.093 (iii)
      TIME TO PEAK    (hrs)=       1.00          1.08          1.08
      RUNOFF VOLUME    (mm)=      63.54         37.71         37.96
      TOTAL RAINFALL   (mm)=      64.54         64.54         64.54
```

```
     RUNOFF COEFFICIENT   =       0.98         0.58           0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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(  0282)|     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   |   0.1000     0.0020

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0106)      0.508      0.093      1.08      37.96
   OUTFLOW: ID= 1 (  0282)      0.508      0.083      1.08      37.95

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 88.42
                  TIME SHIFT OF PEAK FLOW         (min)=  0.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0018

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.32         0.26
     Dep. Storage     (mm)=        1.00         5.00
     Average Slope     (%)=        1.00         2.00
     Length            (m)=       62.24        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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
```

```
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Max.Eff.Inten.(mm/hr)=     162.35       204.85
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.58 (ii)    6.88 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.33         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.11          0.106 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.08
     RUNOFF VOLUME    (mm)=      63.54        37.71          37.96
     TOTAL RAINFALL   (mm)=      64.54        64.54          64.54
     RUNOFF COEFFICIENT   =       0.98         0.58           0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0246)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0245):       0.58   0.106     1.08    37.96
     + ID2= 2 (  0282):       0.51   0.083     1.08    37.95
       ===================================================
       ID = 3 (  0246):       1.09   0.189     1.08    37.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0302)|   Area    (ha)=   0.78   Curve Number   (CN)= 78.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

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

```
                              ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Unit Hyd Qpeak  (cms)=   0.149

     PEAK FLOW       (cms)=   0.070 (i)
     TIME TO PEAK    (hrs)=   1.167
     RUNOFF VOLUME    (mm)=  27.832
     TOTAL RAINFALL   (mm)=  64.542
     RUNOFF COEFFICIENT   =   0.431

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

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   0.50
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.28         0.22
     Dep. Storage     (mm)=        1.00         5.00
     Average Slope     (%)=        1.00         2.00
     Length            (m)=       57.74        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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
```

```
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Max.Eff.Inten.(mm/hr)=     162.35       204.85
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.51 (ii)    6.81 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.33         0.14
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09          0.092 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.08
     RUNOFF VOLUME    (mm)=      63.54        37.71          37.96
     TOTAL RAINFALL   (mm)=      64.54        64.54          64.54
     RUNOFF COEFFICIENT   =       0.98         0.58           0.59

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0248)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0019):       0.50   0.092     1.08    37.96
     + ID2= 2 (  0302):       0.78   0.070     1.17    27.83
       ===================================================
       ID = 3 (  0248):       1.28   0.160     1.08    31.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.90         0.38
     Dep. Storage     (mm)=        1.00         5.00
     Average Slope     (%)=        1.00         2.00
     Length            (m)=       92.38        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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42

     Max.Eff.Inten.(mm/hr)=     162.35     ********
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       2.01 (ii)    6.15 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.40         0.04          0.436 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.00
     RUNOFF VOLUME    (mm)=      63.54        23.83          51.63
     TOTAL RAINFALL   (mm)=      64.54        64.54          64.54
     RUNOFF COEFFICIENT   =       0.98         0.37           0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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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--------------------
| DUHYD    (  0279)|
| Inlet Cap.= 0.270|
| #of Inlets=     1|
| Total(cms)=   0.3|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.28      0.44      1.00   51.63
     ===================================================
     MAJOR SYS.(ID= 2):   0.16      0.17      1.00   51.63
     MINOR SYS.(ID= 3):   1.12      0.27      0.92   51.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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  --------------------------
  | Junction Command(0303) |
  --------------------------

                            AREA     QPEAK   TPEAK     R.V.
                            (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 8(  0279)     0.16      0.17    1.00    51.63
  OUTFLOW: ID= 2(  0303)     0.16      0.17    1.00    51.63

  --------------------------------------------------------------------------------
----------------------
|Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA          |   STAGE      AREA
                       (m)         (m2)          |    (m)       (m2)
                      0.000       100.000        |   1.500     100.000
                      0.500       100.000        |   0.000       0.000
                      1.000       100.000        |   0.000       0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     4.64

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width      (m)=   58.00  Length           (m)=  2.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=   36.30

                    STORAGE LAYER:
                    Depth       (m)=    1.50  Porosity          =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=    69.60

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060
```

```
                      AREA         QPEAK            TPEAK         R.V.
                      (ha)         (cms)            (hrs)         (mm)
     INFLOW:ID= 2     1.12         0.270             0.92         51.63
   OVERFLOW:ID= 3     1.12         0.270             1.00         37.56

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       27.25
              Time to reach Max Ponding storage       (Hr)=        0.00
              Volume of water for drawdown in LID  (cu.m.)=      167.37
              Volume of Max. Water Storage         (cu.m.)=        0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=      154.59
              Maximum Engineered Soil Volume       (cu.m.)=       12.86
              ***** After simulation, water volume is not zero.

  --------------------------
  | Junction Command(0277) |
  --------------------------

                          AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 3(  0278)    1.12      0.27    1.00    37.56
  OUTFLOW: ID= 2(  0277)    1.12      0.27    1.00    37.56

  --------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0313)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        2.43         1.62
     Dep. Storage     (mm)=        5.00         5.00
     Average Slope     (%)=        1.00         2.00
     Length            (m)=      164.25        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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42
```

```
     Max.Eff.Inten.(mm/hr)=     162.35     ********
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       2.83 (ii)    7.78 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.28         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       1.07         0.17          1.197 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.00
     RUNOFF VOLUME    (mm)=      59.54        23.83          45.26
     TOTAL RAINFALL   (mm)=      64.54        64.54          64.54
     RUNOFF COEFFICIENT   =       0.92         0.37           0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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 (  0314)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.72         0.72
     Dep. Storage     (mm)=        2.00         5.00
     Average Slope     (%)=        0.50         2.00
     Length            (m)=       97.74        30.00
     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    7.55 | 0.833   28.01 | 1.583   13.62 |  2.33    8.49
                   0.167    7.55 | 0.917  162.35 | 1.667   13.62 |  2.42    7.83
                   0.250    8.89 | 1.000  162.35 | 1.750   11.70 |  2.50    7.83
                   0.333    8.89 | 1.083   34.38 | 1.833   11.70 |  2.58    7.28
                   0.417   11.01 | 1.167   34.38 | 1.917   10.34 |  2.67    7.28
                   0.500   11.01 | 1.250   21.68 | 2.000   10.34 |  2.75    6.82
                   0.583   15.06 | 1.333   21.68 | 2.083    9.30 |  2.83    6.82
                   0.667   15.06 | 1.417   16.53 | 2.167    9.30 |  2.92    6.42
                   0.750   28.01 | 1.500   16.53 | 2.250    8.49 |  3.00    6.42
```

```
     Max.Eff.Inten.(mm/hr)=     162.35     ********
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       2.56 (ii)    7.45 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.29         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.32         0.08          0.376 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08           1.00
     RUNOFF VOLUME    (mm)=      62.54        23.83          43.18
     TOTAL RAINFALL   (mm)=      64.54        64.54          64.54
     RUNOFF COEFFICIENT   =       0.97         0.37           0.67

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0310)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0313):       4.05   1.197     1.00    45.26
     + ID2= 2 (  0314):       1.43   0.376     1.00    43.18
       ===================================================
       ID = 3 (  0310):       5.48   1.574     1.00    44.71

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0315)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       10.09         4.12
     Dep. Storage     (mm)=        1.00         5.00
     Average Slope     (%)=        1.00         2.00
     Length            (m)=      307.76        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    7.55  | 0.833   28.01  | 1.583   13.62  |  2.33    8.49
                0.167    7.55  | 0.917  162.35  | 1.667   13.62  |  2.42    7.83
                0.250    8.89  | 1.000  162.35  | 1.750   11.70  |  2.50    7.83
                0.333    8.89  | 1.083   34.38  | 1.833   11.70  |  2.58    7.28
                0.417   11.01  | 1.167   34.38  | 1.917   10.34  |  2.67    7.28
                0.500   11.01  | 1.250   21.68  | 2.000   10.34  |  2.75    6.82
                0.583   15.06  | 1.333   21.68  | 2.083    9.30  |  2.83    6.82
                0.667   15.06  | 1.417   16.53  | 2.167    9.30  |  2.92    6.42
                0.750   28.01  | 1.500   16.53  | 2.250    8.49  |  3.00    6.42

     Max.Eff.Inten.(mm/hr)=     162.35     ********
               over (min)          5.00       10.00
     Storage Coeff.  (min)=        4.13 (ii)    8.20 (ii)
     Unit Hyd. Tpeak (min)=        5.00       10.00
     Unit Hyd. peak  (cms)=        0.24        0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=        4.21        0.41         4.531 (iii)
     TIME TO PEAK    (hrs)=        1.00        1.08          1.00
     RUNOFF VOLUME    (mm)=       63.54       23.83         52.02
     TOTAL RAINFALL   (mm)=       64.54       64.54         64.54
     RUNOFF COEFFICIENT   =        0.98        0.37          0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=   2.9|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):  14.21      4.53      1.00   52.02
     ================================================
     MAJOR SYS.(ID= 2):   1.24      1.58      1.00   52.02
     MINOR SYS.(ID= 3):  12.97      2.95      0.92   52.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
```

```
----------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA           |  STAGE      AREA
                       (m)         (m2)           |   (m)       (m2)
                      0.000       100.000         |  1.500     100.000
                      0.500       100.000         |  0.000       0.000
                      1.000       100.000         |  0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    62.40

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width       (m)=   780.00  Length           (m)=  2.00
                    Porosity      =     0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                    STORAGE LAYER:
                    Depth       (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   936.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2    12.97         2.948          0.92         52.02
       OVERFLOW:ID= 3    12.97         2.945          0.92         50.14

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      3.63
                    Time to reach Max Ponding storage       (Hr)=      0.00
                    Volume of water for drawdown in LID  (cu.m.)=    385.08
                    Volume of Max. Water Storage        (cu.m.)=      0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=    212.35
                    Maximum Engineered Soil Volume      (cu.m.)=    176.20
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0317) |
  ------------------------
```

```
                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0318)    12.97     2.95     0.92     50.14
  OUTFLOW: ID= 2(  0317)    12.97     2.95     0.92     50.14

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

--------------------
| ADD HYD  (  0316)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0311):    1.24   1.583     1.00    52.02
     + ID2= 2 (  0317):   12.97   2.945     0.92    50.14
       ================================================
       ID = 3 (  0316):   14.21   4.528     1.00    50.30

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.39         0.20
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      62.78        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    7.55  | 0.833   28.01  | 1.583   13.62  |  2.33    8.49
         0.167    7.55  | 0.917  162.35  | 1.667   13.62  |  2.42    7.83
         0.250    8.89  | 1.000  162.35  | 1.750   11.70  |  2.50    7.83
         0.333    8.89  | 1.083   34.38  | 1.833   11.70  |  2.58    7.28
         0.417   11.01  | 1.167   34.38  | 1.917   10.34  |  2.67    7.28
         0.500   11.01  | 1.250   21.68  | 2.000   10.34  |  2.75    6.82
         0.583   15.06  | 1.333   21.68  | 2.083    9.30  |  2.83    6.82
         0.667   15.06  | 1.417   16.53  | 2.167    9.30  |  2.92    6.42
         0.750   28.01  | 1.500   16.53  | 2.250    8.49  |  3.00    6.42

     Max.Eff.Inten.(mm/hr)=     162.35      205.70
               over (min)          5.00       10.00
     Storage Coeff.  (min)=        1.59 (ii)    6.88 (ii)
     Unit Hyd. Tpeak (min)=        5.00       10.00
```

```
     Unit Hyd. peak  (cms)=       0.33         0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.07         0.08          0.137 (iii)
     TIME TO PEAK    (hrs)=       1.00         1.08          1.00
     RUNOFF VOLUME    (mm)=      63.54        37.75         44.19
     TOTAL RAINFALL   (mm)=      64.54        64.54         64.54
     RUNOFF COEFFICIENT   =       0.98         0.58          0.68

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.14      1.00   44.19
     ================================================
     MAJOR SYS.(ID= 2):   0.02      0.02      1.00   44.19
     MINOR SYS.(ID= 3):   0.57      0.11      1.00   44.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA           |  STAGE      AREA
                       (m)         (m2)           |   (m)       (m2)
                      0.000       100.000         |  1.500     100.000
                      0.500       100.000         |  0.000       0.000
                      1.000       100.000         |  0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=    0.00  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     0.00

                    ENGINEERED SOIL LAYER:
```

```
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width       (m)=    3.00  Length           (m)=240.00
                    Porosity      =     0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                      DEPTH      DISCHARGE      |   DEPTH      DISCHARGE
                       (m)         (cms)        |    (m)        (cms)
                      0.000         0.000       |   0.559       0.030
                      0.279         0.010       |   0.762       0.040
                      0.406         0.020       |   1.300       0.050

                    STORAGE LAYER:
                    Depth       (m)=    1.00  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   288.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     0.57         0.112          1.00         44.19
        OUTFLOW:ID= 1     0.24         0.009          0.08         26.94
       OVERFLOW:ID= 3     0.33         0.030          1.42         26.94

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      39.03
                    Time to reach Max Ponding storage       (Hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     169.12
                    Volume of Max. Water Storage        (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     149.95
                    Maximum Engineered Soil Volume      (cu.m.)=      69.86
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0330) |
  ------------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0329)    0.33     0.03     1.42     26.94
  OUTFLOW: ID= 2(  0330)    0.03     0.03     1.42     26.94

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

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```

```
  | Junction Command(0332) |
  ------------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 1(  0329)    0.24     0.01     0.08     26.94
  OUTFLOW: ID= 2(  0332)    0.24     0.01     0.08     26.94

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

--------------------
| ADD HYD  (  3106)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0330):    0.33   0.030     1.42    26.94
     + ID2= 2 (  0331):    0.02   0.025     1.00    44.19
       ================================================
       ID = 3 (  3106):    0.35   0.030     1.42    27.77

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

--------------------
| ADD HYD  (  3106)|
|  3 +  2 =  1     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  3106):    0.35   0.030     1.42    27.77
     + ID2= 2 (  0332):    0.24   0.009     0.08    26.94
       ================================================
       ID = 1 (  3106):    0.59   0.035     1.42    27.43

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

--------------------
| ADD HYD  (  0312)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0277):    1.12   0.270     1.00    37.56
     + ID2= 2 (  0310):    5.48   1.574     1.00    44.71
       ================================================
       ID = 3 (  0312):    6.59   1.843     1.00    43.50

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

--------------------
| ADD HYD  (  0312)|
|  3 +  2 =  1     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
```

```
       ID1= 3 (  0312):     6.59   1.843     1.00    43.50
     + ID2= 2 (  3106):     0.59   0.035     1.42    27.43
       ================================================
       ID = 1 (  0312):     7.19   1.874     1.00    42.18

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

--------------------
| ADD HYD  (  0312)|
|  1 +  2 =  3     |       AREA    QPEAK    TPEAK     R.V.
--------------------       (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0312):     7.19   1.874     1.00    42.18
     + ID2= 2 (  0316):    14.21   4.528     1.00    50.30
       ================================================
       ID = 3 (  0312):    21.39   6.402     1.00    47.57

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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    |  0.6610     0.9850
                           0.0400     0.1140    |  1.0960     1.3320
                           0.0760     0.3690    |  1.4260     1.5860
                           0.2810     0.6450    |  0.0000     0.0000

                               AREA     QPEAK     TPEAK        R.V.
                                (ha)     (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (  0312)    21.393     6.402     1.00        47.57
     OUTFLOW: ID= 1 (  0319)    21.393     0.404     2.58        47.54

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.30
                    TIME SHIFT OF PEAK FLOW          (min)= 95.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.7548

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 FINISH
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       V    V   I    SSSSS  U   U    A    L              (v 6.2.2008)
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\c7ba2
950-4f5d-4e3a-9b11-662ac482cc65\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\c7ba2
950-4f5d-4e3a-9b11-662ac482cc65\scena


DATE: 08-28-2022                          TIME: 02:37:55

USER:


COMMENTS: _____________________________________________

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  **********************************************
  ** SIMULATION : F. 100yr 3hr 10min Chicago    **
  **********************************************

-------------------
| CHICAGO STORM     |    IDF curve parameters: A= 892.273
| Ptotal= 70.94 mm  |                          B=   0.000
-------------------                          C=   0.699
```

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

                                  Duration of storm   =  3.00 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    8.30  |  0.83  178.44  |  1.67   12.86  |  2.50    8.00
                0.17    9.77  |  1.00   37.79  |  1.83   11.36  |  2.67    7.50
                0.33   12.10  |  1.17   23.83  |  2.00   10.23  |  2.83    7.06
                0.50   16.55  |  1.33   18.17  |  2.17    9.33  |
                0.67   30.79  |  1.50   14.97  |  2.33    8.61  |


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-------------------
| CALIB             |
| NASHYD  (  0185)  |   Area    (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min  |   Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.24

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

                                  ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN
                 hrs    mm/hr |   hrs    mm/hr |   hrs    mm/hr |   hrs    mm/hr
                0.083   8.30  | 0.833   30.79  | 1.583   14.97  | 2.33    9.33
                0.167   8.30  | 0.917  178.44  | 1.667   14.97  | 2.42    8.61
                0.250   9.77  | 1.000  178.44  | 1.750   12.86  | 2.50    8.61
                0.333   9.77  | 1.083   37.79  | 1.833   12.86  | 2.58    8.00
                0.417  12.10  | 1.167   37.79  | 1.917   11.36  | 2.67    8.00
                0.500  12.10  | 1.250   23.83  | 2.000   11.36  | 2.75    7.50
                0.583  16.55  | 1.333   23.83  | 2.083   10.23  | 2.83    7.50
                0.667  16.55  | 1.417   18.17  | 2.167   10.23  | 2.92    7.06
                0.750  30.79  | 1.500   18.17  | 2.250    9.33  | 3.00    7.06

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW      (cms)=   0.136 (i)
     TIME TO PEAK   (hrs)=   1.167
     RUNOFF VOLUME  (mm)=  28.709
     TOTAL RAINFALL (mm)=  70.941
     RUNOFF COEFFICIENT   =   0.405

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

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```
| DUHYD    (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=     1|
| Total(cms)=  0.1|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   1.66      0.14      1.17   28.71
      ================================================
      MAJOR SYS.(ID= 2):   0.01      0.01      1.17   28.71
      MINOR SYS.(ID= 3):   1.66      0.13      1.17   28.71

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE        AREA          |   STAGE       AREA
                         (m)         (m2)          |    (m)        (m2)
                        0.000       100.000        |   1.500       100.000
                        0.500       100.000        |   0.000         0.000
                        1.000       100.000        |   0.000         0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    21.60

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width      (m)=  100.00  Length           (m)=  3.00
                    Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                    STORAGE LAYER:
                    Depth      (m)=    0.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   108.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060
```

```
                      AREA         QPEAK          TPEAK         R.V.
                      (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2     1.66         0.131           1.17         28.71
   OVERFLOW:ID= 3     1.66         0.104           1.42         17.70

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      38.33
              Time to reach Max Ponding storage      (Hr)=       0.00
              Volume of water for drawdown in LID  (cu.m.)=    234.26
              Volume of Max. Water Storage         (cu.m.)=      0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=    171.55
              Maximum Engineered Soil Volume       (cu.m.)=     64.77
              ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                        AREA     QPEAK   TPEAK     R.V.
                        (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0184)   1.66     0.10    1.42    17.70
  OUTFLOW: ID= 2(  0181)   1.66     0.10    1.42    17.70

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-------------------
| CALIB             |
| STANDHYD (  0265)|   Area    (ha)=   0.86
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.56         0.30
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     75.87        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   8.30  | 0.833   30.79  | 1.583   14.97  | 2.33    9.33
                0.167   8.30  | 0.917  178.44  | 1.667   14.97  | 2.42    8.61
                0.250   9.77  | 1.000  178.44  | 1.750   12.86  | 2.50    8.61
                0.333   9.77  | 1.083   37.79  | 1.833   12.86  | 2.58    8.00
                0.417  12.10  | 1.167   37.79  | 1.917   11.36  | 2.67    8.00
                0.500  12.10  | 1.250   23.83  | 2.000   11.36  | 2.75    7.50
                0.583  16.55  | 1.333   23.83  | 2.083   10.23  | 2.83    7.50
                0.667  16.55  | 1.417   18.17  | 2.167   10.23  | 2.92    7.06
                0.750  30.79  | 1.500   18.17  | 2.250    9.33  | 3.00    7.06
```

```
     Max.Eff.Inten.(mm/hr)=    178.44      ********
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.72 (ii)    6.09 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.32         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.28         0.04       0.310 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08        1.00
     RUNOFF VOLUME    (mm)=    69.94        28.02       55.27
     TOTAL RAINFALL   (mm)=    70.94        70.94       70.94
     RUNOFF COEFFICIENT   =     0.99         0.39        0.78

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
              THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
---------------------
| DUHYD    (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=     1|
| Total(cms)=  0.2|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)      (cms)     (hrs)     (mm)
      TOTAL HYD.(ID= 1):   0.86      0.31      1.00   55.27
      ================================================
      MAJOR SYS.(ID= 2):   0.13      0.14      1.00   55.27
      MINOR SYS.(ID= 3):   0.73      0.17      0.92   55.27

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE        AREA          |   STAGE       AREA
                         (m)         (m2)          |    (m)        (m2)
                        0.000       100.000        |   1.500       100.000
                        0.500       100.000        |   0.000         0.000
                        1.000       100.000        |   0.000         0.000
```

```
                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     3.20

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width      (m)=   40.00  Length           (m)=  2.00
                    Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                    STORAGE LAYER:
                    Depth      (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=    48.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060
```

```
                      AREA         QPEAK          TPEAK         R.V.
                      (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2     0.73         0.174           0.92         55.27
   OVERFLOW:ID= 3     0.73         0.111           1.08         34.18

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      38.16
              Time to reach Max Ponding storage      (Hr)=       0.00
              Volume of water for drawdown in LID  (cu.m.)=    161.97
              Volume of Max. Water Storage         (cu.m.)=      0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=    153.15
              Maximum Engineered Soil Volume       (cu.m.)=      8.87
              ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                        AREA     QPEAK   TPEAK     R.V.
                        (ha)     (cms)   (hrs)     (mm)
  INFLOW : ID= 3(  0264)   0.73     0.11    1.08    34.18
  OUTFLOW: ID= 2(  0262)   0.73     0.11    1.08    34.18

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

-------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)      (cms)     (hrs)     (mm)
      ID1= 1 (  0188):   2.53      0.127     1.08    24.45
    + ID2= 2 (  0252):   0.32      0.090     1.00    51.52
      ================================================
      ID = 3 (  0179):   2.84      0.186     1.08    27.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.28         0.23
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     58.22        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   8.30  | 0.833   30.79  | 1.583   14.97  | 2.33    9.33
                0.167   8.30  | 0.917  178.44  | 1.667   14.97  | 2.42    8.61
                0.250   9.77  | 1.000  178.44  | 1.750   12.86  | 2.50    8.61
                0.333   9.77  | 1.083   37.79  | 1.833   12.86  | 2.58    8.00
                0.417  12.10  | 1.167   37.79  | 1.917   11.36  | 2.67    8.00
                0.500  12.10  | 1.250   23.83  | 2.000   11.36  | 2.75    7.50
                0.583  16.55  | 1.333   23.83  | 2.083   10.23  | 2.83    7.50
                0.667  16.55  | 1.417   18.17  | 2.167   10.23  | 2.92    7.06
                0.750  30.79  | 1.500   18.17  | 2.250    9.33  | 3.00    7.06

     Max.Eff.Inten.(mm/hr)=    178.44      236.75
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.46 (ii)    6.46 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.33         0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.00         0.11       0.109 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08        1.08
     RUNOFF VOLUME    (mm)=    69.94        43.17       43.43
     TOTAL RAINFALL   (mm)=    70.94        70.94       70.94
     RUNOFF COEFFICIENT   =     0.99         0.61        0.61
```

```
--------------------      (ha)    (cms)    (hrs)     (mm)
      ID1= 1 (  0181):     1.66    0.104     1.42    17.70
    + ID2= 2 (  0182):     0.01    0.005     1.17    28.71
      ================================================
      ID = 3 (  0243):     1.66    0.104     1.42    17.76

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

--------------------
| ADD HYD  (  0243)|
|  3 +  2 =  1     |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
      ID1= 3 (  0243):     1.66    0.104     1.42    17.76
    + ID2= 2 (  0262):     0.73    0.111     1.08    34.18
      ================================================
      ID = 1 (  0243):     2.40    0.146     1.42    22.78

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

--------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
      ID1= 1 (  0243):     2.40    0.146     1.42    22.78
    + ID2= 2 (  0263):     0.13    0.136     1.00    55.27
      ================================================
      ID = 3 (  0243):     2.53    0.196     1.00    24.45

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

--------------------
| RESERVOIR(  0188)|    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    |  0.4800      0.0190

                          AREA     QPEAK     TPEAK        R.V.
                          (ha)     (cms)     (hrs)        (mm)
   INFLOW : ID= 2 (  0243)    2.527     0.196     1.00        24.45
   OUTFLOW: ID= 1 (  0188)    2.527     0.127     1.08        24.45

        PEAK   FLOW   REDUCTION [Qout/Qin](%)= 64.89
        TIME SHIFT OF PEAK FLOW         (min)=  5.00
        MAXIMUM  STORAGE   USED        (ha.m.)=  0.0068

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```
| ADD HYD  (  0179)|
|  1 +  2 =  3     |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
      ID1= 1 (  0188):     2.53    0.127     1.08    24.45
    + ID2= 2 (  0252):     0.32    0.090     1.00    51.52
      ================================================
      ID = 3 (  0179):     2.84    0.186     1.08    27.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.28         0.23
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     58.22        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   8.30  | 0.833   30.79  | 1.583   14.97  | 2.33    9.33
                0.167   8.30  | 0.917  178.44  | 1.667   14.97  | 2.42    8.61
                0.250   9.77  | 1.000  178.44  | 1.750   12.86  | 2.50    8.61
                0.333   9.77  | 1.083   37.79  | 1.833   12.86  | 2.58    8.00
                0.417  12.10  | 1.167   37.79  | 1.917   11.36  | 2.67    8.00
                0.500  12.10  | 1.250   23.83  | 2.000   11.36  | 2.75    7.50
                0.583  16.55  | 1.333   23.83  | 2.083   10.23  | 2.83    7.50
                0.667  16.55  | 1.417   18.17  | 2.167   10.23  | 2.92    7.06
                0.750  30.79  | 1.500   18.17  | 2.250    9.33  | 3.00    7.06

     Max.Eff.Inten.(mm/hr)=    178.44      236.75
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.46 (ii)    6.46 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.33         0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.00         0.11       0.109 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08        1.08
     RUNOFF VOLUME    (mm)=    69.94        43.17       43.43
     TOTAL RAINFALL   (mm)=    70.94        70.94       70.94
     RUNOFF COEFFICIENT   =     0.99         0.61        0.61

    (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. 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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***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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(  0282)|    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     |  0.1000     0.0020

                                 AREA     QPEAK      TPEAK       R.V.
                                 (ha)     (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (   0106)      0.508     0.109      1.08       43.43
  OUTFLOW: ID= 1 (   0282)      0.508     0.098      1.08       43.43

                PEAK   FLOW    REDUCTION [Qout/Qin](%)= 89.18
                TIME SHIFT OF PEAK FLOW          (min)=  0.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0021

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--------------------
| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.32         0.26
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      62.24        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   8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
    0.167   8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
    0.250   9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
    0.333   9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
    0.417  12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
    0.500  12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
    0.583  16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
    0.667  16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
    0.750  30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

   Max.Eff.Inten.(mm/hr)=    178.44       236.75
            over (min)        5.00        10.00
   Storage Coeff.  (min)=     1.46 (ii)    6.46 (ii)
   Unit Hyd. Tpeak (min)=     5.00        10.00
   Unit Hyd. peak  (cms)=     0.33         0.14
                                                    *TOTALS*
   PEAK FLOW       (cms)=     0.00         0.11          0.108 (iii)
   TIME TO PEAK    (hrs)=     1.00         1.08           1.08
   RUNOFF VOLUME    (mm)=    69.94        43.17          43.43
   TOTAL RAINFALL   (mm)=    70.94        70.94          70.94
   RUNOFF COEFFICIENT   =     0.99         0.61           0.61

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0248)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0019):    0.50   0.108     1.08    43.43
     + ID2= 2 (  0302):    0.78   0.083     1.17    32.47
       ========================================================
       ID = 3 (  0248):    1.28   0.188     1.08    36.75

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.90         0.38
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      92.38        40.00
     Mannings n            =      0.013        0.250

          NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
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                0.417   12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
                0.500   12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
                0.583   16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
                0.667   16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
                0.750   30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

     Max.Eff.Inten.(mm/hr)=    178.44       236.75
              over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.52 (ii)    6.52 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.33         0.14
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.00         0.12          0.125 (iii)
     TIME TO PEAK    (hrs)=     1.00         1.08           1.08
     RUNOFF VOLUME    (mm)=    69.94        43.17          43.43
     TOTAL RAINFALL   (mm)=    70.94        70.94          70.94
     RUNOFF COEFFICIENT   =     0.99         0.61           0.61

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------------------
--------------------
| ADD HYD  (  0302)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0281):    0.58   0.125     1.08    43.43
     + ID2= 2 (  0282):    0.51   0.098     1.08    43.43
       ========================================================
       ID = 3 (  0246):    1.09   0.222     1.08    43.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0302)|   Area    (ha)=   0.78   Curve Number   (CN)= 78.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

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

                                ---- TRANSFORMED HYETOGRAPH ----
    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
    0.083   8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
    0.167   8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
    0.250   9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
    0.333   9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
    0.417  12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
    0.500  12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
    0.583  16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
    0.667  16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
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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   8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
    0.167   8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
    0.250   9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
    0.333   9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
    0.417  12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
    0.500  12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
    0.583  16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
    0.667  16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06

   Max.Eff.Inten.(mm/hr)=    178.44     ********
            over (min)        5.00        10.00
   Storage Coeff.  (min)=     1.93 (ii)    5.92 (ii)
   Unit Hyd. Tpeak (min)=     5.00        10.00
   Unit Hyd. peak  (cms)=     0.31         0.15
                                                    *TOTALS*
   PEAK FLOW       (cms)=     0.44         0.05          0.484 (iii)
   TIME TO PEAK    (hrs)=     1.00         1.08           1.00
   RUNOFF VOLUME    (mm)=    69.94        28.02          57.36
   TOTAL RAINFALL   (mm)=    70.94        70.94          70.94
   RUNOFF COEFFICIENT   =     0.99         0.39           0.81

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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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--------------------
| DUHYD    (  0279)|
| Inlet Cap.= 0.270|
| #of Inlets=    3 |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.28      0.48      1.00    57.36
     ========================================================
     MAJOR SYS.(ID= 2):   0.20      0.21      1.00    57.36
     MINOR SYS.(ID= 3):   1.08      0.27      0.92    57.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 | Junction Command(0303) |
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                      AREA     QPEAK    TPEAK     R.V.
                      (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 8(  0279)    0.20     0.21     1.00    57.36
 OUTFLOW: ID= 2(  0303)    0.20     0.21     1.00    57.36

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--------------------
|Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE       AREA          |   STAGE       AREA
                         (m)       (m2)          |     (m)       (m2)
                       0.000     100.000         |   1.500     100.000
                       0.500     100.000         |   0.000       0.000
                       1.000     100.000         |   0.000       0.000

                       MULCH LAYER:
                       Depth      (m)=    0.10  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=     4.64

                       ENGINEERED SOIL LAYER:
                       Soil moisture =    0.30  Depth            (m)=  0.67
                       Width      (m)=   58.00  Length           (m)=  2.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=   36.30

                       STORAGE LAYER:
                       Depth      (m)=    1.50  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=    69.60

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060

                          AREA          QPEAK          TPEAK          R.V.
                          (ha)          (cms)          (hrs)          (mm)
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   INFLOW:ID= 2     1.08         0.270             0.92        57.36
OVERFLOW:ID= 3     1.08         0.270             1.00        42.89

          Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       25.23
          Time to reach Max Ponding storage       (Hr)=        0.00
          Volume of water for drawdown in LID  (cu.m.)=      167.37
          Volume of Max. Water Storage         (cu.m.)=        0.00
          Maximum Surface Ponding And Mulch Vol(cu.m.)=      154.59
          Maximum Engineered Soil Volume       (cu.m.)=       12.86
          ***** After simulation, water volume is not zero.


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 | Junction Command(0277) |
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                      AREA     QPEAK    TPEAK     R.V.
                      (ha)     (cms)    (hrs)     (mm)
INFLOW : ID= 3(  0278)    1.08     0.27     1.00    42.89
OUTFLOW: ID= 2(  0277)    1.08     0.27     1.00    42.89

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--------------------
| CALIB            |
| STANDHYD (  0313)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.43         1.62
     Dep. Storage     (mm)=       5.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     164.25        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   8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
    0.167   8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
    0.250   9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
    0.333   9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
    0.417  12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
    0.500  12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
    0.583  16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
    0.667  16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
    0.750  30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

   Max.Eff.Inten.(mm/hr)=    178.44     ********
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```
            over (min)        5.00        10.00
   Storage Coeff.  (min)=     2.73 (ii)    7.49 (ii)
   Unit Hyd. Tpeak (min)=     5.00        10.00
   Unit Hyd. peak  (cms)=     0.29         0.13
                                                    *TOTALS*
   PEAK FLOW       (cms)=     1.18         0.20          1.336 (iii)
   TIME TO PEAK    (hrs)=     1.00         1.08           1.00
   RUNOFF VOLUME    (mm)=    65.94        28.02          50.77
   TOTAL RAINFALL   (mm)=    70.94        70.94          70.94
   RUNOFF COEFFICIENT   =     0.93         0.39           0.72

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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 (  0314)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.72         0.72
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope     (%)=       0.50         2.00
     Length            (m)=      97.74        30.00
     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   8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
    0.167   8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
    0.250   9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
    0.333   9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
    0.417  12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
    0.500  12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
    0.583  16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
    0.667  16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
    0.750  30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

   Max.Eff.Inten.(mm/hr)=    178.44     ********
            over (min)        5.00        10.00
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   Storage Coeff.  (min)=     2.46 (ii)    7.17 (ii)
   Unit Hyd. Tpeak (min)=     5.00        10.00
   Unit Hyd. peak  (cms)=     0.30         0.14
                                                    *TOTALS*
   PEAK FLOW       (cms)=     0.35         0.09          0.422 (iii)
   TIME TO PEAK    (hrs)=     1.00         1.08           1.00
   RUNOFF VOLUME    (mm)=    68.94        28.02          48.48
   TOTAL RAINFALL   (mm)=    70.94        70.94          70.94
   RUNOFF COEFFICIENT   =     0.97         0.39           0.68

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0310)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0313):    4.05   1.336     1.00    50.77
     + ID2= 2 (  0314):    1.43   0.422     1.00    48.48
       ========================================================
       ID = 3 (  0310):    5.48   1.758     1.00    50.17

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0315)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.09         4.12
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     307.76        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   8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
```

```
                                ---- TRANSFORMED HYETOGRAPH ----
    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
    0.083   8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
    0.167   8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
    0.250   9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
    0.333   9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
    0.417  12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
    0.500  12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
    0.583  16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
    0.667  16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
```

```
                0.167    8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
                0.250    9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
                0.333    9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
                0.417   12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
                0.500   12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
                0.583   16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
                0.667   16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
                0.750   30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

      Max.Eff.Inten.(mm/hr)=     178.44     ********
                  over (min)         5.00       10.00
      Storage Coeff.  (min)=         3.98 (ii)    7.89 (ii)
      Unit Hyd. Tpeak (min)=         5.00       10.00
      Unit Hyd. peak  (cms)=         0.24        0.13
                                                          *TOTALS*
      PEAK FLOW       (cms)=         4.66        0.50         5.055 (iii)
      TIME TO PEAK    (hrs)=         1.00        1.08          1.00
      RUNOFF VOLUME    (mm)=        69.94       28.02         57.78
      TOTAL RAINFALL   (mm)=        70.94       70.94         70.94
      RUNOFF COEFFICIENT   =         0.99        0.39          0.81

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=   2.9|      AREA     QPEAK     TPEAK    R.V.
--------------------       (ha)     (cms)     (hrs)    (mm)
      TOTAL HYD.(ID= 1):  14.21      5.05      1.00   57.78
      ==================================================
      MAJOR SYS.(ID= 2):   1.61      2.11      1.00   57.78
      MINOR SYS.(ID= 3):  12.60      2.95      0.92   57.78

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                              Max. Ponding Storage(cu.m.)=      149.95

                            STAGE        AREA           |  STAGE      AREA
                             (m)         (m2)           |   (m)       (m2)
                            0.000      100.000          |  1.500     100.000
                            0.500      100.000          |  0.000       0.000
                            1.000      100.000          |  0.000       0.000

                          MULCH LAYER:
                          Depth       (m)=    0.10  Porosity           =  0.40
                          Maximum Mulch layer Volume (cu.m.)=    62.40

                          ENGINEERED SOIL LAYER:
                          Soil moisture =    0.30  Depth            (m)=  0.67
                          Width       (m)=  780.00  Length           (m)=  2.00
                          Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                          Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                          STORAGE LAYER:
                          Depth       (m)=    1.50  Porosity           =  0.40
                          Seepage (m/hr) = 0.0010
                          Maximum Storage layer Volume(cu.m.)=   936.00

                          TOTAL AVAILABLE STORAGE:

                          TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
      +Storage Layer(cu.m.)=     1636.46

                          NATIVE SOIL LAYER:
                          Infiltration (m/hr) = 0.0060

                             AREA         QPEAK            TPEAK         R.V.
                              (ha)         (cms)           (hrs)          (mm)
                INFLOW:ID= 2    12.60        2.948            0.92        57.78
              OVERFLOW:ID= 3    12.60        2.945            0.92        55.84

                          Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       3.36
                          Time to reach Max Ponding storage          (Hr)=      0.00
                          Volume of water for drawdown in LID  (cu.m.)=    385.07
                          Volume of Max. Water Storage         (cu.m.)=      0.00
                          Maximum Surface Ponding And Mulch Vol(cu.m.)=    212.35
                          Maximum Engineered Soil Volume       (cu.m.)=    176.20
                          ***** After simulation, water volume is not zero.

        -------------------------
        | Junction Command(0317) |
        -------------------------

                             AREA     QPEAK   TPEAK     R.V.
                             (ha)     (cms)   (hrs)     (mm)
```

```
                              Max. Ponding Storage(cu.m.)=      149.95

                            STAGE        AREA           |  STAGE      AREA
                             (m)         (m2)           |   (m)       (m2)
                            0.000      100.000          |  1.500     100.000
                            0.500      100.000          |  0.000       0.000
                            1.000      100.000          |  0.000       0.000

                          MULCH LAYER:
                          Depth       (m)=    0.10  Porosity           =  0.40
                          Maximum Mulch layer Volume (cu.m.)=    62.40

                          ENGINEERED SOIL LAYER:
                          Soil moisture =    0.30  Depth            (m)=  0.67
                          Width       (m)=  780.00  Length           (m)=  2.00
                          Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                          Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                          STORAGE LAYER:
                          Depth       (m)=    1.50  Porosity           =  0.40
                          Seepage (m/hr) = 0.0010
                          Maximum Storage layer Volume(cu.m.)=   936.00

                          TOTAL AVAILABLE STORAGE:

                          TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
      +Storage Layer(cu.m.)=     1636.46

                          NATIVE SOIL LAYER:
                          Infiltration (m/hr) = 0.0060

                             AREA         QPEAK            TPEAK         R.V.
                              (ha)         (cms)           (hrs)          (mm)
                INFLOW:ID= 2    12.60        2.948            0.92        57.78
              OVERFLOW:ID= 3    12.60        2.945            0.92        55.84

                          Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       3.36
                          Time to reach Max Ponding storage          (Hr)=      0.00
                          Volume of water for drawdown in LID  (cu.m.)=    385.07
                          Volume of Max. Water Storage         (cu.m.)=      0.00
                          Maximum Surface Ponding And Mulch Vol(cu.m.)=    212.35
                          Maximum Engineered Soil Volume       (cu.m.)=    176.20
                          ***** After simulation, water volume is not zero.

        -------------------------
        | Junction Command(0317) |
        -------------------------

                             AREA     QPEAK   TPEAK     R.V.
                             (ha)     (cms)   (hrs)     (mm)
```

```
    INFLOW : ID= 3(  0318)   12.60     2.95     0.92     55.84
    OUTFLOW: ID= 2(  0317)   12.60     2.95     0.92     55.84

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

    --------------------
    | ADD HYD  (  0316)|
    |   1 +  2 =  3    |        AREA     QPEAK     TPEAK     R.V.
    --------------------        (ha)     (cms)     (hrs)     (mm)
          ID1= 1 (  0311):     1.61     2.107     1.00     57.78
        + ID2= 2 (  0317):    12.60     2.945     0.92     55.84
          ==================================================
          ID = 3 (  0316):    14.21     5.052     1.00     56.06

        NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

    --------------------------------------------------------------------------------
    --------------------
    | CALIB            |
    | STANDHYD (  0323)|   Area    (ha)=   0.59
    |ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
    --------------------
                               IMPERVIOUS    PERVIOUS (i)
          Surface Area     (ha)=      0.39         0.20
          Dep. Storage     (mm)=      1.00         5.00
          Average Slope     (%)=      1.00         2.00
          Length            (m)=     62.78        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    8.30 | 0.833   30.79 | 1.583   14.97 |  2.33    9.33
                   0.167    8.30 | 0.917  178.44 | 1.667   14.97 |  2.42    8.61
                   0.250    9.77 | 1.000  178.44 | 1.750   12.86 |  2.50    8.61
                   0.333    9.77 | 1.083   37.79 | 1.833   12.86 |  2.58    8.00
                   0.417   12.10 | 1.167   37.79 | 1.917   11.36 |  2.67    8.00
                   0.500   12.10 | 1.250   23.83 | 2.000   11.36 |  2.75    7.50
                   0.583   16.55 | 1.333   23.83 | 2.083   10.23 |  2.83    7.50
                   0.667   16.55 | 1.417   18.17 | 2.167   10.23 |  2.92    7.06
                   0.750   30.79 | 1.500   18.17 | 2.250    9.33 |  3.00    7.06

          Max.Eff.Inten.(mm/hr)=     178.44       237.70
                    over (min)         5.00        10.00
          Storage Coeff.  (min)=         1.53 (ii)    6.52 (ii)
          Unit Hyd. Tpeak (min)=         5.00        10.00
          Unit Hyd. peak  (cms)=         0.33         0.14
                                                          *TOTALS*
```

```
          PEAK FLOW       (cms)=         0.07         0.10          0.157 (iii)
          TIME TO PEAK    (hrs)=         1.00         1.08          1.00
          RUNOFF VOLUME    (mm)=        69.94        43.22         49.89
          TOTAL RAINFALL   (mm)=        70.94        70.94         70.94
          RUNOFF COEFFICIENT   =         0.99         0.61          0.70

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------       (ha)     (cms)     (hrs)    (mm)
      TOTAL HYD.(ID= 1):   0.59      0.16      1.00   49.89
      ==================================================
      MAJOR SYS.(ID= 2):   0.03      0.04      1.00   49.89
      MINOR SYS.(ID= 3):   0.56      0.11      1.00   49.89

      NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                              Max. Ponding Storage(cu.m.)=      149.95

                            STAGE        AREA           |  STAGE      AREA
                             (m)         (m2)           |   (m)       (m2)
                            0.000      100.000          |  1.500     100.000
                            0.500      100.000          |  0.000       0.000
                            1.000      100.000          |  0.000       0.000

                          MULCH LAYER:
                          Depth       (m)=    0.00  Porosity           =  0.40
                          Maximum Mulch layer Volume (cu.m.)=     0.00

                          ENGINEERED SOIL LAYER:
                          Soil moisture =    0.30  Depth            (m)=  0.72
                          Width       (m)=    3.00  Length           (m)=240.00
```

```
                          Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                          Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                            DEPTH      DISCHARGE      |   DEPTH      DISCHARGE
                             (m)         (cms)         |    (m)        (cms)
                            0.000       0.000         |   0.559       0.030
                            0.279       0.010         |   0.762       0.040
                            0.406       0.020         |   1.300       0.050

                          STORAGE LAYER:
                          Depth       (m)=    1.00  Porosity           =  0.40
                          Seepage (m/hr) = 0.0010
                          Maximum Storage layer Volume(cu.m.)=   288.00

                          TOTAL AVAILABLE STORAGE:

                          TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
      +Storage Layer(cu.m.)=      680.04

                          NATIVE SOIL LAYER:
                          Infiltration (m/hr) = 0.0060

                             AREA         QPEAK            TPEAK         R.V.
                              (ha)         (cms)           (hrs)          (mm)
                INFLOW:ID= 2     0.56        0.112            1.00        49.89
               OUTFLOW:ID= 1     0.20        0.009            0.08        32.31
              OVERFLOW:ID= 3     0.36        0.042            1.33        32.31

                          Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      35.24
                          Time to reach Max Ponding storage          (Hr)=      0.00
                          Volume of water for drawdown in LID  (cu.m.)=    169.11
                          Volume of Max. Water Storage         (cu.m.)=      0.00
                          Maximum Surface Ponding And Mulch Vol(cu.m.)=    149.95
                          Maximum Engineered Soil Volume       (cu.m.)=     69.86
                          ***** After simulation, water volume is not zero.

        -------------------------
        | Junction Command(0330) |
        -------------------------

                             AREA     QPEAK   TPEAK     R.V.
                             (ha)     (cms)   (hrs)     (mm)
        INFLOW : ID= 3(  0329)   0.36     0.04     1.33     32.31
        OUTFLOW: ID= 2(  0330)   0.36     0.04     1.33     32.31

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

        -------------------------
        | Junction Command(0332) |
        -------------------------
```

```
                             AREA     QPEAK   TPEAK     R.V.
                             (ha)     (cms)   (hrs)     (mm)
        INFLOW : ID= 1(  0329)   0.20     0.01     0.08     32.31
        OUTFLOW: ID= 2(  0332)   0.20     0.01     0.08     32.31

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

        --------------------
        | ADD HYD  (  3106)|
        |   1 +  2 =  3    |        AREA     QPEAK     TPEAK     R.V.
        --------------------        (ha)     (cms)     (hrs)     (mm)
              ID1= 1 (  0330):     0.36     0.042     1.33     32.31
            + ID2= 2 (  0331):     0.03     0.045     1.00     49.89
              ==================================================
              ID = 3 (  3106):     0.39     0.045     1.00     33.56

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

        --------------------
        | ADD HYD  (  3106)|
        |   3 +  2 =  1    |        AREA     QPEAK     TPEAK     R.V.
        --------------------        (ha)     (cms)     (hrs)     (mm)
              ID1= 3 (  3106):     0.39     0.045     1.00     33.56
            + ID2= 2 (  0332):     0.20     0.009     0.08     32.31
              ==================================================
              ID = 1 (  3106):     0.59     0.051     1.00     33.13

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

        --------------------
        | ADD HYD  (  0312)|
        |   1 +  2 =  3    |        AREA     QPEAK     TPEAK     R.V.
        --------------------        (ha)     (cms)     (hrs)     (mm)
              ID1= 1 (  0277):     1.08     0.270     1.00     42.89
            + ID2= 2 (  0310):     5.48     1.758     1.00     50.17
              ==================================================
              ID = 3 (  0312):     6.56     2.028     1.00     48.97

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

        --------------------
        | ADD HYD  (  0312)|
        |   3 +  2 =  1    |        AREA     QPEAK     TPEAK     R.V.
        --------------------        (ha)     (cms)     (hrs)     (mm)
              ID1= 3 (  0312):     6.56     2.028     1.00     48.97
            + ID2= 2 (  3106):     0.59     0.051     1.00     33.13
```

```
          ==================================================
          ID = 1 (  0312):     7.15    2.079     1.00    47.66

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |        AREA     QPEAK     TPEAK     R.V.
--------------------        (ha)     (cms)     (hrs)     (mm)
      ID1= 1 (  0312):     7.15    2.079     1.00    47.66
    + ID2= 2 (  0316):    14.21    5.052     1.00    56.06
      ==================================================
      ID = 3 (  0312):    21.36    7.131     1.00    53.25

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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    |  0.6610     0.9850
                         0.0400     0.1140    |  1.0960     1.3320
                         0.0760     0.3690    |  1.4260     1.5860
                         0.2810     0.6450    |  0.0000     0.0000

                              AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
    INFLOW : ID= 2 (  0312)    21.362     7.131      1.00      53.25
    OUTFLOW: ID= 1 (  0319)    21.362     0.481      2.42      53.21

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  6.75
                    TIME SHIFT OF PEAK FLOW          (min)= 85.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.8244

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

```
================================================================================
========================

       V    V   I    SSSSS  U   U    A     L              (v 6.2.2008)
       V    V   I   SS      U   U   A A    L
        V  V    I    SS     U   U  AAAAA   L
        V  V    I     SS    U   U  A   A   L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\00429
2e8-eed2-47ba-95fc-82dac5ad8331\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\00429
2e8-eed2-47ba-95fc-82dac5ad8331\scena

DATE: 08-28-2022                      TIME: 02:36:02

USER:


COMMENTS: _____

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


--------------------
|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

```
                  |                  8397b39b-3436-4fc2-b953-d488413a7757\719a2500
| Ptotal= 60.13 mm |   Comments: G. 2yr 24hr 15min SCS Type II
-------------------
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
            hrs     mm/hr |  hrs     mm/hr |  hrs     mm/hr |  hrs     mm/hr
           0.00     0.00 |  6.25     1.08 |  12.50    8.66 |  18.75    1.08
           0.25     0.66 |  6.50     1.08 |  12.75    4.45 |  19.00    1.08
           0.50     0.66 |  6.75     1.08 |  13.00    4.45 |  19.25    1.08
           0.75     0.66 |  7.00     1.08 |  13.25    3.25 |  19.50    1.08
           1.00     0.66 |  7.25     1.32 |  13.50    3.25 |  19.75    1.08
           1.25     0.66 |  7.50     1.32 |  13.75    2.53 |  20.00    1.08
           1.50     0.66 |  7.75     1.32 |  14.00    2.53 |  20.25    0.72
           1.75     0.66 |  8.00     1.32 |  14.25    1.80 |  20.50    0.72
           2.00     0.66 |  8.25     1.56 |  14.50    1.80 |  20.75    0.72
           2.25     0.78 |  8.50     1.56 |  14.75    1.80 |  21.00    0.72
           2.50     0.78 |  8.75     1.68 |  15.00    1.80 |  21.25    0.72
           2.75     0.78 |  9.00     1.68 |  15.25    1.80 |  21.50    0.72
           3.00     0.78 |  9.25     1.92 |  15.50    1.80 |  21.75    0.72
           3.25     0.78 |  9.50     1.92 |  15.75    1.80 |  22.00    0.72
           3.50     0.78 |  9.75     2.16 |  16.00    1.80 |  22.25    0.72
           3.75     0.78 | 10.00     2.16 |  16.25    1.08 |  22.50    0.72
           4.00     0.78 | 10.25     2.77 |  16.50    1.08 |  22.75    0.72
           4.25     0.96 | 10.50     2.77 |  16.75    1.08 |  23.00    0.72
           4.50     0.96 | 10.75     3.73 |  17.00    1.08 |  23.25    0.72
           4.75     0.96 | 11.00     3.73 |  17.25    1.08 |  23.50    0.72
           5.00     0.96 | 11.25     5.77 |  17.50    1.08 |  23.75    0.72
           5.25     0.96 | 11.50     5.77 |  17.75    1.08 |  24.00    0.72
           5.50     0.96 | 11.75    17.80 |  18.00    1.08 |
           5.75     0.96 | 12.00    73.60 |  18.25    1.08 |
           6.00     0.96 | 12.25     8.66 |  18.50    1.08 |

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

-------------------
| CALIB             |
| NASHYD  (  0185)| Area    (ha)=   1.66    Curve Number    (CN)= 74.4
|ID= 1 DT= 5.0 min | Ia      (mm)=   4.44    # of Linear Res.(N)= 3.00
-------------------  U.H. Tp(hrs)=   0.24

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

                          ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs    mm/hr |  hrs    mm/hr |  hrs    mm/hr |  hrs    mm/hr
           0.083    0.00 | 6.167    0.96 |12.250   73.60 | 18.33    1.08
           0.167    0.00 | 6.250    0.96 |12.333    8.67 | 18.42    1.08
           0.250    0.00 | 6.333    1.08 |12.417    8.66 | 18.50    1.08
           0.333    0.66 | 6.417    1.08 |12.500    8.66 | 18.58    1.08
           0.417    0.66 | 6.500    1.08 |12.583    8.66 | 18.67    1.08
```

```
           0.500    0.66 | 6.583    1.08 |12.667    8.66 | 18.75    1.08
           0.583    0.66 | 6.667    1.08 |12.750    8.66 | 18.83    1.08
           0.667    0.66 | 6.750    1.08 |12.833    4.45 | 18.92    1.08
           0.750    0.66 | 6.833    1.08 |12.917    4.45 | 19.00    1.08
           0.833    0.66 | 6.917    1.08 |13.000    4.45 | 19.08    1.08
           0.917    0.66 | 7.000    1.08 |13.083    4.45 | 19.17    1.08
           1.000    0.66 | 7.083    1.08 |13.167    4.45 | 19.25    1.08
           1.083    0.66 | 7.167    1.08 |13.250    4.45 | 19.33    1.08
           1.167    0.66 | 7.250    1.08 |13.333    3.25 | 19.42    1.08
           1.250    0.66 | 7.333    1.32 |13.417    3.25 | 19.50    1.08
           1.333    0.66 | 7.417    1.32 |13.500    3.25 | 19.58    1.08
           1.417    0.66 | 7.500    1.32 |13.583    3.25 | 19.67    1.08
           1.500    0.66 | 7.583    1.32 |13.667    3.25 | 19.75    1.08
           1.583    0.66 | 7.667    1.32 |13.750    3.25 | 19.83    1.08
           1.667    0.66 | 7.750    1.32 |13.833    2.53 | 19.92    1.08
           1.750    0.66 | 7.833    1.32 |13.917    2.53 | 20.00    1.08
           1.833    0.66 | 7.917    1.32 |14.000    2.53 | 20.08    1.08
           1.917    0.66 | 8.000    1.32 |14.083    2.53 | 20.17    1.08
           2.000    0.66 | 8.083    1.32 |14.167    2.53 | 20.25    1.08
           2.083    0.66 | 8.167    1.32 |14.250    2.53 | 20.33    0.72
           2.167    0.66 | 8.250    1.32 |14.333    1.80 | 20.42    0.72
           2.250    0.66 | 8.333    1.56 |14.417    1.80 | 20.50    0.72
           2.333    0.78 | 8.417    1.56 |14.500    1.80 | 20.58    0.72
           2.417    0.78 | 8.500    1.56 |14.583    1.80 | 20.67    0.72
           2.500    0.78 | 8.583    1.56 |14.667    1.80 | 20.75    0.72
           2.583    0.78 | 8.667    1.56 |14.750    1.80 | 20.83    0.72
           2.667    0.78 | 8.750    1.56 |14.833    1.80 | 20.92    0.72
           2.750    0.78 | 8.833    1.68 |14.917    1.80 | 21.00    0.72
           2.833    0.78 | 8.917    1.68 |15.000    1.80 | 21.08    0.72
           2.917    0.78 | 9.000    1.68 |15.083    1.80 | 21.17    0.72
           3.000    0.78 | 9.083    1.68 |15.167    1.80 | 21.25    0.72
           3.083    0.78 | 9.167    1.68 |15.250    1.80 | 21.33    0.72
           3.167    0.78 | 9.250    1.68 |15.333    1.80 | 21.42    0.72
           3.250    0.78 | 9.333    1.92 |15.417    1.80 | 21.50    0.72
           3.333    0.78 | 9.417    1.92 |15.500    1.80 | 21.58    0.72
           3.417    0.78 | 9.500    1.92 |15.583    1.80 | 21.67    0.72
           3.500    0.78 | 9.583    1.92 |15.667    1.80 | 21.75    0.72
           3.583    0.78 | 9.667    1.92 |15.750    1.80 | 21.83    0.72
           3.667    0.78 | 9.750    1.92 |15.833    1.80 | 21.92    0.72
           3.750    0.78 | 9.833    2.16 |15.917    1.80 | 22.00    0.72
           3.833    0.78 | 9.917    2.16 |16.000    1.80 | 22.08    0.72
           3.917    0.78 |10.000    2.16 |16.083    1.80 | 22.17    0.72
           4.000    0.78 |10.083    2.16 |16.167    1.80 | 22.25    0.72
           4.083    0.78 |10.167    2.16 |16.250    1.80 | 22.33    0.72
           4.167    0.78 |10.250    2.16 |16.333    1.08 | 22.42    0.72
           4.250    0.78 |10.333    2.77 |16.417    1.08 | 22.50    0.72
           4.333    0.96 |10.417    2.77 |16.500    1.08 | 22.58    0.72
           4.417    0.96 |10.500    2.77 |16.583    1.08 | 22.67    0.72
           4.500    0.96 |10.583    2.77 |16.667    1.08 | 22.75    0.72
           4.583    0.96 |10.667    2.77 |16.750    1.08 | 22.83    0.72
```

```
           4.667    0.96 |10.750    2.77 |16.833    1.08 | 22.92    0.72
           4.750    0.96 |10.833    3.73 |16.917    1.08 | 23.00    0.72
           4.833    0.96 |10.917    3.73 |17.000    1.08 | 23.08    0.72
           4.917    0.96 |11.000    3.73 |17.083    1.08 | 23.17    0.72
           5.000    0.96 |11.083    3.73 |17.167    1.08 | 23.25    0.72
           5.083    0.96 |11.167    3.73 |17.250    1.08 | 23.33    0.72
           5.167    0.96 |11.250    3.73 |17.333    1.08 | 23.42    0.72
           5.250    0.96 |11.333    5.77 |17.417    1.08 | 23.50    0.72
           5.333    0.96 |11.417    5.77 |17.500    1.08 | 23.58    0.72
           5.417    0.96 |11.500    5.77 |17.583    1.08 | 23.67    0.72
           5.500    0.96 |11.583    5.77 |17.667    1.08 | 23.75    0.72
           5.583    0.96 |11.667    5.77 |17.750    1.08 | 23.83    0.72
           5.667    0.96 |11.750    5.77 |17.833    1.08 | 23.92    0.72
           5.750    0.96 |11.833   17.80 |17.917    1.08 | 24.00    0.72
           5.833    0.96 |11.917   17.80 |18.000    1.08 | 24.08    0.72
           5.917    0.96 |12.000   17.80 |18.083    1.08 | 24.17    0.72
           6.000    0.96 |12.083   73.59 |18.167    1.08 | 24.25    0.72
           6.083    0.96 |12.167   73.60 |18.250    1.08 |

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW       (cms)=   0.080 (1)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME   (mm)=  21.654
     TOTAL RAINFALL  (mm)=  60.130
     RUNOFF COEFFICIENT   =   0.360

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

--------------------------------------------------------------------------------
---------------------
| DUHYD     (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
---------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.66      0.08     12.33    21.65
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   1.66      0.08     12.33    21.65

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:
```

```
                  Max. Ponding Storage(cu.m.)=      149.95

                STAGE        AREA           |  STAGE      AREA
                  (m)        (m2)           |    (m)      (m2)
                0.000     100.000           |  1.500     100.000
                0.500     100.000           |  0.000       0.000
                1.000     100.000           |  0.000       0.000

               MULCH LAYER:
               Depth      (m)=   0.10  Porosity           =  0.40
               Maximum Mulch layer Volume (cu.m.)=    21.60

               ENGINEERED SOIL LAYER:
               Soil moisture =    0.30  Depth              (m)=  0.72
               Width      (m)=  180.00  Length             (m)=  3.00
               Porosity      =    0.47  Infiltration (m/hr) = 0.0060
               Maximum Engineered Soil layer Volume(cu.m.)=  181.57

               STORAGE LAYER:
               Depth      (m)=   0.50  Porosity           =  0.40
               Seepage (m/hr) = 0.0010
               Maximum Storage layer Volume(cu.m.)=   108.00

               TOTAL AVAILABLE STORAGE:

               TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

               NATIVE SOIL LAYER:
               Infiltration (m/hr) = 0.0060

                  AREA         QPEAK          TPEAK         R.V.
                  (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2     1.66       0.080          12.33        21.65
    OVERFLOW:ID= 3     1.66       0.024          12.92         8.18

               Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       62.24
               Time to reach Max Ponding storage       (hr)=        0.00
               Volume of water for drawdown in LID  (cu.m.)=      265.05
               Volume of Max. Water Storage         (cu.m.)=        0.00
               Maximum Surface Ponding And Mulch Vol(cu.m.)=      171.55
               Maximum Engineered Soil Volume       (cu.m.)=       95.52
               ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                     AREA     QPEAK     TPEAK     R.V.
                     (ha)     (cms)     (hrs)     (mm)
```

```
    INFLOW : ID= 3(  0184)     1.66     0.02     12.92     8.18
    OUTFLOW: ID= 2(  0181)     1.66     0.02     12.92     8.18

 --------------------------------------------------------------------------------
---------------------
| CALIB             |
| STANDHYD (  0265)|  Area    (ha)=   0.86
|ID= 1 DT= 5.0 min |  Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.56         0.30
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope    (%)=       1.00         2.00
     Length           (m)=      75.87        40.00
     Mannings n             =     0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs    mm/hr |  hrs    mm/hr |  hrs    mm/hr |  hrs    mm/hr
           0.083    0.00 | 6.167    0.96 |12.250   73.60 | 18.33    1.08
           0.167    0.00 | 6.250    0.96 |12.333    8.67 | 18.42    1.08
           0.250    0.00 | 6.333    1.08 |12.417    8.66 | 18.50    1.08
           0.333    0.66 | 6.417    1.08 |12.500    8.66 | 18.58    1.08
           0.417    0.66 | 6.500    1.08 |12.583    8.66 | 18.67    1.08
           0.500    0.66 | 6.583    1.08 |12.667    8.66 | 18.75    1.08
           0.583    0.66 | 6.667    1.08 |12.750    8.66 | 18.83    1.08
           0.667    0.66 | 6.750    1.08 |12.833    4.45 | 18.92    1.08
           0.750    0.66 | 6.833    1.08 |12.917    4.45 | 19.00    1.08
           0.833    0.66 | 6.917    1.08 |13.000    4.45 | 19.08    1.08
           0.917    0.66 | 7.000    1.08 |13.083    4.45 | 19.17    1.08
           1.000    0.66 | 7.083    1.08 |13.167    4.45 | 19.25    1.08
           1.083    0.66 | 7.167    1.08 |13.250    4.45 | 19.33    1.08
           1.167    0.66 | 7.250    1.08 |13.333    3.25 | 19.42    1.08
           1.250    0.66 | 7.333    1.32 |13.417    3.25 | 19.50    1.08
           1.333    0.66 | 7.417    1.32 |13.500    3.25 | 19.58    1.08
           1.417    0.66 | 7.500    1.32 |13.583    3.25 | 19.67    1.08
           1.500    0.66 | 7.583    1.32 |13.667    3.25 | 19.75    1.08
           1.583    0.66 | 7.667    1.32 |13.750    3.25 | 19.83    1.08
           1.667    0.66 | 7.750    1.32 |13.833    2.53 | 19.92    1.08
           1.750    0.66 | 7.833    1.32 |13.917    2.53 | 20.00    1.08
           1.833    0.66 | 7.917    1.32 |14.000    2.53 | 20.08    1.08
           1.917    0.66 | 8.000    1.32 |14.083    2.53 | 20.17    1.08
           2.000    0.66 | 8.083    1.32 |14.167    2.53 | 20.25    1.08
           2.083    0.66 | 8.167    1.32 |14.250    2.53 | 20.33    0.72
           2.167    0.66 | 8.250    1.32 |14.333    1.80 | 20.42    0.72
           2.250    0.66 | 8.333    1.56 |14.417    1.80 | 20.50    0.72
           2.333    0.78 | 8.417    1.56 |14.500    1.80 | 20.58    0.72
```

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           2.417    0.78 | 8.500    1.56 |14.583    1.80 | 20.67    0.72
           2.500    0.78 | 8.583    1.56 |14.667    1.80 | 20.75    0.72
           2.583    0.78 | 8.667    1.56 |14.750    1.80 | 20.83    0.72
           2.667    0.78 | 8.750    1.56 |14.833    1.80 | 20.92    0.72
           2.750    0.78 | 8.833    1.68 |14.917    1.80 | 21.00    0.72
           2.833    0.78 | 8.917    1.68 |15.000    1.80 | 21.08    0.72
           2.917    0.78 | 9.000    1.68 |15.083    1.80 | 21.17    0.72
           3.000    0.78 | 9.083    1.68 |15.167    1.80 | 21.25    0.72
           3.083    0.78 | 9.167    1.68 |15.250    1.80 | 21.33    0.72
           3.167    0.78 | 9.250    1.68 |15.333    1.80 | 21.42    0.72
           3.250    0.78 | 9.333    1.92 |15.417    1.80 | 21.50    0.72
           3.333    0.78 | 9.417    1.92 |15.500    1.80 | 21.58    0.72
           3.417    0.78 | 9.500    1.92 |15.583    1.80 | 21.67    0.72
           3.500    0.78 | 9.583    1.92 |15.667    1.80 | 21.75    0.72
           3.583    0.78 | 9.667    1.92 |15.750    1.80 | 21.83    0.72
           3.667    0.78 | 9.750    1.92 |15.833    1.80 | 21.92    0.72
           3.750    0.78 | 9.833    2.16 |15.917    1.80 | 22.00    0.72
           3.833    0.78 | 9.917    2.16 |16.000    1.80 | 22.08    0.72
           3.917    0.78 |10.000    2.16 |16.083    1.80 | 22.17    0.72
           4.000    0.78 |10.083    2.16 |16.167    1.80 | 22.25    0.72
           4.083    0.78 |10.167    2.16 |16.250    1.80 | 22.33    0.72
           4.167    0.78 |10.250    2.16 |16.333    1.08 | 22.42    0.72
           4.250    0.78 |10.333    2.77 |16.417    1.08 | 22.50    0.72
           4.333    0.96 |10.417    2.77 |16.500    1.08 | 22.58    0.72
           4.417    0.96 |10.500    2.77 |16.583    1.08 | 22.67    0.72
           4.500    0.96 |10.583    2.77 |16.667    1.08 | 22.75    0.72
           4.583    0.96 |10.667    2.77 |16.750    1.08 | 22.83    0.72
           4.667    0.96 |10.750    2.77 |16.833    1.08 | 22.92    0.72
           4.750    0.96 |10.833    3.73 |16.917    1.08 | 23.00    0.72
           4.833    0.96 |10.917    3.73 |17.000    1.08 | 23.08    0.72
           4.917    0.96 |11.000    3.73 |17.083    1.08 | 23.17    0.72
           5.000    0.96 |11.083    3.73 |17.167    1.08 | 23.25    0.72
           5.083    0.96 |11.167    3.73 |17.250    1.08 | 23.33    0.72
           5.167    0.96 |11.250    3.73 |17.333    1.08 | 23.42    0.72
           5.250    0.96 |11.333    5.77 |17.417    1.08 | 23.50    0.72
           5.333    0.96 |11.417    5.77 |17.500    1.08 | 23.58    0.72
           5.417    0.96 |11.500    5.77 |17.583    1.08 | 23.67    0.72
           5.500    0.96 |11.583    5.77 |17.667    1.08 | 23.75    0.72
           5.583    0.96 |11.667    5.77 |17.750    1.08 | 23.83    0.72
           5.667    0.96 |11.750    5.77 |17.833    1.08 | 23.92    0.72
           5.750    0.96 |11.833   17.80 |17.917    1.08 | 24.00    0.72
           5.833    0.96 |11.917   17.80 |18.000    1.08 | 24.08    0.72
           5.917    0.96 |12.000   17.80 |18.083    1.08 | 24.17    0.72
           6.000    0.96 |12.083   73.59 |18.167    1.08 | 24.25    0.72
           6.083    0.96 |12.167   73.60 |18.250    1.08 |

     Max.Eff.Inten.(mm/hr)=     73.60       28.92
               over (min)        5.00       15.00
     Storage Coeff.  (min)=      2.45 (ii)  14.04 (ii)
     Unit Hyd. Tpeak (min)=      5.00       15.00
```

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     Unit Hyd. peak  (cms)=       0.30         0.08
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.11         0.01          0.127 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33         12.25
     RUNOFF VOLUME   (mm)=       59.13        21.05         45.79
     TOTAL RAINFALL  (mm)=       60.13        60.13         60.13
     RUNOFF COEFFICIENT   =       0.98         0.35          0.76

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

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
               CN*  =  74.0    Ia = Dep. Storage  (Above)
          (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
               THAN THE STORAGE COEFFICIENT.
          (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=    1|
| Total(cms)=   0.2|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.86      0.13     12.25    45.79
     ================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):   0.86      0.13     12.25    45.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                  Max. Ponding Storage(cu.m.)=      149.95

                STAGE        AREA           |  STAGE      AREA
                  (m)        (m2)           |    (m)      (m2)
                0.000     100.000           |  1.500     100.000
                0.500     100.000           |  0.000       0.000
                1.000     100.000           |  0.000       0.000

               MULCH LAYER:
               Depth      (m)=   0.10  Porosity           =  0.40
               Maximum Mulch layer Volume (cu.m.)=    3.20

               ENGINEERED SOIL LAYER:
```

```
               Soil moisture =    0.30  Depth              (m)=  0.67
               Width      (m)=   40.00  Length             (m)=  2.00
               Porosity      =    0.47  Infiltration (m/hr) = 0.0060
               Maximum Engineered Soil layer Volume(cu.m.)=   25.03

               STORAGE LAYER:
               Depth      (m)=   1.50  Porosity           =  0.40
               Seepage (m/hr) = 0.0010
               Maximum Storage layer Volume(cu.m.)=    48.00

               TOTAL AVAILABLE STORAGE:

               TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

               NATIVE SOIL LAYER:
               Infiltration (m/hr) = 0.0060

                  AREA         QPEAK          TPEAK         R.V.
                  (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2     0.86       0.127          12.25        45.79
    OVERFLOW:ID= 3     0.86       0.127          12.25        26.78

               Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       41.51
               Time to reach Max Ponding storage       (hr)=        0.00
               Volume of water for drawdown in LID  (cu.m.)=      169.65
               Volume of Max. Water Storage         (cu.m.)=        0.00
               Maximum Surface Ponding And Mulch Vol(cu.m.)=      153.15
               Maximum Engineered Soil Volume       (cu.m.)=       16.54
               ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                     AREA     QPEAK     TPEAK     R.V.
                     (ha)     (cms)     (hrs)     (mm)
    INFLOW : ID= 3(  0264)     0.86     0.13     12.25     26.78
    OUTFLOW: ID= 2(  0262)     0.86     0.13     12.25     26.78

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

-------------------
| ADD HYD  (  0243)|
|  1 + 2 = 3       |      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)     (cms)     (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0182 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH      0003 = HYDROGRAPH 0001
       ID1= 1 (  0181):     1.66     0.024    12.92     8.18
     + ID2= 2 (  0182):     0.00     0.000     0.00     0.00
```

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        ==========================================
        ID = 3 (  0243):     1.66   0.024    12.92     8.18

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| ADD HYD  (  0243)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0243):     1.66   0.024    12.92     8.18
      + ID2= 2 (  0262):     0.86   0.127    12.25    26.78
        ==========================================
        ID = 1 (  0243):     2.53   0.127    12.25    14.53

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

-------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH    0263 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH    0003 = HYDROGRAPH 0001
        ID1= 1 (  0243):     2.53   0.127    12.25    14.53
      + ID2= 2 (  0263):     0.00   0.000     0.00     0.00
        ==========================================
        ID = 3 (  0243):     2.53   0.127    12.25    14.53

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

-------------------
| RESERVOIR(  0188)|    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    |  0.4800     0.0190

                            AREA     QPEAK     TPEAK      R.V.
                            (ha)     (cms)     (hrs)      (mm)
    INFLOW : ID= 2 (  0243)     2.527     0.127     12.25     14.53
   OUTFLOW: ID= 1 (  0188)     2.527     0.079     12.33     14.53

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 62.32
                TIME SHIFT OF PEAK FLOW          (min)=  5.00
                MAXIMUM  STORAGE   USED       (ha.m.)=  0.0037

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| CALIB            |
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| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
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                        IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.22          0.10
      Dep. Storage     (mm)=       1.00          5.00
      Average Slope     (%)=       1.00          2.00
      Length            (m)=      45.84         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   0.66 |  6.333   1.08 | 12.583   8.66 | 18.833   1.08
    0.167   0.66 |  6.417   1.08 | 12.667   8.66 | 18.917   1.08
    0.250   0.66 |  6.500   1.08 | 12.750   8.66 | 19.000   1.08
    0.333   0.66 |  6.583   1.08 | 12.833   4.45 | 19.083   1.08
    0.417   0.66 |  6.667   1.08 | 12.917   4.45 | 19.167   1.08
    0.500   0.66 |  6.750   1.08 | 13.000   4.45 | 19.250   1.08
    0.583   0.66 |  6.833   1.08 | 13.083   4.45 | 19.333   1.08
    0.667   0.66 |  6.917   1.08 | 13.167   4.45 | 19.417   1.08
    0.750   0.66 |  7.000   1.08 | 13.250   4.45 | 19.500   1.08
    0.833   0.66 |  7.083   1.08 | 13.333   3.25 | 19.583   1.08
    0.917   0.66 |  7.167   1.08 | 13.417   3.25 | 19.667   1.08
    1.000   0.66 |  7.250   1.08 | 13.500   3.25 | 19.750   1.08
    1.083   0.66 |  7.333   1.32 | 13.583   3.25 | 19.833   1.08
    1.167   0.66 |  7.417   1.32 | 13.667   3.25 | 19.917   1.08
    1.250   0.66 |  7.500   1.32 | 13.750   3.25 | 20.000   1.08
    1.333   0.66 |  7.583   1.32 | 13.833   2.53 | 20.083   1.08
    1.417   0.66 |  7.667   1.32 | 13.917   2.53 | 20.167   1.08
    1.500   0.66 |  7.750   1.32 | 14.000   2.53 | 20.250   1.08
    1.583   0.66 |  7.833   1.32 | 14.083   2.53 | 20.333   0.72
    1.667   0.66 |  7.917   1.32 | 14.167   2.53 | 20.417   0.72
    1.750   0.66 |  8.000   1.32 | 14.250   2.53 | 20.500   0.72
    1.833   0.66 |  8.083   1.32 | 14.333   1.80 | 20.583   0.72
    1.917   0.66 |  8.167   1.32 | 14.417   1.80 | 20.667   0.72
    2.000   0.66 |  8.250   1.32 | 14.500   1.80 | 20.750   0.72
    2.083   0.66 |  8.333   1.56 | 14.583   1.80 | 20.833   0.72
    2.167   0.66 |  8.417   1.56 | 14.667   1.80 | 20.917   0.72
    2.250   0.66 |  8.500   1.56 | 14.750   1.80 | 21.000   0.72
    2.333   0.78 |  8.583   1.56 | 14.833   1.80 | 21.083   0.72
    2.417   0.78 |  8.667   1.56 | 14.917   1.80 | 21.167   0.72
    2.500   0.78 |  8.750   1.56 | 15.000   1.80 | 21.250   0.72
    2.583   0.78 |  8.833   1.68 | 15.083   1.80 | 21.333   0.72
    2.667   0.78 |  8.917   1.68 | 15.167   1.80 | 21.417   0.72
    2.750   0.78 |  9.000   1.68 | 15.250   1.80 | 21.500   0.72
    2.833   0.78 |  9.083   1.68 | 15.333   1.80 | 21.583   0.72
    2.917   0.78 |  9.167   1.68 | 15.417   1.80 | 21.667   0.72
    3.000   0.78 |  9.250   1.68 | 15.500   1.80 | 21.750   0.72
    3.083   0.78 |  9.333   1.92 | 15.583   1.80 | 21.833   0.72
    3.167   0.78 |  9.417   1.92 | 15.667   1.80 | 21.917   0.72
    3.250   0.78 |  9.500   1.92 | 15.750   1.80 | 22.000   0.72
    3.333   0.78 |  9.583   1.92 | 15.833   1.80 | 22.083   0.72
    3.417   0.78 |  9.667   1.92 | 15.917   1.80 | 22.167   0.72
    3.500   0.78 |  9.750   1.92 | 16.000   1.80 | 22.250   0.72
    3.583   0.78 |  9.833   2.16 | 16.083   1.80 | 22.333   0.72
    3.667   0.78 |  9.917   2.16 | 16.167   1.80 | 22.417   0.72
    3.750   0.78 | 10.000   2.16 | 16.250   1.80 | 22.500   0.72
    3.833   0.78 | 10.083   2.16 | 16.333   1.08 | 22.583   0.72
    3.917   0.78 | 10.167   2.16 | 16.417   1.08 | 22.667   0.72
    4.000   0.78 | 10.250   2.16 | 16.500   1.08 | 22.750   0.72
    4.083   0.78 | 10.333   2.77 | 16.583   1.08 | 22.833   0.72
    4.167   0.78 | 10.417   2.77 | 16.667   1.08 | 22.917   0.72
    4.250   0.78 | 10.500   2.77 | 16.750   1.08 | 23.000   0.72
    4.333   0.78 | 10.583   2.77 | 16.833   1.08 | 23.083   0.72
    4.417   0.78 | 10.667   2.77 | 16.917   1.08 | 23.167   0.72
    4.500   0.78 | 10.750   2.77 | 17.000   1.08 | 23.250   0.72
    4.583   0.78 | 10.833   3.73 | 17.083   1.08 | 23.333   0.72
    4.667   0.78 | 10.917   3.73 | 17.167   1.08 | 23.417   0.72
    4.750   0.78 | 11.000   3.73 | 17.250   1.08 | 23.500   0.72
    4.833   0.78 | 11.083   3.73 | 17.333   1.08 | 23.583   0.72
    4.917   0.78 | 11.167   3.73 | 17.417   1.08 | 23.667   0.72
    5.000   0.78 | 11.250   3.73 | 17.500   1.08 | 23.750   0.72
    5.083   0.78 | 11.333   5.77 | 17.583   1.08 | 23.833   0.72
    5.167   0.78 | 11.417   5.77 | 17.667   1.08 | 23.917   0.72
    5.250   0.78 | 11.500   5.77 | 17.750   1.08 | 24.000   0.72
    5.333   0.78 | 11.583   5.77 | 17.833   1.08 | 24.083   0.72
    5.417   0.78 | 11.667   5.77 | 17.917   1.08 | 24.167   0.72
    5.500   0.78 | 11.750   5.77 | 18.000   1.08 | 24.250   0.72
    5.583   0.78 | 11.833   5.77 | 18.083   1.08 | 24.333   0.72
    5.667   0.78 | 11.917   5.77 | 18.167   1.08 | 24.417   0.72
    5.750   0.78 | 12.000   5.77 | 18.250   1.08 | 24.500   0.72
    5.833   0.78 | 12.083   5.77 |
    5.917   0.78 | 12.167   5.77 |
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                        2.917    0.78 |  9.000    1.68 | 15.083    1.80 |  21.167    0.72
                        3.000    0.78 |  9.083    1.68 | 15.167    1.80 |  21.250    0.72
                        3.083    0.78 |  9.167    1.68 | 15.250    1.80 |  21.333    0.72
                        3.167    0.78 |  9.250    1.68 | 15.333    1.80 |  21.417    0.72
                        3.250    0.78 |  9.333    1.92 | 15.417    1.80 |  21.500    0.72
                        3.333    0.78 |  9.417    1.92 | 15.500    1.80 |  21.583    0.72
                        3.417    0.78 |  9.500    1.92 | 15.583    1.80 |  21.667    0.72
                        3.500    0.78 |  9.583    1.92 | 15.667    1.80 |  21.750    0.72
                        3.583    0.78 |  9.667    1.92 | 15.750    1.80 |  21.833    0.72
                        3.667    0.78 |  9.750    1.92 | 15.833    1.80 |  21.917    0.72
                        3.750    0.78 |  9.833    2.16 | 15.917    1.80 |  22.000    0.72
                        3.833    0.78 |  9.917    2.16 | 16.000    1.80 |  22.083    0.72
                        3.917    0.78 | 10.000    2.16 | 16.083    1.80 |  22.167    0.72
                        4.000    0.78 | 10.083    2.16 | 16.167    1.80 |  22.250    0.72
                        4.083    0.78 | 10.167    2.16 | 16.250    1.80 |  22.333    0.72
                        4.167    0.78 | 10.250    2.16 | 16.333    1.08 |  22.417    0.72
                        4.250    0.78 | 10.333    2.77 | 16.417    1.08 |  22.500    0.72
                        4.333    0.78 | 10.417    2.77 | 16.500    1.08 |  22.583    0.72
                        4.417    0.78 | 10.500    2.77 | 16.583    1.08 |  22.667    0.72
                        4.500    0.78 | 10.583    2.77 | 16.667    1.08 |  22.750    0.72
                        4.583    0.78 | 10.667    2.77 | 16.750    1.08 |  22.833    0.72
                        4.667    0.78 | 10.750    2.77 | 16.833    1.08 |  22.917    0.72
                        4.750    0.78 | 10.833    3.73 | 16.917    1.08 |  23.000    0.72
                        4.833    0.78 | 10.917    3.73 | 17.000    1.08 |  23.083    0.72
                        4.917    0.96 | 11.000    3.73 | 17.083    1.08 |  23.167    0.72
                        5.000    0.96 | 11.083    3.73 | 17.167    1.08 |  23.250    0.72
                        5.083    0.96 | 11.167    3.73 | 17.250    1.08 |  23.333    0.72
                        5.167    0.96 | 11.250    3.73 | 17.333    1.08 |  23.417    0.72
                        5.250    0.96 | 11.333    5.77 | 17.417    1.08 |  23.500    0.72
                        5.333    0.96 | 11.417    5.77 | 17.500    1.08 |  23.583    0.72
                        5.417    0.96 | 11.500    5.77 | 17.583    1.08 |  23.667    0.72
                        5.500    0.96 | 11.583    5.77 | 17.667    1.08 |  23.750    0.72
                        5.583    0.96 | 11.667    5.77 | 17.750    1.08 |  23.833    0.72
                        5.667    0.96 | 11.750    5.77 | 17.833    1.08 |  23.917    0.72
                        5.750    0.96 | 11.833   17.80 | 17.917    1.08 |  24.000    0.72
                        5.833    0.96 | 11.917   17.80 | 18.000    1.08 |  24.083    0.72
                        5.917    0.96 | 12.000   17.80 | 18.083    1.08 |  24.167    0.72
                        6.000    0.96 | 12.083   73.59 | 18.167    1.08 |  24.250    0.72
                        6.083    0.96 | 12.167   73.60 | 18.250    1.08 |

                    Max.Eff.Inten.(mm/hr)=      73.60       114.37
                                over (min)=       5.00        10.00
                    Storage Coeff.  (min)=       1.81 (ii)    8.50 (ii)
                    Unit Hyd. Tpeak (min)=       5.00        10.00
                    Unit Hyd. peak  (cms)=       0.32         0.12
                                                                    *TOTALS*
                    PEAK FLOW       (cms)=       0.02         0.02          0.043 (iii)
                    TIME TO PEAK    (hrs)=      12.25        12.25         12.25
                    RUNOFF VOLUME    (mm)=      59.13        34.42         41.82
                    TOTAL RAINFALL   (mm)=      60.13        60.13         60.13
```

```
    RUNOFF COEFFICIENT   =       0.98         0.57          0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0179)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0188):     2.53   0.079    12.33    14.53
      + ID2= 2 (  0252):     0.32   0.043    12.25    41.82
        ==========================================
        ID = 3 (  0179):     2.84   0.116    12.25    17.56

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

-------------------
| CALIB            |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.28          0.23
      Dep. Storage     (mm)=       1.00          5.00
      Average Slope     (%)=       1.00          2.00
      Length            (m)=      58.22         40.00
      Mannings n            =      0.013         0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
    TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
     hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
    0.083   0.00 |  6.167   0.96 | 12.250   73.60 | 18.33    1.08
    0.167   0.00 |  6.250   0.96 | 12.333    8.67 | 18.42    1.08
    0.250   0.00 |  6.333   1.08 | 12.417    8.66 | 18.50    1.08
    0.333   0.66 |  6.417   1.08 | 12.500    8.66 | 18.58    1.08
    0.417   0.66 |  6.500   1.08 | 12.583    8.66 | 18.67    1.08
    0.500   0.66 |  6.583   1.08 | 12.667    8.66 | 18.75    1.08
    0.583   0.66 |  6.667   1.08 | 12.750    8.66 | 18.83    1.08
    0.667   0.66 |  6.750   1.08 | 12.833    4.45 | 18.92    1.08
    0.750   0.66 |  6.833   1.08 | 12.917    4.45 | 19.00    1.08
```

```
                        PEAK   FLOW   REDUCTION [Qout/Qin](%)= 94.97
                        TIME SHIFT OF PEAK FLOW          (min)=  5.00
                        MAXIMUM  STORAGE   USED       (ha.m.)=  0.0010

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

-------------------
| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.32          0.26
      Dep. Storage     (mm)=       1.00          5.00
      Average Slope     (%)=       1.00          2.00
      Length            (m)=      62.24         40.00
      Mannings n            =      0.013         0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
    TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
     hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
    0.083   0.00 |  6.167   0.96 | 12.250   73.60 | 18.33    1.08
    0.167   0.00 |  6.250   0.96 | 12.333    8.67 | 18.42    1.08
    0.250   0.00 |  6.333   1.08 | 12.417    8.66 | 18.50    1.08
    0.333   0.66 |  6.417   1.08 | 12.500    8.66 | 18.58    1.08
    0.417   0.66 |  6.500   1.08 | 12.583    8.66 | 18.67    1.08
    0.500   0.66 |  6.583   1.08 | 12.667    8.66 | 18.75    1.08
    0.583   0.66 |  6.667   1.08 | 12.750    8.66 | 18.83    1.08
    0.667   0.66 |  6.750   1.08 | 12.833    4.45 | 18.92    1.08
    0.750   0.66 |  6.833   1.08 | 12.917    4.45 | 19.00    1.08
    0.833   0.66 |  6.917   1.08 | 13.000    4.45 | 19.08    1.08
    0.917   0.66 |  7.000   1.08 | 13.083    4.45 | 19.17    1.08
    1.000   0.66 |  7.083   1.08 | 13.167    4.45 | 19.25    1.08
    1.083   0.66 |  7.167   1.08 | 13.250    4.45 | 19.33    1.08
    1.167   0.66 |  7.250   1.08 | 13.333    3.25 | 19.42    1.08
    1.250   0.66 |  7.333   1.32 | 13.417    3.25 | 19.50    1.08
    1.333   0.66 |  7.417   1.32 | 13.500    3.25 | 19.58    1.08
    1.417   0.66 |  7.500   1.32 | 13.583    3.25 | 19.67    1.08
    1.500   0.66 |  7.583   1.32 | 13.667    3.25 | 19.75    1.08
    1.583   0.66 |  7.667   1.32 | 13.750    3.25 | 19.83    1.08
    1.667   0.66 |  7.750   1.32 | 13.833    2.53 | 19.92    1.08
    1.750   0.66 |  7.833   1.32 | 13.917    2.53 | 20.00    1.08
    1.833   0.66 |  7.917   1.32 | 14.000    2.53 | 20.08    1.08
    1.917   0.66 |  8.000   1.32 | 14.083    2.53 | 20.17    1.08
    2.000   0.66 |  8.083   1.32 | 14.167    2.53 | 20.25    1.08
    2.083   0.66 |  8.167   1.32 | 14.250    2.53 | 20.33    0.72
    2.167   0.66 |  8.250   1.32 | 14.333    1.80 | 20.42    0.72
    2.250   0.66 |  8.333   1.56 | 14.417    1.80 | 20.50    0.72
    2.333   0.78 |  8.417   1.56 | 14.500    1.80 | 20.58    0.72
    2.417   0.78 |  8.500   1.56 | 14.583    1.80 | 20.67    0.72
    2.500   0.78 |  8.583   1.56 | 14.667    1.80 | 20.75    0.72
    2.583   0.78 |  8.667   1.56 | 14.750    1.80 | 20.83    0.72
    2.667   0.78 |  8.750   1.56 | 14.833    1.80 | 20.92    0.72
    2.750   0.78 |  8.833   1.68 | 14.917    1.80 | 21.00    0.72
    2.833   0.78 |  8.917   1.68 | 15.000    1.80 | 21.08    0.72
    2.917   0.78 |  9.000   1.68 | 15.083    1.80 | 21.17    0.72
    3.000   0.78 |  9.083   1.68 | 15.167    1.80 | 21.25    0.72
    3.083   0.78 |  9.167   1.68 | 15.250    1.80 | 21.33    0.72
    3.167   0.78 |  9.250   1.68 | 15.333    1.80 | 21.42    0.72
    3.250   0.78 |  9.333   1.92 | 15.417    1.80 | 21.50    0.72
    3.333   0.78 |  9.417   1.92 | 15.500    1.80 | 21.58    0.72
    3.417   0.78 |  9.500   1.92 | 15.583    1.80 | 21.67    0.72
    3.500   0.78 |  9.583   1.92 | 15.667    1.80 | 21.75    0.72
    3.583   0.78 |  9.667   1.92 | 15.750    1.80 | 21.83    0.72
    3.667   0.78 |  9.750   1.92 | 15.833    1.80 | 21.92    0.72
    3.750   0.78 |  9.833   2.16 | 15.917    1.80 | 22.00    0.72
    3.833   0.78 |  9.917   2.16 | 16.000    1.80 | 22.08    0.72
    3.917   0.78 | 10.000   2.16 | 16.083    1.80 | 22.17    0.72
    4.000   0.78 | 10.083   2.16 | 16.167    1.80 | 22.25    0.72
    4.083   0.78 | 10.167   2.16 | 16.250    1.80 | 22.33    0.72
    4.167   0.78 | 10.250   2.16 | 16.333    1.08 | 22.42    0.72
    4.250   0.78 | 10.333   2.77 | 16.417    1.08 | 22.50    0.72
    4.333   0.96 | 10.417   2.77 | 16.500    1.08 | 22.58    0.72
    4.417   0.96 | 10.500   2.77 | 16.583    1.08 | 22.67    0.72
    4.500   0.96 | 10.583   2.77 | 16.667    1.08 | 22.75    0.72
    4.583   0.96 | 10.667   2.77 | 16.750    1.08 | 22.83    0.72
    4.667   0.96 | 10.750   2.77 | 16.833    1.08 | 22.92    0.72
    4.750   0.96 | 10.833   3.73 | 16.917    1.08 | 23.00    0.72
    4.833   0.96 | 10.917   3.73 | 17.000    1.08 | 23.08    0.72
    4.917   0.96 | 11.000   3.73 | 17.083    1.08 | 23.17    0.72
    5.000   0.96 | 11.083   3.73 | 17.167    1.08 | 23.25    0.72
    5.083   0.96 | 11.167   3.73 | 17.250    1.08 | 23.33    0.72
    5.167   0.96 | 11.250   3.73 | 17.333    1.08 | 23.42    0.72
    5.250   0.96 | 11.333   5.77 | 17.417    1.08 | 23.50    0.72
    5.333   0.96 | 11.417   5.77 | 17.500    1.08 | 23.58    0.72
    5.417   0.96 | 11.500   5.77 | 17.583    1.08 | 23.67    0.72
    5.500   0.96 | 11.583   5.77 | 17.667    1.08 | 23.75    0.72
    5.583   0.96 | 11.667   5.77 | 17.750    1.08 | 23.83    0.72
    5.667   0.96 | 11.750   5.77 | 17.833    1.08 | 23.92    0.72
    5.750   0.96 | 11.833   17.80 | 17.917    1.08 | 24.00    0.72
    5.833   0.96 | 11.917   17.80 | 18.000    1.08 | 24.08    0.72
    5.917   0.96 | 12.000   17.80 | 18.083    1.08 | 24.17    0.72
    6.000   0.96 | 12.083   73.59 | 18.167    1.08 | 24.25    0.72
    6.083   0.96 | 12.167   73.60 | 18.250    1.08 |

                Max.Eff.Inten.(mm/hr)=      73.60       110.18
                            over (min)=       5.00        10.00
                Storage Coeff.  (min)=       2.17 (ii)    8.96 (ii)
```

```
                    Unit Hyd. Tpeak (min)=       5.00        10.00
                    Unit Hyd. peak  (cms)=       0.31         0.12
                                                                    *TOTALS*
                    PEAK FLOW       (cms)=       0.00         0.06          0.060 (iii)
                    TIME TO PEAK    (hrs)=      12.25        12.25         12.25
                    RUNOFF VOLUME    (mm)=      59.13        34.01         34.25
                    TOTAL RAINFALL   (mm)=      60.13        60.13         60.13
                    RUNOFF COEFFICIENT   =       0.98         0.57          0.57

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

           (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
               CN* =  74.0    Ia = Dep. Storage  (Above)
          (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
               THAN THE STORAGE COEFFICIENT.
         (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
--------------------------------------------------------------------------------

-------------------
| ADD HYD  (  0246)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0245):     0.58   0.060    12.25     34.25
      + ID2= 2 (  0282):     0.51   0.050    12.33     34.25
        ==========================================
        ID = 3 (  0246):     1.09   0.107    12.33     34.25

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

-------------------
| CALIB            |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------

                        IMPERVIOUS     PERVIOUS (i)
      Surface Area     (ha)=       0.90          0.38
      Dep. Storage     (mm)=       1.00          5.00
      Average Slope     (%)=       1.00          2.00
      Length            (m)=      92.38         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    0.00 | 6.167    0.96 |12.250   73.60 | 18.33    1.08
 0.167    0.00 | 6.250    0.96 |12.333    8.67 | 18.42    1.08
 0.250    0.00 | 6.333    1.08 |12.417    8.66 | 18.50    1.08
 0.333    0.66 | 6.417    1.08 |12.500    8.66 | 18.58    1.08
 0.417    0.66 | 6.500    1.08 |12.583    8.66 | 18.67    1.08
 0.500    0.66 | 6.583    1.08 |12.667    8.66 | 18.75    1.08
 0.583    0.66 | 6.667    1.08 |12.750    8.66 | 18.83    1.08
 0.667    0.66 | 6.750    1.08 |12.833    4.45 | 18.92    1.08
 0.750    0.66 | 6.833    1.08 |12.917    4.45 | 19.00    1.08
 0.833    0.66 | 6.917    1.08 |13.000    4.45 | 19.08    1.08
 0.917    0.66 | 7.000    1.08 |13.083    4.45 | 19.17    1.08
 1.000    0.66 | 7.083    1.08 |13.167    4.45 | 19.25    1.08
 1.083    0.66 | 7.167    1.08 |13.250    4.45 | 19.33    1.08
 1.167    0.66 | 7.250    1.08 |13.333    3.25 | 19.42    1.08
 1.250    0.66 | 7.333    1.32 |13.417    3.25 | 19.50    1.08
 1.333    0.66 | 7.417    1.32 |13.500    3.25 | 19.58    1.08
 1.417    0.66 | 7.500    1.32 |13.583    3.25 | 19.67    1.08
 1.500    0.66 | 7.583    1.32 |13.667    3.25 | 19.75    1.08
 1.583    0.66 | 7.667    1.32 |13.750    3.25 | 19.83    1.08
 1.667    0.66 | 7.750    1.32 |13.833    2.53 | 19.92    1.08
 1.750    0.66 | 7.833    1.32 |13.917    2.53 | 20.00    1.08
 1.833    0.66 | 7.917    1.32 |14.000    2.53 | 20.08    1.08
 1.917    0.66 | 8.000    1.32 |14.083    2.53 | 20.17    1.08
 2.000    0.66 | 8.083    1.32 |14.167    2.53 | 20.25    1.08
 2.083    0.66 | 8.167    1.32 |14.250    2.53 | 20.33    0.72
 2.167    0.66 | 8.250    1.32 |14.333    1.80 | 20.42    0.72
 2.250    0.66 | 8.333    1.56 |14.417    1.80 | 20.50    0.72
 2.333    0.78 | 8.417    1.56 |14.500    1.80 | 20.58    0.72
 2.417    0.78 | 8.500    1.56 |14.583    1.80 | 20.67    0.72
 2.500    0.78 | 8.583    1.56 |14.667    1.80 | 20.75    0.72
 2.583    0.78 | 8.667    1.56 |14.750    1.80 | 20.83    0.72
 2.667    0.78 | 8.750    1.56 |14.833    1.80 | 20.92    0.72
 2.750    0.78 | 8.833    1.68 |14.917    1.80 | 21.00    0.72
 2.833    0.78 | 8.917    1.68 |15.000    1.80 | 21.08    0.72
 2.917    0.78 | 9.000    1.68 |15.083    1.80 | 21.17    0.72
 3.000    0.78 | 9.083    1.68 |15.167    1.80 | 21.25    0.72
 3.083    0.78 | 9.167    1.68 |15.250    1.80 | 21.33    0.72
 3.167    0.78 | 9.250    1.68 |15.333    1.80 | 21.42    0.72
 3.250    0.78 | 9.333    1.92 |15.417    1.80 | 21.50    0.72
 3.333    0.78 | 9.417    1.92 |15.500    1.80 | 21.58    0.72
 3.417    0.78 | 9.500    1.92 |15.583    1.80 | 21.67    0.72
 3.500    0.78 | 9.583    1.92 |15.667    1.80 | 21.75    0.72
 3.583    0.78 | 9.667    1.92 |15.750    1.80 | 21.83    0.72
 3.667    0.78 | 9.750    1.92 |15.833    1.80 | 21.92    0.72
 3.750    0.78 | 9.833    2.16 |15.917    1.80 | 22.00    0.72
 3.833    0.78 | 9.917    2.16 |16.000    1.80 | 22.08    0.72
 3.917    0.78 |10.000    2.16 |16.083    1.80 | 22.17    0.72
 4.000    0.78 |10.083    2.16 |16.167    1.80 | 22.25    0.72
 4.083    0.78 |10.167    2.16 |16.250    1.80 | 22.33    0.72
 4.167    0.78 |10.250    2.16 |16.333    1.08 | 22.42    0.72
 4.250    0.78 |10.333    2.77 |16.417    1.08 | 22.50    0.72
 4.333    0.96 |10.417    2.77 |16.500    1.08 | 22.58    0.72
 4.417    0.96 |10.500    2.77 |16.583    1.08 | 22.67    0.72
 4.500    0.96 |10.583    2.77 |16.667    1.08 | 22.75    0.72
 4.583    0.96 |10.667    2.77 |16.750    1.08 | 22.83    0.72
 4.667    0.96 |10.750    2.77 |16.833    1.08 | 22.92    0.72
 4.750    0.96 |10.833    3.73 |16.917    1.08 | 23.00    0.72
 4.833    0.96 |10.917    3.73 |17.000    1.08 | 23.08    0.72
 4.917    0.96 |11.000    3.73 |17.083    1.08 | 23.17    0.72
 5.000    0.96 |11.083    3.73 |17.167    1.08 | 23.25    0.72
 5.083    0.96 |11.167    3.73 |17.250    1.08 | 23.33    0.72
 5.167    0.96 |11.250    3.73 |17.333    1.08 | 23.42    0.72
 5.250    0.96 |11.333    5.77 |17.417    1.08 | 23.50    0.72
 5.333    0.96 |11.417    5.77 |17.500    1.08 | 23.58    0.72
 5.417    0.96 |11.500    5.77 |17.583    1.08 | 23.67    0.72
 5.500    0.96 |11.583    5.77 |17.667    1.08 | 23.75    0.72
 5.583    0.96 |11.667    5.77 |17.750    1.08 | 23.83    0.72
 5.667    0.96 |11.750    5.77 |17.833    1.08 | 23.92    0.72
 5.750    0.96 |11.833   17.80 |17.917    1.08 | 24.00    0.72
 5.833    0.96 |11.917   17.80 |18.000    1.08 | 24.08    0.72
 5.917    0.96 |12.000   17.80 |18.083    1.08 | 24.17    0.72
 6.000    0.96 |12.083   73.59 |18.167    1.08 | 24.25    0.72
 6.083    0.96 |12.167   73.60 |18.250    1.08 |

     Max.Eff.Inten.(mm/hr)=     73.60        28.92
              over (min)        5.00        20.00
     Storage Coeff.  (min)=     3.89 (ii)   15.48 (ii)
     Unit Hyd. Tpeak (min)=     5.00        20.00
     Unit Hyd. peak  (cms)=     0.25         0.07
                                          *TOTALS*
     PEAK FLOW      (cms)=      0.49         0.07          0.535 (iii)
     TIME TO PEAK   (hrs)=     12.25        12.42         12.25
     RUNOFF VOLUME   (mm)=     55.13        21.05         41.50
     TOTAL RAINFALL  (mm)=     60.13        60.13         60.13
     RUNOFF COEFFICIENT  =      0.92         0.35          0.69

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* = 74.0    Ia = Dep. 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  (  0304)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0060):    4.05   0.535    12.25    41.50
     + ID2= 2 (  0064):    1.43   0.175    12.25    39.58
       ================================================
       ID = 3 (  0304):    5.48   0.710    12.25    41.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| STANDHYD (  0066)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.09         4.12
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     307.76        40.00
     Mannings n            =      0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
     TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
      hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
    0.083    0.00 | 6.167    0.96 |12.250   73.60 | 18.33    1.08
    0.167    0.00 | 6.250    0.96 |12.333    8.67 | 18.42    1.08
    0.250    0.00 | 6.333    1.08 |12.417    8.66 | 18.50    1.08
    0.333    0.66 | 6.417    1.08 |12.500    8.66 | 18.58    1.08
    0.417    0.66 | 6.500    1.08 |12.583    8.66 | 18.67    1.08
    0.500    0.66 | 6.583    1.08 |12.667    8.66 | 18.75    1.08
    0.583    0.66 | 6.667    1.08 |12.750    8.66 | 18.83    1.08
    0.667    0.66 | 6.750    1.08 |12.833    4.45 | 18.92    1.08
    0.750    0.66 | 6.833    1.08 |12.917    4.45 | 19.00    1.08
    0.833    0.66 | 6.917    1.08 |13.000    4.45 | 19.08    1.08
    0.917    0.66 | 7.000    1.08 |13.083    4.45 | 19.17    1.08
    1.000    0.66 | 7.083    1.08 |13.167    4.45 | 19.25    1.08
    1.083    0.66 | 7.167    1.08 |13.250    4.45 | 19.33    1.08
    1.167    0.66 | 7.250    1.08 |13.333    3.25 | 19.42    1.08
    1.250    0.66 | 7.333    1.32 |13.417    3.25 | 19.50    1.08
    1.333    0.66 | 7.417    1.32 |13.500    3.25 | 19.58    1.08
    1.417    0.66 | 7.500    1.32 |13.583    3.25 | 19.67    1.08
    1.500    0.66 | 7.583    1.32 |13.667    3.25 | 19.75    1.08
    1.583    0.66 | 7.667    1.32 |13.750    3.25 | 19.83    1.08
    1.667    0.66 | 7.750    1.32 |13.833    2.53 | 19.92    1.08
    1.750    0.66 | 7.833    1.32 |13.917    2.53 | 20.00    1.08
    1.833    0.66 | 7.917    1.32 |14.000    2.53 | 20.08    1.08
    1.917    0.66 | 8.000    1.32 |14.083    2.53 | 20.17    1.08
    2.000    0.66 | 8.083    1.32 |14.167    2.53 | 20.25    1.08
    2.083    0.66 | 8.167    1.32 |14.250    2.53 | 20.33    0.72
    2.167    0.66 | 8.250    1.32 |14.333    1.80 | 20.42    0.72
    2.250    0.66 | 8.333    1.56 |14.417    1.80 | 20.50    0.72
    2.333    0.78 | 8.417    1.56 |14.500    1.80 | 20.58    0.72
    2.417    0.78 | 8.500    1.56 |14.583    1.80 | 20.67    0.72
    2.500    0.78 | 8.583    1.56 |14.667    1.80 | 20.75    0.72
    2.583    0.78 | 8.667    1.56 |14.750    1.80 | 20.83    0.72
    2.667    0.78 | 8.750    1.56 |14.833    1.80 | 20.92    0.72
    2.750    0.78 | 8.833    1.68 |14.917    1.80 | 21.00    0.72
    2.833    0.78 | 8.917    1.68 |15.000    1.80 | 21.08    0.72
    2.917    0.78 | 9.000    1.68 |15.083    1.80 | 21.17    0.72
    3.000    0.78 | 9.083    1.68 |15.167    1.80 | 21.25    0.72
    3.083    0.78 | 9.167    1.68 |15.250    1.80 | 21.33    0.72
    3.167    0.78 | 9.250    1.68 |15.333    1.80 | 21.42    0.72
    3.250    0.78 | 9.333    1.92 |15.417    1.80 | 21.50    0.72
    3.333    0.78 | 9.417    1.92 |15.500    1.80 | 21.58    0.72
    3.417    0.78 | 9.500    1.92 |15.583    1.80 | 21.67    0.72
    3.500    0.78 | 9.583    1.92 |15.667    1.80 | 21.75    0.72
    3.583    0.78 | 9.667    1.92 |15.750    1.80 | 21.83    0.72
    3.667    0.78 | 9.750    1.92 |15.833    1.80 | 21.92    0.72
    3.750    0.78 | 9.833    2.16 |15.917    1.80 | 22.00    0.72
    3.833    0.78 | 9.917    2.16 |16.000    1.80 | 22.08    0.72
    3.917    0.78 |10.000    2.16 |16.083    1.80 | 22.17    0.72
    4.000    0.78 |10.083    2.16 |16.167    1.80 | 22.25    0.72
    4.083    0.78 |10.167    2.16 |16.250    1.80 | 22.33    0.72
    4.167    0.78 |10.250    2.16 |16.333    1.08 | 22.42    0.72
    4.250    0.78 |10.333    2.77 |16.417    1.08 | 22.50    0.72
    4.333    0.96 |10.417    2.77 |16.500    1.08 | 22.58    0.72
    4.417    0.96 |10.500    2.77 |16.583    1.08 | 22.67    0.72
    4.500    0.96 |10.583    2.77 |16.667    1.08 | 22.75    0.72
    4.583    0.96 |10.667    2.77 |16.750    1.08 | 22.83    0.72
    4.667    0.96 |10.750    2.77 |16.833    1.08 | 22.92    0.72
    4.750    0.96 |10.833    3.73 |16.917    1.08 | 23.00    0.72
    4.833    0.96 |10.917    3.73 |17.000    1.08 | 23.08    0.72
    4.917    0.96 |11.000    3.73 |17.083    1.08 | 23.17    0.72
    5.000    0.96 |11.083    3.73 |17.167    1.08 | 23.25    0.72
    5.083    0.96 |11.167    3.73 |17.250    1.08 | 23.33    0.72
    5.167    0.96 |11.250    3.73 |17.333    1.08 | 23.42    0.72
    5.250    0.96 |11.333    5.77 |17.417    1.08 | 23.50    0.72
    5.333    0.96 |11.417    5.77 |17.500    1.08 | 23.58    0.72
    5.417    0.96 |11.500    5.77 |17.583    1.08 | 23.67    0.72
    5.500    0.96 |11.583    5.77 |17.667    1.08 | 23.75    0.72
    5.583    0.96 |11.667    5.77 |17.750    1.08 | 23.83    0.72
    5.667    0.96 |11.750    5.77 |17.833    1.08 | 23.92    0.72
    5.750    0.96 |11.833   17.80 |17.917    1.08 | 24.00    0.72
    5.833    0.96 |11.917   17.80 |18.000    1.08 | 24.08    0.72
    5.917    0.96 |12.000   17.80 |18.083    1.08 | 24.17    0.72
    6.000    0.96 |12.083   73.59 |18.167    1.08 | 24.25    0.72
    6.083    0.96 |12.167   73.60 |18.250    1.08 |

     Max.Eff.Inten.(mm/hr)=     73.60        31.37
              over (min)        5.00        15.00
     Storage Coeff.  (min)=     3.51 (ii)   12.95 (ii)
     Unit Hyd. Tpeak (min)=     5.00        15.00
     Unit Hyd. peak  (cms)=     0.26         0.08
                                          *TOTALS*
     PEAK FLOW      (cms)=      0.14         0.04          0.175 (iii)
     TIME TO PEAK   (hrs)=     12.25        12.33         12.25
     RUNOFF VOLUME   (mm)=     58.13        21.05         39.58
     TOTAL RAINFALL  (mm)=     60.13        60.13         60.13
     RUNOFF COEFFICIENT  =      0.97         0.35          0.66

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* = 74.0    Ia = Dep. 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 (  0066)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.09         4.12
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=     307.76        40.00
     Mannings n            =      0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
     TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
      hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
    0.083    0.00 | 6.167    0.96 |12.250   73.60 | 18.33    1.08
    0.167    0.00 | 6.250    0.96 |12.333    8.67 | 18.42    1.08
    0.250    0.00 | 6.333    1.08 |12.417    8.66 | 18.50    1.08
    0.333    0.66 | 6.417    1.08 |12.500    8.66 | 18.58    1.08
    0.417    0.66 | 6.500    1.08 |12.583    8.66 | 18.67    1.08
    0.500    0.66 | 6.583    1.08 |12.667    8.66 | 18.75    1.08
    0.583    0.66 | 6.667    1.08 |12.750    8.66 | 18.83    1.08
    0.667    0.66 | 6.750    1.08 |12.833    4.45 | 18.92    1.08
    0.750    0.66 | 6.833    1.08 |12.917    4.45 | 19.00    1.08
    0.833    0.66 | 6.917    1.08 |13.000    4.45 | 19.08    1.08
    0.917    0.66 | 7.000    1.08 |13.083    4.45 | 19.17    1.08
    1.000    0.66 | 7.083    1.08 |13.167    4.45 | 19.25    1.08
    1.083    0.66 | 7.167    1.08 |13.250    4.45 | 19.33    1.08
    1.167    0.66 | 7.250    1.08 |13.333    3.25 | 19.42    1.08
    1.250    0.66 | 7.333    1.32 |13.417    3.25 | 19.50    1.08
    1.333    0.66 | 7.417    1.32 |13.500    3.25 | 19.58    1.08
    1.417    0.66 | 7.500    1.32 |13.583    3.25 | 19.67    1.08
    1.500    0.66 | 7.583    1.32 |13.667    3.25 | 19.75    1.08
    1.583    0.66 | 7.667    1.32 |13.750    3.25 | 19.83    1.08
    1.667    0.66 | 7.750    1.32 |13.833    2.53 | 19.92    1.08
    1.750    0.66 | 7.833    1.32 |13.917    2.53 | 20.00    1.08
    1.833    0.66 | 7.917    1.32 |14.000    2.53 | 20.08    1.08
    1.917    0.66 | 8.000    1.32 |14.083    2.53 | 20.17    1.08
    2.000    0.66 | 8.083    1.32 |14.167    2.53 | 20.25    1.08
    2.083    0.66 | 8.167    1.32 |14.250    2.53 | 20.33    0.72
    2.167    0.66 | 8.250    1.32 |14.333    1.80 | 20.42    0.72
    2.250    0.66 | 8.333    1.56 |14.417    1.80 | 20.50    0.72
    2.333    0.78 | 8.417    1.56 |14.500    1.80 | 20.58    0.72
    2.417    0.78 | 8.500    1.56 |14.583    1.80 | 20.67    0.72
    2.500    0.78 | 8.583    1.56 |14.667    1.80 | 20.75    0.72
    2.583    0.78 | 8.667    1.56 |14.750    1.80 | 20.83    0.72
    2.667    0.78 | 8.750    1.56 |14.833    1.80 | 20.92    0.72
    2.750    0.78 | 8.833    1.68 |14.917    1.80 | 21.00    0.72
    2.833    0.78 | 8.917    1.68 |15.000    1.80 | 21.08    0.72
    2.917    0.78 | 9.000    1.68 |15.083    1.80 | 21.17    0.72
    3.000    0.78 | 9.083    1.68 |15.167    1.80 | 21.25    0.72
    3.083    0.78 | 9.167    1.68 |15.250    1.80 | 21.33    0.72
    3.167    0.78 | 9.250    1.68 |15.333    1.80 | 21.42    0.72
    3.250    0.78 | 9.333    1.92 |15.417    1.80 | 21.50    0.72
    3.333    0.78 | 9.417    1.92 |15.500    1.80 | 21.58    0.72
    3.417    0.78 | 9.500    1.92 |15.583    1.80 | 21.67    0.72
    3.500    0.78 | 9.583    1.92 |15.667    1.80 | 21.75    0.72
    3.583    0.78 | 9.667    1.92 |15.750    1.80 | 21.83    0.72
    3.667    0.78 | 9.750    1.92 |15.833    1.80 | 21.92    0.72
    3.750    0.78 | 9.833    2.16 |15.917    1.80 | 22.00    0.72
    3.833    0.78 | 9.917    2.16 |16.000    1.80 | 22.08    0.72
    3.917    0.78 |10.000    2.16 |16.083    1.80 | 22.17    0.72
    4.000    0.78 |10.083    2.16 |16.167    1.80 | 22.25    0.72
    4.083    0.78 |10.167    2.16 |16.250    1.80 | 22.33    0.72
    4.167    0.78 |10.250    2.16 |16.333    1.08 | 22.42    0.72
    4.250    0.78 |10.333    2.77 |16.417    1.08 | 22.50    0.72
    4.333    0.96 |10.417    2.77 |16.500    1.08 | 22.58    0.72
    4.417    0.96 |10.500    2.77 |16.583    1.08 | 22.67    0.72
    4.500    0.96 |10.583    2.77 |16.667    1.08 | 22.75    0.72
    4.583    0.96 |10.667    2.77 |16.750    1.08 | 22.83    0.72
    4.667    0.96 |10.750    2.77 |16.833    1.08 | 22.92    0.72
    4.750    0.96 |10.833    3.73 |16.917    1.08 | 23.00    0.72
    4.833    0.96 |10.917    3.73 |17.000    1.08 | 23.08    0.72
    4.917    0.96 |11.000    3.73 |17.083    1.08 | 23.17    0.72
    5.000    0.96 |11.083    3.73 |17.167    1.08 | 23.25    0.72
    5.083    0.96 |11.167    3.73 |17.250    1.08 | 23.33    0.72
    5.167    0.96 |11.250    3.73 |17.333    1.08 | 23.42    0.72
    5.250    0.96 |11.333    5.77 |17.417    1.08 | 23.50    0.72
    5.333    0.96 |11.417    5.77 |17.500    1.08 | 23.58    0.72
    5.417    0.96 |11.500    5.77 |17.583    1.08 | 23.67    0.72
    5.500    0.96 |11.583    5.77 |17.667    1.08 | 23.75    0.72
    5.583    0.96 |11.667    5.77 |17.750    1.08 | 23.83    0.72
    5.667    0.96 |11.750    5.77 |17.833    1.08 | 23.92    0.72
    5.750    0.96 |11.833   17.80 |17.917    1.08 | 24.00    0.72
    5.833    0.96 |11.917   17.80 |18.000    1.08 | 24.08    0.72
    5.917    0.96 |12.000   17.80 |18.083    1.08 | 24.17    0.72
    6.000    0.96 |12.083   73.59 |18.167    1.08 | 24.25    0.72
    6.083    0.96 |12.167   73.60 |18.250    1.08 |

     Max.Eff.Inten.(mm/hr)=     73.60        28.92
              over (min)        5.00        20.00
     Storage Coeff.  (min)=     5.67 (ii)   17.26 (ii)
     Unit Hyd. Tpeak (min)=     5.00        20.00
     Unit Hyd. peak  (cms)=     0.20         0.06
                                          *TOTALS*
     PEAK FLOW      (cms)=      1.95         0.17          2.061 (iii)
     TIME TO PEAK   (hrs)=     12.25        12.42         12.25
     RUNOFF VOLUME   (mm)=     59.13        21.05         48.09
     TOTAL RAINFALL  (mm)=     60.13        60.13         60.13
     RUNOFF COEFFICIENT  =      0.98         0.35          0.80

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* = 74.0    Ia = Dep. 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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--------------------
| DUHYD    (  0062)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=  2.9|      AREA     QPEAK     TPEAK     R.V.
```

```
--------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):  14.21      2.06     12.25    48.09
     ===================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00     0.00
     MINOR SYS.(ID= 3):  14.21      2.06     12.25    48.09

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
---------------------
|Bioretention(  0065)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3      |
| DT=  5.0 min        |
---------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA          |   STAGE      AREA
                       (m)         (m2)          |    (m)       (m2)
                      0.000       100.000        |   1.500     100.000
                      0.500       100.000        |   0.000       0.000
                      1.000       100.000        |   0.000       0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity            =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    62.40

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width      (m)=  780.00  Length           (m)=  2.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                    STORAGE LAYER:
                    Depth       (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   936.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                       AREA         QPEAK            TPEAK         R.V.
                       (ha)         (cms)            (hrs)         (mm)
      INFLOW:ID= 2    14.21         2.061            12.25         48.09
    OVERFLOW:ID= 3    14.21         2.059            12.25         45.07
```

```
                Volume Reduction Rate[(RVin-RVout)/RVin] (%)=        6.27
                Time to reach Max Ponding storage       (Hr)=        0.00
                Volume of water for drawdown in LID  (cu.m.)=      535.09
                Volume of Max. Water Storage         (cu.m.)=        0.00
                Maximum Surface Ponding And Mulch Vol(cu.m.)=      212.35
                Maximum Engineered Soil Volume       (cu.m.)=      329.60
                ***** After simulation, water volume is not zero.

  --------------------------
  | Junction Command(0063) |
  --------------------------

                          AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 3(  0065)   14.21     2.06   12.25    45.07
  OUTFLOW: ID= 2(  0063)   14.21     2.06   12.25    45.07

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

--------------------
| ADD HYD  (  0306)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0062 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0306 = HYDROGRAPH 0063
        ID1= 1 (  0062):     0.00   0.000     0.00     0.00
      + ID2= 2 (  0063):    14.21   2.059    12.25    45.07
        ===================================================
        ID = 3 (  0306):    14.21   2.059    12.25    45.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.39         0.20
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length            (m)=      62.78        40.00
     Mannings n          =      0.013        0.250

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


                                  ---- TRANSFORMED HYETOGRAPH ----
                    TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                     hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                   0.083    0.00 |  6.167   0.96 |12.250   73.60 | 18.33    1.08
                   0.167    0.00 |  6.250   0.96 |12.333    8.67 | 18.42    1.08
                   0.250    0.00 |  6.333   1.08 |12.417    8.66 | 18.50    1.08
                   0.333    0.66 |  6.417   1.08 |12.500    8.66 | 18.58    1.08
                   0.417    0.66 |  6.500   1.08 |12.583    8.66 | 18.67    1.08
                   0.500    0.66 |  6.583   1.08 |12.667    8.66 | 18.75    1.08
                   0.583    0.66 |  6.667   1.08 |12.750    8.66 | 18.83    1.08
                   0.667    0.66 |  6.750   1.08 |12.833    4.45 | 18.92    1.08
                   0.750    0.66 |  6.833   1.08 |12.917    4.45 | 19.00    1.08
                   0.833    0.66 |  6.917   1.08 |13.000    4.45 | 19.08    1.08
                   0.917    0.66 |  7.000   1.08 |13.083    4.45 | 19.17    1.08
                   1.000    0.66 |  7.083   1.08 |13.167    4.45 | 19.25    1.08
                   1.083    0.66 |  7.167   1.08 |13.250    4.45 | 19.33    1.08
                   1.167    0.66 |  7.250   1.08 |13.333    3.25 | 19.42    1.08
                   1.250    0.66 |  7.333   1.32 |13.417    3.25 | 19.50    1.08
                   1.333    0.66 |  7.417   1.32 |13.500    3.25 | 19.58    1.08
                   1.417    0.66 |  7.500   1.32 |13.583    3.25 | 19.67    1.08
                   1.500    0.66 |  7.583   1.32 |13.667    3.25 | 19.75    1.08
                   1.583    0.66 |  7.667   1.32 |13.750    3.25 | 19.83    1.08
                   1.667    0.66 |  7.750   1.32 |13.833    2.53 | 19.92    1.08
                   1.750    0.66 |  7.833   1.32 |13.917    2.53 | 20.00    1.08
                   1.833    0.66 |  7.917   1.32 |14.000    2.53 | 20.08    1.08
                   1.917    0.66 |  8.000   1.32 |14.083    2.53 | 20.17    1.08
                   2.000    0.66 |  8.083   1.32 |14.167    2.53 | 20.25    1.08
                   2.083    0.66 |  8.167   1.32 |14.250    2.53 | 20.33    0.72
                   2.167    0.66 |  8.250   1.32 |14.333    1.80 | 20.42    0.72
                   2.250    0.66 |  8.333   1.56 |14.417    1.80 | 20.50    0.72
                   2.333    0.78 |  8.417   1.56 |14.500    1.80 | 20.58    0.72
                   2.417    0.78 |  8.500   1.56 |14.583    1.80 | 20.67    0.72
                   2.500    0.78 |  8.583   1.56 |14.667    1.80 | 20.75    0.72
                   2.583    0.78 |  8.667   1.56 |14.750    1.80 | 20.83    0.72
                   2.667    0.78 |  8.750   1.56 |14.833    1.80 | 20.92    0.72
                   2.750    0.78 |  8.833   1.68 |14.917    1.80 | 21.00    0.72
                   2.833    0.78 |  8.917   1.68 |15.000    1.80 | 21.08    0.72
                   2.917    0.78 |  9.000   1.68 |15.083    1.80 | 21.17    0.72
                   3.000    0.78 |  9.083   1.68 |15.167    1.80 | 21.25    0.72
                   3.083    0.78 |  9.167   1.68 |15.250    1.80 | 21.33    0.72
                   3.167    0.78 |  9.250   1.68 |15.333    1.80 | 21.42    0.72
                   3.250    0.78 |  9.333   1.92 |15.417    1.80 | 21.50    0.72
                   3.333    0.78 |  9.417   1.92 |15.500    1.80 | 21.58    0.72
                   3.417    0.78 |  9.500   1.92 |15.583    1.80 | 21.67    0.72
                   3.500    0.78 |  9.583   1.92 |15.667    1.80 | 21.75    0.72
                   3.583    0.78 |  9.667   1.92 |15.750    1.80 | 21.83    0.72
                   3.667    0.78 |  9.750   1.92 |15.833    1.80 | 21.92    0.72
                   3.750    0.78 |  9.833   2.16 |15.917    1.80 | 22.00    0.72
                   3.833    0.78 |  9.917   2.16 |16.000    1.80 | 22.08    0.72
                   3.917    0.78 |10.000    2.16 |16.083    1.80 | 22.17    0.72
                   4.000    0.78 |10.083    2.16 |16.167    1.80 | 22.25    0.72
                   4.083    0.78 |10.167    2.16 |16.250    1.80 | 22.33    0.72
                   4.167    0.78 |10.250    2.16 |16.333    1.08 | 22.42    0.72
                   4.250    0.78 |10.333    2.77 |16.417    1.08 | 22.50    0.72
                   4.333    0.96 |10.417    2.77 |16.500    1.08 | 22.58    0.72
                   4.417    0.96 |10.500    2.77 |16.583    1.08 | 22.67    0.72
                   4.500    0.96 |10.583    2.77 |16.667    1.08 | 22.75    0.72
                   4.583    0.96 |10.667    2.77 |16.750    1.08 | 22.83    0.72
                   4.667    0.96 |10.750    2.77 |16.833    1.08 | 22.92    0.72
                   4.750    0.96 |10.833    3.73 |16.917    1.08 | 23.00    0.72
                   4.833    0.96 |10.917    3.73 |17.000    1.08 | 23.08    0.72
                   4.917    0.96 |11.000    3.73 |17.083    1.08 | 23.17    0.72
                   5.000    0.96 |11.083    3.73 |17.167    1.08 | 23.25    0.72
                   5.083    0.96 |11.167    3.73 |17.250    1.08 | 23.33    0.72
                   5.167    0.96 |11.250    3.73 |17.333    1.08 | 23.42    0.72
                   5.250    0.96 |11.333    5.77 |17.417    1.08 | 23.50    0.72
                   5.333    0.96 |11.417    5.77 |17.500    1.08 | 23.58    0.72
                   5.417    0.96 |11.500    5.77 |17.583    1.08 | 23.67    0.72
                   5.500    0.96 |11.583    5.77 |17.667    1.08 | 23.75    0.72
                   5.583    0.96 |11.667    5.77 |17.750    1.08 | 23.83    0.72
                   5.667    0.96 |11.750    5.77 |17.833    1.08 | 23.92    0.72
                   5.750    0.96 |11.833   17.80 |17.917    1.08 | 24.00    0.72
                   5.833    0.96 |11.917   17.80 |18.000    1.08 | 24.08    0.72
                   5.917    0.96 |12.000   17.80 |18.083    1.08 | 24.17    0.72
                   6.000    0.96 |12.083   73.59 |18.167    1.08 | 24.25    0.72
                   6.083    0.96 |12.167   73.60 |18.250    1.08 |

     Max.Eff.Inten.(mm/hr)=      73.60       110.60
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       2.18 (ii)    8.96 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.12
                                                           *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.05          0.076 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=      59.13        34.05          40.31
     TOTAL RAINFALL   (mm)=      60.13        60.13          60.13
     RUNOFF COEFFICIENT   =       0.98         0.57           0.67

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-------------------------------------------------------------------------------
--------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=     1|
```

```
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.08     12.25   40.31
     ===================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   0.59      0.08     12.25   40.31

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-------------------------------------------------------------------------------
---------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3      |
| DT=  5.0 min        |
---------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA          |   STAGE      AREA
                       (m)         (m2)          |    (m)       (m2)
                      0.000       100.000        |   1.500     100.000
                      0.500       100.000        |   0.000       0.000
                      1.000       100.000        |   0.000       0.000

                    MULCH LAYER:
                    Depth      (m)=    0.00  Porosity            =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     0.00

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width      (m)=    3.00  Length           (m)=240.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                      DEPTH       DISCHARGE      |   DEPTH      DISCHARGE
                       (m)          (cms)        |    (m)         (cms)
                      0.000         0.000        |   0.559        0.030
                      0.279         0.010        |   0.762        0.040
                      0.406         0.020        |   1.300        0.050

                    STORAGE LAYER:
                    Depth       (m)=    1.00  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   288.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04
```

```
                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                       AREA         QPEAK            TPEAK         R.V.
                       (ha)         (cms)            (hrs)         (mm)
      INFLOW:ID= 2     0.59         0.076            12.25         40.31
     OUTFLOW:ID= 1     0.55         0.009             0.08         23.55
    OVERFLOW:ID= 3     0.04         0.001            16.25         23.55

                Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       41.59
                Time to reach Max Ponding storage       (Hr)=        0.00
                Volume of water for drawdown in LID  (cu.m.)=      153.99
                Volume of Max. Water Storage         (cu.m.)=        0.00
                Maximum Surface Ponding And Mulch Vol(cu.m.)=      149.95
                Maximum Engineered Soil Volume       (cu.m.)=       69.86
                ***** After simulation, water volume is not zero.

  --------------------------
  | Junction Command(0330) |
  --------------------------

                          AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 3(  0329)    0.04     0.00   16.25    23.55
  OUTFLOW: ID= 2(  0330)    0.04     0.00   16.25    23.55

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

  --------------------------
  | Junction Command(0332) |
  --------------------------

                          AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 1(  0329)    0.55     0.01    0.08    23.55
  OUTFLOW: ID= 2(  0332)    0.55     0.01    0.08    23.55

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

--------------------
| ADD HYD  (  0310)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0331 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
        ID1= 1 (  0330):     0.04   0.001    16.25    23.55
      + ID2= 2 (  0331):     0.00   0.000     0.00     0.00
        ===================================================
        ID = 3 (  0310):     0.04   0.001    16.25    23.55
```

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

--------------------
| ADD HYD  (  0310)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0310):     0.04   0.001    16.25    23.55
      + ID2= 2 (  0332):     0.55   0.009     0.08    23.55
        ===================================================
        ID = 1 (  0310):     0.59   0.009     0.08    23.55

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

--------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0276):     1.28   0.198    12.25    47.70
      + ID2= 2 (  0304):     5.48   0.710    12.25    41.00
        ===================================================
        ID = 3 (  0061):     6.76   0.908    12.25    42.27

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

--------------------
| ADD HYD  (  0061)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0061):     6.76   0.908    12.25    42.27
      + ID2= 2 (  0306):    14.21   2.059    12.25    45.07
        ===================================================
        ID = 1 (  0061):    20.97   2.966    12.25    44.17

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

--------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0061):    20.97   2.966    12.25    44.17
      + ID2= 2 (  0310):     0.59   0.009     0.08    23.55
        ===================================================
        ID = 3 (  0061):    21.56   2.967    12.25    43.60

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

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--------------------
| RESERVOIR(  0067)|     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   |   0.6610      0.9850
                          0.0400     0.1140   |   1.0960      1.3320
                          0.0760     0.3690   |   1.4260      1.5860
                          0.2810     0.6450   |   0.0000      0.0000

                                AREA      QPEAK      TPEAK        R.V.
                                (ha)      (cms)      (hrs)        (mm)
   INFLOW : ID= 2 (  0061)     21.558      2.967      12.25        43.60
   OUTFLOW: ID= 1 (  0067)     21.558      0.216      13.33        43.57

                 PEAK   FLOW   REDUCTION [Qout/Qin](%)=  7.29
                 TIME SHIFT OF PEAK FLOW         (min)= 65.00
                 MAXIMUM  STORAGE   USED       (ha.m.)=  0.5581

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

```
================================================================================
========================

       V    V   I    SSSSS  U   U    A     L              (v 6.2.2008)
       V    V   I    SS     U   U   A A    L
        V  V    I     SS    U   U  AAAAA   L
         V V    I      SS   U   U A     A  L
          VV    I    SSSSS  UUUUU A     A  LLLLL

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


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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\81183
ea6-7d5e-44a0-8358-fad2e22e45e5\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\81183
ea6-7d5e-44a0-8358-fad2e22e45e5\scena

DATE: 08-28-2022                          TIME: 02:36:02

USER:


COMMENTS: _____

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


--------------------
|     READ STORM     |    Filename: C:\Users\kswain\AppD
|                    |              ata\Local\Temp\
```

```
|                    |                8397b39b-3436-4fc2-b953-d488413a7757\7c8cbce6
| Ptotal= 79.65 mm   |   Comments: H. 5yr 24hr 15min SCS Type II
--------------------
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
            hrs    mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.00    0.00  |  6.25    1.43 |  12.50   11.47 |  18.75    1.43
           0.25    0.88  |  6.50    1.43 |  12.75    5.89 |  19.00    1.43
           0.50    0.88  |  6.75    1.43 |  13.00    5.89 |  19.25    1.43
           0.75    0.88  |  7.00    1.43 |  13.25    4.30 |  19.50    1.43
           1.00    0.88  |  7.25    1.75 |  13.50    4.30 |  19.75    1.43
           1.25    0.88  |  7.50    1.75 |  13.75    3.35 |  20.00    1.43
           1.50    0.88  |  7.75    1.75 |  14.00    3.35 |  20.25    0.96
           1.75    0.88  |  8.00    1.75 |  14.25    2.39 |  20.50    0.96
           2.00    0.88  |  8.25    2.07 |  14.50    2.39 |  20.75    0.96
           2.25    1.04  |  8.50    2.07 |  14.75    2.39 |  21.00    0.96
           2.50    1.04  |  8.75    2.23 |  15.00    2.39 |  21.25    0.96
           2.75    1.04  |  9.00    2.23 |  15.25    2.39 |  21.50    0.96
           3.00    1.04  |  9.25    2.55 |  15.50    2.39 |  21.75    0.96
           3.25    1.04  |  9.50    2.55 |  15.75    2.39 |  22.00    0.96
           3.50    1.04  |  9.75    2.87 |  16.00    2.39 |  22.25    0.96
           3.75    1.04  | 10.00    2.87 |  16.25    1.43 |  22.50    0.96
           4.00    1.04  | 10.25    3.66 |  16.50    1.43 |  22.75    0.96
           4.25    1.27  | 10.50    3.66 |  16.75    1.43 |  23.00    0.96
           4.50    1.27  | 10.75    4.94 |  17.00    1.43 |  23.25    0.96
           4.75    1.27  | 11.00    4.94 |  17.25    1.43 |  23.50    0.96
           5.00    1.27  | 11.25    7.65 |  17.50    1.43 |  23.75    0.96
           5.25    1.27  | 11.50    7.65 |  17.75    1.43 |  24.00    0.96
           5.50    1.27  | 11.75   23.58 |  18.00    1.43 |
           5.75    1.27  | 12.00   97.49 |  18.25    1.43 |
           6.00    1.27  | 12.25   11.47 |  18.50    1.43 |

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


--------------------
| CALIB              |
| NASHYD   (  0185)| |  Area     (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min | |  Ia       (mm)=   4.44   # of Linear Res.(N)= 3.00
--------------------   |  U.H. Tp(hrs)=   0.24

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

                          ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 |  6.167    1.27 | 12.250   97.49 |  18.33    1.43
           0.167    0.00 |  6.250    1.27 | 12.333   11.48 |  18.42    1.43
           0.250    0.00 |  6.333    1.43 | 12.417   11.47 |  18.50    1.43
           0.333    0.88 |  6.417    1.43 | 12.500   11.47 |  18.58    1.43
           0.417    0.88 |  6.500    1.43 | 12.583   11.47 |  18.67    1.43
```

```
           0.500    0.88 |  6.583    1.43 | 12.667   11.47 |  18.75    1.43
           0.583    0.88 |  6.667    1.43 | 12.750   11.47 |  18.83    1.43
           0.667    0.88 |  6.750    1.43 | 12.833    5.89 |  18.92    1.43
           0.750    0.88 |  6.833    1.43 | 12.917    5.89 |  19.00    1.43
           0.833    0.88 |  6.917    1.43 | 13.000    5.89 |  19.08    1.43
           0.917    0.88 |  7.000    1.43 | 13.083    5.89 |  19.17    1.43
           1.000    0.88 |  7.083    1.43 | 13.167    5.89 |  19.25    1.43
           1.083    0.88 |  7.167    1.43 | 13.250    5.89 |  19.33    1.43
           1.167    0.88 |  7.250    1.43 | 13.333    4.30 |  19.42    1.43
           1.250    0.88 |  7.333    1.75 | 13.417    4.30 |  19.50    1.43
           1.333    0.88 |  7.417    1.75 | 13.500    4.30 |  19.58    1.43
           1.417    0.88 |  7.500    1.75 | 13.583    4.30 |  19.67    1.43
           1.500    0.88 |  7.583    1.75 | 13.667    4.30 |  19.75    1.43
           1.583    0.88 |  7.667    1.75 | 13.750    4.30 |  19.83    1.43
           1.667    0.88 |  7.750    1.75 | 13.833    3.35 |  19.92    1.43
           1.750    0.88 |  7.833    1.75 | 13.917    3.35 |  20.00    1.43
           1.833    0.88 |  7.917    1.75 | 14.000    3.35 |  20.08    1.43
           1.917    0.88 |  8.000    1.75 | 14.083    3.35 |  20.17    1.43
           2.000    0.88 |  8.083    1.75 | 14.167    3.35 |  20.25    1.43
           2.083    0.88 |  8.167    1.75 | 14.250    3.35 |  20.33    0.96
           2.167    0.88 |  8.250    1.75 | 14.333    2.39 |  20.42    0.96
           2.250    0.88 |  8.333    2.07 | 14.417    2.39 |  20.50    0.96
           2.333    1.04 |  8.417    2.07 | 14.500    2.39 |  20.58    0.96
           2.417    1.04 |  8.500    2.07 | 14.583    2.39 |  20.67    0.96
           2.500    1.04 |  8.583    2.07 | 14.667    2.39 |  20.75    0.96
           2.583    1.04 |  8.667    2.07 | 14.750    2.39 |  20.83    0.96
           2.667    1.04 |  8.750    2.07 | 14.833    2.39 |  20.92    0.96
           2.750    1.04 |  8.833    2.23 | 14.917    2.39 |  21.00    0.96
           2.833    1.04 |  8.917    2.23 | 15.000    2.39 |  21.08    0.96
           2.917    1.04 |  9.000    2.23 | 15.083    2.39 |  21.17    0.96
           3.000    1.04 |  9.083    2.23 | 15.167    2.39 |  21.25    0.96
           3.083    1.04 |  9.167    2.23 | 15.250    2.39 |  21.33    0.96
           3.167    1.04 |  9.250    2.23 | 15.333    2.39 |  21.42    0.96
           3.250    1.04 |  9.333    2.55 | 15.417    2.39 |  21.50    0.96
           3.333    1.04 |  9.417    2.55 | 15.500    2.39 |  21.58    0.96
           3.417    1.04 |  9.500    2.55 | 15.583    2.39 |  21.67    0.96
           3.500    1.04 |  9.583    2.55 | 15.667    2.39 |  21.75    0.96
           3.583    1.04 |  9.667    2.55 | 15.750    2.39 |  21.83    0.96
           3.667    1.04 |  9.750    2.55 | 15.833    2.39 |  21.92    0.96
           3.750    1.04 |  9.833    2.87 | 15.917    2.39 |  22.00    0.96
           3.833    1.04 |  9.917    2.87 | 16.000    2.39 |  22.08    0.96
           3.917    1.04 | 10.000    2.87 | 16.083    2.39 |  22.17    0.96
           4.000    1.04 | 10.083    2.87 | 16.167    2.39 |  22.25    0.96
           4.083    1.04 | 10.167    2.87 | 16.250    2.39 |  22.33    0.96
           4.167    1.04 | 10.250    2.87 | 16.333    1.43 |  22.42    0.96
           4.250    1.04 | 10.333    3.66 | 16.417    1.43 |  22.50    0.96
           4.333    1.27 | 10.417    3.66 | 16.500    1.43 |  22.58    0.96
           4.417    1.27 | 10.500    3.66 | 16.583    1.43 |  22.67    0.96
           4.500    1.27 | 10.583    3.66 | 16.667    1.43 |  22.75    0.96
           4.583    1.27 | 10.667    3.66 | 16.750    1.43 |  22.83    0.96
```

```
           4.667    1.27 | 10.750    3.66 | 16.833    1.43 |  22.92    0.96
           4.750    1.27 | 10.833    4.94 | 16.917    1.43 |  23.00    0.96
           4.833    1.27 | 10.917    4.94 | 17.000    1.43 |  23.08    0.96
           4.917    1.27 | 11.000    4.94 | 17.083    1.43 |  23.17    0.96
           5.000    1.27 | 11.083    4.94 | 17.167    1.43 |  23.25    0.96
           5.083    1.27 | 11.167    4.94 | 17.250    1.43 |  23.33    0.96
           5.167    1.27 | 11.250    4.94 | 17.333    1.43 |  23.42    0.96
           5.250    1.27 | 11.333    7.65 | 17.417    1.43 |  23.50    0.96
           5.333    1.27 | 11.417    7.65 | 17.500    1.43 |  23.58    0.96
           5.417    1.27 | 11.500    7.65 | 17.583    1.43 |  23.67    0.96
           5.500    1.27 | 11.583    7.65 | 17.667    1.43 |  23.75    0.96
           5.583    1.27 | 11.667    7.65 | 17.750    1.43 |  23.83    0.96
           5.667    1.27 | 11.750    7.65 | 17.833    1.43 |  23.92    0.96
           5.750    1.27 | 11.833   23.57 | 17.917    1.43 |  24.00    0.96
           5.833    1.27 | 11.917   23.58 | 18.000    1.43 |  24.08    0.96
           5.917    1.27 | 12.000   23.58 | 18.083    1.43 |  24.17    0.96
           6.000    1.27 | 12.083   97.48 | 18.167    1.43 |  24.25    0.96
           6.083    1.27 | 12.167   97.49 | 18.250    1.43 |

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW       (cms)=   0.131 (1)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME   (mm)=  34.754
     TOTAL RAINFALL  (mm)=  79.650
     RUNOFF COEFFICIENT   =   0.436

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

--------------------------------------------------------------------------------
---------------------
| DUHYD     (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
---------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.66      0.13      12.33     34.75
     ================================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      12.33     34.75
     MINOR SYS.(ID= 3):   1.66      0.13      12.33     34.75

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:
```

```
                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE       AREA          |  STAGE      AREA
                         (m)        (m2)          |   (m)       (m2)
                        0.000     100.000         |  1.500     100.000
                        0.500     100.000         |  0.000       0.000
                        1.000     100.000         |  0.000       0.000

                       MULCH LAYER:
                       Depth      (m)=   0.10  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=    21.60

                       ENGINEERED SOIL LAYER:
                       Soil moisture =    0.30  Depth              (m)=  0.72
                       Width      (m)=  180.00  Length             (m)=  3.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                       STORAGE LAYER:
                       Depth      (m)=   0.50  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=   108.00

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060

                         AREA         QPEAK          TPEAK         R.V.
                         (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     1.66         0.131          12.33         34.75
       OVERFLOW:ID= 3     1.66         0.108          12.50         20.99

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      39.60
                    Time to reach Max Ponding storage       (hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     269.74
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     171.55
                    Maximum Engineered Soil Volume       (cu.m.)=     100.23
                    ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                             AREA     QPEAK    TPEAK     R.V.
                             (ha)     (cms)    (hrs)     (mm)
```

```
     INFLOW : ID= 3(  0184)     1.66     0.11   12.50    20.99
     OUTFLOW: ID= 2(  0181)     1.66     0.11   12.50    20.99

  --------------------------------------------------------------------------------
---------------------
| CALIB              |
| STANDHYD (  0265)|  Area     (ha)=   0.86
|ID= 1 DT= 5.0 min |  Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
---------------------
                          IMPERVIOUS    PERVIOUS (i)
          Surface Area     (ha)=       0.56         0.30
          Dep. Storage     (mm)=       1.00         5.00
          Average Slope    (%)=        1.00         2.00
          Length           (m)=       75.87        40.00
          Mannings n               =   0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 |  6.167    1.27 | 12.250   97.49 |  18.33    1.43
           0.167    0.00 |  6.250    1.27 | 12.333   11.48 |  18.42    1.43
           0.250    0.00 |  6.333    1.43 | 12.417   11.47 |  18.50    1.43
           0.333    0.88 |  6.417    1.43 | 12.500   11.47 |  18.58    1.43
           0.417    0.88 |  6.500    1.43 | 12.583   11.47 |  18.67    1.43
           0.500    0.88 |  6.583    1.43 | 12.667   11.47 |  18.75    1.43
           0.583    0.88 |  6.667    1.43 | 12.750   11.47 |  18.83    1.43
           0.667    0.88 |  6.750    1.43 | 12.833    5.89 |  18.92    1.43
           0.750    0.88 |  6.833    1.43 | 12.917    5.89 |  19.00    1.43
           0.833    0.88 |  6.917    1.43 | 13.000    5.89 |  19.08    1.43
           0.917    0.88 |  7.000    1.43 | 13.083    5.89 |  19.17    1.43
           1.000    0.88 |  7.083    1.43 | 13.167    5.89 |  19.25    1.43
           1.083    0.88 |  7.167    1.43 | 13.250    5.89 |  19.33    1.43
           1.167    0.88 |  7.250    1.43 | 13.333    4.30 |  19.42    1.43
           1.250    0.88 |  7.333    1.75 | 13.417    4.30 |  19.50    1.43
           1.333    0.88 |  7.417    1.75 | 13.500    4.30 |  19.58    1.43
           1.417    0.88 |  7.500    1.75 | 13.583    4.30 |  19.67    1.43
           1.500    0.88 |  7.583    1.75 | 13.667    4.30 |  19.75    1.43
           1.583    0.88 |  7.667    1.75 | 13.750    4.30 |  19.83    1.43
           1.667    0.88 |  7.750    1.75 | 13.833    3.35 |  19.92    1.43
           1.750    0.88 |  7.833    1.75 | 13.917    3.35 |  20.00    1.43
           1.833    0.88 |  7.917    1.75 | 14.000    3.35 |  20.08    1.43
           1.917    0.88 |  8.000    1.75 | 14.083    3.35 |  20.17    1.43
           2.000    0.88 |  8.083    1.75 | 14.167    3.35 |  20.25    1.43
           2.083    0.88 |  8.167    1.75 | 14.250    3.35 |  20.33    0.96
           2.167    0.88 |  8.250    1.75 | 14.333    2.39 |  20.42    0.96
           2.250    0.88 |  8.333    2.07 | 14.417    2.39 |  20.50    0.96
           2.333    1.04 |  8.417    2.07 | 14.500    2.39 |  20.58    0.96
```

```
           2.417    1.04 |  8.500    2.07 | 14.583    2.39 |  20.67    0.96
           2.500    1.04 |  8.583    2.07 | 14.667    2.39 |  20.75    0.96
           2.583    1.04 |  8.667    2.07 | 14.750    2.39 |  20.83    0.96
           2.667    1.04 |  8.750    2.07 | 14.833    2.39 |  20.92    0.96
           2.750    1.04 |  8.833    2.23 | 14.917    2.39 |  21.00    0.96
           2.833    1.04 |  8.917    2.23 | 15.000    2.39 |  21.08    0.96
           2.917    1.04 |  9.000    2.23 | 15.083    2.39 |  21.17    0.96
           3.000    1.04 |  9.083    2.23 | 15.167    2.39 |  21.25    0.96
           3.083    1.04 |  9.167    2.23 | 15.250    2.39 |  21.33    0.96
           3.167    1.04 |  9.250    2.23 | 15.333    2.39 |  21.42    0.96
           3.250    1.04 |  9.333    2.55 | 15.417    2.39 |  21.50    0.96
           3.333    1.04 |  9.417    2.55 | 15.500    2.39 |  21.58    0.96
           3.417    1.04 |  9.500    2.55 | 15.583    2.39 |  21.67    0.96
           3.500    1.04 |  9.583    2.55 | 15.667    2.39 |  21.75    0.96
           3.583    1.04 |  9.667    2.55 | 15.750    2.39 |  21.83    0.96
           3.667    1.04 |  9.750    2.55 | 15.833    2.39 |  21.92    0.96
           3.750    1.04 |  9.833    2.87 | 15.917    2.39 |  22.00    0.96
           3.833    1.04 |  9.917    2.87 | 16.000    2.39 |  22.08    0.96
           3.917    1.04 | 10.000    2.87 | 16.083    2.39 |  22.17    0.96
           4.000    1.04 | 10.083    2.87 | 16.167    2.39 |  22.25    0.96
           4.083    1.04 | 10.167    2.87 | 16.250    2.39 |  22.33    0.96
           4.167    1.04 | 10.250    2.87 | 16.333    1.43 |  22.42    0.96
           4.250    1.04 | 10.333    3.66 | 16.417    1.43 |  22.50    0.96
           4.333    1.27 | 10.417    3.66 | 16.500    1.43 |  22.58    0.96
           4.417    1.27 | 10.500    3.66 | 16.583    1.43 |  22.67    0.96
           4.500    1.27 | 10.583    3.66 | 16.667    1.43 |  22.75    0.96
           4.583    1.27 | 10.667    3.66 | 16.750    1.43 |  22.83    0.96
           4.667    1.27 | 10.750    3.66 | 16.833    1.43 |  22.92    0.96
           4.750    1.27 | 10.833    4.94 | 16.917    1.43 |  23.00    0.96
           4.833    1.27 | 10.917    4.94 | 17.000    1.43 |  23.08    0.96
           4.917    1.27 | 11.000    4.94 | 17.083    1.43 |  23.17    0.96
           5.000    1.27 | 11.083    4.94 | 17.167    1.43 |  23.25    0.96
           5.083    1.27 | 11.167    4.94 | 17.250    1.43 |  23.33    0.96
           5.167    1.27 | 11.250    4.94 | 17.333    1.43 |  23.42    0.96
           5.250    1.27 | 11.333    7.65 | 17.417    1.43 |  23.50    0.96
           5.333    1.27 | 11.417    7.65 | 17.500    1.43 |  23.58    0.96
           5.417    1.27 | 11.500    7.65 | 17.583    1.43 |  23.67    0.96
           5.500    1.27 | 11.583    7.65 | 17.667    1.43 |  23.75    0.96
           5.583    1.27 | 11.667    7.65 | 17.750    1.43 |  23.83    0.96
           5.667    1.27 | 11.750    7.65 | 17.833    1.43 |  23.92    0.96
           5.750    1.27 | 11.833   23.57 | 17.917    1.43 |  24.00    0.96
           5.833    1.27 | 11.917   23.58 | 18.000    1.43 |  24.08    0.96
           5.917    1.27 | 12.000   23.58 | 18.083    1.43 |  24.17    0.96
           6.000    1.27 | 12.083   97.48 | 18.167    1.43 |  24.25    0.96
           6.083    1.27 | 12.167   97.49 | 18.250    1.43 |

     Max.Eff.Inten.(mm/hr)=     97.49       50.59
               over (min)        5.00       15.00
     Storage Coeff.  (min)=      2.19 (ii)  11.46 (ii)
     Unit Hyd. Tpeak (min)=      5.00       15.00
```

```
     Unit Hyd. peak  (cms)=       0.31          0.09
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.15          0.03          0.174 (iii)
     TIME TO PEAK    (hrs)=      12.25         12.33         12.25
     RUNOFF VOLUME   (mm)=       78.65         34.00         63.02
     TOTAL RAINFALL  (mm)=       79.65         79.65         79.65
     RUNOFF COEFFICIENT   =       0.99          0.43          0.79

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
       (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
---------------------
| DUHYD     (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=    1|
| Total(cms)=  0.2|      AREA     QPEAK     TPEAK     R.V.
---------------------       (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.86      0.17      12.25     63.02
     ================================================================
     MAJOR SYS.(ID= 2):   0.00      0.00      12.25     63.02
     MINOR SYS.(ID= 3):   0.86      0.17      12.25     63.02

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE       AREA          |  STAGE      AREA
                         (m)        (m2)          |   (m)       (m2)
                        0.000     100.000         |  1.500     100.000
                        0.500     100.000         |  0.000       0.000
                        1.000     100.000         |  0.000       0.000

                       MULCH LAYER:
                       Depth      (m)=   0.10  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=    3.20

                       ENGINEERED SOIL LAYER:
```

```
                       Soil moisture =    0.30  Depth              (m)=  0.67
                       Width      (m)=   40.00  Length             (m)=  2.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                       STORAGE LAYER:
                       Depth      (m)=   1.50  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=    48.00

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060

                         AREA         QPEAK          TPEAK         R.V.
                         (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     0.86         0.174          12.25         63.02
       OVERFLOW:ID= 3     0.86         0.174          12.25         43.98

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      30.21
                    Time to reach Max Ponding storage       (hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     169.87
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
                    Maximum Engineered Soil Volume       (cu.m.)=      16.77
                    ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                             AREA     QPEAK    TPEAK     R.V.
                             (ha)     (cms)    (hrs)     (mm)
     INFLOW : ID= 3(  0264)     0.86     0.17   12.25    43.98
     OUTFLOW: ID= 2(  0262)     0.86     0.17   12.25    43.98

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


--------------------
| ADD HYD  (  0243)|
|  1 + 2 =  3      |      AREA     QPEAK     TPEAK     R.V.
--------------------       (ha)     (cms)     (hrs)     (mm)
       ID1= 1 (  0181):   1.66     0.108     12.50     20.99
     + ID2= 2 (  0182):   0.00     0.000     12.33     34.75
       ================================================================
       ID = 3 (  0243):   1.66     0.108     12.50     20.99
```

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

--------------------
| ADD HYD  (  0243)|
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0243):     1.66   0.108    12.50    20.99
      + ID2= 2 (  0262):     0.86   0.174    12.25    43.98
        ===================================================
        ID = 1 (  0243):     2.53   0.174    12.25    28.84

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

--------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0243):     2.53   0.174    12.25    28.84
      + ID2= 2 (  0263):     0.00   0.000    12.25    63.02
        ===================================================
        ID = 3 (  0243):     2.53   0.174    12.25    28.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0188)|     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   |   0.4800     0.0190

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0243)      2.527      0.174     12.25      28.85
   OUTFLOW: ID= 1 (  0188)      2.527      0.141     12.25      28.85

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 80.96
                   TIME SHIFT OF PEAK FLOW        (min)=  0.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0061

-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
```

```
   Surface Area     (ha)=       0.22          0.10
   Dep. Storage     (mm)=       1.00          5.00
   Average Slope     (%)=       1.00          2.00
   Length            (m)=      45.84         40.00
   Mannings n          =       0.013         0.250

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


                       ---- TRANSFORMED HYETOGRAPH ----
             TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
              hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
            0.083    0.00 | 6.167    1.27 |12.250   97.49 | 18.33    1.43
            0.167    0.00 | 6.250    1.27 |12.333   11.48 | 18.42    1.43
            0.250    0.00 | 6.333    1.43 |12.417   11.47 | 18.50    1.43
            0.333    0.88 | 6.417    1.43 |12.500   11.47 | 18.58    1.43
            0.417    0.88 | 6.500    1.43 |12.583   11.47 | 18.67    1.43
            0.500    0.88 | 6.583    1.43 |12.667   11.47 | 18.75    1.43
            0.583    0.88 | 6.667    1.43 |12.750   11.47 | 18.83    1.43
            0.667    0.88 | 6.750    1.43 |12.833    5.89 | 18.92    1.43
            0.750    0.88 | 6.833    1.43 |12.917    5.89 | 19.00    1.43
            0.833    0.88 | 6.917    1.43 |13.000    5.89 | 19.08    1.43
            0.917    0.88 | 7.000    1.43 |13.083    5.89 | 19.17    1.43
            1.000    0.88 | 7.083    1.43 |13.167    5.89 | 19.25    1.43
            1.083    0.88 | 7.167    1.43 |13.250    5.89 | 19.33    1.43
            1.167    0.88 | 7.250    1.43 |13.333    4.30 | 19.42    1.43
            1.250    0.88 | 7.333    1.75 |13.417    4.30 | 19.50    1.43
            1.333    0.88 | 7.417    1.75 |13.500    4.30 | 19.58    1.43
            1.417    0.88 | 7.500    1.75 |13.583    4.30 | 19.67    1.43
            1.500    0.88 | 7.583    1.75 |13.667    4.30 | 19.75    1.43
            1.583    0.88 | 7.667    1.75 |13.750    4.30 | 19.83    1.43
            1.667    0.88 | 7.750    1.75 |13.833    3.35 | 19.92    1.43
            1.750    0.88 | 7.833    1.75 |13.917    3.35 | 20.00    1.43
            1.833    0.88 | 7.917    1.75 |14.000    3.35 | 20.08    1.43
            1.917    0.88 | 8.000    1.75 |14.083    3.35 | 20.17    1.43
            2.000    0.88 | 8.083    1.75 |14.167    3.35 | 20.25    1.43
            2.083    0.88 | 8.167    1.75 |14.250    3.35 | 20.33    0.96
            2.167    0.88 | 8.250    1.75 |14.333    2.39 | 20.42    0.96
            2.250    0.88 | 8.333    2.07 |14.417    2.39 | 20.50    0.96
            2.333    1.04 | 8.417    2.07 |14.500    2.39 | 20.58    0.96
            2.417    1.04 | 8.500    2.07 |14.583    2.39 | 20.67    0.96
            2.500    1.04 | 8.583    2.07 |14.667    2.39 | 20.75    0.96
            2.583    1.04 | 8.667    2.07 |14.750    2.39 | 20.83    0.96
            2.667    1.04 | 8.750    2.07 |14.833    2.39 | 20.92    0.96
            2.750    1.04 | 8.833    2.23 |14.917    2.39 | 21.00    0.96
            2.833    1.04 | 8.917    2.23 |15.000    2.39 | 21.08    0.96
            2.917    1.04 | 9.000    2.23 |15.083    2.39 | 21.17    0.96
            3.000    1.04 | 9.083    2.23 |15.167    2.39 | 21.25    0.96
            3.083    1.04 | 9.167    2.23 |15.250    2.39 | 21.33    0.96
            3.167    1.04 | 9.250    2.23 |15.333    2.39 | 21.42    0.96
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            3.250    1.04 | 9.333    2.55 |15.417    2.39 | 21.50    0.96
            3.333    1.04 | 9.417    2.55 |15.500    2.39 | 21.58    0.96
            3.417    1.04 | 9.500    2.55 |15.583    2.39 | 21.67    0.96
            3.500    1.04 | 9.583    2.55 |15.667    2.39 | 21.75    0.96
            3.583    1.04 | 9.667    2.55 |15.750    2.39 | 21.83    0.96
            3.667    1.04 | 9.750    2.55 |15.833    2.39 | 21.92    0.96
            3.750    1.04 | 9.833    2.87 |15.917    2.39 | 22.00    0.96
            3.833    1.04 | 9.917    2.87 |16.000    2.39 | 22.08    0.96
            3.917    1.04 |10.000    2.87 |16.083    2.39 | 22.17    0.96
            4.000    1.04 |10.083    2.87 |16.167    2.39 | 22.25    0.96
            4.083    1.04 |10.167    2.87 |16.250    2.39 | 22.33    0.96
            4.167    1.04 |10.250    2.87 |16.333    1.43 | 22.42    0.96
            4.250    1.04 |10.333    3.66 |16.417    1.43 | 22.50    0.96
            4.333    1.27 |10.417    3.66 |16.500    1.43 | 22.58    0.96
            4.417    1.27 |10.500    3.66 |16.583    1.43 | 22.67    0.96
            4.500    1.27 |10.583    3.66 |16.667    1.43 | 22.75    0.96
            4.583    1.27 |10.667    3.66 |16.750    1.43 | 22.83    0.96
            4.667    1.27 |10.750    3.66 |16.833    1.43 | 22.92    0.96
            4.750    1.27 |10.833    4.94 |16.917    1.43 | 23.00    0.96
            4.833    1.27 |10.917    4.94 |17.000    1.43 | 23.08    0.96
            4.917    1.27 |11.000    4.94 |17.083    1.43 | 23.17    0.96
            5.000    1.27 |11.083    4.94 |17.167    1.43 | 23.25    0.96
            5.083    1.27 |11.167    4.94 |17.250    1.43 | 23.33    0.96
            5.167    1.27 |11.250    4.94 |17.333    1.43 | 23.42    0.96
            5.250    1.27 |11.333    7.65 |17.417    1.43 | 23.50    0.96
            5.333    1.27 |11.417    7.65 |17.500    1.43 | 23.58    0.96
            5.417    1.27 |11.500    7.65 |17.583    1.43 | 23.67    0.96
            5.500    1.27 |11.583    7.65 |17.667    1.43 | 23.75    0.96
            5.583    1.27 |11.667    7.65 |17.750    1.43 | 23.83    0.96
            5.667    1.27 |11.750    7.65 |17.833    1.43 | 23.92    0.96
            5.750    1.27 |11.833   23.57 |17.917    1.43 | 24.00    0.96
            5.833    1.27 |11.917   23.58 |18.000    1.43 | 24.08    0.96
            5.917    1.27 |12.000   23.58 |18.083    1.43 | 24.17    0.96
            6.000    1.27 |12.083   97.48 |18.167    1.43 | 24.25    0.96
            6.083    1.27 |12.167   97.49 |18.250    1.43 |

     Max.Eff.Inten.(mm/hr)=      97.49       168.48
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.62 (ii)    7.34 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.04         0.062 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=      78.65        51.27         59.47
     TOTAL RAINFALL   (mm)=      79.65        79.65         79.65
     RUNOFF COEFFICIENT   =       0.99         0.64          0.75

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

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0179)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0188):     2.53   0.141    12.25    28.85
      + ID2= 2 (  0252):     0.32   0.062    12.25    59.47
        ===================================================
        ID = 3 (  0179):     2.84   0.203    12.25    32.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.28          0.23
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      58.22         40.00
     Mannings n          =       0.013         0.250

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


                       ---- TRANSFORMED HYETOGRAPH ----
             TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
              hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
            0.083    0.00 | 6.167    1.27 |12.250   97.49 | 18.33    1.43
            0.167    0.00 | 6.250    1.27 |12.333   11.48 | 18.42    1.43
            0.250    0.00 | 6.333    1.43 |12.417   11.47 | 18.50    1.43
            0.333    0.88 | 6.417    1.43 |12.500   11.47 | 18.58    1.43
            0.417    0.88 | 6.500    1.43 |12.583   11.47 | 18.67    1.43
            0.500    0.88 | 6.583    1.43 |12.667   11.47 | 18.75    1.43
            0.583    0.88 | 6.667    1.43 |12.750   11.47 | 18.83    1.43
            0.667    0.88 | 6.750    1.43 |12.833    5.89 | 18.92    1.43
            0.750    0.88 | 6.833    1.43 |12.917    5.89 | 19.00    1.43
            0.833    0.88 | 6.917    1.43 |13.000    5.89 | 19.08    1.43
            0.917    0.88 | 7.000    1.43 |13.083    5.89 | 19.17    1.43
            1.000    0.88 | 7.083    1.43 |13.167    5.89 | 19.25    1.43
            1.083    0.88 | 7.167    1.43 |13.250    5.89 | 19.33    1.43
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            1.167    0.88 | 7.250    1.43 |13.333    4.30 | 19.42    1.43
            1.250    0.88 | 7.333    1.75 |13.417    4.30 | 19.50    1.43
            1.333    0.88 | 7.417    1.75 |13.500    4.30 | 19.58    1.43
            1.417    0.88 | 7.500    1.75 |13.583    4.30 | 19.67    1.43
            1.500    0.88 | 7.583    1.75 |13.667    4.30 | 19.75    1.43
            1.583    0.88 | 7.667    1.75 |13.750    4.30 | 19.83    1.43
            1.667    0.88 | 7.750    1.75 |13.833    3.35 | 19.92    1.43
            1.750    0.88 | 7.833    1.75 |13.917    3.35 | 20.00    1.43
            1.833    0.88 | 7.917    1.75 |14.000    3.35 | 20.08    1.43
            1.917    0.88 | 8.000    1.75 |14.083    3.35 | 20.17    1.43
            2.000    0.88 | 8.083    1.75 |14.167    3.35 | 20.25    1.43
            2.083    0.88 | 8.167    1.75 |14.250    3.35 | 20.33    0.96
            2.167    0.88 | 8.250    1.75 |14.333    2.39 | 20.42    0.96
            2.250    0.88 | 8.333    2.07 |14.417    2.39 | 20.50    0.96
            2.333    1.04 | 8.417    2.07 |14.500    2.39 | 20.58    0.96
            2.417    1.04 | 8.500    2.07 |14.583    2.39 | 20.67    0.96
            2.500    1.04 | 8.583    2.07 |14.667    2.39 | 20.75    0.96
            2.583    1.04 | 8.667    2.07 |14.750    2.39 | 20.83    0.96
            2.667    1.04 | 8.750    2.07 |14.833    2.39 | 20.92    0.96
            2.750    1.04 | 8.833    2.23 |14.917    2.39 | 21.00    0.96
            2.833    1.04 | 8.917    2.23 |15.000    2.39 | 21.08    0.96
            2.917    1.04 | 9.000    2.23 |15.083    2.39 | 21.17    0.96
            3.000    1.04 | 9.083    2.23 |15.167    2.39 | 21.25    0.96
            3.083    1.04 | 9.167    2.23 |15.250    2.39 | 21.33    0.96
            3.167    1.04 | 9.250    2.23 |15.333    2.39 | 21.42    0.96
            3.250    1.04 | 9.333    2.55 |15.417    2.39 | 21.50    0.96
            3.333    1.04 | 9.417    2.55 |15.500    2.39 | 21.58    0.96
            3.417    1.04 | 9.500    2.55 |15.583    2.39 | 21.67    0.96
            3.500    1.04 | 9.583    2.55 |15.667    2.39 | 21.75    0.96
            3.583    1.04 | 9.667    2.55 |15.750    2.39 | 21.83    0.96
            3.667    1.04 | 9.750    2.55 |15.833    2.39 | 21.92    0.96
            3.750    1.04 | 9.833    2.87 |15.917    2.39 | 22.00    0.96
            3.833    1.04 | 9.917    2.87 |16.000    2.39 | 22.08    0.96
            3.917    1.04 |10.000    2.87 |16.083    2.39 | 22.17    0.96
            4.000    1.04 |10.083    2.87 |16.167    2.39 | 22.25    0.96
            4.083    1.04 |10.167    2.87 |16.250    2.39 | 22.33    0.96
            4.167    1.04 |10.250    2.87 |16.333    1.43 | 22.42    0.96
            4.250    1.04 |10.333    3.66 |16.417    1.43 | 22.50    0.96
            4.333    1.27 |10.417    3.66 |16.500    1.43 | 22.58    0.96
            4.417    1.27 |10.500    3.66 |16.583    1.43 | 22.67    0.96
            4.500    1.27 |10.583    3.66 |16.667    1.43 | 22.75    0.96
            4.583    1.27 |10.667    3.66 |16.750    1.43 | 22.83    0.96
            4.667    1.27 |10.750    3.66 |16.833    1.43 | 22.92    0.96
            4.750    1.27 |10.833    4.94 |16.917    1.43 | 23.00    0.96
            4.833    1.27 |10.917    4.94 |17.000    1.43 | 23.08    0.96
            4.917    1.27 |11.000    4.94 |17.083    1.43 | 23.17    0.96
            5.000    1.27 |11.083    4.94 |17.167    1.43 | 23.25    0.96
            5.083    1.27 |11.167    4.94 |17.250    1.43 | 23.33    0.96
            5.167    1.27 |11.250    4.94 |17.333    1.43 | 23.42    0.96
            5.250    1.27 |11.333    7.65 |17.417    1.43 | 23.50    0.96
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            5.333    1.27 |11.417    7.65 |17.500    1.43 | 23.58    0.96
            5.417    1.27 |11.500    7.65 |17.583    1.43 | 23.67    0.96
            5.500    1.27 |11.583    7.65 |17.667    1.43 | 23.75    0.96
            5.583    1.27 |11.667    7.65 |17.750    1.43 | 23.83    0.96
            5.667    1.27 |11.750    7.65 |17.833    1.43 | 23.92    0.96
            5.750    1.27 |11.833   23.57 |17.917    1.43 | 24.00    0.96
            5.833    1.27 |11.917   23.58 |18.000    1.43 | 24.08    0.96
            5.917    1.27 |12.000   23.58 |18.083    1.43 | 24.17    0.96
            6.000    1.27 |12.083   97.48 |18.167    1.43 | 24.25    0.96
            6.083    1.27 |12.167   97.49 |18.250    1.43 |

     Max.Eff.Inten.(mm/hr)=      97.49       162.72
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.87 (ii)    7.67 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.08         0.083 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=      78.65        50.76         51.03
     TOTAL RAINFALL   (mm)=      79.65        79.65         79.65
     RUNOFF COEFFICIENT   =       0.99         0.64          0.64

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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(  0282)|     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   |   0.1000     0.0020

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0106)      0.508      0.083     12.25      51.03
   OUTFLOW: ID= 1 (  0282)      0.508      0.078     12.33      51.03

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 93.88
                   TIME SHIFT OF PEAK FLOW        (min)=  5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0016
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-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.32          0.26
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      62.24         40.00
     Mannings n          =       0.013         0.250

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


                       ---- TRANSFORMED HYETOGRAPH ----
             TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
              hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
            0.083    0.00 | 6.167    1.27 |12.250   97.49 | 18.33    1.43
            0.167    0.00 | 6.250    1.27 |12.333   11.48 | 18.42    1.43
            0.250    0.00 | 6.333    1.43 |12.417   11.47 | 18.50    1.43
            0.333    0.88 | 6.417    1.43 |12.500   11.47 | 18.58    1.43
            0.417    0.88 | 6.500    1.43 |12.583   11.47 | 18.67    1.43
            0.500    0.88 | 6.583    1.43 |12.667   11.47 | 18.75    1.43
            0.583    0.88 | 6.667    1.43 |12.750   11.47 | 18.83    1.43
            0.667    0.88 | 6.750    1.43 |12.833    5.89 | 18.92    1.43
            0.750    0.88 | 6.833    1.43 |12.917    5.89 | 19.00    1.43
            0.833    0.88 | 6.917    1.43 |13.000    5.89 | 19.08    1.43
            0.917    0.88 | 7.000    1.43 |13.083    5.89 | 19.17    1.43
            1.000    0.88 | 7.083    1.43 |13.167    5.89 | 19.25    1.43
            1.083    0.88 | 7.167    1.43 |13.250    5.89 | 19.33    1.43
            1.167    0.88 | 7.250    1.43 |13.333    4.30 | 19.42    1.43
            1.250    0.88 | 7.333    1.75 |13.417    4.30 | 19.50    1.43
            1.333    0.88 | 7.417    1.75 |13.500    4.30 | 19.58    1.43
            1.417    0.88 | 7.500    1.75 |13.583    4.30 | 19.67    1.43
            1.500    0.88 | 7.583    1.75 |13.667    4.30 | 19.75    1.43
            1.583    0.88 | 7.667    1.75 |13.750    4.30 | 19.83    1.43
            1.667    0.88 | 7.750    1.75 |13.833    3.35 | 19.92    1.43
            1.750    0.88 | 7.833    1.75 |13.917    3.35 | 20.00    1.43
            1.833    0.88 | 7.917    1.75 |14.000    3.35 | 20.08    1.43
            1.917    0.88 | 8.000    1.75 |14.083    3.35 | 20.17    1.43
            2.000    0.88 | 8.083    1.75 |14.167    3.35 | 20.25    1.43
            2.083    0.88 | 8.167    1.75 |14.250    3.35 | 20.33    0.96
            2.167    0.88 | 8.250    1.75 |14.333    2.39 | 20.42    0.96
            2.250    0.88 | 8.333    2.07 |14.417    2.39 | 20.50    0.96
            2.333    1.04 | 8.417    2.07 |14.500    2.39 | 20.58    0.96
            2.417    1.04 | 8.500    2.07 |14.583    2.39 | 20.67    0.96
            2.500    1.04 | 8.583    2.07 |14.667    2.39 | 20.75    0.96
            2.583    1.04 | 8.667    2.07 |14.750    2.39 | 20.83    0.96
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            2.667    1.04 | 8.750    2.07 |14.833    2.39 | 20.92    0.96
            2.750    1.04 | 8.833    2.23 |14.917    2.39 | 21.00    0.96
            2.833    1.04 | 8.917    2.23 |15.000    2.39 | 21.08    0.96
            2.917    1.04 | 9.000    2.23 |15.083    2.39 | 21.17    0.96
            3.000    1.04 | 9.083    2.23 |15.167    2.39 | 21.25    0.96
            3.083    1.04 | 9.167    2.23 |15.250    2.39 | 21.33    0.96
            3.167    1.04 | 9.250    2.23 |15.333    2.39 | 21.42    0.96
            3.250    1.04 | 9.333    2.55 |15.417    2.39 | 21.50    0.96
            3.333    1.04 | 9.417    2.55 |15.500    2.39 | 21.58    0.96
            3.417    1.04 | 9.500    2.55 |15.583    2.39 | 21.67    0.96
            3.500    1.04 | 9.583    2.55 |15.667    2.39 | 21.75    0.96
            3.583    1.04 | 9.667    2.55 |15.750    2.39 | 21.83    0.96
            3.667    1.04 | 9.750    2.55 |15.833    2.39 | 21.92    0.96
            3.750    1.04 | 9.833    2.87 |15.917    2.39 | 22.00    0.96
            3.833    1.04 | 9.917    2.87 |16.000    2.39 | 22.08    0.96
            3.917    1.04 |10.000    2.87 |16.083    2.39 | 22.17    0.96
            4.000    1.04 |10.083    2.87 |16.167    2.39 | 22.25    0.96
            4.083    1.04 |10.167    2.87 |16.250    2.39 | 22.33    0.96
            4.167    1.04 |10.250    2.87 |16.333    1.43 | 22.42    0.96
            4.250    1.04 |10.333    3.66 |16.417    1.43 | 22.50    0.96
            4.333    1.27 |10.417    3.66 |16.500    1.43 | 22.58    0.96
            4.417    1.27 |10.500    3.66 |16.583    1.43 | 22.67    0.96
            4.500    1.27 |10.583    3.66 |16.667    1.43 | 22.75    0.96
            4.583    1.27 |10.667    3.66 |16.750    1.43 | 22.83    0.96
            4.667    1.27 |10.750    3.66 |16.833    1.43 | 22.92    0.96
            4.750    1.27 |10.833    4.94 |16.917    1.43 | 23.00    0.96
            4.833    1.27 |10.917    4.94 |17.000    1.43 | 23.08    0.96
            4.917    1.27 |11.000    4.94 |17.083    1.43 | 23.17    0.96
            5.000    1.27 |11.083    4.94 |17.167    1.43 | 23.25    0.96
            5.083    1.27 |11.167    4.94 |17.250    1.43 | 23.33    0.96
            5.167    1.27 |11.250    4.94 |17.333    1.43 | 23.42    0.96
            5.250    1.27 |11.333    7.65 |17.417    1.43 | 23.50    0.96
            5.333    1.27 |11.417    7.65 |17.500    1.43 | 23.58    0.96
            5.417    1.27 |11.500    7.65 |17.583    1.43 | 23.67    0.96
            5.500    1.27 |11.583    7.65 |17.667    1.43 | 23.75    0.96
            5.583    1.27 |11.667    7.65 |17.750    1.43 | 23.83    0.96
            5.667    1.27 |11.750    7.65 |17.833    1.43 | 23.92    0.96
            5.750    1.27 |11.833   23.57 |17.917    1.43 | 24.00    0.96
            5.833    1.27 |11.917   23.58 |18.000    1.43 | 24.08    0.96
            5.917    1.27 |12.000   23.58 |18.083    1.43 | 24.17    0.96
            6.000    1.27 |12.083   97.48 |18.167    1.43 | 24.25    0.96
            6.083    1.27 |12.167   97.49 |18.250    1.43 |

     Max.Eff.Inten.(mm/hr)=      97.49       162.72
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.94 (ii)    7.75 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.31         0.13
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.09         0.095 (iii)
```

```
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=      78.65        50.76         51.03
     TOTAL RAINFALL   (mm)=      79.65        79.65         79.65
     RUNOFF COEFFICIENT   =       0.99         0.64          0.64

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0246)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0245):     0.58   0.095    12.25    51.03
      + ID2= 2 (  0282):     0.51   0.078    12.33    51.03
        ===================================================
        ID = 3 (  0246):     1.09   0.164    12.33    51.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
-------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.90          0.38
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      92.38         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    0.00 | 6.167    1.27 |12.250   97.49 | 18.33    1.43
            0.167    0.00 | 6.250    1.27 |12.333   11.48 | 18.42    1.43
            0.250    0.00 | 6.333    1.43 |12.417   11.47 | 18.50    1.43
            0.333    0.88 | 6.417    1.43 |12.500   11.47 | 18.58    1.43
```

0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96
4.500	1.27	10.583	3.66	16.667	1.43	22.75	0.96

4.583	1.27	10.667	3.66	16.750	1.43	22.83	0.96
4.667	1.27	10.750	3.66	16.833	1.43	22.92	0.96
4.750	1.27	10.833	4.94	16.917	1.43	23.00	0.96
4.833	1.27	10.917	4.94	17.000	1.43	23.08	0.96
4.917	1.27	11.000	4.94	17.083	1.43	23.17	0.96
5.000	1.27	11.083	4.94	17.167	1.43	23.25	0.96
5.083	1.27	11.167	4.94	17.250	1.43	23.33	0.96
5.167	1.27	11.250	4.94	17.333	1.43	23.42	0.96
5.250	1.27	11.333	7.65	17.417	1.43	23.50	0.96
5.333	1.27	11.417	7.65	17.500	1.43	23.58	0.96
5.417	1.27	11.500	7.65	17.583	1.43	23.67	0.96
5.500	1.27	11.583	7.65	17.667	1.43	23.75	0.96
5.583	1.27	11.667	7.65	17.750	1.43	23.83	0.96
5.667	1.27	11.750	7.65	17.833	1.43	23.92	0.96
5.750	1.27	11.833	23.57	17.917	1.43	24.00	0.96
5.833	1.27	11.917	23.58	18.000	1.43	24.08	0.96
5.917	1.27	12.000	23.58	18.083	1.43	24.17	0.96
6.000	1.27	12.083	97.48	18.167	1.43	24.25	0.96
6.083	1.27	12.167	97.49	18.250	1.43		

```
     Max.Eff.Inten.(mm/hr)=      97.49         50.59
               over (min)         5.00         15.00
     Storage Coeff.  (min)=      3.48 (ii)   12.74 (ii)
     Unit Hyd. Tpeak (min)=      5.00         15.00
     Unit Hyd. peak  (cms)=      0.26          0.08
                                                    *TOTALS*
     PEAK FLOW      (cms)=       0.65          0.13          0.764 (iii)
     TIME TO PEAK   (hrs)=      12.25         12.33         12.25
     RUNOFF VOLUME   (mm)=      74.65         34.00         58.39
     TOTAL RAINFALL  (mm)=      79.65         79.65         79.65
     RUNOFF COEFFICIENT   =      0.94          0.43          0.73

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* = 74.0    Ia = Dep. 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 (  0060) |   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
-------------------
                            IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       2.43          1.62
     Dep. Storage     (mm)=       5.00          5.00
     Average Slope     (%)=       1.00          2.00
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```
     Length            (m)=     164.25         40.00
     Mannings n            =      0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 6.167    1.27 |12.250   97.49 | 18.33    1.43
     0.167    0.00 | 6.250    1.27 |12.333   11.48 | 18.42    1.43
     0.250    0.00 | 6.333    1.43 |12.417   11.47 | 18.50    1.43
     0.333    0.88 | 6.417    1.43 |12.500   11.47 | 18.58    1.43
     0.417    0.88 | 6.500    1.43 |12.583   11.47 | 18.67    1.43
     0.500    0.88 | 6.583    1.43 |12.667   11.47 | 18.75    1.43
     0.583    0.88 | 6.667    1.43 |12.750   11.47 | 18.83    1.43
     0.667    0.88 | 6.750    1.43 |12.833    5.89 | 18.92    1.43
     0.750    0.88 | 6.833    1.43 |12.917    5.89 | 19.00    1.43
     0.833    0.88 | 6.917    1.43 |13.000    5.89 | 19.08    1.43
     0.917    0.88 | 7.000    1.43 |13.083    5.89 | 19.17    1.43
     1.000    0.88 | 7.083    1.43 |13.167    5.89 | 19.25    1.43
     1.083    0.88 | 7.167    1.43 |13.250    5.89 | 19.33    1.43
     1.167    0.88 | 7.250    1.43 |13.333    4.30 | 19.42    1.43
     1.250    0.88 | 7.333    1.75 |13.417    4.30 | 19.50    1.43
     1.333    0.88 | 7.417    1.75 |13.500    4.30 | 19.58    1.43
     1.417    0.88 | 7.500    1.75 |13.583    4.30 | 19.67    1.43
     1.500    0.88 | 7.583    1.75 |13.667    4.30 | 19.75    1.43
     1.583    0.88 | 7.667    1.75 |13.750    4.30 | 19.83    1.43
     1.667    0.88 | 7.750    1.75 |13.833    3.35 | 19.92    1.43
     1.750    0.88 | 7.833    1.75 |13.917    3.35 | 20.00    1.43
     1.833    0.88 | 7.917    1.75 |14.000    3.35 | 20.08    1.43
     1.917    0.88 | 8.000    1.75 |14.083    3.35 | 20.17    1.43
     2.000    0.88 | 8.083    1.75 |14.167    3.35 | 20.25    1.43
     2.083    0.88 | 8.167    1.75 |14.250    3.35 | 20.33    0.96
     2.167    0.88 | 8.250    1.75 |14.333    2.39 | 20.42    0.96
     2.250    0.88 | 8.333    2.07 |14.417    2.39 | 20.50    0.96
     2.333    1.04 | 8.417    2.07 |14.500    2.39 | 20.58    0.96
     2.417    1.04 | 8.500    2.07 |14.583    2.39 | 20.67    0.96
     2.500    1.04 | 8.583    2.07 |14.667    2.39 | 20.75    0.96
     2.583    1.04 | 8.667    2.07 |14.750    2.39 | 20.83    0.96
     2.667    1.04 | 8.750    2.07 |14.833    2.39 | 20.92    0.96
     2.750    1.04 | 8.833    2.23 |14.917    2.39 | 21.00    0.96
     2.833    1.04 | 8.917    2.23 |15.000    2.39 | 21.08    0.96
     2.917    1.04 | 9.000    2.23 |15.083    2.39 | 21.17    0.96
     3.000    1.04 | 9.083    2.23 |15.167    2.39 | 21.25    0.96
     3.083    1.04 | 9.167    2.23 |15.250    2.39 | 21.33    0.96
     3.167    1.04 | 9.250    2.23 |15.333    2.39 | 21.42    0.96
     3.250    1.04 | 9.333    2.55 |15.417    2.39 | 21.50    0.96
     3.333    1.04 | 9.417    2.55 |15.500    2.39 | 21.58    0.96
     3.417    1.04 | 9.500    2.55 |15.583    2.39 | 21.67    0.96

     Max.Eff.Inten.(mm/hr)=      97.49         50.59
               over (min)         5.00         15.00
     Storage Coeff.  (min)=      3.13 (ii)   10.93 (ii)
     Unit Hyd. Tpeak (min)=      5.00         15.00
```

```
     Unit Hyd. peak  (cms)=       0.27          0.09
                                                    *TOTALS*
     PEAK FLOW      (cms)=       0.19          0.06          0.247 (iii)
     TIME TO PEAK   (hrs)=      12.25         12.33         12.25
     RUNOFF VOLUME   (mm)=      77.65         34.00         55.82
     TOTAL RAINFALL  (mm)=      79.65         79.65         79.65
     RUNOFF COEFFICIENT   =      0.97          0.43          0.70

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* = 74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-------------------
| ADD HYD  (  0304)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
-------------------           (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0060):     4.05    0.764    12.25     58.39
     + ID2= 2 (  0064):     1.43    0.247    12.25     55.82
       ================================================
       ID = 3 (  0304):     5.48    1.011    12.25     57.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
-------------------
| CALIB             |
| STANDHYD (  0066) |   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
-------------------
                            IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=      10.09          4.12
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=     307.76         40.00
     Mannings n            =      0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 6.167    1.27 |12.250   97.49 | 18.33    1.43
     0.167    0.00 | 6.250    1.27 |12.333   11.48 | 18.42    1.43
     0.250    0.00 | 6.333    1.43 |12.417   11.47 | 18.50    1.43
```

0.333	0.88	6.417	1.43	12.500	11.47	18.58	1.43
0.417	0.88	6.500	1.43	12.583	11.47	18.67	1.43
0.500	0.88	6.583	1.43	12.667	11.47	18.75	1.43
0.583	0.88	6.667	1.43	12.750	11.47	18.83	1.43
0.667	0.88	6.750	1.43	12.833	5.89	18.92	1.43
0.750	0.88	6.833	1.43	12.917	5.89	19.00	1.43
0.833	0.88	6.917	1.43	13.000	5.89	19.08	1.43
0.917	0.88	7.000	1.43	13.083	5.89	19.17	1.43
1.000	0.88	7.083	1.43	13.167	5.89	19.25	1.43
1.083	0.88	7.167	1.43	13.250	5.89	19.33	1.43
1.167	0.88	7.250	1.43	13.333	4.30	19.42	1.43
1.250	0.88	7.333	1.75	13.417	4.30	19.50	1.43
1.333	0.88	7.417	1.75	13.500	4.30	19.58	1.43
1.417	0.88	7.500	1.75	13.583	4.30	19.67	1.43
1.500	0.88	7.583	1.75	13.667	4.30	19.75	1.43
1.583	0.88	7.667	1.75	13.750	4.30	19.83	1.43
1.667	0.88	7.750	1.75	13.833	3.35	19.92	1.43
1.750	0.88	7.833	1.75	13.917	3.35	20.00	1.43
1.833	0.88	7.917	1.75	14.000	3.35	20.08	1.43
1.917	0.88	8.000	1.75	14.083	3.35	20.17	1.43
2.000	0.88	8.083	1.75	14.167	3.35	20.25	1.43
2.083	0.88	8.167	1.75	14.250	3.35	20.33	0.96
2.167	0.88	8.250	1.75	14.333	2.39	20.42	0.96
2.250	0.88	8.333	2.07	14.417	2.39	20.50	0.96
2.333	1.04	8.417	2.07	14.500	2.39	20.58	0.96
2.417	1.04	8.500	2.07	14.583	2.39	20.67	0.96
2.500	1.04	8.583	2.07	14.667	2.39	20.75	0.96
2.583	1.04	8.667	2.07	14.750	2.39	20.83	0.96
2.667	1.04	8.750	2.07	14.833	2.39	20.92	0.96
2.750	1.04	8.833	2.23	14.917	2.39	21.00	0.96
2.833	1.04	8.917	2.23	15.000	2.39	21.08	0.96
2.917	1.04	9.000	2.23	15.083	2.39	21.17	0.96
3.000	1.04	9.083	2.23	15.167	2.39	21.25	0.96
3.083	1.04	9.167	2.23	15.250	2.39	21.33	0.96
3.167	1.04	9.250	2.23	15.333	2.39	21.42	0.96
3.250	1.04	9.333	2.55	15.417	2.39	21.50	0.96
3.333	1.04	9.417	2.55	15.500	2.39	21.58	0.96
3.417	1.04	9.500	2.55	15.583	2.39	21.67	0.96
3.500	1.04	9.583	2.55	15.667	2.39	21.75	0.96
3.583	1.04	9.667	2.55	15.750	2.39	21.83	0.96
3.667	1.04	9.750	2.55	15.833	2.39	21.92	0.96
3.750	1.04	9.833	2.87	15.917	2.39	22.00	0.96
3.833	1.04	9.917	2.87	16.000	2.39	22.08	0.96
3.917	1.04	10.000	2.87	16.083	2.39	22.17	0.96
4.000	1.04	10.083	2.87	16.167	2.39	22.25	0.96
4.083	1.04	10.167	2.87	16.250	2.39	22.33	0.96
4.167	1.04	10.250	2.87	16.333	1.43	22.42	0.96
4.250	1.04	10.333	3.66	16.417	1.43	22.50	0.96
4.333	1.27	10.417	3.66	16.500	1.43	22.58	0.96
4.417	1.27	10.500	3.66	16.583	1.43	22.67	0.96

```
     Max.Eff.Inten.(mm/hr)=      97.49         50.59
               over (min)         5.00         15.00
     Storage Coeff.  (min)=      3.48 (ii)   12.74 (ii)
     Unit Hyd. Tpeak (min)=      5.00         15.00
     Unit Hyd. peak  (cms)=      0.26          0.08
                                                    *TOTALS*
     PEAK FLOW      (cms)=       0.65          0.13          0.764 (iii)
     TIME TO PEAK   (hrs)=      12.25         12.33         12.25
     RUNOFF VOLUME   (mm)=      74.65         34.00         58.39
     TOTAL RAINFALL  (mm)=      79.65         79.65         79.65
     RUNOFF COEFFICIENT   =      0.94          0.43          0.73

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* = 74.0    Ia = Dep. 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 (  0064) |   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min  |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
-------------------
                            IMPERVIOUS     PERVIOUS (i)
     Surface Area     (ha)=       0.72          0.72
     Dep. Storage     (mm)=       2.00          5.00
     Average Slope     (%)=       0.50          2.00
     Length            (m)=      97.74         30.00
     Mannings n            =      0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 6.167    1.27 |12.250   97.49 | 18.33    1.43
     0.167    0.00 | 6.250    1.27 |12.333   11.48 | 18.42    1.43
     0.250    0.00 | 6.333    1.43 |12.417   11.47 | 18.50    1.43
     0.333    0.88 | 6.417    1.43 |12.500   11.47 | 18.58    1.43
     0.417    0.88 | 6.500    1.43 |12.583   11.47 | 18.67    1.43
     0.500    0.88 | 6.583    1.43 |12.667   11.47 | 18.75    1.43
     0.583    0.88 | 6.667    1.43 |12.750   11.47 | 18.83    1.43
     0.667    0.88 | 6.750    1.43 |12.833    5.89 | 18.92    1.43
     0.750    0.88 | 6.833    1.43 |12.917    5.89 | 19.00    1.43
     0.833    0.88 | 6.917    1.43 |13.000    5.89 | 19.08    1.43
     0.917    0.88 | 7.000    1.43 |13.083    5.89 | 19.17    1.43
     1.000    0.88 | 7.083    1.43 |13.167    5.89 | 19.25    1.43
     1.083    0.88 | 7.167    1.43 |13.250    5.89 | 19.33    1.43
     1.167    0.88 | 7.250    1.43 |13.333    4.30 | 19.42    1.43
     1.250    0.88 | 7.333    1.75 |13.417    4.30 | 19.50    1.43
     1.333    0.88 | 7.417    1.75 |13.500    4.30 | 19.58    1.43
     1.417    0.88 | 7.500    1.75 |13.583    4.30 | 19.67    1.43
     1.500    0.88 | 7.583    1.75 |13.667    4.30 | 19.75    1.43
     1.583    0.88 | 7.667    1.75 |13.750    4.30 | 19.83    1.43
     1.667    0.88 | 7.750    1.75 |13.833    3.35 | 19.92    1.43
     1.750    0.88 | 7.833    1.75 |13.917    3.35 | 20.00    1.43
     1.833    0.88 | 7.917    1.75 |14.000    3.35 | 20.08    1.43
     1.917    0.88 | 8.000    1.75 |14.083    3.35 | 20.17    1.43
     2.000    0.88 | 8.083    1.75 |14.167    3.35 | 20.25    1.43
     2.083    0.88 | 8.167    1.75 |14.250    3.35 | 20.33    0.96
     2.167    0.88 | 8.250    1.75 |14.333    2.39 | 20.42    0.96
     2.250    0.88 | 8.333    2.07 |14.417    2.39 | 20.50    0.96
     2.333    1.04 | 8.417    2.07 |14.500    2.39 | 20.58    0.96
     2.417    1.04 | 8.500    2.07 |14.583    2.39 | 20.67    0.96
     2.500    1.04 | 8.583    2.07 |14.667    2.39 | 20.75    0.96
     2.583    1.04 | 8.667    2.07 |14.750    2.39 | 20.83    0.96
     2.667    1.04 | 8.750    2.07 |14.833    2.39 | 20.92    0.96
     2.750    1.04 | 8.833    2.23 |14.917    2.39 | 21.00    0.96
     2.833    1.04 | 8.917    2.23 |15.000    2.39 | 21.08    0.96
     2.917    1.04 | 9.000    2.23 |15.083    2.39 | 21.17    0.96
     3.000    1.04 | 9.083    2.23 |15.167    2.39 | 21.25    0.96
     3.083    1.04 | 9.167    2.23 |15.250    2.39 | 21.33    0.96
     3.167    1.04 | 9.250    2.23 |15.333    2.39 | 21.42    0.96
     3.250    1.04 | 9.333    2.55 |15.417    2.39 | 21.50    0.96
     3.333    1.04 | 9.417    2.55 |15.500    2.39 | 21.58    0.96
     3.417    1.04 | 9.500    2.55 |15.583    2.39 | 21.67    0.96
     3.500    1.04 | 9.583    2.55 |15.667    2.39 | 21.75    0.96
     3.583    1.04 | 9.667    2.55 |15.750    2.39 | 21.83    0.96
     3.667    1.04 | 9.750    2.55 |15.833    2.39 | 21.92    0.96
     3.750    1.04 | 9.833    2.87 |15.917    2.39 | 22.00    0.96
     3.833    1.04 | 9.917    2.87 |16.000    2.39 | 22.08    0.96
     3.917    1.04 | 10.000   2.87 |16.083    2.39 | 22.17    0.96
     4.000    1.04 | 10.083   2.87 |16.167    2.39 | 22.25    0.96
     4.083    1.04 | 10.167   2.87 |16.250    2.39 | 22.33    0.96
     4.167    1.04 | 10.250   2.87 |16.333    1.43 | 22.42    0.96
     4.250    1.04 | 10.333   3.66 |16.417    1.43 | 22.50    0.96
     4.333    1.27 | 10.417   3.66 |16.500    1.43 | 22.58    0.96
     4.417    1.27 | 10.500   3.66 |16.583    1.43 | 22.67    0.96
     4.500    1.27 | 10.583   3.66 |16.667    1.43 | 22.75    0.96
     4.583    1.27 | 10.667   3.66 |16.750    1.43 | 22.83    0.96
     4.667    1.27 | 10.750   3.66 |16.833    1.43 | 22.92    0.96
     4.750    1.27 | 10.833   4.94 |16.917    1.43 | 23.00    0.96
     4.833    1.27 | 10.917   4.94 |17.000    1.43 | 23.08    0.96
     4.917    1.27 | 11.000   4.94 |17.083    1.43 | 23.17    0.96
     5.000    1.27 | 11.083   4.94 |17.167    1.43 | 23.25    0.96
     5.083    1.27 | 11.167   4.94 |17.250    1.43 | 23.33    0.96
     5.167    1.27 | 11.250   4.94 |17.333    1.43 | 23.42    0.96
     5.250    1.27 | 11.333   7.65 |17.417    1.43 | 23.50    0.96
     5.333    1.27 | 11.417   7.65 |17.500    1.43 | 23.58    0.96
     5.417    1.27 | 11.500   7.65 |17.583    1.43 | 23.67    0.96
     5.500    1.27 | 11.583   7.65 |17.667    1.43 | 23.75    0.96
     5.583    1.27 | 11.667   7.65 |17.750    1.43 | 23.83    0.96
     5.667    1.27 | 11.750   7.65 |17.833    1.43 | 23.92    0.96
     5.750    1.27 | 11.833   23.57 |17.917    1.43 | 24.00    0.96
     5.833    1.27 | 11.917   23.58 |18.000    1.43 | 24.08    0.96
     5.917    1.27 | 12.000   23.58 |18.083    1.43 | 24.17    0.96
     6.000    1.27 | 12.083   97.48 |18.167    1.43 | 24.25    0.96
     6.083    1.27 | 12.167   97.49 |18.250    1.43 |

     Max.Eff.Inten.(mm/hr)=      97.49         50.59
               over (min)         5.00         15.00
     Storage Coeff.  (min)=      5.07 (ii)   10.05 (ii)
     Unit Hyd. Tpeak (min)=      5.00         15.00
     Unit Hyd. peak  (cms)=      0.21          0.10
                                                    *TOTALS*
     PEAK FLOW      (cms)=       2.62          0.38          2.948 (iii)
     TIME TO PEAK   (hrs)=      12.25         12.33         12.25
     RUNOFF VOLUME   (mm)=      78.65         34.00         65.70
     TOTAL RAINFALL  (mm)=      79.65         79.65         79.65
     RUNOFF COEFFICIENT   =      0.99          0.43          0.82

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* = 74.0    Ia = Dep. 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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-------------------
| DUHYD    (  0062)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=  2.9|      AREA     QPEAK     TPEAK     R.V.
-------------------        (ha)      (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   14.21      2.95     12.25    65.70
     ================================================
     MAJOR SYS.(ID= 2):    0.00      0.00      0.00     0.00
```

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     MINOR SYS.(ID= 3):  14.21      2.95     12.25   65.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
--------------------
|Bioretention(  0065)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA           |  STAGE      AREA
                        (m)         (m2)           |   (m)       (m2)
                       0.000       100.000         |  1.500      100.000
                       0.500       100.000         |  0.000        0.000
                       1.000       100.000         |  0.000        0.000

                     MULCH LAYER:
                     Depth      (m)=    0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    62.40

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth            (m)=  0.67
                     Width      (m)=  780.00  Length           (m)=  2.00
                     Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                     STORAGE LAYER:
                     Depth      (m)=    1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   936.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                        AREA         QPEAK            TPEAK         R.V.
                        (ha)         (cms)            (hrs)         (mm)
     INFLOW:ID= 2    14.21         2.948           12.25         65.70
    OVERFLOW:ID= 3   14.21         2.945           12.25         62.67

               Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       4.62
               Time to reach Max Ponding storage       (Hr)=       0.00
               Volume of water for drawdown in LID  (cu.m.)=     538.12
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                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     212.35
                    Maximum Engineered Soil Volume       (cu.m.)=     330.25
                    ***** After simulation, water volume is not zero.

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 | Junction Command(0063) |
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                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
 INFLOW : ID= 3(  0065)   14.21     2.94   12.25    62.67
 OUTFLOW: ID= 2(  0063)   14.21     2.94   12.25    62.67

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-------------------
| ADD HYD  (  0306)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0062 <ID= 1> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0306 = HYDROGRAPH 0063
       ID1= 1 (  0062):    0.00   0.000     0.00     0.00
     + ID2= 2 (  0063):   14.21   2.945    12.25    62.67
       ==========================================================
       ID = 3 (  0306):   14.21   2.945    12.25    62.67

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| CALIB             |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
-------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.39         0.20
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      62.78        40.00
     Mannings n             =    0.013        0.250

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

                                ---- TRANSFORMED HYETOGRAPH ----
           TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN  |  TIME    RAIN
           hrs   mm/hr  |  hrs   mm/hr  |  hrs   mm/hr  |  hrs   mm/hr
          0.083   0.00  |  6.167   1.27  | 12.250   97.49  | 18.33    1.43
          0.167   0.00  |  6.250   1.27  | 12.333   11.48  | 18.42    1.43
          0.250   0.00  |  6.333   1.43  | 12.417   11.47  | 18.50    1.43
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          0.333    0.88  |  6.417    1.43  | 12.500   11.47  | 18.58    1.43
          0.417    0.88  |  6.500    1.43  | 12.583   11.47  | 18.67    1.43
          0.500    0.88  |  6.583    1.43  | 12.667   11.47  | 18.75    1.43
          0.583    0.88  |  6.667    1.43  | 12.750   11.47  | 18.83    1.43
          0.667    0.88  |  6.750    1.43  | 12.833    5.89  | 18.92    1.43
          0.750    0.88  |  6.833    1.43  | 12.917    5.89  | 19.00    1.43
          0.833    0.88  |  6.917    1.43  | 13.000    5.89  | 19.08    1.43
          0.917    0.88  |  7.000    1.43  | 13.083    5.89  | 19.17    1.43
          1.000    0.88  |  7.083    1.43  | 13.167    5.89  | 19.25    1.43
          1.083    0.88  |  7.167    1.43  | 13.250    5.89  | 19.33    1.43
          1.167    0.88  |  7.250    1.43  | 13.333    4.30  | 19.42    1.43
          1.250    0.88  |  7.333    1.75  | 13.417    4.30  | 19.50    1.43
          1.333    0.88  |  7.417    1.75  | 13.500    4.30  | 19.58    1.43
          1.417    0.88  |  7.500    1.75  | 13.583    4.30  | 19.67    1.43
          1.500    0.88  |  7.583    1.75  | 13.667    4.30  | 19.75    1.43
          1.583    0.88  |  7.667    1.75  | 13.750    4.30  | 19.83    1.43
          1.667    0.88  |  7.750    1.75  | 13.833    3.35  | 19.92    1.43
          1.750    0.88  |  7.833    1.75  | 13.917    3.35  | 20.00    1.43
          1.833    0.88  |  7.917    1.75  | 14.000    3.35  | 20.08    1.43
          1.917    0.88  |  8.000    1.75  | 14.083    3.35  | 20.17    1.43
          2.000    0.88  |  8.083    1.75  | 14.167    3.35  | 20.25    1.43
          2.083    0.88  |  8.167    1.75  | 14.250    3.35  | 20.33    0.96
          2.167    0.88  |  8.250    1.75  | 14.333    2.39  | 20.42    0.96
          2.250    0.88  |  8.333    2.07  | 14.417    2.39  | 20.50    0.96
          2.333    1.04  |  8.417    2.07  | 14.500    2.39  | 20.58    0.96
          2.417    1.04  |  8.500    2.07  | 14.583    2.39  | 20.67    0.96
          2.500    1.04  |  8.583    2.07  | 14.667    2.39  | 20.75    0.96
          2.583    1.04  |  8.667    2.07  | 14.750    2.39  | 20.83    0.96
          2.667    1.04  |  8.750    2.07  | 14.833    2.39  | 20.92    0.96
          2.750    1.04  |  8.833    2.23  | 14.917    2.39  | 21.00    0.96
          2.833    1.04  |  8.917    2.23  | 15.000    2.39  | 21.08    0.96
          2.917    1.04  |  9.000    2.23  | 15.083    2.39  | 21.17    0.96
          3.000    1.04  |  9.083    2.23  | 15.167    2.39  | 21.25    0.96
          3.083    1.04  |  9.167    2.23  | 15.250    2.39  | 21.33    0.96
          3.167    1.04  |  9.250    2.23  | 15.333    2.39  | 21.42    0.96
          3.250    1.04  |  9.333    2.55  | 15.417    2.39  | 21.50    0.96
          3.333    1.04  |  9.417    2.55  | 15.500    2.39  | 21.58    0.96
          3.417    1.04  |  9.500    2.55  | 15.583    2.39  | 21.67    0.96
          3.500    1.04  |  9.583    2.55  | 15.667    2.39  | 21.75    0.96
          3.583    1.04  |  9.667    2.55  | 15.750    2.39  | 21.83    0.96
          3.667    1.04  |  9.750    2.55  | 15.833    2.39  | 21.92    0.96
          3.750    1.04  |  9.833    2.87  | 15.917    2.39  | 22.00    0.96
          3.833    1.04  |  9.917    2.87  | 16.000    2.39  | 22.08    0.96
          3.917    1.04  | 10.000    2.87  | 16.083    2.39  | 22.17    0.96
          4.000    1.04  | 10.083    2.87  | 16.167    2.39  | 22.25    0.96
          4.083    1.04  | 10.167    2.87  | 16.250    2.39  | 22.33    0.96
          4.167    1.04  | 10.250    2.87  | 16.333    1.43  | 22.42    0.96
          4.250    1.04  | 10.333    3.66  | 16.417    1.43  | 22.50    0.96
          4.333    1.27  | 10.417    3.66  | 16.500    1.43  | 22.58    0.96
          4.417    1.27  | 10.500    3.66  | 16.583    1.43  | 22.67    0.96
```

```
          4.500    1.27 | 10.583    3.66 | 16.667    1.43 | 22.75    0.96
          4.583    1.27 | 10.667    3.66 | 16.750    1.43 | 22.83    0.96
          4.667    1.27 | 10.750    3.66 | 16.833    1.43 | 22.92    0.96
          4.750    1.27 | 10.833    4.94 | 16.917    1.43 | 23.00    0.96
          4.833    1.27 | 10.917    4.94 | 17.000    1.43 | 23.08    0.96
          4.917    1.27 | 11.000    4.94 | 17.083    1.43 | 23.17    0.96
          5.000    1.27 | 11.083    4.94 | 17.167    1.43 | 23.25    0.96
          5.083    1.27 | 11.167    4.94 | 17.250    1.43 | 23.33    0.96
          5.167    1.27 | 11.250    4.94 | 17.333    1.43 | 23.42    0.96
          5.250    1.27 | 11.333    7.65 | 17.417    1.43 | 23.50    0.96
          5.333    1.27 | 11.417    7.65 | 17.500    1.43 | 23.58    0.96
          5.417    1.27 | 11.500    7.65 | 17.583    1.43 | 23.67    0.96
          5.500    1.27 | 11.583    7.65 | 17.667    1.43 | 23.75    0.96
          5.583    1.27 | 11.667    7.65 | 17.750    1.43 | 23.83    0.96
          5.667    1.27 | 11.750    7.65 | 17.833    1.43 | 23.92    0.96
          5.750    1.27 | 11.833   23.57 | 17.917    1.43 | 24.00    0.96
          5.833    1.27 | 11.917   23.58 | 18.000    1.43 | 24.08    0.96
          5.917    1.27 | 12.000   23.58 | 18.083    1.43 | 24.17    0.96
          6.000    1.27 | 12.083   97.48 | 18.167    1.43 | 24.25    0.96
          6.083    1.27 | 12.167   97.49 | 18.250    1.43 |

     Max.Eff.Inten.(mm/hr)=     97.49       163.31
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.95 (ii)    7.75 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.31         0.13
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.04         0.07         0.112 (iii)
     TIME TO PEAK    (hrs)=    12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=    78.65        50.82        57.77
     TOTAL RAINFALL   (mm)=    79.65        79.65        79.65
     RUNOFF COEFFICIENT   =     0.99         0.64         0.73

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN* =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------------------------------------------------------------
-------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=    1|
| Total(cms)=  0.1|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.59      0.11     12.25    57.77
     ================================================
```

```
     MAJOR SYS.(ID= 2):   0.00      0.00      0.00    0.00
     MINOR SYS.(ID= 3):   0.59      0.11     12.25   57.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
---------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=      149.95

                       STAGE        AREA           |  STAGE      AREA
                        (m)         (m2)           |   (m)       (m2)
                       0.000       100.000         |  1.500      100.000
                       0.500       100.000         |  0.000        0.000
                       1.000       100.000         |  0.000        0.000

                     MULCH LAYER:
                     Depth      (m)=    0.00  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=     0.00

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth            (m)=  0.72
                     Width      (m)=    3.00  Length           (m)=240.00
                     Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                       DEPTH       DISCHARGE       |   DEPTH       DISCHARGE
                        (m)          (cms)         |    (m)         (cms)
                       0.000        0.000          |   0.559        0.030
                       0.279        0.010          |   0.762        0.040
                       0.406        0.020          |   1.300        0.050

                     STORAGE LAYER:
                     Depth      (m)=    1.00  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   288.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      680.04

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                        AREA         QPEAK            TPEAK         R.V.
```

```
                        (ha)         (cms)            (hrs)         (mm)
     INFLOW:ID= 2     0.59         0.112           12.25         57.77
    OVERFLOW:ID= 1    0.33         0.009            0.00         40.60
    OVERFLOW:ID= 3    0.26         0.034           12.42         40.60

               Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      29.72
               Time to reach Max Ponding storage       (Hr)=       0.00
               Volume of water for drawdown in LID  (cu.m.)=     156.38
               Volume of Max. Water Storage         (cu.m.)=       0.00
               Maximum Surface Ponding And Mulch Vol(cu.m.)=     149.95
               Maximum Engineered Soil Volume       (cu.m.)=      69.86
               ***** After simulation, water volume is not zero.

 ----------------------
 | Junction Command(0330) |
 ----------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
 INFLOW : ID= 3(  0329)    0.26     0.03   12.42    40.60
 OUTFLOW: ID= 2(  0330)    0.26     0.03   12.42    40.60

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

 ----------------------
 | Junction Command(0332) |
 ----------------------

                                AREA     QPEAK   TPEAK     R.V.
                                (ha)     (cms)   (hrs)     (mm)
 INFLOW : ID= 1(  0329)    0.33     0.01   0.08    40.60
 OUTFLOW: ID= 2(  0332)    0.33     0.01   0.08    40.60

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

-------------------
| ADD HYD  (  0310)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
*** W A R N I N G :  HYDROGRAPH   0331 <ID= 2> IS DRY.
*** W A R N I N G :  HYDROGRAPH   0003 = HYDROGRAPH 0001
       ID1= 1 (  0330):    0.26   0.034    12.42    40.60
     + ID2= 2 (  0331):    0.00   0.000     0.00     0.00
       ==========================================================
       ID = 3 (  0310):    0.26   0.034    12.42    40.60

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

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

```
| ADD HYD  (  0310)|
|   3 +  2 =  1    |        AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0310):    0.26   0.034    12.42    40.60
     + ID2= 2 (  0332):    0.33   0.009     0.08    40.60
       ==========================================================
       ID = 1 (  0310):    0.59   0.035    12.42    40.60

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0276):    1.28   0.270    12.25    65.25
     + ID2= 2 (  0304):    5.48   1.011    12.25    57.72
       ==========================================================
       ID = 3 (  0061):    6.76   1.282    12.25    59.14

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

-------------------
| ADD HYD  (  0061)|
|   3 +  2 =  1    |        AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0061):    6.76   1.282    12.25    59.14
     + ID2= 2 (  0306):   14.21   2.945    12.25    62.67
       ==========================================================
       ID = 1 (  0061):   20.97   4.227    12.25    61.53

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

-------------------
| ADD HYD  (  0061)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0061):   20.97   4.227    12.25    61.53
     + ID2= 2 (  0310):    0.59   0.035    12.42    40.60
       ==========================================================
       ID = 3 (  0061):   21.56   4.228    12.25    60.96

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
------------------------------------------------------------------------------
-------------------
| RESERVOIR(  0067)|     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    |  0.6610    0.9850
                          0.0400    0.1140    |  1.0960    1.3320
                          0.0760    0.3690    |  1.4260    1.5860
                          0.2810    0.6450    |  0.0000    0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0061)     21.558      4.228     12.25      60.96
   OUTFLOW: ID= 1 (  0067)     21.558      0.401     12.92      60.92

                             PEAK   FLOW   REDUCTION [Qout/Qin](%)=  9.47
                             TIME SHIFT OF PEAK FLOW          (min)= 40.00
                             MAXIMUM  STORAGE   USED       (ha.m.)=  0.7520

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

```
================================================================================
========================

       V    V   I    SSSSS  U   U    A     L              (v 6.2.2008)
       V    V   I   SS      U   U   A A    L
        V  V    I    SS     U   U  AAAAA   L
         V V    I     SS    U   U  A   A   L
          VV    I    SSSSS  UUUUU  A   A   LLLLL

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

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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\1f60b
27a-eb3b-4fb1-978d-1219bc1fff3b\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\1f60b
27a-eb3b-4fb1-978d-1219bc1fff3b\scena

DATE: 08-28-2022                          TIME: 02:37:54

USER:


COMMENTS: _____

--------------------------------------------------------------------------------
----------------------
  ************************************************
  ** SIMULATION : I. 10yr 24hr 15min SCS Type I **
  ************************************************


--------------------
|     READ STORM     |     Filename: C:\Users\kswain\AppD
|                    |               ata\Local\Temp\
```

```
|                    |                493684fd-5088-4e79-aaf3-4a5a81863920\a944daaa
| Ptotal= 92.66 mm   |   Comments: I. 10yr 24hr 15min SCS Type II
--------------------
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
            hrs    mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.00     0.00 |  6.25    1.67 | 12.50   13.34 | 18.75    1.67
           0.25     1.02 |  6.50    1.67 | 12.75    6.86 | 19.00    1.67
           0.50     1.02 |  6.75    1.67 | 13.00    6.86 | 19.25    1.67
           0.75     1.02 |  7.00    1.67 | 13.25    5.00 | 19.50    1.67
           1.00     1.02 |  7.25    2.04 | 13.50    5.00 | 19.75    1.67
           1.25     1.02 |  7.50    2.04 | 13.75    3.89 | 20.00    1.67
           1.50     1.02 |  7.75    2.04 | 14.00    3.89 | 20.25    1.11
           1.75     1.02 |  8.00    2.04 | 14.25    2.78 | 20.50    1.11
           2.00     1.02 |  8.25    2.41 | 14.50    2.78 | 20.75    1.11
           2.25     1.20 |  8.50    2.41 | 14.75    2.78 | 21.00    1.11
           2.50     1.20 |  8.75    2.59 | 15.00    2.78 | 21.25    1.11
           2.75     1.20 |  9.00    2.59 | 15.25    2.78 | 21.50    1.11
           3.00     1.20 |  9.25    2.97 | 15.50    2.78 | 21.75    1.11
           3.25     1.20 |  9.50    2.97 | 15.75    2.78 | 22.00    1.11
           3.50     1.20 |  9.75    3.34 | 16.00    2.78 | 22.25    1.11
           3.75     1.20 | 10.00    3.34 | 16.25    1.67 | 22.50    1.11
           4.00     1.20 | 10.25    4.26 | 16.50    1.67 | 22.75    1.11
           4.25     1.48 | 10.50    4.26 | 16.75    1.67 | 23.00    1.11
           4.50     1.48 | 10.75    5.74 | 17.00    1.67 | 23.25    1.11
           4.75     1.48 | 11.00    5.74 | 17.25    1.67 | 23.50    1.11
           5.00     1.48 | 11.25    8.90 | 17.50    1.67 | 23.75    1.11
           5.25     1.48 | 11.50    8.90 | 17.75    1.67 | 24.00    1.11
           5.50     1.48 | 11.75   27.43 | 18.00    1.67 |
           5.75     1.48 | 12.00  113.42 | 18.25    1.67 |
           6.00     1.48 | 12.25   13.34 | 18.50    1.67 |

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

--------------------
| CALIB              |
| NASHYD   (  0185)| |   Area     (ha)=   1.66   Curve Number    (CN)= 74.4
|ID= 1 DT= 5.0 min | |   Ia       (mm)=   4.44   # of Linear Res.(N)= 3.00
--------------------  |   U.H. Tp(hrs)=   0.24

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

                                ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 | 6.167    1.48 |12.250  113.42 | 18.33    1.67
           0.167    0.00 | 6.250    1.48 |12.333   13.36 | 18.42    1.67
           0.250    0.00 | 6.333    1.67 |12.417   13.34 | 18.50    1.67
           0.333    1.02 | 6.417    1.67 |12.500   13.34 | 18.58    1.67
           0.417    1.02 | 6.500    1.67 |12.583   13.34 | 18.67    1.67
```

```
           0.500    1.02 | 6.583    1.67 |12.667   13.34 | 18.75    1.67
           0.583    1.02 | 6.667    1.67 |12.750   13.34 | 18.83    1.67
           0.667    1.02 | 6.750    1.67 |12.833    6.86 | 18.92    1.67
           0.750    1.02 | 6.833    1.67 |12.917    6.86 | 19.00    1.67
           0.833    1.02 | 6.917    1.67 |13.000    6.86 | 19.08    1.67
           0.917    1.02 | 7.000    1.67 |13.083    6.86 | 19.17    1.67
           1.000    1.02 | 7.083    1.67 |13.167    6.86 | 19.25    1.67
           1.083    1.02 | 7.167    1.67 |13.250    6.86 | 19.33    1.67
           1.167    1.02 | 7.250    1.67 |13.333    5.00 | 19.42    1.67
           1.250    1.02 | 7.333    2.04 |13.417    5.00 | 19.50    1.67
           1.333    1.02 | 7.417    2.04 |13.500    5.00 | 19.58    1.67
           1.417    1.02 | 7.500    2.04 |13.583    5.00 | 19.67    1.67
           1.500    1.02 | 7.583    2.04 |13.667    5.00 | 19.75    1.67
           1.583    1.02 | 7.667    2.04 |13.750    5.00 | 19.83    1.67
           1.667    1.02 | 7.750    2.04 |13.833    3.89 | 19.92    1.67
           1.750    1.02 | 7.833    2.04 |13.917    3.89 | 20.00    1.67
           1.833    1.02 | 7.917    2.04 |14.000    3.89 | 20.08    1.67
           1.917    1.02 | 8.000    2.04 |14.083    3.89 | 20.17    1.67
           2.000    1.02 | 8.083    2.04 |14.167    3.89 | 20.25    1.67
           2.083    1.02 | 8.167    2.04 |14.250    3.89 | 20.33    1.11
           2.167    1.02 | 8.250    2.04 |14.333    2.78 | 20.42    1.11
           2.250    1.02 | 8.333    2.41 |14.417    2.78 | 20.50    1.11
           2.333    1.20 | 8.417    2.41 |14.500    2.78 | 20.58    1.11
           2.417    1.20 | 8.500    2.41 |14.583    2.78 | 20.67    1.11
           2.500    1.20 | 8.583    2.41 |14.667    2.78 | 20.75    1.11
           2.583    1.20 | 8.667    2.41 |14.750    2.78 | 20.83    1.11
           2.667    1.20 | 8.750    2.41 |14.833    2.78 | 20.92    1.11
           2.750    1.20 | 8.833    2.59 |14.917    2.78 | 21.00    1.11
           2.833    1.20 | 8.917    2.59 |15.000    2.78 | 21.08    1.11
           2.917    1.20 | 9.000    2.59 |15.083    2.78 | 21.17    1.11
           3.000    1.20 | 9.083    2.59 |15.167    2.78 | 21.25    1.11
           3.083    1.20 | 9.167    2.59 |15.250    2.78 | 21.33    1.11
           3.167    1.20 | 9.250    2.59 |15.333    2.78 | 21.42    1.11
           3.250    1.20 | 9.333    2.97 |15.417    2.78 | 21.50    1.11
           3.333    1.20 | 9.417    2.97 |15.500    2.78 | 21.58    1.11
           3.417    1.20 | 9.500    2.97 |15.583    2.78 | 21.67    1.11
           3.500    1.20 | 9.583    2.97 |15.667    2.78 | 21.75    1.11
           3.583    1.20 | 9.667    2.97 |15.750    2.78 | 21.83    1.11
           3.667    1.20 | 9.750    2.97 |15.833    2.78 | 21.92    1.11
           3.750    1.20 | 9.833    3.34 |15.917    2.78 | 22.00    1.11
           3.833    1.20 | 9.917    3.34 |16.000    2.78 | 22.08    1.11
           3.917    1.20 |10.000    3.34 |16.083    2.78 | 22.17    1.11
           4.000    1.20 |10.083    3.34 |16.167    2.78 | 22.25    1.11
           4.083    1.20 |10.167    3.34 |16.250    2.78 | 22.33    1.11
           4.167    1.20 |10.250    3.34 |16.333    1.67 | 22.42    1.11
           4.250    1.20 |10.333    4.26 |16.417    1.67 | 22.50    1.11
           4.333    1.48 |10.417    4.26 |16.500    1.67 | 22.58    1.11
           4.417    1.48 |10.500    4.26 |16.583    1.67 | 22.67    1.11
           4.500    1.48 |10.583    4.26 |16.667    1.67 | 22.75    1.11
           4.583    1.48 |10.667    4.26 |16.750    1.67 | 22.83    1.11
```

```
           4.667    1.48 |10.750    4.26 |16.833    1.67 | 22.92    1.11
           4.750    1.48 |10.833    5.74 |16.917    1.67 | 23.00    1.11
           4.833    1.48 |10.917    5.74 |17.000    1.67 | 23.08    1.11
           4.917    1.48 |11.000    5.74 |17.083    1.67 | 23.17    1.11
           5.000    1.48 |11.083    5.74 |17.167    1.67 | 23.25    1.11
           5.083    1.48 |11.167    5.74 |17.250    1.67 | 23.33    1.11
           5.167    1.48 |11.250    5.74 |17.333    1.67 | 23.42    1.11
           5.250    1.48 |11.333    8.90 |17.417    1.67 | 23.50    1.11
           5.333    1.48 |11.417    8.90 |17.500    1.67 | 23.58    1.11
           5.417    1.48 |11.500    8.90 |17.583    1.67 | 23.67    1.11
           5.500    1.48 |11.583    8.90 |17.667    1.67 | 23.75    1.11
           5.583    1.48 |11.667    8.90 |17.750    1.67 | 23.83    1.11
           5.667    1.48 |11.750    8.90 |17.833    1.67 | 23.92    1.11
           5.750    1.48 |11.833   27.43 |17.917    1.67 | 24.00    1.11
           5.833    1.48 |11.917   27.43 |18.000    1.67 | 24.08    1.11
           5.917    1.48 |12.000   27.43 |18.083    1.67 | 24.17    1.11
           6.000    1.48 |12.083  113.41 |18.167    1.67 | 24.25    1.11
           6.083    1.48 |12.167  113.42 |18.250    1.67 |

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW       (cms)=   0.168 (1)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME   (mm)=  44.275
     TOTAL RAINFALL  (mm)=  92.660
     RUNOFF COEFFICIENT   =   0.478

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

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--------------------
| DUHYD     (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.66      0.17     12.33    44.27
                          ================================================
     MAJOR SYS.(ID= 2):   0.06      0.04     12.33    44.27
     MINOR SYS.(ID= 3):   1.60      0.13     12.25    44.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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----------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:
```

```
                                Max. Ponding Storage(cu.m.)=      149.95

                              STAGE        AREA             |   STAGE      AREA
                                (m)        (m2)             |     (m)      (m2)
                              0.000     100.000             |   1.500    100.000
                              0.500     100.000             |   0.000      0.000
                              1.000     100.000             |   0.000      0.000

                             MULCH LAYER:
                             Depth      (m)=   0.10  Porosity           =  0.40
                             Maximum Mulch layer Volume (cu.m.)=    21.60

                             ENGINEERED SOIL LAYER:
                             Soil moisture =    0.30  Depth              (m)=  0.72
                             Width      (m)=  180.00  Length             (m)=  3.00
                             Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                             Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                             STORAGE LAYER:
                             Depth      (m)=   0.50  Porosity           =  0.40
                             Seepage (m/hr) = 0.0010
                             Maximum Storage layer Volume(cu.m.)=   108.00

                             TOTAL AVAILABLE STORAGE:

                             TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                             NATIVE SOIL LAYER:
                             Infiltration (m/hr) = 0.0060

                                AREA         QPEAK          TPEAK         R.V.
                                (ha)         (cms)          (hrs)         (mm)
                    INFLOW:ID= 2     1.60       0.131          12.25        44.27
                  OVERFLOW:ID= 3     1.60       0.130          12.42        29.85

                             Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      32.59
                             Time to reach Max Ponding storage       (hr)=       0.00
                             Volume of water for drawdown in LID  (cu.m.)=     272.29
                             Volume of Max. Water Storage         (cu.m.)=       0.00
                             Maximum Surface Ponding And Mulch Vol(cu.m.)=     171.55
                             Maximum Engineered Soil Volume       (cu.m.)=     102.67
                             ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                                AREA     QPEAK    TPEAK     R.V.
                                (ha)     (cms)    (hrs)     (mm)
```

```
  INFLOW : ID= 3(  0184)     1.60      0.13    12.42     29.85
  OUTFLOW: ID= 2(  0181)     1.60      0.13    12.42     29.85

  --------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0265)| |   Area     (ha)=   0.86
|ID= 1 DT= 5.0 min | |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
--------------------  -------------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.56          0.30
     Dep. Storage     (mm)=        1.00          5.00
     Average Slope    (%)=         1.00          2.00
     Length           (m)=        75.87         40.00
     Mannings n               =    0.013         0.250

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

                             ---- TRANSFORMED HYETOGRAPH ----
          TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
           hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
         0.083    0.00 | 6.167    1.48 |12.250  113.42 | 18.33    1.67
         0.167    0.00 | 6.250    1.48 |12.333   13.36 | 18.42    1.67
         0.250    0.00 | 6.333    1.67 |12.417   13.34 | 18.50    1.67
         0.333    1.02 | 6.417    1.67 |12.500   13.34 | 18.58    1.67
         0.417    1.02 | 6.500    1.67 |12.583   13.34 | 18.67    1.67
         0.500    1.02 | 6.583    1.67 |12.667   13.34 | 18.75    1.67
         0.583    1.02 | 6.667    1.67 |12.750   13.34 | 18.83    1.67
         0.667    1.02 | 6.750    1.67 |12.833    6.86 | 18.92    1.67
         0.750    1.02 | 6.833    1.67 |12.917    6.86 | 19.00    1.67
         0.833    1.02 | 6.917    1.67 |13.000    6.86 | 19.08    1.67
         0.917    1.02 | 7.000    1.67 |13.083    6.86 | 19.17    1.67
         1.000    1.02 | 7.083    1.67 |13.167    6.86 | 19.25    1.67
         1.083    1.02 | 7.167    1.67 |13.250    6.86 | 19.33    1.67
         1.167    1.02 | 7.250    1.67 |13.333    5.00 | 19.42    1.67
         1.250    1.02 | 7.333    2.04 |13.417    5.00 | 19.50    1.67
         1.333    1.02 | 7.417    2.04 |13.500    5.00 | 19.58    1.67
         1.417    1.02 | 7.500    2.04 |13.583    5.00 | 19.67    1.67
         1.500    1.02 | 7.583    2.04 |13.667    5.00 | 19.75    1.67
         1.583    1.02 | 7.667    2.04 |13.750    5.00 | 19.83    1.67
         1.667    1.02 | 7.750    2.04 |13.833    3.89 | 19.92    1.67
         1.750    1.02 | 7.833    2.04 |13.917    3.89 | 20.00    1.67
         1.833    1.02 | 7.917    2.04 |14.000    3.89 | 20.08    1.67
         1.917    1.02 | 8.000    2.04 |14.083    3.89 | 20.17    1.67
         2.000    1.02 | 8.083    2.04 |14.167    3.89 | 20.25    1.67
         2.083    1.02 | 8.167    2.04 |14.250    3.89 | 20.33    1.11
         2.167    1.02 | 8.250    2.04 |14.333    2.78 | 20.42    1.11
         2.250    1.02 | 8.333    2.41 |14.417    2.78 | 20.50    1.11
         2.333    1.20 | 8.417    2.41 |14.500    2.78 | 20.58    1.11
```

```
                                Soil moisture =    0.30  Depth              (m)=  0.67
                                Width      (m)=   40.00  Length             (m)=  2.00
                                Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                                Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                                STORAGE LAYER:
                                Depth      (m)=   1.50  Porosity           =  0.40
                                Seepage (m/hr) = 0.0010
                                Maximum Storage layer Volume(cu.m.)=    48.00

                                TOTAL AVAILABLE STORAGE:

                                TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                                NATIVE SOIL LAYER:
                                Infiltration (m/hr) = 0.0060

                                   AREA         QPEAK          TPEAK         R.V.
                                   (ha)         (cms)          (hrs)         (mm)
                       INFLOW:ID= 2     0.84       0.174          12.08        74.78
                     OVERFLOW:ID= 3     0.84       0.174          12.08        55.24

                                Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      26.13
                                Time to reach Max Ponding storage       (hr)=       0.00
                                Volume of water for drawdown in LID  (cu.m.)=     169.95
                                Volume of Max. Water Storage         (cu.m.)=       0.00
                                Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
                                Maximum Engineered Soil Volume       (cu.m.)=      16.85
                                ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                                   AREA     QPEAK    TPEAK     R.V.
                                   (ha)     (cms)    (hrs)     (mm)
     INFLOW : ID= 3(  0264)     0.84      0.17    12.08     55.24
     OUTFLOW: ID= 2(  0262)     0.84      0.17    12.08     55.24

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

--------------------
| ADD HYD   (  0243)|
|  1 + 2 =  3       |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
       ID1= 1 (  0181):   1.60     0.130     12.42     29.85
     + ID2= 2 (  0182):   0.06     0.037     12.33     44.27
       ================================================
       ID = 3 (  0243):   1.66     0.160     12.42     30.36
```

```
  Max.Eff.Inten.(mm/hr)=     113.42        64.50
            over (min)          5.00        15.00
  Storage Coeff. (min)=         2.86 (ii)   10.47 (ii)
  Unit Hyd. Tpeak (min)=        5.00        15.00
```

```
     Unit Hyd. peak  (cms)=       0.31         0.09
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.18         0.03          0.207 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33         12.25
     RUNOFF VOLUME   (mm)=       91.66        43.44         74.78
     TOTAL RAINFALL  (mm)=       92.66        92.66         92.66
     RUNOFF COEFFICIENT   =       0.99         0.47          0.81

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=    1|
| Total(cms)=   0.2|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.86      0.21     12.25     74.78
                          ================================================
     MAJOR SYS.(ID= 2):   0.02      0.03     12.25     74.78
     MINOR SYS.(ID= 3):   0.84      0.17     12.08     74.78

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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----------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                                Max. Ponding Storage(cu.m.)=      149.95

                              STAGE        AREA             |   STAGE      AREA
                                (m)        (m2)             |     (m)      (m2)
                              0.000     100.000             |   1.500    100.000
                              0.500     100.000             |   0.000      0.000
                              1.000     100.000             |   0.000      0.000

                             MULCH LAYER:
                             Depth      (m)=   0.10  Porosity           =  0.40
                             Maximum Mulch layer Volume (cu.m.)=    3.20

                             ENGINEERED SOIL LAYER:
```

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

-------------------
| ADD HYD  (  0243)|
|   3 +  2 =  1    |        AREA    QPEAK     TPEAK      R.V.
-------------------          (ha)    (cms)     (hrs)      (mm)
       ID1= 3 (  0243):     1.66   0.160     12.42      30.36
     + ID2= 2 (  0262):     0.84   0.174     12.08      55.24
       ================================================
       ID = 1 (  0243):     2.51   0.214     12.42      38.72

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

-------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |        AREA    QPEAK     TPEAK      R.V.
-------------------          (ha)    (cms)     (hrs)      (mm)
       ID1= 1 (  0243):     2.51   0.214     12.42      38.72
     + ID2= 2 (  0263):     0.02   0.033     12.25      74.78
       ================================================
       ID = 3 (  0243):     2.53   0.219     12.25      39.03

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

-------------------
| RESERVOIR(  0188)|     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    |   0.4800     0.0190

                              AREA     QPEAK      TPEAK       R.V.
                               (ha)    (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (  0243)     2.527     0.219      12.25      39.03
   OUTFLOW: ID= 1 (  0188)     2.527     0.189      12.50      39.03

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 86.03
                  TIME SHIFT OF PEAK FLOW          (min)= 15.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0087
------------------------------------------------------------------------------

-------------------
| CALIB            |
| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
```

```
Surface Area     (ha)=       0.22         0.10
Dep. Storage     (mm)=       1.00         5.00
Average Slope     (%)=       1.00         2.00
Length            (m)=      45.84        40.00
Mannings n            =      0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 |  6.167    1.48 | 12.250  113.42 | 18.33    1.67
 0.167    0.00 |  6.250    1.48 | 12.333   13.36 | 18.42    1.67
 0.250    0.00 |  6.333    1.67 | 12.417   13.34 | 18.50    1.67
 0.333    1.02 |  6.417    1.67 | 12.500   13.34 | 18.58    1.67
 0.417    1.02 |  6.500    1.67 | 12.583   13.34 | 18.67    1.67
 0.500    1.02 |  6.583    1.67 | 12.667   13.34 | 18.75    1.67
 0.583    1.02 |  6.667    1.67 | 12.750   13.34 | 18.83    1.67
 0.667    1.02 |  6.750    1.67 | 12.833    6.86 | 18.92    1.67
 0.750    1.02 |  6.833    1.67 | 12.917    6.86 | 19.00    1.67
 0.833    1.02 |  6.917    1.67 | 13.000    6.86 | 19.08    1.67
 0.917    1.02 |  7.000    1.67 | 13.083    6.86 | 19.17    1.67
 1.000    1.02 |  7.083    1.67 | 13.167    6.86 | 19.25    1.67
 1.083    1.02 |  7.167    1.67 | 13.250    6.86 | 19.33    1.67
 1.167    1.02 |  7.250    1.67 | 13.333    5.00 | 19.42    1.67
 1.250    1.02 |  7.333    2.04 | 13.417    5.00 | 19.50    1.67
 1.333    1.02 |  7.417    2.04 | 13.500    5.00 | 19.58    1.67
 1.417    1.02 |  7.500    2.04 | 13.583    5.00 | 19.67    1.67
 1.500    1.02 |  7.583    2.04 | 13.667    5.00 | 19.75    1.67
 1.583    1.02 |  7.667    2.04 | 13.750    5.00 | 19.83    1.67
 1.667    1.02 |  7.750    2.04 | 13.833    3.89 | 19.92    1.67
 1.750    1.02 |  7.833    2.04 | 13.917    3.89 | 20.00    1.67
 1.833    1.02 |  7.917    2.04 | 14.000    3.89 | 20.08    1.67
 1.917    1.02 |  8.000    2.04 | 14.083    3.89 | 20.17    1.67
 2.000    1.02 |  8.083    2.04 | 14.167    3.89 | 20.25    1.67
 2.083    1.02 |  8.167    2.04 | 14.250    3.89 | 20.33    1.11
 2.167    1.02 |  8.250    2.04 | 14.333    2.78 | 20.42    1.11
 2.250    1.02 |  8.333    2.41 | 14.417    2.78 | 20.50    1.11
 2.333    1.20 |  8.417    2.41 | 14.500    2.78 | 20.58    1.11
 2.417    1.20 |  8.500    2.41 | 14.583    2.78 | 20.67    1.11
 2.500    1.20 |  8.583    2.41 | 14.667    2.78 | 20.75    1.11
 2.583    1.20 |  8.667    2.41 | 14.750    2.78 | 20.83    1.11
 2.667    1.20 |  8.750    2.41 | 14.833    2.78 | 20.92    1.11
 2.750    1.20 |  8.833    2.59 | 14.917    2.78 | 21.00    1.11
 2.833    1.20 |  8.917    2.59 | 15.000    2.78 | 21.08    1.11
 2.917    1.20 |  9.000    2.59 | 15.083    2.78 | 21.17    1.11
 3.000    1.20 |  9.083    2.59 | 15.167    2.78 | 21.25    1.11
 3.083    1.20 |  9.167    2.59 | 15.250    2.78 | 21.33    1.11
 3.167    1.20 |  9.250    2.59 | 15.333    2.78 | 21.42    1.11
 3.250    1.20 |  9.333    2.97 | 15.417    2.78 | 21.50    1.11
 3.333    1.20 |  9.417    2.97 | 15.500    2.78 | 21.58    1.11
 3.417    1.20 |  9.500    2.97 | 15.583    2.78 | 21.67    1.11
 3.500    1.20 |  9.583    2.97 | 15.667    2.78 | 21.75    1.11
 3.583    1.20 |  9.667    2.97 | 15.750    2.78 | 21.83    1.11
 3.667    1.20 |  9.750    2.97 | 15.833    2.78 | 21.92    1.11
 3.750    1.20 |  9.833    3.34 | 15.917    2.78 | 22.00    1.11
 3.833    1.20 |  9.917    3.34 | 16.000    2.78 | 22.08    1.11
 3.917    1.20 | 10.000    3.34 | 16.083    2.78 | 22.17    1.11
 4.000    1.20 | 10.083    3.34 | 16.167    2.78 | 22.25    1.11
 4.083    1.20 | 10.167    3.34 | 16.250    2.78 | 22.33    1.11
 4.167    1.20 | 10.250    3.34 | 16.333    2.78 | 22.42    1.11
 4.250    1.20 | 10.333    4.26 | 16.417    2.78 | 22.50    1.11
 4.333    1.48 | 10.417    4.26 | 16.500    1.67 | 22.58    1.11
 4.417    1.48 | 10.500    4.26 | 16.583    1.67 | 22.67    1.11
 4.500    1.48 | 10.583    4.26 | 16.667    1.67 | 22.75    1.11
 4.583    1.48 | 10.667    4.26 | 16.750    1.67 | 22.83    1.11
 4.667    1.48 | 10.750    4.26 | 16.833    1.67 | 22.92    1.11
 4.750    1.48 | 10.833    5.74 | 16.917    1.67 | 23.00    1.11
 4.833    1.48 | 10.917    5.74 | 17.000    1.67 | 23.08    1.11
 4.917    1.48 | 11.000    5.74 | 17.083    1.67 | 23.17    1.11
 5.000    1.48 | 11.083    5.74 | 17.167    1.67 | 23.25    1.11
 5.083    1.48 | 11.167    5.74 | 17.250    1.67 | 23.33    1.11
 5.167    1.48 | 11.250    5.74 | 17.333    1.67 | 23.42    1.11
 5.250    1.48 | 11.333    8.90 | 17.417    1.67 | 23.50    1.11
 5.333    1.48 | 11.417    8.90 | 17.500    1.67 | 23.58    1.11
 5.417    1.48 | 11.500    8.90 | 17.583    1.67 | 23.67    1.11
 5.500    1.48 | 11.583    8.90 | 17.667    1.67 | 23.75    1.11
 5.583    1.48 | 11.667    8.90 | 17.750    1.67 | 23.83    1.11
 5.667    1.48 | 11.750    8.90 | 17.833    1.67 | 23.92    1.11
 5.750    1.48 | 11.833   27.43 | 17.917    1.67 | 24.00    1.11
 5.833    1.48 | 11.917   27.43 | 18.000    1.67 | 24.08    1.11
 5.917    1.48 | 12.000   27.43 | 18.083    1.67 | 24.17    1.11
 6.000    1.48 | 12.083  113.41 | 18.167    1.67 | 24.25    1.11
 6.083    1.48 | 12.167  113.42 | 18.250    1.67 |

Max.Eff.Inten.(mm/hr)=     113.42       205.36
          over (min)=       5.00        10.00
Storage Coeff.  (min)=       1.52 (ii)    6.81 (ii)
Unit Hyd. Tpeak (min)=       5.00        10.00
Unit Hyd. peak  (cms)=       0.33         0.14
                                          *TOTALS*
PEAK FLOW       (cms)=       0.03         0.05          0.076 (iii)
TIME TO PEAK    (hrs)=      12.25        12.25         12.25
RUNOFF VOLUME    (mm)=      91.66        62.94         71.55
TOTAL RAINFALL   (mm)=      92.66        92.66         92.66
RUNOFF COEFFICIENT   =       0.99         0.68          0.77

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

```
      (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN* =  74.0    Ia = Dep. Storage  (Above)
     (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
          THAN THE STORAGE COEFFICIENT.
    (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

-------------------
| ADD HYD  (  0179)|
|   1 +  2 =  3    |        AREA    QPEAK     TPEAK      R.V.
-------------------          (ha)    (cms)     (hrs)      (mm)
       ID1= 1 (  0188):     2.53   0.189     12.50      39.03
     + ID2= 2 (  0252):     0.32   0.076     12.25      71.55
       ================================================
       ID = 3 (  0179):     2.84   0.251     12.25      42.63

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

-------------------
| CALIB            |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                         IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       0.28         0.23
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      58.22        40.00
      Mannings n            =      0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
        TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
         hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
       0.083    0.00 |  6.167    1.48 | 12.250  113.42 | 18.33    1.67
       0.167    0.00 |  6.250    1.48 | 12.333   13.36 | 18.42    1.67
       0.250    0.00 |  6.333    1.67 | 12.417   13.34 | 18.50    1.67
       0.333    1.02 |  6.417    1.67 | 12.500   13.34 | 18.58    1.67
       0.417    1.02 |  6.500    1.67 | 12.583   13.34 | 18.67    1.67
       0.500    1.02 |  6.583    1.67 | 12.667   13.34 | 18.75    1.67
       0.583    1.02 |  6.667    1.67 | 12.750   13.34 | 18.83    1.67
       0.667    1.02 |  6.750    1.67 | 12.833    6.86 | 18.92    1.67
       0.750    1.02 |  6.833    1.67 | 12.917    6.86 | 19.00    1.67
       0.833    1.02 |  6.917    1.67 | 13.000    6.86 | 19.08    1.67
       0.917    1.02 |  7.000    1.67 | 13.083    6.86 | 19.17    1.67
       1.000    1.02 |  7.083    1.67 | 13.167    6.86 | 19.25    1.67
       1.083    1.02 |  7.167    1.67 | 13.250    6.86 | 19.33    1.67
       1.167    1.02 |  7.250    1.67 | 13.333    5.00 | 19.42    1.67
       1.250    1.02 |  7.333    2.04 | 13.417    5.00 | 19.50    1.67
       1.333    1.02 |  7.417    2.04 | 13.500    5.00 | 19.58    1.67
       1.417    1.02 |  7.500    2.04 | 13.583    5.00 | 19.67    1.67
       1.500    1.02 |  7.583    2.04 | 13.667    5.00 | 19.75    1.67
       1.583    1.02 |  7.667    2.04 | 13.750    5.00 | 19.83    1.67
       1.667    1.02 |  7.750    2.04 | 13.833    3.89 | 19.92    1.67
       1.750    1.02 |  7.833    2.04 | 13.917    3.89 | 20.00    1.67
       1.833    1.02 |  7.917    2.04 | 14.000    3.89 | 20.08    1.67
       1.917    1.02 |  8.000    2.04 | 14.083    3.89 | 20.17    1.67
       2.000    1.02 |  8.083    2.04 | 14.167    3.89 | 20.25    1.67
       2.083    1.02 |  8.167    2.04 | 14.250    3.89 | 20.33    1.11
       2.167    1.02 |  8.250    2.04 | 14.333    2.78 | 20.42    1.11
       2.250    1.02 |  8.333    2.41 | 14.417    2.78 | 20.50    1.11
       2.333    1.20 |  8.417    2.41 | 14.500    2.78 | 20.58    1.11
       2.417    1.20 |  8.500    2.41 | 14.583    2.78 | 20.67    1.11
       2.500    1.20 |  8.583    2.41 | 14.667    2.78 | 20.75    1.11
       2.583    1.20 |  8.667    2.41 | 14.750    2.78 | 20.83    1.11
       2.667    1.20 |  8.750    2.41 | 14.833    2.78 | 20.92    1.11
       2.750    1.20 |  8.833    2.59 | 14.917    2.78 | 21.00    1.11
       2.833    1.20 |  8.917    2.59 | 15.000    2.78 | 21.08    1.11
       2.917    1.20 |  9.000    2.59 | 15.083    2.78 | 21.17    1.11
       3.000    1.20 |  9.083    2.59 | 15.167    2.78 | 21.25    1.11
       3.083    1.20 |  9.167    2.59 | 15.250    2.78 | 21.33    1.11
       3.167    1.20 |  9.250    2.59 | 15.333    2.78 | 21.42    1.11
       3.250    1.20 |  9.333    2.97 | 15.417    2.78 | 21.50    1.11
       3.333    1.20 |  9.417    2.97 | 15.500    2.78 | 21.58    1.11
       3.417    1.20 |  9.500    2.97 | 15.583    2.78 | 21.67    1.11
       3.500    1.20 |  9.583    2.97 | 15.667    2.78 | 21.75    1.11
       3.583    1.20 |  9.667    2.97 | 15.750    2.78 | 21.83    1.11
       3.667    1.20 |  9.750    2.97 | 15.833    2.78 | 21.92    1.11
       3.750    1.20 |  9.833    3.34 | 15.917    2.78 | 22.00    1.11
       3.833    1.20 |  9.917    3.34 | 16.000    2.78 | 22.08    1.11
       3.917    1.20 | 10.000    3.34 | 16.083    2.78 | 22.17    1.11
       4.000    1.20 | 10.083    3.34 | 16.167    2.78 | 22.25    1.11
       4.083    1.20 | 10.167    3.34 | 16.250    2.78 | 22.33    1.11
       4.167    1.20 | 10.250    3.34 | 16.333    1.67 | 22.42    1.11
       4.250    1.20 | 10.333    4.26 | 16.417    1.67 | 22.50    1.11
       4.333    1.48 | 10.417    4.26 | 16.500    1.67 | 22.58    1.11
       4.417    1.48 | 10.500    4.26 | 16.583    1.67 | 22.67    1.11
       4.500    1.48 | 10.583    4.26 | 16.667    1.67 | 22.75    1.11
       4.583    1.48 | 10.667    4.26 | 16.750    1.67 | 22.83    1.11
       4.667    1.48 | 10.750    4.26 | 16.833    1.67 | 22.92    1.11
       4.750    1.48 | 10.833    5.74 | 16.917    1.67 | 23.00    1.11
       4.833    1.48 | 10.917    5.74 | 17.000    1.67 | 23.08    1.11
       4.917    1.48 | 11.000    5.74 | 17.083    1.67 | 23.17    1.11
       5.000    1.48 | 11.083    5.74 | 17.167    1.67 | 23.25    1.11
       5.083    1.48 | 11.167    5.74 | 17.250    1.67 | 23.33    1.11
       5.167    1.48 | 11.250    5.74 | 17.333    1.67 | 23.42    1.11
       5.250    1.48 | 11.333    8.90 | 17.417    1.67 | 23.50    1.11
       5.333    1.48 | 11.417    8.90 | 17.500    1.67 | 23.58    1.11
       5.417    1.48 | 11.500    8.90 | 17.583    1.67 | 23.67    1.11
       5.500    1.48 | 11.583    8.90 | 17.667    1.67 | 23.75    1.11
       5.583    1.48 | 11.667    8.90 | 17.750    1.67 | 23.83    1.11
       5.667    1.48 | 11.750    8.90 | 17.833    1.67 | 23.92    1.11
       5.750    1.48 | 11.833   27.43 | 17.917    1.67 | 24.00    1.11
       5.833    1.48 | 11.917   27.43 | 18.000    1.67 | 24.08    1.11
       5.917    1.48 | 12.000   27.43 | 18.083    1.67 | 24.17    1.11
       6.000    1.48 | 12.083  113.41 | 18.167    1.67 | 24.25    1.11
       6.083    1.48 | 12.167  113.42 | 18.250    1.67 |

      Max.Eff.Inten.(mm/hr)=     113.42       198.57
                over (min)=       5.00        10.00
      Storage Coeff.  (min)=       1.76 (ii)    7.12 (ii)
      Unit Hyd. Tpeak (min)=       5.00        10.00
      Unit Hyd. peak  (cms)=       0.32         0.14
                                                *TOTALS*
      PEAK FLOW       (cms)=       0.00         0.10          0.104 (iii)
      TIME TO PEAK    (hrs)=      12.25        12.25         12.25
      RUNOFF VOLUME    (mm)=      91.66        62.39         62.67
      TOTAL RAINFALL   (mm)=      92.66        92.66         92.66
      RUNOFF COEFFICIENT   =       0.99         0.67          0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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(  0282)|     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    |   0.1000     0.0020

                              AREA     QPEAK      TPEAK       R.V.
                               (ha)    (cms)      (hrs)       (mm)
   INFLOW : ID= 2 (  0106)     0.508     0.104      12.25      62.67
   OUTFLOW: ID= 1 (  0282)     0.508     0.097      12.33      62.67

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 93.31
                  TIME SHIFT OF PEAK FLOW          (min)=  5.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0020
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    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
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                         IMPERVIOUS    PERVIOUS (i)
      Surface Area     (ha)=       0.32         0.26
      Dep. Storage     (mm)=       1.00         5.00
      Average Slope     (%)=       1.00         2.00
      Length            (m)=      62.24        40.00
      Mannings n            =      0.013        0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
        TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
         hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
       0.083    0.00 |  6.167    1.48 | 12.250  113.42 | 18.33    1.67
       0.167    0.00 |  6.250    1.48 | 12.333   13.36 | 18.42    1.67
       0.250    0.00 |  6.333    1.67 | 12.417   13.34 | 18.50    1.67
       0.333    1.02 |  6.417    1.67 | 12.500   13.34 | 18.58    1.67
       0.417    1.02 |  6.500    1.67 | 12.583   13.34 | 18.67    1.67
       0.500    1.02 |  6.583    1.67 | 12.667   13.34 | 18.75    1.67
       0.583    1.02 |  6.667    1.67 | 12.750   13.34 | 18.83    1.67
       0.667    1.02 |  6.750    1.67 | 12.833    6.86 | 18.92    1.67
       0.750    1.02 |  6.833    1.67 | 12.917    6.86 | 19.00    1.67
       0.833    1.02 |  6.917    1.67 | 13.000    6.86 | 19.08    1.67
       0.917    1.02 |  7.000    1.67 | 13.083    6.86 | 19.17    1.67
       1.000    1.02 |  7.083    1.67 | 13.167    6.86 | 19.25    1.67
       1.083    1.02 |  7.167    1.67 | 13.250    6.86 | 19.33    1.67
       1.167    1.02 |  7.250    1.67 | 13.333    5.00 | 19.42    1.67
       1.250    1.02 |  7.333    2.04 | 13.417    5.00 | 19.50    1.67
       1.333    1.02 |  7.417    2.04 | 13.500    5.00 | 19.58    1.67
       1.417    1.02 |  7.500    2.04 | 13.583    5.00 | 19.67    1.67
       1.500    1.02 |  7.583    2.04 | 13.667    5.00 | 19.75    1.67
       1.583    1.02 |  7.667    2.04 | 13.750    5.00 | 19.83    1.67
       1.667    1.02 |  7.750    2.04 | 13.833    3.89 | 19.92    1.67
       1.750    1.02 |  7.833    2.04 | 13.917    3.89 | 20.00    1.67
       1.833    1.02 |  7.917    2.04 | 14.000    3.89 | 20.08    1.67
       1.917    1.02 |  8.000    2.04 | 14.083    3.89 | 20.17    1.67
       2.000    1.02 |  8.083    2.04 | 14.167    3.89 | 20.25    1.67
       2.083    1.02 |  8.167    2.04 | 14.250    3.89 | 20.33    1.11
       2.167    1.02 |  8.250    2.04 | 14.333    2.78 | 20.42    1.11
       2.250    1.02 |  8.333    2.41 | 14.417    2.78 | 20.50    1.11
       2.333    1.20 |  8.417    2.41 | 14.500    2.78 | 20.58    1.11
       2.417    1.20 |  8.500    2.41 | 14.583    2.78 | 20.67    1.11
       2.500    1.20 |  8.583    2.41 | 14.667    2.78 | 20.75    1.11
       2.583    1.20 |  8.667    2.41 | 14.750    2.78 | 20.83    1.11
       2.667    1.20 |  8.750    2.41 | 14.833    2.78 | 20.92    1.11
       2.750    1.20 |  8.833    2.59 | 14.917    2.78 | 21.00    1.11
       2.833    1.20 |  8.917    2.59 | 15.000    2.78 | 21.08    1.11
       2.917    1.20 |  9.000    2.59 | 15.083    2.78 | 21.17    1.11
       3.000    1.20 |  9.083    2.59 | 15.167    2.78 | 21.25    1.11
       3.083    1.20 |  9.167    2.59 | 15.250    2.78 | 21.33    1.11
       3.167    1.20 |  9.250    2.59 | 15.333    2.78 | 21.42    1.11
       3.250    1.20 |  9.333    2.97 | 15.417    2.78 | 21.50    1.11
       3.333    1.20 |  9.417    2.97 | 15.500    2.78 | 21.58    1.11
       3.417    1.20 |  9.500    2.97 | 15.583    2.78 | 21.67    1.11
       3.500    1.20 |  9.583    2.97 | 15.667    2.78 | 21.75    1.11
       3.583    1.20 |  9.667    2.97 | 15.750    2.78 | 21.83    1.11
       3.667    1.20 |  9.750    2.97 | 15.833    2.78 | 21.92    1.11
       3.750    1.20 |  9.833    3.34 | 15.917    2.78 | 22.00    1.11
       3.833    1.20 |  9.917    3.34 | 16.000    2.78 | 22.08    1.11
       3.917    1.20 | 10.000    3.34 | 16.083    2.78 | 22.17    1.11
       4.000    1.20 | 10.083    3.34 | 16.167    2.78 | 22.25    1.11
       4.083    1.20 | 10.167    3.34 | 16.250    2.78 | 22.33    1.11
       4.167    1.20 | 10.250    3.34 | 16.333    1.67 | 22.42    1.11
       4.250    1.20 | 10.333    4.26 | 16.417    1.67 | 22.50    1.11
       4.333    1.48 | 10.417    4.26 | 16.500    1.67 | 22.58    1.11
       4.417    1.48 | 10.500    4.26 | 16.583    1.67 | 22.67    1.11
       4.500    1.48 | 10.583    4.26 | 16.667    1.67 | 22.75    1.11
       4.583    1.48 | 10.667    4.26 | 16.750    1.67 | 22.83    1.11
       4.667    1.48 | 10.750    4.26 | 16.833    1.67 | 22.92    1.11
       4.750    1.48 | 10.833    5.74 | 16.917    1.67 | 23.00    1.11
       4.833    1.48 | 10.917    5.74 | 17.000    1.67 | 23.08    1.11
       4.917    1.48 | 11.000    5.74 | 17.083    1.67 | 23.17    1.11
       5.000    1.48 | 11.083    5.74 | 17.167    1.67 | 23.25    1.11
       5.083    1.48 | 11.167    5.74 | 17.250    1.67 | 23.33    1.11
       5.167    1.48 | 11.250    5.74 | 17.333    1.67 | 23.42    1.11
       5.250    1.48 | 11.333    8.90 | 17.417    1.67 | 23.50    1.11
       5.333    1.48 | 11.417    8.90 | 17.500    1.67 | 23.58    1.11
       5.417    1.48 | 11.500    8.90 | 17.583    1.67 | 23.67    1.11
       5.500    1.48 | 11.583    8.90 | 17.667    1.67 | 23.75    1.11
       5.583    1.48 | 11.667    8.90 | 17.750    1.67 | 23.83    1.11
       5.667    1.48 | 11.750    8.90 | 17.833    1.67 | 23.92    1.11
       5.750    1.48 | 11.833   27.43 | 17.917    1.67 | 24.00    1.11
       5.833    1.48 | 11.917   27.43 | 18.000    1.67 | 24.08    1.11
       5.917    1.48 | 12.000   27.43 | 18.083    1.67 | 24.17    1.11
       6.000    1.48 | 12.083  113.41 | 18.167    1.67 | 24.25    1.11
       6.083    1.48 | 12.167  113.42 | 18.250    1.67 |

      Max.Eff.Inten.(mm/hr)=     113.42       198.57
                over (min)=       5.00        10.00
      Storage Coeff.  (min)=       1.83 (ii)    7.19 (ii)
      Unit Hyd. Tpeak (min)=       5.00        10.00
      Unit Hyd. peak  (cms)=       0.32         0.14
                                                *TOTALS*
      PEAK FLOW       (cms)=       0.00         0.12          0.119 (iii)
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      TIME TO PEAK    (hrs)=      12.25        12.25         12.25
      RUNOFF VOLUME    (mm)=      91.66        62.39         62.67
      TOTAL RAINFALL   (mm)=      92.66        92.66         92.66
      RUNOFF COEFFICIENT   =       0.99         0.67          0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
            YOU SHOULD CONSIDER SPLITTING THE AREA.

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0    Ia = Dep. 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  (  0246)|
|   1 +  2 =  3    |        AREA    QPEAK     TPEAK      R.V.
-------------------          (ha)    (cms)     (hrs)      (mm)
       ID1= 1 (  0245):     0.58   0.119     12.25      62.67
     + ID2= 2 (  0282):     0.51   0.097     12.33      62.67
       ================================================
       ID = 3 (  0246):     1.09   0.206     12.25      62.67

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| CALIB            |
| NASHYD  (  0302)|   Area    (ha)=   0.78   Curve Number   (CN)= 78.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.20

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

                          ---- TRANSFORMED HYETOGRAPH ----
        TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
         hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
       0.083    0.00 |  6.167    1.48 | 12.250  113.42 | 18.33    1.67
       0.167    0.00 |  6.250    1.48 | 12.333   13.36 | 18.42    1.67
       0.250    0.00 |  6.333    1.67 | 12.417   13.34 | 18.50    1.67
       0.333    1.02 |  6.417    1.67 | 12.500   13.34 | 18.58    1.67
       0.417    1.02 |  6.500    1.67 | 12.583   13.34 | 18.67    1.67
       0.500    1.02 |  6.583    1.67 | 12.667   13.34 | 18.75    1.67
       0.583    1.02 |  6.667    1.67 | 12.750   13.34 | 18.83    1.67
       0.667    1.02 |  6.750    1.67 | 12.833    6.86 | 18.92    1.67
       0.750    1.02 |  6.833    1.67 | 12.917    6.86 | 19.00    1.67
       0.833    1.02 |  6.917    1.67 | 13.000    6.86 | 19.08    1.67
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 0.917    1.02 | 7.000    1.67 |13.083    6.86 | 19.17    1.67
 1.000    1.02 | 7.083    1.67 |13.167    6.86 | 19.25    1.67
 1.083    1.02 | 7.167    1.67 |13.250    6.86 | 19.33    1.67
 1.167    1.02 | 7.250    1.67 |13.333    5.00 | 19.42    1.67
 1.250    1.02 | 7.333    2.04 |13.417    5.00 | 19.50    1.67
 1.333    1.02 | 7.417    2.04 |13.500    5.00 | 19.58    1.67
 1.417    1.02 | 7.500    2.04 |13.583    5.00 | 19.67    1.67
 1.500    1.02 | 7.583    2.04 |13.667    5.00 | 19.75    1.67
 1.583    1.02 | 7.667    2.04 |13.750    5.00 | 19.83    1.67
 1.667    1.02 | 7.750    2.04 |13.833    3.89 | 19.92    1.67
 1.750    1.02 | 7.833    2.04 |13.917    3.89 | 20.00    1.67
 1.833    1.02 | 7.917    2.04 |14.000    3.89 | 20.08    1.67
 1.917    1.02 | 8.000    2.04 |14.083    3.89 | 20.17    1.67
 2.000    1.02 | 8.083    2.04 |14.167    3.89 | 20.25    1.67
 2.083    1.02 | 8.167    2.04 |14.250    3.89 | 20.33    1.11
 2.167    1.02 | 8.250    2.04 |14.333    2.78 | 20.42    1.11
 2.250    1.02 | 8.333    2.41 |14.417    2.78 | 20.50    1.11
 2.333    1.20 | 8.417    2.41 |14.500    2.78 | 20.58    1.11
 2.417    1.20 | 8.500    2.41 |14.583    2.78 | 20.67    1.11
 2.500    1.20 | 8.583    2.41 |14.667    2.78 | 20.75    1.11
 2.583    1.20 | 8.667    2.41 |14.750    2.78 | 20.83    1.11
 2.667    1.20 | 8.750    2.41 |14.833    2.78 | 20.92    1.11
 2.750    1.20 | 8.833    2.59 |14.917    2.78 | 21.00    1.11
 2.833    1.20 | 8.917    2.59 |15.000    2.78 | 21.08    1.11
 2.917    1.20 | 9.000    2.59 |15.083    2.78 | 21.17    1.11
 3.000    1.20 | 9.083    2.59 |15.167    2.78 | 21.25    1.11
 3.083    1.20 | 9.167    2.59 |15.250    2.78 | 21.33    1.11
 3.167    1.20 | 9.250    2.59 |15.333    2.78 | 21.42    1.11
 3.250    1.20 | 9.333    2.97 |15.417    2.78 | 21.50    1.11
 3.333    1.20 | 9.417    2.97 |15.500    2.78 | 21.58    1.11
 3.417    1.20 | 9.500    2.97 |15.583    2.78 | 21.67    1.11
 3.500    1.20 | 9.583    2.97 |15.667    2.78 | 21.75    1.11
 3.583    1.20 | 9.667    2.97 |15.750    2.78 | 21.83    1.11
 3.667    1.20 | 9.750    2.97 |15.833    2.78 | 21.92    1.11
 3.750    1.20 | 9.833    3.34 |15.917    2.78 | 22.00    1.11
 3.833    1.20 | 9.917    3.34 |16.000    2.78 | 22.08    1.11
 3.917    1.20 |10.000    3.34 |16.083    2.78 | 22.17    1.11
 4.000    1.20 |10.083    3.34 |16.167    2.78 | 22.25    1.11
 4.083    1.20 |10.167    3.34 |16.250    2.78 | 22.33    1.11
 4.167    1.20 |10.250    3.34 |16.333    1.67 | 22.42    1.11
 4.250    1.20 |10.333    4.26 |16.417    1.67 | 22.50    1.11
 4.333    1.48 |10.417    4.26 |16.500    1.67 | 22.58    1.11
 4.417    1.48 |10.500    4.26 |16.583    1.67 | 22.67    1.11
 4.500    1.48 |10.583    4.26 |16.667    1.67 | 22.75    1.11
 4.583    1.48 |10.667    4.26 |16.750    1.67 | 22.83    1.11
 4.667    1.48 |10.750    4.26 |16.833    1.67 | 22.92    1.11
 4.750    1.48 |10.833    5.74 |16.917    1.67 | 23.00    1.11
 4.833    1.48 |10.917    5.74 |17.000    1.67 | 23.08    1.11
 4.917    1.48 |11.000    5.74 |17.083    1.67 | 23.17    1.11
 5.000    1.48 |11.083    5.74 |17.167    1.67 | 23.25    1.11
 5.083    1.48 |11.167    5.74 |17.250    1.67 | 23.33    1.11
 5.167    1.48 |11.250    5.74 |17.333    1.67 | 23.42    1.11
 5.250    1.48 |11.333    8.90 |17.417    1.67 | 23.50    1.11
 5.333    1.48 |11.417    8.90 |17.500    1.67 | 23.58    1.11
 5.417    1.48 |11.500    8.90 |17.583    1.67 | 23.67    1.11
 5.500    1.48 |11.583    8.90 |17.667    1.67 | 23.75    1.11
 5.583    1.48 |11.667    8.90 |17.750    1.67 | 23.83    1.11
 5.667    1.48 |11.750    8.90 |17.833    1.67 | 23.92    1.11
 5.750    1.48 |11.833   27.43 |17.917    1.67 | 24.00    1.11
 5.833    1.48 |11.917   27.43 |18.000    1.67 | 24.08    1.11
 5.917    1.48 |12.000   27.43 |18.083    1.67 | 24.17    1.11
 6.000    1.48 |12.083  113.41 |18.167    1.67 | 24.25    1.11
 6.083    1.48 |12.167  113.42 |18.250    1.67 |

     Max.Eff.Inten.(mm/hr)=     113.42       198.57
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     1.75 (ii)    7.11 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.32         0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=     0.00         0.10        0.103 (iii)
     TIME TO PEAK    (hrs)=    12.25        12.25       12.25
     RUNOFF VOLUME    (mm)=    91.66        62.39       62.67
     TOTAL RAINFALL   (mm)=    92.66        92.66       92.66
     RUNOFF COEFFICIENT   =     0.99         0.67        0.68

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. 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  (  0248)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------        (ha)    (cms)    (hrs)     (mm)
     ID1= 1 (  0019):      0.50   0.103    12.25    62.67
   + ID2= 2 (  0302):      0.78   0.100    12.33    49.26
     ==========================================================
     ID = 3 (  0248):      1.28   0.195    12.25    54.50
```

```
 5.083    1.48 |11.167    5.74 |17.250    1.67 | 23.33    1.11
 5.167    1.48 |11.250    5.74 |17.333    1.67 | 23.42    1.11
 5.250    1.48 |11.333    8.90 |17.417    1.67 | 23.50    1.11
 5.333    1.48 |11.417    8.90 |17.500    1.67 | 23.58    1.11
 5.417    1.48 |11.500    8.90 |17.583    1.67 | 23.67    1.11
 5.500    1.48 |11.583    8.90 |17.667    1.67 | 23.75    1.11
 5.583    1.48 |11.667    8.90 |17.750    1.67 | 23.83    1.11
 5.667    1.48 |11.750    8.90 |17.833    1.67 | 23.92    1.11
 5.750    1.48 |11.833   27.43 |17.917    1.67 | 24.00    1.11
 5.833    1.48 |11.917   27.43 |18.000    1.67 | 24.08    1.11
 5.917    1.48 |12.000   27.43 |18.083    1.67 | 24.17    1.11
 6.000    1.48 |12.083  113.41 |18.167    1.67 | 24.25    1.11
 6.083    1.48 |12.167  113.42 |18.250    1.67 |

     Unit Hyd Qpeak  (cms)=   0.149

     PEAK FLOW       (cms)=   0.100 (i)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME    (mm)=  49.262
     TOTAL RAINFALL   (mm)=  92.660
     RUNOFF COEFFICIENT   =   0.532

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

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-------------------
| CALIB            |
| STANDHYD (  0019)|   Area    (ha)=   0.50
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.28         0.22
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      57.74        40.00
     Mannings n             =    0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
   TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
    hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
  0.083    0.00 |  6.167    1.48 | 12.250  113.42 | 18.33    1.67
  0.167    0.00 |  6.250    1.48 | 12.333   13.36 | 18.42    1.67
  0.250    0.00 |  6.333    1.67 | 12.417   13.34 | 18.50    1.67
  0.333    1.02 |  6.417    1.67 | 12.500   13.34 | 18.58    1.67
  0.417    1.02 |  6.500    1.67 | 12.583   13.34 | 18.67    1.67
  0.500    1.02 |  6.583    1.67 | 12.667   13.34 | 18.75    1.67
  0.583    1.02 |  6.667    1.67 | 12.750   13.34 | 18.83    1.67
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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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-------------------
| CALIB            |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.90         0.38
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      92.38        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    0.00 |  6.167    1.48 | 12.250  113.42 | 18.33    1.67
  0.167    0.00 |  6.250    1.48 | 12.333   13.36 | 18.42    1.67
  0.250    0.00 |  6.333    1.67 | 12.417   13.34 | 18.50    1.67
  0.333    1.02 |  6.417    1.67 | 12.500   13.34 | 18.58    1.67
  0.417    1.02 |  6.500    1.67 | 12.583   13.34 | 18.67    1.67
  0.500    1.02 |  6.583    1.67 | 12.667   13.34 | 18.75    1.67
  0.583    1.02 |  6.667    1.67 | 12.750   13.34 | 18.83    1.67
  0.667    1.02 |  6.750    1.67 | 12.833   13.34 | 18.92    1.67
  0.750    1.02 |  6.833    1.67 | 12.917   13.34 | 19.00    1.67
  0.833    1.02 |  6.917    1.67 | 13.000   13.34 | 19.08    1.67
  0.917    1.02 |  7.000    1.67 | 13.083   13.34 | 19.17    1.67
  1.000    1.02 |  7.083    1.67 | 13.167   13.34 | 19.25    1.67
  1.083    1.02 |  7.167    1.67 | 13.250   13.34 | 19.33    1.67
  1.167    1.02 |  7.250    1.67 | 13.333    5.00 | 19.42    1.67
  1.250    1.02 |  7.333    2.04 | 13.417    5.00 | 19.50    1.67
  1.333    1.02 |  7.417    2.04 | 13.500    5.00 | 19.58    1.67
  1.417    1.02 |  7.500    2.04 | 13.583    5.00 | 19.67    1.67
  1.500    1.02 |  7.583    2.04 | 13.667    5.00 | 19.75    1.67
  1.583    1.02 |  7.667    2.04 | 13.750    5.00 | 19.83    1.67
  1.667    1.02 |  7.750    2.04 | 13.833    3.89 | 19.92    1.67
  1.750    1.02 |  7.833    2.04 | 13.917    3.89 | 20.00    1.67
  1.833    1.02 |  7.917    2.04 | 14.000    3.89 | 20.08    1.67
  1.917    1.02 |  8.000    2.04 | 14.083    3.89 | 20.17    1.67
  2.000    1.02 |  8.083    2.04 | 14.167    3.89 | 20.25    1.67
  2.083    1.02 |  8.167    2.04 | 14.250    3.89 | 20.33    1.11
  2.167    1.02 |  8.250    2.04 | 14.333    2.78 | 20.42    1.11
  2.250    1.02 |  8.333    2.41 | 14.417    2.78 | 20.50    1.11
  2.333    1.20 |  8.417    2.41 | 14.500    2.78 | 20.58    1.11
  2.417    1.20 |  8.500    2.41 | 14.583    2.78 | 20.67    1.11
  2.500    1.20 |  8.583    2.41 | 14.667    2.78 | 20.75    1.11
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  0.667    1.02 |  6.750    1.67 | 12.833    6.86 | 18.92    1.67
  0.750    1.02 |  6.833    1.67 | 12.917    6.86 | 19.00    1.67
  0.833    1.02 |  6.917    1.67 | 13.000    6.86 | 19.08    1.67
  0.917    1.02 |  7.000    1.67 | 13.083    6.86 | 19.17    1.67
  1.000    1.02 |  7.083    1.67 | 13.167    6.86 | 19.25    1.67
  1.083    1.02 |  7.167    1.67 | 13.250    6.86 | 19.33    1.67
  1.167    1.02 |  7.250    1.67 | 13.333    5.00 | 19.42    1.67
  1.250    1.02 |  7.333    2.04 | 13.417    5.00 | 19.50    1.67
  1.333    1.02 |  7.417    2.04 | 13.500    5.00 | 19.58    1.67
  1.417    1.02 |  7.500    2.04 | 13.583    5.00 | 19.67    1.67
  1.500    1.02 |  7.583    2.04 | 13.667    5.00 | 19.75    1.67
  1.583    1.02 |  7.667    2.04 | 13.750    5.00 | 19.83    1.67
  1.667    1.02 |  7.750    2.04 | 13.833    3.89 | 19.92    1.67
  1.750    1.02 |  7.833    2.04 | 13.917    3.89 | 20.00    1.67
  1.833    1.02 |  7.917    2.04 | 14.000    3.89 | 20.08    1.67
  1.917    1.02 |  8.000    2.04 | 14.083    3.89 | 20.17    1.67
  2.000    1.02 |  8.083    2.04 | 14.167    3.89 | 20.25    1.67
  2.083    1.02 |  8.167    2.04 | 14.250    3.89 | 20.33    1.11
  2.167    1.02 |  8.250    2.04 | 14.333    2.78 | 20.42    1.11
  2.250    1.02 |  8.333    2.41 | 14.417    2.78 | 20.50    1.11
  2.333    1.20 |  8.417    2.41 | 14.500    2.78 | 20.58    1.11
  2.417    1.20 |  8.500    2.41 | 14.583    2.78 | 20.67    1.11
  2.500    1.20 |  8.583    2.41 | 14.667    2.78 | 20.75    1.11
  2.583    1.20 |  8.667    2.41 | 14.750    2.78 | 20.83    1.11
  2.667    1.20 |  8.750    2.41 | 14.833    2.78 | 20.92    1.11
  2.750    1.20 |  8.833    2.59 | 14.917    2.78 | 21.00    1.11
  2.833    1.20 |  8.917    2.59 | 15.000    2.78 | 21.08    1.11
  2.917    1.20 |  9.000    2.59 | 15.083    2.78 | 21.17    1.11
  3.000    1.20 |  9.083    2.59 | 15.167    2.78 | 21.25    1.11
  3.083    1.20 |  9.167    2.59 | 15.250    2.78 | 21.33    1.11
  3.167    1.20 |  9.250    2.59 | 15.333    2.78 | 21.42    1.11
  3.250    1.20 |  9.333    2.97 | 15.417    2.78 | 21.50    1.11
  3.333    1.20 |  9.417    2.97 | 15.500    2.78 | 21.58    1.11
  3.417    1.20 |  9.500    2.97 | 15.583    2.78 | 21.67    1.11
  3.500    1.20 |  9.583    2.97 | 15.667    2.78 | 21.75    1.11
  3.583    1.20 |  9.667    2.97 | 15.750    2.78 | 21.83    1.11
  3.667    1.20 |  9.750    2.97 | 15.833    2.78 | 21.92    1.11
  3.750    1.20 |  9.833    3.34 | 15.917    2.78 | 22.00    1.11
  3.833    1.20 |  9.917    3.34 | 16.000    2.78 | 22.08    1.11
  3.917    1.20 | 10.000    3.34 | 16.083    2.78 | 22.17    1.11
  4.000    1.20 | 10.083    3.34 | 16.167    2.78 | 22.25    1.11
  4.083    1.20 | 10.167    3.34 | 16.250    2.78 | 22.33    1.11
  4.167    1.20 | 10.250    3.34 | 16.333    1.67 | 22.42    1.11
  4.250    1.20 | 10.333    4.26 | 16.417    1.67 | 22.50    1.11
  4.333    1.48 | 10.417    4.26 | 16.500    1.67 | 22.58    1.11
  4.417    1.48 | 10.500    4.26 | 16.583    1.67 | 22.67    1.11
  4.500    1.48 | 10.583    4.26 | 16.667    1.67 | 22.75    1.11
  4.583    1.48 | 10.667    4.26 | 16.750    1.67 | 22.83    1.11
  4.667    1.48 | 10.750    4.26 | 16.833    1.67 | 22.92    1.11
  4.750    1.48 | 10.833    5.74 | 16.917    1.67 | 23.00    1.11

     Max.Eff.Inten.(mm/hr)=     113.42       64.50
               over (min)        5.00       10.00
     Storage Coeff.  (min)=     2.32 (ii)    7.10 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.30         0.14
                                                      *TOTALS*
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     PEAK FLOW       (cms)=       0.28         0.05         0.336 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=      91.66        43.44        77.19
     TOTAL RAINFALL   (mm)=      92.66        92.66        92.66
     RUNOFF COEFFICIENT   =       0.99         0.47         0.83

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. 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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--------------------
| DUHYD    (  0279)|
| Inlet Cap.= 0.270|
| #of Inlets=   1  |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK     R.V.
--------------------        (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):    1.28      0.34     12.25    77.19
     ==========================================================
     MAJOR SYS.(ID= 2):    0.05      0.07     12.25    77.19
     MINOR SYS.(ID= 3):    1.23      0.27     12.08    77.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  -------------------------
  | Junction Command(0303) |
  -------------------------

                         AREA     QPEAK    TPEAK     R.V.
                         (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 8(  0279)    0.05     0.07    12.25    77.19
  OUTFLOW: ID= 2(  0303)    0.05     0.07    12.25    77.19

  --------------------------------------------------------------------------------
-------------------
|Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                       Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA          |  STAGE      AREA
                       (m)         (m2)          |   (m)      (m2)
```

```
                       0.000      100.000         |   1.500    100.000
                       0.500      100.000         |   0.000      0.000
                       1.000      100.000         |   0.000      0.000

                      MULCH LAYER:
                      Depth       (m)=   0.10  Porosity           =  0.40
                      Maximum Mulch layer Volume (cu.m.)=     4.64

                      ENGINEERED SOIL LAYER:
                      Soil moisture =   0.30  Depth          (m)=  0.67
                      Width         (m)=  58.00  Length         (m)=  2.00
                      Porosity      =   0.47  Infiltration (m/hr) = 0.0060
                      Maximum Engineered Soil layer Volume(cu.m.)=   36.30

                      STORAGE LAYER:
                      Depth       (m)=   1.50  Porosity           =  0.40
                      Seepage (m/hr) = 0.0010
                      Maximum Storage layer Volume(cu.m.)=    69.60

                      TOTAL AVAILABLE STORAGE:

                      TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                      NATIVE SOIL LAYER:
                      Infiltration (m/hr) = 0.0060

                         AREA         QPEAK          TPEAK         R.V.
                         (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2     1.23         0.270          12.08         77.19
   OVERFLOW:ID= 3     1.23         0.270          12.08         63.33

                      Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      77.96
                      Time to reach Max Ponding storage       (Hr)=       0.00
                      Volume of water for drawdown in LID  (cu.m.)=     178.86
                      Volume of Max. Water Storage         (cu.m.)=       0.00
                      Maximum Surface Ponding And Mulch Vol(cu.m.)=     154.59
                      Maximum Engineered Soil Volume       (cu.m.)=      24.33
                      ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0277) |
  -------------------------

                         AREA     QPEAK    TPEAK     R.V.
                         (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 3(  0278)    1.23     0.27    12.08    63.33
  OUTFLOW: ID= 2(  0277)    1.23     0.27    12.08    63.33

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| CALIB            |
| STANDHYD (  0313)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.43         1.62
     Dep. Storage     (mm)=       5.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=     164.25        40.00
     Mannings n             =    0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
   TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
    hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
  0.083    0.00 |  6.167    1.48 | 12.250  113.42 | 18.33    1.67
  0.167    0.00 |  6.250    1.48 | 12.333   13.36 | 18.42    1.67
  0.250    0.00 |  6.333    1.67 | 12.417   13.34 | 18.50    1.67
  0.333    1.02 |  6.417    1.67 | 12.500   13.34 | 18.58    1.67
  0.417    1.02 |  6.500    1.67 | 12.583   13.34 | 18.67    1.67
  0.500    1.02 |  6.583    1.67 | 12.667   13.34 | 18.75    1.67
  0.583    1.02 |  6.667    1.67 | 12.750   13.34 | 18.83    1.67
  0.667    1.02 |  6.750    1.67 | 12.833    6.86 | 18.92    1.67
  0.750    1.02 |  6.833    1.67 | 12.917    6.86 | 19.00    1.67
  0.833    1.02 |  6.917    1.67 | 13.000    6.86 | 19.08    1.67
  0.917    1.02 |  7.000    1.67 | 13.083    6.86 | 19.17    1.67
  1.000    1.02 |  7.083    1.67 | 13.167    6.86 | 19.25    1.67
  1.083    1.02 |  7.167    1.67 | 13.250    6.86 | 19.33    1.67
  1.167    1.02 |  7.250    1.67 | 13.333    5.00 | 19.42    1.67
  1.250    1.02 |  7.333    2.04 | 13.417    5.00 | 19.50    1.67
  1.333    1.02 |  7.417    2.04 | 13.500    5.00 | 19.58    1.67
  1.417    1.02 |  7.500    2.04 | 13.583    5.00 | 19.67    1.67
  1.500    1.02 |  7.583    2.04 | 13.667    5.00 | 19.75    1.67
  1.583    1.02 |  7.667    2.04 | 13.750    5.00 | 19.83    1.67
  1.667    1.02 |  7.750    2.04 | 13.833    3.89 | 19.92    1.67
  1.750    1.02 |  7.833    2.04 | 13.917    3.89 | 20.00    1.67
  1.833    1.02 |  7.917    2.04 | 14.000    3.89 | 20.08    1.67
  1.917    1.02 |  8.000    2.04 | 14.083    3.89 | 20.17    1.67
  2.000    1.02 |  8.083    2.04 | 14.167    3.89 | 20.25    1.67
  2.083    1.02 |  8.167    2.04 | 14.250    3.89 | 20.33    1.11
  2.167    1.02 |  8.250    2.04 | 14.333    2.78 | 20.42    1.11
  2.250    1.02 |  8.333    2.41 | 14.417    2.78 | 20.50    1.11
  2.333    1.20 |  8.417    2.41 | 14.500    2.78 | 20.58    1.11
  2.417    1.20 |  8.500    2.41 | 14.583    2.78 | 20.67    1.11
  2.500    1.20 |  8.583    2.41 | 14.667    2.78 | 20.75    1.11
  2.583    1.20 |  8.667    2.41 | 14.750    2.78 | 20.83    1.11
  2.667    1.20 |  8.750    2.41 | 14.833    2.78 | 20.92    1.11
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                2.750    1.20 |  8.833    2.59 | 14.917    2.78 |  21.00    1.11
                2.833    1.20 |  8.917    2.59 | 15.000    2.78 |  21.08    1.11
                2.917    1.20 |  9.000    2.59 | 15.083    2.78 |  21.17    1.11
                3.000    1.20 |  9.083    2.59 | 15.167    2.78 |  21.25    1.11
                3.083    1.20 |  9.167    2.59 | 15.250    2.78 |  21.33    1.11
                3.167    1.20 |  9.250    2.59 | 15.333    2.78 |  21.42    1.11
                3.250    1.20 |  9.333    2.97 | 15.417    2.78 |  21.50    1.11
                3.333    1.20 |  9.417    2.97 | 15.500    2.78 |  21.58    1.11
                3.417    1.20 |  9.500    2.97 | 15.583    2.78 |  21.67    1.11
                3.500    1.20 |  9.583    2.97 | 15.667    2.78 |  21.75    1.11
                3.583    1.20 |  9.667    2.97 | 15.750    2.78 |  21.83    1.11
                3.667    1.20 |  9.750    2.97 | 15.833    2.78 |  21.92    1.11
                3.750    1.20 |  9.833    3.34 | 15.917    2.78 |  22.00    1.11
                3.833    1.20 |  9.917    3.34 | 16.000    2.78 |  22.08    1.11
                3.917    1.20 | 10.000    3.34 | 16.083    2.78 |  22.17    1.11
                4.000    1.20 | 10.083    3.34 | 16.167    2.78 |  22.25    1.11
                4.083    1.20 | 10.167    3.34 | 16.250    2.78 |  22.33    1.11
                4.167    1.20 | 10.250    3.34 | 16.333    1.67 |  22.42    1.11
                4.250    1.20 | 10.333    4.26 | 16.417    1.67 |  22.50    1.11
                4.333    1.48 | 10.417    4.26 | 16.500    1.67 |  22.58    1.11
                4.417    1.48 | 10.500    4.26 | 16.583    1.67 |  22.67    1.11
                4.500    1.48 | 10.583    4.26 | 16.667    1.67 |  22.75    1.11
                4.583    1.48 | 10.667    4.26 | 16.750    1.67 |  22.83    1.11
                4.667    1.48 | 10.750    4.26 | 16.833    1.67 |  22.92    1.11
                4.750    1.48 | 10.833    5.74 | 16.917    1.67 |  23.00    1.11
                4.833    1.48 | 10.917    5.74 | 17.000    1.67 |  23.08    1.11
                4.917    1.48 | 11.000    5.74 | 17.083    1.67 |  23.17    1.11
                5.000    1.48 | 11.083    5.74 | 17.167    1.67 |  23.25    1.11
                5.083    1.48 | 11.167    5.74 | 17.250    1.67 |  23.33    1.11
                5.167    1.48 | 11.250    5.74 | 17.333    1.67 |  23.42    1.11
                5.250    1.48 | 11.333    8.90 | 17.417    1.67 |  23.50    1.11
                5.333    1.48 | 11.417    8.90 | 17.500    1.67 |  23.58    1.11
                5.417    1.48 | 11.500    8.90 | 17.583    1.67 |  23.67    1.11
                5.500    1.48 | 11.583    8.90 | 17.667    1.67 |  23.75    1.11
                5.583    1.48 | 11.667    8.90 | 17.750    1.67 |  23.83    1.11
                5.667    1.48 | 11.750    8.90 | 17.833    1.67 |  23.92    1.11
                5.750    1.48 | 11.833   27.43 | 17.917    1.67 |  24.00    1.11
                5.833    1.48 | 11.917   27.43 | 18.000    1.67 |  24.08    1.11
                5.917    1.48 | 12.000   27.43 | 18.083    1.67 |  24.17    1.11
                6.000    1.48 | 12.083  113.41 | 18.167    1.67 |  24.25    1.11
                6.083    1.48 | 12.167  113.42 | 18.250    1.67 |

     Max.Eff.Inten.(mm/hr)=     113.42        64.50
               over (min)=       5.00        15.00
     Storage Coeff.  (min)=       3.27 (ii)   11.68 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.27         0.09
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.76         0.18          0.912 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33         12.25
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     RUNOFF VOLUME    (mm)=      87.66        43.44         69.97
     TOTAL RAINFALL   (mm)=      92.66        92.66         92.66
     RUNOFF COEFFICIENT   =       0.95         0.47          0.76

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0     Ia = Dep. 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 (  0314)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
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                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.72         0.72
     Dep. Storage     (mm)=       2.00         5.00
     Average Slope    (%)=        0.50         2.00
     Length           (m)=       97.74        30.00
     Mannings n           =       0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 6.167    1.48 |12.250  113.42 | 18.33    1.67
     0.167    0.00 | 6.250    1.48 |12.333   13.36 | 18.42    1.67
     0.250    0.00 | 6.333    1.67 |12.417   13.34 | 18.50    1.67
     0.333    1.02 | 6.417    1.67 |12.500   13.34 | 18.58    1.67
     0.417    1.02 | 6.500    1.67 |12.583   13.34 | 18.67    1.67
     0.500    1.02 | 6.583    1.67 |12.667   13.34 | 18.75    1.67
     0.583    1.02 | 6.667    1.67 |12.750   13.34 | 18.83    1.67
     0.667    1.02 | 6.750    1.67 |12.833    6.86 | 18.92    1.67
     0.750    1.02 | 6.833    1.67 |12.917    6.86 | 19.00    1.67
     0.833    1.02 | 6.917    1.67 |13.000    6.86 | 19.08    1.67
     0.917    1.02 | 7.000    1.67 |13.083    6.86 | 19.17    1.67
     1.000    1.02 | 7.083    1.67 |13.167    6.86 | 19.25    1.67
     1.083    1.02 | 7.167    1.67 |13.250    6.86 | 19.33    1.67
     1.167    1.02 | 7.250    1.67 |13.333    5.00 | 19.42    1.67
     1.250    1.02 | 7.333    2.04 |13.417    5.00 | 19.50    1.67
     1.333    1.02 | 7.417    2.04 |13.500    5.00 | 19.58    1.67
     1.417    1.02 | 7.500    2.04 |13.583    5.00 | 19.67    1.67
     1.500    1.02 | 7.583    2.04 |13.667    5.00 | 19.75    1.67
     1.583    1.02 | 7.667    2.04 |13.750    5.00 | 19.83    1.67
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     1.667    1.02 | 7.750    2.04 |13.833    3.89 | 19.92    1.67
     1.750    1.02 | 7.833    2.04 |13.917    3.89 | 20.00    1.67
     1.833    1.02 | 7.917    2.04 |14.000    3.89 | 20.08    1.67
     1.917    1.02 | 8.000    2.04 |14.083    3.89 | 20.17    1.67
     2.000    1.02 | 8.083    2.04 |14.167    3.89 | 20.25    1.67
     2.083    1.02 | 8.167    2.04 |14.250    3.89 | 20.33    1.11
     2.167    1.02 | 8.250    2.04 |14.333    2.78 | 20.42    1.11
     2.250    1.02 | 8.333    2.41 |14.417    2.78 | 20.50    1.11
     2.333    1.20 | 8.417    2.41 |14.500    2.78 | 20.58    1.11
     2.417    1.20 | 8.500    2.41 |14.583    2.78 | 20.67    1.11
     2.500    1.20 | 8.583    2.41 |14.667    2.78 | 20.75    1.11
     2.583    1.20 | 8.667    2.41 |14.750    2.78 | 20.83    1.11
     2.667    1.20 | 8.750    2.41 |14.833    2.78 | 20.92    1.11
     2.750    1.20 | 8.833    2.59 |14.917    2.78 | 21.00    1.11
     2.833    1.20 | 8.917    2.59 |15.000    2.78 | 21.08    1.11
     2.917    1.20 | 9.000    2.59 |15.083    2.78 | 21.17    1.11
     3.000    1.20 | 9.083    2.59 |15.167    2.78 | 21.25    1.11
     3.083    1.20 | 9.167    2.59 |15.250    2.78 | 21.33    1.11
     3.167    1.20 | 9.250    2.59 |15.333    2.78 | 21.42    1.11
     3.250    1.20 | 9.333    2.97 |15.417    2.78 | 21.50    1.11
     3.333    1.20 | 9.417    2.97 |15.500    2.78 | 21.58    1.11
     3.417    1.20 | 9.500    2.97 |15.583    2.78 | 21.67    1.11
     3.500    1.20 | 9.583    2.97 |15.667    2.78 | 21.75    1.11
     3.583    1.20 | 9.667    2.97 |15.750    2.78 | 21.83    1.11
     3.667    1.20 | 9.750    2.97 |15.833    2.78 | 21.92    1.11
     3.750    1.20 | 9.833    3.34 |15.917    2.78 | 22.00    1.11
     3.833    1.20 | 9.917    3.34 |16.000    2.78 | 22.08    1.11
     3.917    1.20 |10.000    3.34 |16.083    2.78 | 22.17    1.11
     4.000    1.20 |10.083    3.34 |16.167    2.78 | 22.25    1.11
     4.083    1.20 |10.167    3.34 |16.250    2.78 | 22.33    1.11
     4.167    1.20 |10.250    3.34 |16.333    1.67 | 22.42    1.11
     4.250    1.20 |10.333    4.26 |16.417    1.67 | 22.50    1.11
     4.333    1.48 |10.417    4.26 |16.500    1.67 | 22.58    1.11
     4.417    1.48 |10.500    4.26 |16.583    1.67 | 22.67    1.11
     4.500    1.48 |10.583    4.26 |16.667    1.67 | 22.75    1.11
     4.583    1.48 |10.667    4.26 |16.750    1.67 | 22.83    1.11
     4.667    1.48 |10.750    4.26 |16.833    1.67 | 22.92    1.11
     4.750    1.48 |10.833    5.74 |16.917    1.67 | 23.00    1.11
     4.833    1.48 |10.917    5.74 |17.000    1.67 | 23.08    1.11
     4.917    1.48 |11.000    5.74 |17.083    1.67 | 23.17    1.11
     5.000    1.48 |11.083    5.74 |17.167    1.67 | 23.25    1.11
     5.083    1.48 |11.167    5.74 |17.250    1.67 | 23.33    1.11
     5.167    1.48 |11.250    5.74 |17.333    1.67 | 23.42    1.11
     5.250    1.48 |11.333    8.90 |17.417    1.67 | 23.50    1.11
     5.333    1.48 |11.417    8.90 |17.500    1.67 | 23.58    1.11
     5.417    1.48 |11.500    8.90 |17.583    1.67 | 23.67    1.11
     5.500    1.48 |11.583    8.90 |17.667    1.67 | 23.75    1.11
     5.583    1.48 |11.667    8.90 |17.750    1.67 | 23.83    1.11
     5.667    1.48 |11.750    8.90 |17.833    1.67 | 23.92    1.11
     5.750    1.48 |11.833   27.43 |17.917    1.67 | 24.00    1.11
     5.833    1.48 |11.917   27.43 |18.000    1.67 | 24.08    1.11
     5.917    1.48 |12.000   27.43 |18.083    1.67 | 24.17    1.11
     6.000    1.48 |12.083  113.41 |18.167    1.67 | 24.25    1.11
     6.083    1.48 |12.167  113.42 |18.250    1.67 |

     Max.Eff.Inten.(mm/hr)=     113.42        64.50
               over (min)=       5.00        15.00
     Storage Coeff.  (min)=       2.95 (ii)   10.03 (ii)
     Unit Hyd. Tpeak (min)=       5.00        15.00
     Unit Hyd. peak  (cms)=       0.28         0.10
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.22         0.08          0.298 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.33         12.25
     RUNOFF VOLUME    (mm)=      90.66        43.44         67.04
     TOTAL RAINFALL   (mm)=      92.66        92.66         92.66
     RUNOFF COEFFICIENT   =       0.98         0.47          0.72

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0     Ia = Dep. 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  (  0310)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0313):    4.05    0.912    12.25    69.97
     + ID2= 2 (  0314):    1.43    0.298    12.25    67.04
       ==========================================================
       ID = 3 (  0310):    5.48    1.210    12.25    69.20

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0315)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      10.09         4.12
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope    (%)=        1.00         2.00
     Length           (m)=     307.76        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    0.00 | 6.167    1.48 |12.250  113.42 | 18.33    1.67
     0.167    0.00 | 6.250    1.48 |12.333   13.36 | 18.42    1.67
     0.250    0.00 | 6.333    1.67 |12.417   13.34 | 18.50    1.67
     0.333    1.02 | 6.417    1.67 |12.500   13.34 | 18.58    1.67
     0.417    1.02 | 6.500    1.67 |12.583   13.34 | 18.67    1.67
     0.500    1.02 | 6.583    1.67 |12.667   13.34 | 18.75    1.67
     0.583    1.02 | 6.667    1.67 |12.750   13.34 | 18.83    1.67
     0.667    1.02 | 6.750    1.67 |12.833    6.86 | 18.92    1.67
     0.750    1.02 | 6.833    1.67 |12.917    6.86 | 19.00    1.67
     0.833    1.02 | 6.917    1.67 |13.000    6.86 | 19.08    1.67
     0.917    1.02 | 7.000    1.67 |13.083    6.86 | 19.17    1.67
     1.000    1.02 | 7.083    1.67 |13.167    6.86 | 19.25    1.67
     1.083    1.02 | 7.167    1.67 |13.250    6.86 | 19.33    1.67
     1.167    1.02 | 7.250    1.67 |13.333    5.00 | 19.42    1.67
     1.250    1.02 | 7.333    2.04 |13.417    5.00 | 19.50    1.67
     1.333    1.02 | 7.417    2.04 |13.500    5.00 | 19.58    1.67
     1.417    1.02 | 7.500    2.04 |13.583    5.00 | 19.67    1.67
     1.500    1.02 | 7.583    2.04 |13.667    5.00 | 19.75    1.67
     1.583    1.02 | 7.667    2.04 |13.750    5.00 | 19.83    1.67
     1.667    1.02 | 7.750    2.04 |13.833    3.89 | 19.92    1.67
     1.750    1.02 | 7.833    2.04 |13.917    3.89 | 20.00    1.67
     1.833    1.02 | 7.917    2.04 |14.000    3.89 | 20.08    1.67
     1.917    1.02 | 8.000    2.04 |14.083    3.89 | 20.17    1.67
     2.000    1.02 | 8.083    2.04 |14.167    3.89 | 20.25    1.67
     2.083    1.02 | 8.167    2.04 |14.250    3.89 | 20.33    1.11
     2.167    1.02 | 8.250    2.04 |14.333    2.78 | 20.42    1.11
     2.250    1.02 | 8.333    2.41 |14.417    2.78 | 20.50    1.11
     2.333    1.20 | 8.417    2.41 |14.500    2.78 | 20.58    1.11
     2.417    1.20 | 8.500    2.41 |14.583    2.78 | 20.67    1.11
     2.500    1.20 | 8.583    2.41 |14.667    2.78 | 20.75    1.11
     2.583    1.20 | 8.667    2.41 |14.750    2.78 | 20.83    1.11
     2.667    1.20 | 8.750    2.41 |14.833    2.78 | 20.92    1.11
     2.750    1.20 | 8.833    2.59 |14.917    2.78 | 21.00    1.11
     2.833    1.20 | 8.917    2.59 |15.000    2.78 | 21.08    1.11
     2.917    1.20 | 9.000    2.59 |15.083    2.78 | 21.17    1.11
     3.000    1.20 | 9.083    2.59 |15.167    2.78 | 21.25    1.11
     3.083    1.20 | 9.167    2.59 |15.250    2.78 | 21.33    1.11
     3.167    1.20 | 9.250    2.59 |15.333    2.78 | 21.42    1.11
     3.250    1.20 | 9.333    2.97 |15.417    2.78 | 21.50    1.11
     3.333    1.20 | 9.417    2.97 |15.500    2.78 | 21.58    1.11
     3.417    1.20 | 9.500    2.97 |15.583    2.78 | 21.67    1.11
     3.500    1.20 | 9.583    2.97 |15.667    2.78 | 21.75    1.11
     3.583    1.20 | 9.667    2.97 |15.750    2.78 | 21.83    1.11
     3.667    1.20 | 9.750    2.97 |15.833    2.78 | 21.92    1.11
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     3.750    1.20 | 9.833    3.34 |15.917    2.78 | 22.00    1.11
     3.833    1.20 | 9.917    3.34 |16.000    2.78 | 22.08    1.11
     3.917    1.20 |10.000    3.34 |16.083    2.78 | 22.17    1.11
     4.000    1.20 |10.083    3.34 |16.167    2.78 | 22.25    1.11
     4.083    1.20 |10.167    3.34 |16.250    2.78 | 22.33    1.11
     4.167    1.20 |10.250    3.34 |16.333    1.67 | 22.42    1.11
     4.250    1.20 |10.333    4.26 |16.417    1.67 | 22.50    1.11
     4.333    1.48 |10.417    4.26 |16.500    1.67 | 22.58    1.11
     4.417    1.48 |10.500    4.26 |16.583    1.67 | 22.67    1.11
     4.500    1.48 |10.583    4.26 |16.667    1.67 | 22.75    1.11
     4.583    1.48 |10.667    4.26 |16.750    1.67 | 22.83    1.11
     4.667    1.48 |10.750    4.26 |16.833    1.67 | 22.92    1.11
     4.750    1.48 |10.833    5.74 |16.917    1.67 | 23.00    1.11
     4.833    1.48 |10.917    5.74 |17.000    1.67 | 23.08    1.11
     4.917    1.48 |11.000    5.74 |17.083    1.67 | 23.17    1.11
     5.000    1.48 |11.083    5.74 |17.167    1.67 | 23.25    1.11
     5.083    1.48 |11.167    5.74 |17.250    1.67 | 23.33    1.11
     5.167    1.48 |11.250    5.74 |17.333    1.67 | 23.42    1.11
     5.250    1.48 |11.333    8.90 |17.417    1.67 | 23.50    1.11
     5.333    1.48 |11.417    8.90 |17.500    1.67 | 23.58    1.11
     5.417    1.48 |11.500    8.90 |17.583    1.67 | 23.67    1.11
     5.500    1.48 |11.583    8.90 |17.667    1.67 | 23.75    1.11
     5.583    1.48 |11.667    8.90 |17.750    1.67 | 23.83    1.11
     5.667    1.48 |11.750    8.90 |17.833    1.67 | 23.92    1.11
     5.750    1.48 |11.833   27.43 |17.917    1.67 | 24.00    1.11
     5.833    1.48 |11.917   27.43 |18.000    1.67 | 24.08    1.11
     5.917    1.48 |12.000   27.43 |18.083    1.67 | 24.17    1.11
     6.000    1.48 |12.083  113.41 |18.167    1.67 | 24.25    1.11
     6.083    1.48 |12.167  113.42 |18.250    1.67 |

     Max.Eff.Inten.(mm/hr)=     113.42        64.50
               over (min)=       5.00        10.00
     Storage Coeff.  (min)=       4.77 (ii)   9.46 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.22         0.12
                                                      *TOTALS*
     PEAK FLOW       (cms)=       3.07         0.52          3.595 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=      91.66        43.44         77.68
     TOTAL RAINFALL   (mm)=      92.66        92.66         92.66
     RUNOFF COEFFICIENT   =       0.99         0.47          0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0     Ia = Dep. 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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--------------------------------------------------------------------------------

--------------------
| DUHYD    (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=  2.9|       AREA    QPEAK    TPEAK    R.V.
--------------------        (ha)    (cms)    (hrs)    (mm)
      TOTAL HYD.(ID= 1):  14.21     3.60    12.25   77.68
     ==========================================================
     MAJOR SYS.(ID= 2):   0.37     0.65    12.25   77.68
     MINOR SYS.(ID= 3):  13.84     2.95    12.17   77.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

--------------------
|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=     149.95

                      STAGE       AREA          |  STAGE      AREA
                       (m)        (m2)          |   (m)       (m2)
                      0.000     100.000          |  1.500     100.000
                      0.500     100.000          |  0.000       0.000
                      1.000     100.000          |  0.000       0.000

                     MULCH LAYER:
                     Depth       (m)=    0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=   62.40

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth           (m)=  0.67
                     Width         (m)=  780.00  Length        (m)=  2.00
                     Porosity          =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                     STORAGE LAYER:
                     Depth       (m)=    1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   936.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                     NATIVE SOIL LAYER:

                        Infiltration (m/hr) = 0.0060

                                AREA         QPEAK          TPEAK         R.V.
                                 (ha)         (cms)          (hrs)         (mm)
                   INFLOW:ID= 2   13.84         2.948          12.17        77.68
                  OVERFLOW:ID= 3   13.84         2.945          12.17        74.55

                             Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       4.02
                             Time to reach Max Ponding storage      (Hr)=       0.00
                             Volume of water for drawdown in LID  (cu.m.)=     539.40
                             Volume of Max. Water Storage         (cu.m.)=       0.00
                             Maximum Surface Ponding And Mulch Vol(cu.m.)=     212.35
                             Maximum Engineered Soil Volume       (cu.m.)=     331.16
                             ***** After simulation, water volume is not zero.

                     --------------------
                     | Junction Command(0317) |
                     --------------------

                                     AREA     QPEAK    TPEAK     R.V.
                                      (ha)     (cms)    (hrs)     (mm)
                     INFLOW : ID= 3(  0318)   13.84     2.95    12.17    74.55
                     OUTFLOW: ID= 2(  0317)   13.84     2.95    12.17    74.55

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

--------------------
| ADD HYD  (  0316)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0311):    0.37    0.647    12.25    77.68
     + ID2= 2 (  0317):   13.84    2.945    12.17    74.55
       ==========================================================
       ID = 3 (  0316):   14.21    3.593    12.25    74.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| CALIB            |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.39         0.20
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope    (%)=        1.00         2.00
     Length           (m)=      62.78        40.00
     Mannings n           =       0.013        0.250

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

```
                    ---- TRANSFORMED HYETOGRAPH ----
      TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
       hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
     0.083    0.00 | 6.167    1.48 |12.250  113.42 | 18.33    1.67
     0.167    0.00 | 6.250    1.48 |12.333   13.36 | 18.42    1.67
     0.250    0.00 | 6.333    1.67 |12.417   13.34 | 18.50    1.67
     0.333    1.02 | 6.417    1.67 |12.500   13.34 | 18.58    1.67
     0.417    1.02 | 6.500    1.67 |12.583   13.34 | 18.67    1.67
     0.500    1.02 | 6.583    1.67 |12.667   13.34 | 18.75    1.67
     0.583    1.02 | 6.667    1.67 |12.750   13.34 | 18.83    1.67
     0.667    1.02 | 6.750    1.67 |12.833    6.86 | 18.92    1.67
     0.750    1.02 | 6.833    1.67 |12.917    6.86 | 19.00    1.67
     0.833    1.02 | 6.917    1.67 |13.000    6.86 | 19.08    1.67
     0.917    1.02 | 7.000    1.67 |13.083    6.86 | 19.17    1.67
     1.000    1.02 | 7.083    1.67 |13.167    6.86 | 19.25    1.67
     1.083    1.02 | 7.167    1.67 |13.250    6.86 | 19.33    1.67
     1.167    1.02 | 7.250    1.67 |13.333    5.00 | 19.42    1.67
     1.250    1.02 | 7.333    2.04 |13.417    5.00 | 19.50    1.67
     1.333    1.02 | 7.417    2.04 |13.500    5.00 | 19.58    1.67
     1.417    1.02 | 7.500    2.04 |13.583    5.00 | 19.67    1.67
     1.500    1.02 | 7.583    2.04 |13.667    5.00 | 19.75    1.67
     1.583    1.02 | 7.667    2.04 |13.750    5.00 | 19.83    1.67
     1.667    1.02 | 7.750    2.04 |13.833    3.89 | 19.92    1.67
     1.750    1.02 | 7.833    2.04 |13.917    3.89 | 20.00    1.67
     1.833    1.02 | 7.917    2.04 |14.000    3.89 | 20.08    1.67
     1.917    1.02 | 8.000    2.04 |14.083    3.89 | 20.17    1.67
     2.000    1.02 | 8.083    2.04 |14.167    3.89 | 20.25    1.67
     2.083    1.02 | 8.167    2.04 |14.250    3.89 | 20.33    1.11
     2.167    1.02 | 8.250    2.04 |14.333    2.78 | 20.42    1.11
     2.250    1.02 | 8.333    2.41 |14.417    2.78 | 20.50    1.11
     2.333    1.20 | 8.417    2.41 |14.500    2.78 | 20.58    1.11
     2.417    1.20 | 8.500    2.41 |14.583    2.78 | 20.67    1.11
     2.500    1.20 | 8.583    2.41 |14.667    2.78 | 20.75    1.11
     2.583    1.20 | 8.667    2.41 |14.750    2.78 | 20.83    1.11
     2.667    1.20 | 8.750    2.41 |14.833    2.78 | 20.92    1.11
     2.750    1.20 | 8.833    2.59 |14.917    2.78 | 21.00    1.11
     2.833    1.20 | 8.917    2.59 |15.000    2.78 | 21.08    1.11
     2.917    1.20 | 9.000    2.59 |15.083    2.78 | 21.17    1.11
     3.000    1.20 | 9.083    2.59 |15.167    2.78 | 21.25    1.11
     3.083    1.20 | 9.167    2.59 |15.250    2.78 | 21.33    1.11
     3.167    1.20 | 9.250    2.59 |15.333    2.78 | 21.42    1.11
     3.250    1.20 | 9.333    2.97 |15.417    2.78 | 21.50    1.11
     3.333    1.20 | 9.417    2.97 |15.500    2.78 | 21.58    1.11
     3.417    1.20 | 9.500    2.97 |15.583    2.78 | 21.67    1.11
     3.500    1.20 | 9.583    2.97 |15.667    2.78 | 21.75    1.11
     3.583    1.20 | 9.667    2.97 |15.750    2.78 | 21.83    1.11
     3.667    1.20 | 9.750    2.97 |15.833    2.78 | 21.92    1.11
     3.750    1.20 | 9.833    3.34 |15.917    2.78 | 22.00    1.11
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                3.833    1.20 | 9.917    3.34 |16.000    2.78 | 22.08    1.11
                3.917    1.20 |10.000    3.34 |16.083    2.78 | 22.17    1.11
                4.000    1.20 |10.083    3.34 |16.167    2.78 | 22.25    1.11
                4.083    1.20 |10.167    3.34 |16.250    2.78 | 22.33    1.11
                4.167    1.20 |10.250    3.34 |16.333    1.67 | 22.42    1.11
                4.250    1.20 |10.333    4.26 |16.417    1.67 | 22.50    1.11
                4.333    1.48 |10.417    4.26 |16.500    1.67 | 22.58    1.11
                4.417    1.48 |10.500    4.26 |16.583    1.67 | 22.67    1.11
                4.500    1.48 |10.583    4.26 |16.667    1.67 | 22.75    1.11
                4.583    1.48 |10.667    4.26 |16.750    1.67 | 22.83    1.11
                4.667    1.48 |10.750    4.26 |16.833    1.67 | 22.92    1.11
                4.750    1.48 |10.833    5.74 |16.917    1.67 | 23.00    1.11
                4.833    1.48 |10.917    5.74 |17.000    1.67 | 23.08    1.11
                4.917    1.48 |11.000    5.74 |17.083    1.67 | 23.17    1.11
                5.000    1.48 |11.083    5.74 |17.167    1.67 | 23.25    1.11
                5.083    1.48 |11.167    5.74 |17.250    1.67 | 23.33    1.11
                5.167    1.48 |11.250    5.74 |17.333    1.67 | 23.42    1.11
                5.250    1.48 |11.333    8.90 |17.417    1.67 | 23.50    1.11
                5.333    1.48 |11.417    8.90 |17.500    1.67 | 23.58    1.11
                5.417    1.48 |11.500    8.90 |17.583    1.67 | 23.67    1.11
                5.500    1.48 |11.583    8.90 |17.667    1.67 | 23.75    1.11
                5.583    1.48 |11.667    8.90 |17.750    1.67 | 23.83    1.11
                5.667    1.48 |11.750    8.90 |17.833    1.67 | 23.92    1.11
                5.750    1.48 |11.833   27.43 |17.917    1.67 | 24.00    1.11
                5.833    1.48 |11.917   27.43 |18.000    1.67 | 24.08    1.11
                5.917    1.48 |12.000   27.43 |18.083    1.67 | 24.17    1.11
                6.000    1.48 |12.083  113.41 |18.167    1.67 | 24.25    1.11
                6.083    1.48 |12.167  113.42 |18.250    1.67 |

     Max.Eff.Inten.(mm/hr)=     113.42       199.26
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.84 (ii)    7.19 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.14
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.05         0.09         0.137 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=      91.66        62.44        69.74
     TOTAL RAINFALL   (mm)=      92.66        92.66        92.66
     RUNOFF COEFFICIENT   =       0.99         0.67         0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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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--------------------
| DUHYD    (  0331)|
| Inlet Cap.=  0.112|
| #of Inlets=     1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.14     12.25   69.74
     ------------------------------------------------------
     MAJOR SYS.(ID= 2):   0.01      0.02     12.25   69.74
     MINOR SYS.(ID= 3):   0.58      0.11     12.17   69.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)| OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=     149.95

                     STAGE       AREA          |   STAGE      AREA
                      (m)        (m2)          |    (m)       (m2)
                     0.000      100.000         |   1.500      100.000
                     0.500      100.000         |   0.000        0.000
                     1.000      100.000         |   0.000        0.000

                    MULCH LAYER:
                    Depth       (m)=    0.00  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     0.00

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width       (m)=    3.00  Length          (m)=240.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                      DEPTH       DISCHARGE       |   DEPTH       DISCHARGE
                       (m)          (cms)         |    (m)          (cms)
                      0.000         0.000         |   0.559         0.030
                      0.279         0.010         |   0.762         0.040
                      0.406         0.020         |   1.300         0.050

                    STORAGE LAYER:
                    Depth       (m)=    1.00  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   288.00

                    TOTAL AVAILABLE STORAGE:
```

```
                        TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
     +Storage Layer(cu.m.)=      680.04

                        NATIVE SOIL LAYER:
                        Infiltration (m/hr) = 0.0060

                           AREA         QPEAK            TPEAK         R.V.
                           (ha)         (cms)            (hrs)         (mm)
          INFLOW:ID= 2     0.58         0.112            12.17        69.74
        OUTFLOW:ID= 1      0.27         0.009             0.08        52.19
       OVERFLOW:ID= 3      0.31         0.089            12.33        52.19

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       25.17
                    Time to reach Max Ponding storage       (Hr)=        0.00
                    Volume of water for drawdown in LID  (cu.m.)=      156.45
                    Volume of Max. Water Storage         (cu.m.)=        0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=      149.95
                    Maximum Engineered Soil Volume       (cu.m.)=       69.86
                    ***** After simulation, water volume is not zero.

     -------------------------
     | Junction Command(0330) |
     -------------------------

                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)    (hrs)     (mm)
     INFLOW : ID= 3(  0329)    0.31     0.09   12.33    52.19
     OUTFLOW: ID= 2(  0330)    0.31     0.09   12.33    52.19

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

     -------------------------
     | Junction Command(0332) |
     -------------------------

                           AREA     QPEAK   TPEAK     R.V.
                           (ha)     (cms)    (hrs)     (mm)
     INFLOW : ID= 1(  0329)    0.27     0.01    0.08    52.19
     OUTFLOW: ID= 2(  0332)    0.27     0.01    0.08    52.19

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

     --------------------
     | ADD HYD  (  3106)|
     |   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
     --------------------      (ha)     (cms)     (hrs)     (mm)
           ID1= 1 (  0330):    0.31   0.089     12.33     52.19
         + ID2= 2 (  0331):    0.01   0.025     12.25     69.74
           ====================================================
```

```
           ID = 3 (  3106):     0.33   0.089    12.33    52.86

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

--------------------
| ADD HYD  (  3106)|
|   3 +  2 =  1    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
           ID1= 3 (  3106):     0.33   0.089    12.33    52.86
         + ID2= 2 (  0332):     0.27   0.009     0.08    52.19
           ====================================================
           ID = 1 (  3106):     0.59   0.090    12.33    52.56

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
           ID1= 1 (  0277):     1.23   0.270    12.08    63.33
         + ID2= 2 (  0310):     5.48   1.210    12.25    69.20
           ====================================================
           ID = 3 (  0312):     6.71   1.480    12.25    68.13

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

--------------------
| ADD HYD  (  0312)|
|   3 +  2 =  1    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
           ID1= 3 (  0312):     6.71   1.480    12.25    68.13
         + ID2= 2 (  3106):     0.59   0.090    12.33    52.56
           ====================================================
           ID = 1 (  0312):     7.30   1.507    12.25    66.87

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
           ID1= 1 (  0312):     7.30   1.507    12.25    66.87
         + ID2= 2 (  0316):    14.21   3.593    12.25    74.63
           ====================================================
           ID = 3 (  0312):    21.51   5.099    12.25    72.00
```

```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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   |  0.6610      0.9850
                          0.0400     0.1140   |  1.0960      1.3320
                          0.0760     0.3690   |  1.4260      1.5860
                          0.2810     0.6450   |  0.0000      0.0000

                               AREA      QPEAK     TPEAK        R.V.
                               (ha)      (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (  0312)     21.510      5.099     12.25       72.00
     OUTFLOW: ID= 1 (  0319)     21.510      0.535     12.83       71.96

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 10.49
                    TIME SHIFT OF PEAK FLOW         (min)= 35.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.8725

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       V    V   I    SSSSS  U   U    A     L              (v 6.2.2008)
       V    V   I    SS     U   U   A A    L
        V  V    I     SS    U   U  AAAAA   L
        V  V    I      SS   U   U  A   A   L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\b8e44
376-52b0-4afc-ad06-2b7b3e366bcb\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\b8e44
376-52b0-4afc-ad06-2b7b3e366bcb\scena

DATE: 08-28-2022                       TIME: 02:37:54

USER:


COMMENTS: _____

--------------------------------------------------------------------------------
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  ************************************************
  ** SIMULATION : J. 25yr 24hr 15min SCS Type I **
  ************************************************


--------------------
|    READ STORM    |    Filename: C:\Users\kswain\AppD
|                  |              ata\Local\Temp\
```

```
|                  |                493684fd-5088-4e79-aaf3-4a5a81863920\110417ef
| Ptotal=108.80 mm |    Comments: J. 25yr 24hr 15min SCS Type II
-------------------
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
            0.00    0.00 |  6.25    1.96 | 12.50   15.67 | 18.75    1.96
            0.25    1.20 |  6.50    1.96 | 12.75    8.05 | 19.00    1.96
            0.50    1.20 |  6.75    1.96 | 13.00    8.05 | 19.25    1.96
            0.75    1.20 |  7.00    1.96 | 13.25    5.88 | 19.50    1.96
            1.00    1.20 |  7.25    2.39 | 13.50    5.88 | 19.75    1.96
            1.25    1.20 |  7.50    2.39 | 13.75    4.57 | 20.00    1.96
            1.50    1.20 |  7.75    2.39 | 14.00    4.57 | 20.25    1.31
            1.75    1.20 |  8.00    2.39 | 14.25    3.26 | 20.50    1.31
            2.00    1.20 |  8.25    2.83 | 14.50    3.26 | 20.75    1.31
            2.25    1.41 |  8.50    2.83 | 14.75    3.26 | 21.00    1.31
            2.50    1.41 |  8.75    3.05 | 15.00    3.26 | 21.25    1.31
            2.75    1.41 |  9.00    3.05 | 15.25    3.26 | 21.50    1.31
            3.00    1.41 |  9.25    3.48 | 15.50    3.26 | 21.75    1.31
            3.25    1.41 |  9.50    3.48 | 15.75    3.26 | 22.00    1.31
            3.50    1.41 |  9.75    3.92 | 16.00    3.26 | 22.25    1.31
            3.75    1.41 | 10.00    3.92 | 16.25    1.96 | 22.50    1.31
            4.00    1.41 | 10.25    5.00 | 16.50    1.96 | 22.75    1.31
            4.25    1.74 | 10.50    5.00 | 16.75    1.96 | 23.00    1.31
            4.50    1.74 | 10.75    6.75 | 17.00    1.96 | 23.25    1.31
            4.75    1.74 | 11.00    6.75 | 17.25    1.96 | 23.50    1.31
            5.00    1.74 | 11.25   10.44 | 17.50    1.96 | 23.75    1.31
            5.25    1.74 | 11.50   10.44 | 17.75    1.96 | 24.00    1.31
            5.50    1.74 | 11.75   32.20 | 18.00    1.96 |
            5.75    1.74 | 12.00  133.17 | 18.25    1.96 |
            6.00    1.74 | 12.25   15.67 | 18.50    1.96 |

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| CALIB             |
| NASHYD  (  0185)| |  Area    (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min |  Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.24

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


                        ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
            0.083   0.00 | 6.167    1.74 |12.250  133.17 | 18.33    1.96
            0.167   0.00 | 6.250    1.74 |12.333   15.68 | 18.42    1.96
            0.250   0.00 | 6.333    1.96 |12.417   15.67 | 18.50    1.96
            0.333   1.20 | 6.417    1.96 |12.500   15.67 | 18.58    1.96
            0.417   1.20 | 6.500    1.96 |12.583   15.67 | 18.67    1.96
```

```
            0.500   1.20 | 6.583    1.96 |12.667   15.67 | 18.75    1.96
            0.583   1.20 | 6.667    1.96 |12.750   15.67 | 18.83    1.96
            0.667   1.20 | 6.750    1.96 |12.833    8.05 | 18.92    1.96
            0.750   1.20 | 6.833    1.96 |12.917    8.05 | 19.00    1.96
            0.833   1.20 | 6.917    1.96 |13.000    8.05 | 19.08    1.96
            0.917   1.20 | 7.000    1.96 |13.083    8.05 | 19.17    1.96
            1.000   1.20 | 7.083    1.96 |13.167    8.05 | 19.25    1.96
            1.083   1.20 | 7.167    1.96 |13.250    8.05 | 19.33    1.96
            1.167   1.20 | 7.250    1.96 |13.333    5.88 | 19.42    1.96
            1.250   1.20 | 7.333    2.39 |13.417    5.88 | 19.50    1.96
            1.333   1.20 | 7.417    2.39 |13.500    5.88 | 19.58    1.96
            1.417   1.20 | 7.500    2.39 |13.583    5.88 | 19.67    1.96
            1.500   1.20 | 7.583    2.39 |13.667    5.88 | 19.75    1.96
            1.583   1.20 | 7.667    2.39 |13.750    5.88 | 19.83    1.96
            1.667   1.20 | 7.750    2.39 |13.833    4.57 | 19.92    1.96
            1.750   1.20 | 7.833    2.39 |13.917    4.57 | 20.00    1.96
            1.833   1.20 | 7.917    2.39 |14.000    4.57 | 20.08    1.96
            1.917   1.20 | 8.000    2.39 |14.083    4.57 | 20.17    1.96
            2.000   1.20 | 8.083    2.39 |14.167    4.57 | 20.25    1.96
            2.083   1.20 | 8.167    2.39 |14.250    4.57 | 20.33    1.31
            2.167   1.20 | 8.250    2.39 |14.333    3.26 | 20.42    1.31
            2.250   1.20 | 8.333    2.83 |14.417    3.26 | 20.50    1.31
            2.333   1.41 | 8.417    2.83 |14.500    3.26 | 20.58    1.31
            2.417   1.41 | 8.500    2.83 |14.583    3.26 | 20.67    1.31
            2.500   1.41 | 8.583    2.83 |14.667    3.26 | 20.75    1.31
            2.583   1.41 | 8.667    2.83 |14.750    3.26 | 20.83    1.31
            2.667   1.41 | 8.750    2.83 |14.833    3.26 | 20.92    1.31
            2.750   1.41 | 8.833    3.05 |14.917    3.26 | 21.00    1.31
            2.833   1.41 | 8.917    3.05 |15.000    3.26 | 21.08    1.31
            2.917   1.41 | 9.000    3.05 |15.083    3.26 | 21.17    1.31
            3.000   1.41 | 9.083    3.05 |15.167    3.26 | 21.25    1.31
            3.083   1.41 | 9.167    3.05 |15.250    3.26 | 21.33    1.31
            3.167   1.41 | 9.250    3.05 |15.333    3.26 | 21.42    1.31
            3.250   1.41 | 9.333    3.48 |15.417    3.26 | 21.50    1.31
            3.333   1.41 | 9.417    3.48 |15.500    3.26 | 21.58    1.31
            3.417   1.41 | 9.500    3.48 |15.583    3.26 | 21.67    1.31
            3.500   1.41 | 9.583    3.48 |15.667    3.26 | 21.75    1.31
            3.583   1.41 | 9.667    3.48 |15.750    3.26 | 21.83    1.31
            3.667   1.41 | 9.750    3.48 |15.833    3.26 | 21.92    1.31
            3.750   1.41 | 9.833    3.92 |15.917    3.26 | 22.00    1.31
            3.833   1.41 | 9.917    3.92 |16.000    3.26 | 22.08    1.31
            3.917   1.41 |10.000    3.92 |16.083    3.26 | 22.17    1.31
            4.000   1.41 |10.083    3.92 |16.167    3.26 | 22.25    1.31
            4.083   1.41 |10.167    3.92 |16.250    3.26 | 22.33    1.31
            4.167   1.41 |10.250    3.92 |16.333    1.96 | 22.42    1.31
            4.250   1.41 |10.333    5.00 |16.417    1.96 | 22.50    1.31
            4.333   1.74 |10.417    5.00 |16.500    1.96 | 22.58    1.31
            4.417   1.74 |10.500    5.00 |16.583    1.96 | 22.67    1.31
            4.500   1.74 |10.583    5.00 |16.667    1.96 | 22.75    1.31
            4.583   1.74 |10.667    5.00 |16.750    1.96 | 22.83    1.31
            4.667   1.74 |10.750    5.00 |16.833    1.96 | 22.92    1.31
            4.750   1.74 |10.833    6.75 |16.917    1.96 | 23.00    1.31
            4.833   1.74 |10.917    6.75 |17.000    1.96 | 23.08    1.31
            4.917   1.74 |11.000    6.75 |17.083    1.96 | 23.17    1.31
            5.000   1.74 |11.083    6.75 |17.167    1.96 | 23.25    1.31
            5.083   1.74 |11.167    6.75 |17.250    1.96 | 23.33    1.31
            5.167   1.74 |11.250    6.75 |17.333    1.96 | 23.42    1.31
            5.250   1.74 |11.333   10.44 |17.417    1.96 | 23.50    1.31
            5.333   1.74 |11.417   10.44 |17.500    1.96 | 23.58    1.31
            5.417   1.74 |11.500   10.44 |17.583    1.96 | 23.67    1.31
            5.500   1.74 |11.583   10.44 |17.667    1.96 | 23.75    1.31
            5.583   1.74 |11.667   10.44 |17.750    1.96 | 23.83    1.31
            5.667   1.74 |11.750   10.44 |17.833    1.96 | 23.92    1.31
            5.750   1.74 |11.833   32.20 |17.917    1.96 | 24.00    1.31
            5.833   1.74 |11.917   32.20 |18.000    1.96 | 24.08    1.31
            5.917   1.74 |12.000   32.20 |18.083    1.96 | 24.17    1.31
            6.000   1.74 |12.083  133.16 |18.167    1.96 | 24.25    1.31
            6.083   1.74 |12.167  133.17 |18.250    1.96 |

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW       (cms)=   0.217 (1)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME   (mm)=  56.742
     TOTAL RAINFALL  (mm)= 108.800
     RUNOFF COEFFICIENT   =   0.522

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

--------------------------------------------------------------------------------
--------------------
| DUHYD     (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.66      0.22     12.33    56.74
     ================================================
     MAJOR SYS.(ID= 2):   0.15      0.09     12.33    56.74
     MINOR SYS.(ID= 3):   1.52      0.13     12.25    56.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
----------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:
```

```
                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA            |   STAGE      AREA
                       (m)         (m2)            |    (m)       (m2)
                      0.000      100.000           |   1.500      100.000
                      0.500      100.000           |   0.000        0.000
                      1.000      100.000           |   0.000        0.000

                     MULCH LAYER:
                     Depth      (m)=   0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    21.60

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth             (m)=  0.72
                     Width      (m)=  180.00  Length            (m)=  3.00
                     Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                     STORAGE LAYER:
                     Depth      (m)=   0.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   108.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK          R.V.
                       (ha)         (cms)          (hrs)          (mm)
     INFLOW:ID= 2     1.52         0.130          12.33          41.31
    OVERFLOW:ID= 3    1.52         0.130          12.33          41.31

                  Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      27.20
                  Time to reach Max Ponding storage       (hr)=       0.00
                  Volume of water for drawdown in LID  (cu.m.)=     274.95
                  Volume of Max. Water Storage         (cu.m.)=       0.00
                  Maximum Surface Ponding And Mulch Vol(cu.m.)=     171.55
                  Maximum Engineered Soil Volume       (cu.m.)=     105.47
                  ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                       AREA     QPEAK    TPEAK     R.V.
                       (ha)     (cms)    (hrs)     (mm)
```

```
   INFLOW : ID= 3(  0184)    1.52     0.13    12.33     41.31
   OUTFLOW: ID= 2(  0181)    1.52     0.13    12.33     41.31

  --------------------------------------------------------------------------------
--------------------
| CALIB             |
| STANDHYD (  0265)|  Area    (ha)=   0.86
|ID= 1 DT= 5.0 min |  Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
--------------------
                       IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.56         0.30
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope    (%)=       1.00         2.00
     Length           (m)=      75.87        40.00
     Mannings n              =   0.013        0.250

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

                        ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
            0.083   0.00 | 6.167    1.74 |12.250  133.17 | 18.33    1.96
            0.167   0.00 | 6.250    1.74 |12.333   15.68 | 18.42    1.96
            0.250   0.00 | 6.333    1.96 |12.417   15.67 | 18.50    1.96
            0.333   1.20 | 6.417    1.96 |12.500   15.67 | 18.58    1.96
            0.417   1.20 | 6.500    1.96 |12.583   15.67 | 18.67    1.96
            0.500   1.20 | 6.583    1.96 |12.667   15.67 | 18.75    1.96
            0.583   1.20 | 6.667    1.96 |12.750   15.67 | 18.83    1.96
            0.667   1.20 | 6.750    1.96 |12.833    8.05 | 18.92    1.96
            0.750   1.20 | 6.833    1.96 |12.917    8.05 | 19.00    1.96
            0.833   1.20 | 6.917    1.96 |13.000    8.05 | 19.08    1.96
            0.917   1.20 | 7.000    1.96 |13.083    8.05 | 19.17    1.96
            1.000   1.20 | 7.083    1.96 |13.167    8.05 | 19.25    1.96
            1.083   1.20 | 7.167    1.96 |13.250    8.05 | 19.33    1.96
            1.167   1.20 | 7.250    1.96 |13.333    5.88 | 19.42    1.96
            1.250   1.20 | 7.333    2.39 |13.417    5.88 | 19.50    1.96
            1.333   1.20 | 7.417    2.39 |13.500    5.88 | 19.58    1.96
            1.417   1.20 | 7.500    2.39 |13.583    5.88 | 19.67    1.96
            1.500   1.20 | 7.583    2.39 |13.667    5.88 | 19.75    1.96
            1.583   1.20 | 7.667    2.39 |13.750    5.88 | 19.83    1.96
            1.667   1.20 | 7.750    2.39 |13.833    4.57 | 19.92    1.96
            1.750   1.20 | 7.833    2.39 |13.917    4.57 | 20.00    1.96
            1.833   1.20 | 7.917    2.39 |14.000    4.57 | 20.08    1.96
            1.917   1.20 | 8.000    2.39 |14.083    4.57 | 20.17    1.96
            2.000   1.20 | 8.083    2.39 |14.167    4.57 | 20.25    1.96
            2.083   1.20 | 8.167    2.39 |14.250    4.57 | 20.33    1.31
            2.167   1.20 | 8.250    2.39 |14.333    3.26 | 20.42    1.31
            2.250   1.20 | 8.333    2.83 |14.417    3.26 | 20.50    1.31
            2.333   1.41 | 8.417    2.83 |14.500    3.26 | 20.58    1.31
```

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            2.417   1.41 | 8.500    2.83 |14.583    3.26 | 20.67    1.31
            2.500   1.41 | 8.583    2.83 |14.667    3.26 | 20.75    1.31
            2.583   1.41 | 8.667    2.83 |14.750    3.26 | 20.83    1.31
            2.667   1.41 | 8.750    2.83 |14.833    3.26 | 20.92    1.31
            2.750   1.41 | 8.833    3.05 |14.917    3.26 | 21.00    1.31
            2.833   1.41 | 8.917    3.05 |15.000    3.26 | 21.08    1.31
            2.917   1.41 | 9.000    3.05 |15.083    3.26 | 21.17    1.31
            3.000   1.41 | 9.083    3.05 |15.167    3.26 | 21.25    1.31
            3.083   1.41 | 9.167    3.05 |15.250    3.26 | 21.33    1.31
            3.167   1.41 | 9.250    3.05 |15.333    3.26 | 21.42    1.31
            3.250   1.41 | 9.333    3.48 |15.417    3.26 | 21.50    1.31
            3.333   1.41 | 9.417    3.48 |15.500    3.26 | 21.58    1.31
            3.417   1.41 | 9.500    3.48 |15.583    3.26 | 21.67    1.31
            3.500   1.41 | 9.583    3.48 |15.667    3.26 | 21.75    1.31
            3.583   1.41 | 9.667    3.48 |15.750    3.26 | 21.83    1.31
            3.667   1.41 | 9.750    3.48 |15.833    3.26 | 21.92    1.31
            3.750   1.41 | 9.833    3.92 |15.917    3.26 | 22.00    1.31
            3.833   1.41 | 9.917    3.92 |16.000    3.26 | 22.08    1.31
            3.917   1.41 |10.000    3.92 |16.083    3.26 | 22.17    1.31
            4.000   1.41 |10.083    3.92 |16.167    3.26 | 22.25    1.31
            4.083   1.41 |10.167    3.92 |16.250    3.26 | 22.33    1.31
            4.167   1.41 |10.250    3.92 |16.333    1.96 | 22.42    1.31
            4.250   1.41 |10.333    5.00 |16.417    1.96 | 22.50    1.31
            4.333   1.74 |10.417    5.00 |16.500    1.96 | 22.58    1.31
            4.417   1.74 |10.500    5.00 |16.583    1.96 | 22.67    1.31
            4.500   1.74 |10.583    5.00 |16.667    1.96 | 22.75    1.31
            4.583   1.74 |10.667    5.00 |16.750    1.96 | 22.83    1.31
            4.667   1.74 |10.750    5.00 |16.833    1.96 | 22.92    1.31
            4.750   1.74 |10.833    6.75 |16.917    1.96 | 23.00    1.31
            4.833   1.74 |10.917    6.75 |17.000    1.96 | 23.08    1.31
            4.917   1.74 |11.000    6.75 |17.083    1.96 | 23.17    1.31
            5.000   1.74 |11.083    6.75 |17.167    1.96 | 23.25    1.31
            5.083   1.74 |11.167    6.75 |17.250    1.96 | 23.33    1.31
            5.167   1.74 |11.250    6.75 |17.333    1.96 | 23.42    1.31
            5.250   1.74 |11.333   10.44 |17.417    1.96 | 23.50    1.31
            5.333   1.74 |11.417   10.44 |17.500    1.96 | 23.58    1.31
            5.417   1.74 |11.500   10.44 |17.583    1.96 | 23.67    1.31
            5.500   1.74 |11.583   10.44 |17.667    1.96 | 23.75    1.31
            5.583   1.74 |11.667   10.44 |17.750    1.96 | 23.83    1.31
            5.667   1.74 |11.750   10.44 |17.833    1.96 | 23.92    1.31
            5.750   1.74 |11.833   32.20 |17.917    1.96 | 24.00    1.31
            5.833   1.74 |11.917   32.20 |18.000    1.96 | 24.08    1.31
            5.917   1.74 |12.000   32.20 |18.083    1.96 | 24.17    1.31
            6.000   1.74 |12.083  133.16 |18.167    1.96 | 24.25    1.31
            6.083   1.74 |12.167  133.17 |18.250    1.96 |

     Max.Eff.Inten.(mm/hr)=     133.17        82.62
               over (min)=       5.00        10.00
     Storage Coeff.  (min)=       1.93 (ii)    6.84 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
```

```
     Unit Hyd. peak  (cms)=       0.31          0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.21          0.06          0.263 (iii)
     TIME TO PEAK    (hrs)=      12.25         12.25         12.25
     RUNOFF VOLUME   (mm)=      107.80         55.81         89.60
     TOTAL RAINFALL  (mm)=      108.80        108.80        108.80
     RUNOFF COEFFICIENT   =       0.99          0.51          0.82

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
        (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
             THAN THE STORAGE COEFFICIENT.
        (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
--------------------
| DUHYD     (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=    1|
| Total(cms)=  0.2|      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.86      0.26     12.25    89.60
     ================================================
     MAJOR SYS.(ID= 2):   0.07      0.09     12.25    89.60
     MINOR SYS.(ID= 3):   0.79      0.17     12.08    89.60

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
----------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA            |   STAGE      AREA
                       (m)         (m2)            |    (m)       (m2)
                      0.000      100.000           |   1.500      100.000
                      0.500      100.000           |   0.000        0.000
                      1.000      100.000           |   0.000        0.000

                     MULCH LAYER:
                     Depth      (m)=   0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    3.20

                     ENGINEERED SOIL LAYER:
```

```
                     Soil moisture =    0.30  Depth             (m)=  0.67
                     Width      (m)=   40.00  Length            (m)=  2.00
                     Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                     STORAGE LAYER:
                     Depth      (m)=   1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=    48.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK          R.V.
                       (ha)         (cms)          (hrs)          (mm)
     INFLOW:ID= 2     0.79         0.174          12.08          89.60
    OVERFLOW:ID= 3    0.79         0.174          12.08          68.91

                  Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      23.10
                  Time to reach Max Ponding storage       (hr)=       0.00
                  Volume of water for drawdown in LID  (cu.m.)=     169.93
                  Volume of Max. Water Storage         (cu.m.)=       0.00
                  Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
                  Maximum Engineered Soil Volume       (cu.m.)=      16.82
                  ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                       AREA     QPEAK    TPEAK     R.V.
                       (ha)     (cms)    (hrs)     (mm)
   INFLOW : ID= 3(  0264)    0.79     0.17    12.08     68.91
   OUTFLOW: ID= 2(  0262)    0.79     0.17    12.08     68.91

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

--------------------
| ADD HYD  (  0243)|
|  1 + 2 =  3      |      AREA     QPEAK    TPEAK     R.V.
--------------------      (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0181):    1.52    0.130     12.33     41.31
     + ID2= 2 (  0182):    0.15    0.086     12.33     56.74
       ================================================
       ID = 3 (  0243):    1.66    0.216     12.33     42.66
```

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

 --------------------
 | ADD HYD  (  0243)|
 |   3 +  2 =  1    |        AREA    QPEAK    TPEAK     R.V.
 --------------------        (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (  0243):     1.66   0.216    12.33    42.66
       + ID2= 2 (  0262):     0.79   0.174    12.08    68.91
         ==================================================
         ID = 1 (  0243):     2.46   0.305    12.33    51.14

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

 --------------------
 | ADD HYD  (  0243)|
 |   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
 --------------------        (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (  0243):     2.46   0.305    12.33    51.14
       + ID2= 2 (  0263):     0.07   0.089    12.25    89.60
         ==================================================
         ID = 3 (  0243):     2.53   0.365    12.25    52.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
 ------------------------------------------------------------------------------
 --------------------
 | RESERVOIR(  0188)|     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   |   0.4800     0.0190

                                 AREA     QPEAK      TPEAK       R.V.
                                 (ha)     (cms)      (hrs)       (mm)
    INFLOW : ID= 2 (  0243)      2.527      0.365      12.25       52.19
    OUTFLOW: ID= 1 (  0188)      2.527      0.295      12.33       52.19

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 80.88
                    TIME SHIFT OF PEAK FLOW         (min)=  5.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0118

 ------------------------------------------------------------------------------
 --------------------
 | CALIB            |
 | STANDHYD (  0252)|   Area    (ha)=   0.32
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
 --------------------
                              IMPERVIOUS    PERVIOUS (i)
```

```
     Surface Area     (ha)=        0.22          0.10
     Dep. Storage     (mm)=        1.00          5.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       45.84         40.00
     Mannings n           =       0.013         0.250

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


                           ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN | TIME    RAIN |'  TIME    RAIN | TIME    RAIN
                hrs   mm/hr |  hrs   mm/hr |'   hrs   mm/hr |  hrs   mm/hr
              0.083    0.00 | 6.167    1.74 |12.250  133.17 | 18.33    1.96
              0.167    0.00 | 6.250    1.74 |12.333   15.68 | 18.42    1.96
              0.250    0.00 | 6.333    1.96 |12.417   15.67 | 18.50    1.96
              0.333    1.20 | 6.417    1.96 |12.500   15.67 | 18.58    1.96
              0.417    1.20 | 6.500    1.96 |12.583   15.67 | 18.67    1.96
              0.500    1.20 | 6.583    1.96 |12.667   15.67 | 18.75    1.96
              0.583    1.20 | 6.667    1.96 |12.750   15.67 | 18.83    1.96
              0.667    1.20 | 6.750    1.96 |12.833    8.05 | 18.92    1.96
              0.750    1.20 | 6.833    1.96 |12.917    8.05 | 19.00    1.96
              0.833    1.20 | 6.917    1.96 |13.000    8.05 | 19.08    1.96
              0.917    1.20 | 7.000    1.96 |13.083    8.05 | 19.17    1.96
              1.000    1.20 | 7.083    1.96 |13.167    8.05 | 19.25    1.96
              1.083    1.20 | 7.167    1.96 |13.250    8.05 | 19.33    1.96
              1.167    1.20 | 7.250    1.96 |13.333    5.88 | 19.42    1.96
              1.250    1.20 | 7.333    2.39 |13.417    5.88 | 19.50    1.96
              1.333    1.20 | 7.417    2.39 |13.500    5.88 | 19.58    1.96
              1.417    1.20 | 7.500    2.39 |13.583    5.88 | 19.67    1.96
              1.500    1.20 | 7.583    2.39 |13.667    5.88 | 19.75    1.96
              1.583    1.20 | 7.667    2.39 |13.750    5.88 | 19.83    1.96
              1.667    1.20 | 7.750    2.39 |13.833    4.57 | 19.92    1.96
              1.750    1.20 | 7.833    2.39 |13.917    4.57 | 20.00    1.96
              1.833    1.20 | 7.917    2.39 |14.000    4.57 | 20.08    1.96
              1.917    1.20 | 8.000    2.39 |14.083    4.57 | 20.17    1.96
              2.000    1.20 | 8.083    2.39 |14.167    4.57 | 20.25    1.96
              2.083    1.20 | 8.167    2.39 |14.250    4.57 | 20.33    1.31
              2.167    1.20 | 8.250    2.39 |14.333    3.26 | 20.42    1.31
              2.250    1.20 | 8.333    2.83 |14.417    3.26 | 20.50    1.31
              2.333    1.41 | 8.417    2.83 |14.500    3.26 | 20.58    1.31
              2.417    1.41 | 8.500    2.83 |14.583    3.26 | 20.67    1.31
              2.500    1.41 | 8.583    2.83 |14.667    3.26 | 20.75    1.31
              2.583    1.41 | 8.667    2.83 |14.750    3.26 | 20.83    1.31
              2.667    1.41 | 8.750    2.83 |14.833    3.26 | 20.92    1.31
              2.750    1.41 | 8.833    3.05 |14.917    3.26 | 21.00    1.31
              2.833    1.41 | 8.917    3.05 |15.000    3.26 | 21.08    1.31
              2.917    1.41 | 9.000    3.05 |15.083    3.26 | 21.17    1.31
              3.000    1.41 | 9.083    3.05 |15.167    3.26 | 21.25    1.31
              3.083    1.41 | 9.167    3.05 |15.250    3.26 | 21.33    1.31
              3.167    1.41 | 9.250    3.05 |15.333    3.26 | 21.42    1.31
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              3.250    1.41 | 9.333    3.48 |15.417    3.26 | 21.50    1.31
              3.333    1.41 | 9.417    3.48 |15.500    3.26 | 21.58    1.31
              3.417    1.41 | 9.500    3.48 |15.583    3.26 | 21.67    1.31
              3.500    1.41 | 9.583    3.48 |15.667    3.26 | 21.75    1.31
              3.583    1.41 | 9.667    3.48 |15.750    3.26 | 21.83    1.31
              3.667    1.41 | 9.750    3.48 |15.833    3.26 | 21.92    1.31
              3.750    1.41 | 9.833    3.92 |15.917    3.26 | 22.00    1.31
              3.833    1.41 | 9.917    3.92 |16.000    3.26 | 22.08    1.31
              3.917    1.41 |10.000    3.92 |16.083    3.26 | 22.17    1.31
              4.000    1.41 |10.083    3.92 |16.167    3.26 | 22.25    1.31
              4.083    1.41 |10.167    3.92 |16.250    3.26 | 22.33    1.31
              4.167    1.41 |10.250    3.92 |16.333    1.96 | 22.42    1.31
              4.250    1.41 |10.333    5.00 |16.417    1.96 | 22.50    1.31
              4.333    1.74 |10.417    5.00 |16.500    1.96 | 22.58    1.31
              4.417    1.74 |10.500    5.00 |16.583    1.96 | 22.67    1.31
              4.500    1.74 |10.583    5.00 |16.667    1.96 | 22.75    1.31
              4.583    1.74 |10.667    5.00 |16.750    1.96 | 22.83    1.31
              4.667    1.74 |10.750    5.00 |16.833    1.96 | 22.92    1.31
              4.750    1.74 |10.833    6.75 |16.917    1.96 | 23.00    1.31
              4.833    1.74 |10.917    6.75 |17.000    1.96 | 23.08    1.31
              4.917    1.74 |11.000    6.75 |17.083    1.96 | 23.17    1.31
              5.000    1.74 |11.083    6.75 |17.167    1.96 | 23.25    1.31
              5.083    1.74 |11.167    6.75 |17.250    1.96 | 23.33    1.31
              5.167    1.74 |11.250    6.75 |17.333    1.96 | 23.42    1.31
              5.250    1.74 |11.333   10.44 |17.417    1.96 | 23.50    1.31
              5.333    1.74 |11.417   10.44 |17.500    1.96 | 23.58    1.31
              5.417    1.74 |11.500   10.44 |17.583    1.96 | 23.67    1.31
              5.500    1.74 |11.583   10.44 |17.667    1.96 | 23.75    1.31
              5.583    1.74 |11.667   10.44 |17.750    1.96 | 23.83    1.31
              5.667    1.74 |11.750   10.44 |17.833    1.96 | 23.92    1.31
              5.750    1.74 |11.833   32.20 |17.917    1.96 | 24.00    1.31
              5.833    1.74 |11.917   32.20 |18.000    1.96 | 24.08    1.31
              5.917    1.74 |12.000   32.20 |18.083    1.96 | 24.17    1.31
              6.000    1.74 |12.083  133.16 |18.167    1.96 | 24.25    1.31
              6.083    1.74 |12.167  133.17 |18.250    1.96 |

     Max.Eff.Inten.(mm/hr)=     133.17       251.52
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.43 (ii)    6.31 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.33         0.15
                                                            *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.06          0.093 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     107.80        77.75          86.76
     TOTAL RAINFALL   (mm)=     108.80       108.80         108.80
     RUNOFF COEFFICIENT   =       0.99         0.71           0.80

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

```
        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

 --------------------
 | ADD HYD  (  0179)|
 |   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
 --------------------        (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (  0188):     2.53   0.295    12.33    52.19
       + ID2= 2 (  0252):     0.32   0.093    12.25    86.76
         ==================================================
         ID = 3 (  0179):     2.84   0.351    12.33    56.03

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
 ------------------------------------------------------------------------------
 --------------------
 | CALIB            |
 | STANDHYD (  0106)|   Area    (ha)=   0.51
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
 --------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.28          0.23
     Dep. Storage     (mm)=        1.00          5.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       58.22         40.00
     Mannings n           =       0.013         0.250

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


                           ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN | TIME    RAIN |'  TIME    RAIN | TIME    RAIN
                hrs   mm/hr |  hrs   mm/hr |'   hrs   mm/hr |  hrs   mm/hr
              0.083    0.00 | 6.167    1.74 |12.250  133.17 | 18.33    1.96
              0.167    0.00 | 6.250    1.74 |12.333   15.68 | 18.42    1.96
              0.250    0.00 | 6.333    1.96 |12.417   15.67 | 18.50    1.96
              0.333    1.20 | 6.417    1.96 |12.500   15.67 | 18.58    1.96
              0.417    1.20 | 6.500    1.96 |12.583   15.67 | 18.67    1.96
              0.500    1.20 | 6.583    1.96 |12.667   15.67 | 18.75    1.96
              0.583    1.20 | 6.667    1.96 |12.750   15.67 | 18.83    1.96
              0.667    1.20 | 6.750    1.96 |12.833    8.05 | 18.92    1.96
              0.750    1.20 | 6.833    1.96 |12.917    8.05 | 19.00    1.96
              0.833    1.20 | 6.917    1.96 |13.000    8.05 | 19.08    1.96
              0.917    1.20 | 7.000    1.96 |13.083    8.05 | 19.17    1.96
              1.000    1.20 | 7.083    1.96 |13.167    8.05 | 19.25    1.96
              1.083    1.20 | 7.167    1.96 |13.250    8.05 | 19.33    1.96
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              1.167    1.20 | 7.250    1.96 |13.333    5.88 | 19.42    1.96
              1.250    1.20 | 7.333    2.39 |13.417    5.88 | 19.50    1.96
              1.333    1.20 | 7.417    2.39 |13.500    5.88 | 19.58    1.96
              1.417    1.20 | 7.500    2.39 |13.583    5.88 | 19.67    1.96
              1.500    1.20 | 7.583    2.39 |13.667    5.88 | 19.75    1.96
              1.583    1.20 | 7.667    2.39 |13.750    5.88 | 19.83    1.96
              1.667    1.20 | 7.750    2.39 |13.833    4.57 | 19.92    1.96
              1.750    1.20 | 7.833    2.39 |13.917    4.57 | 20.00    1.96
              1.833    1.20 | 7.917    2.39 |14.000    4.57 | 20.08    1.96
              1.917    1.20 | 8.000    2.39 |14.083    4.57 | 20.17    1.96
              2.000    1.20 | 8.083    2.39 |14.167    4.57 | 20.25    1.96
              2.083    1.20 | 8.167    2.39 |14.250    4.57 | 20.33    1.31
              2.167    1.20 | 8.250    2.39 |14.333    3.26 | 20.42    1.31
              2.250    1.20 | 8.333    2.83 |14.417    3.26 | 20.50    1.31
              2.333    1.41 | 8.417    2.83 |14.500    3.26 | 20.58    1.31
              2.417    1.41 | 8.500    2.83 |14.583    3.26 | 20.67    1.31
              2.500    1.41 | 8.583    2.83 |14.667    3.26 | 20.75    1.31
              2.583    1.41 | 8.667    2.83 |14.750    3.26 | 20.83    1.31
              2.667    1.41 | 8.750    2.83 |14.833    3.26 | 20.92    1.31
              2.750    1.41 | 8.833    3.05 |14.917    3.26 | 21.00    1.31
              2.833    1.41 | 8.917    3.05 |15.000    3.26 | 21.08    1.31
              2.917    1.41 | 9.000    3.05 |15.083    3.26 | 21.17    1.31
              3.000    1.41 | 9.083    3.05 |15.167    3.26 | 21.25    1.31
              3.083    1.41 | 9.167    3.05 |15.250    3.26 | 21.33    1.31
              3.167    1.41 | 9.250    3.05 |15.333    3.26 | 21.42    1.31
              3.250    1.41 | 9.333    3.48 |15.417    3.26 | 21.50    1.31
              3.333    1.41 | 9.417    3.48 |15.500    3.26 | 21.58    1.31
              3.417    1.41 | 9.500    3.48 |15.583    3.26 | 21.67    1.31
              3.500    1.41 | 9.583    3.48 |15.667    3.26 | 21.75    1.31
              3.583    1.41 | 9.667    3.48 |15.750    3.26 | 21.83    1.31
              3.667    1.41 | 9.750    3.48 |15.833    3.26 | 21.92    1.31
              3.750    1.41 | 9.833    3.92 |15.917    3.26 | 22.00    1.31
              3.833    1.41 | 9.917    3.92 |16.000    3.26 | 22.08    1.31
              3.917    1.41 |10.000    3.92 |16.083    3.26 | 22.17    1.31
              4.000    1.41 |10.083    3.92 |16.167    3.26 | 22.25    1.31
              4.083    1.41 |10.167    3.92 |16.250    3.26 | 22.33    1.31
              4.167    1.41 |10.250    3.92 |16.333    1.96 | 22.42    1.31
              4.250    1.41 |10.333    5.00 |16.417    1.96 | 22.50    1.31
              4.333    1.74 |10.417    5.00 |16.500    1.96 | 22.58    1.31
              4.417    1.74 |10.500    5.00 |16.583    1.96 | 22.67    1.31
              4.500    1.74 |10.583    5.00 |16.667    1.96 | 22.75    1.31
              4.583    1.74 |10.667    5.00 |16.750    1.96 | 22.83    1.31
              4.667    1.74 |10.750    5.00 |16.833    1.96 | 22.92    1.31
              4.750    1.74 |10.833    6.75 |16.917    1.96 | 23.00    1.31
              4.833    1.74 |10.917    6.75 |17.000    1.96 | 23.08    1.31
              4.917    1.74 |11.000    6.75 |17.083    1.96 | 23.17    1.31
              5.000    1.74 |11.083    6.75 |17.167    1.96 | 23.25    1.31
              5.083    1.74 |11.167    6.75 |17.250    1.96 | 23.33    1.31
              5.167    1.74 |11.250    6.75 |17.333    1.96 | 23.42    1.31
              5.250    1.74 |11.333   10.44 |17.417    1.96 | 23.50    1.31
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              5.333    1.74 |11.417   10.44 |17.500    1.96 | 23.58    1.31
              5.417    1.74 |11.500   10.44 |17.583    1.96 | 23.67    1.31
              5.500    1.74 |11.583   10.44 |17.667    1.96 | 23.75    1.31
              5.583    1.74 |11.667   10.44 |17.750    1.96 | 23.83    1.31
              5.667    1.74 |11.750   10.44 |17.833    1.96 | 23.92    1.31
              5.750    1.74 |11.833   32.20 |17.917    1.96 | 24.00    1.31
              5.833    1.74 |11.917   32.20 |18.000    1.96 | 24.08    1.31
              5.917    1.74 |12.000   32.20 |18.083    1.96 | 24.17    1.31
              6.000    1.74 |12.083  133.16 |18.167    1.96 | 24.25    1.31
              6.083    1.74 |12.167  133.17 |18.250    1.96 |

     Max.Eff.Inten.(mm/hr)=     133.17       243.49
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.65 (ii)    6.59 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.14
                                                            *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.13          0.131 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     107.80        77.15          77.45
     TOTAL RAINFALL   (mm)=     108.80       108.80         108.80
     RUNOFF COEFFICIENT   =       0.99         0.71           0.71

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. 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(  0282)|     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   |   0.1000     0.0020

                                 AREA     QPEAK      TPEAK       R.V.
                                 (ha)     (cms)      (hrs)       (mm)
    INFLOW : ID= 2 (  0106)      0.508      0.131      12.25       77.45
    OUTFLOW: ID= 1 (  0282)      0.508      0.122      12.33       77.45

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 92.73
                    TIME SHIFT OF PEAK FLOW         (min)=  5.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0025
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 --------------------
 | CALIB            |
 | STANDHYD (  0245)|   Area    (ha)=   0.58
 |ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
 --------------------
                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        0.32          0.26
     Dep. Storage     (mm)=        1.00          5.00
     Average Slope     (%)=        1.00          2.00
     Length            (m)=       62.24         40.00
     Mannings n           =       0.013         0.250

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


                           ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN | TIME    RAIN |'  TIME    RAIN | TIME    RAIN
                hrs   mm/hr |  hrs   mm/hr |'   hrs   mm/hr |  hrs   mm/hr
              0.083    0.00 | 6.167    1.74 |12.250  133.17 | 18.33    1.96
              0.167    0.00 | 6.250    1.74 |12.333   15.68 | 18.42    1.96
              0.250    0.00 | 6.333    1.96 |12.417   15.67 | 18.50    1.96
              0.333    1.20 | 6.417    1.96 |12.500   15.67 | 18.58    1.96
              0.417    1.20 | 6.500    1.96 |12.583   15.67 | 18.67    1.96
              0.500    1.20 | 6.583    1.96 |12.667   15.67 | 18.75    1.96
              0.583    1.20 | 6.667    1.96 |12.750   15.67 | 18.83    1.96
              0.667    1.20 | 6.750    1.96 |12.833    8.05 | 18.92    1.96
              0.750    1.20 | 6.833    1.96 |12.917    8.05 | 19.00    1.96
              0.833    1.20 | 6.917    1.96 |13.000    8.05 | 19.08    1.96
              0.917    1.20 | 7.000    1.96 |13.083    8.05 | 19.17    1.96
              1.000    1.20 | 7.083    1.96 |13.167    8.05 | 19.25    1.96
              1.083    1.20 | 7.167    1.96 |13.250    8.05 | 19.33    1.96
              1.167    1.20 | 7.250    1.96 |13.333    5.88 | 19.42    1.96
              1.250    1.20 | 7.333    2.39 |13.417    5.88 | 19.50    1.96
              1.333    1.20 | 7.417    2.39 |13.500    5.88 | 19.58    1.96
              1.417    1.20 | 7.500    2.39 |13.583    5.88 | 19.67    1.96
              1.500    1.20 | 7.583    2.39 |13.667    5.88 | 19.75    1.96
              1.583    1.20 | 7.667    2.39 |13.750    5.88 | 19.83    1.96
              1.667    1.20 | 7.750    2.39 |13.833    4.57 | 19.92    1.96
              1.750    1.20 | 7.833    2.39 |13.917    4.57 | 20.00    1.96
              1.833    1.20 | 7.917    2.39 |14.000    4.57 | 20.08    1.96
              1.917    1.20 | 8.000    2.39 |14.083    4.57 | 20.17    1.96
              2.000    1.20 | 8.083    2.39 |14.167    4.57 | 20.25    1.96
              2.083    1.20 | 8.167    2.39 |14.250    4.57 | 20.33    1.31
              2.167    1.20 | 8.250    2.39 |14.333    3.26 | 20.42    1.31
              2.250    1.20 | 8.333    2.83 |14.417    3.26 | 20.50    1.31
              2.333    1.41 | 8.417    2.83 |14.500    3.26 | 20.58    1.31
              2.417    1.41 | 8.500    2.83 |14.583    3.26 | 20.67    1.31
              2.500    1.41 | 8.583    2.83 |14.667    3.26 | 20.75    1.31
              2.583    1.41 | 8.667    2.83 |14.750    3.26 | 20.83    1.31
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              2.667    1.41 | 8.750    2.83 |14.833    3.26 | 20.92    1.31
              2.750    1.41 | 8.833    3.05 |14.917    3.26 | 21.00    1.31
              2.833    1.41 | 8.917    3.05 |15.000    3.26 | 21.08    1.31
              2.917    1.41 | 9.000    3.05 |15.083    3.26 | 21.17    1.31
              3.000    1.41 | 9.083    3.05 |15.167    3.26 | 21.25    1.31
              3.083    1.41 | 9.167    3.05 |15.250    3.26 | 21.33    1.31
              3.167    1.41 | 9.250    3.05 |15.333    3.26 | 21.42    1.31
              3.250    1.41 | 9.333    3.48 |15.417    3.26 | 21.50    1.31
              3.333    1.41 | 9.417    3.48 |15.500    3.26 | 21.58    1.31
              3.417    1.41 | 9.500    3.48 |15.583    3.26 | 21.67    1.31
              3.500    1.41 | 9.583    3.48 |15.667    3.26 | 21.75    1.31
              3.583    1.41 | 9.667    3.48 |15.750    3.26 | 21.83    1.31
              3.667    1.41 | 9.750    3.48 |15.833    3.26 | 21.92    1.31
              3.750    1.41 | 9.833    3.92 |15.917    3.26 | 22.00    1.31
              3.833    1.41 | 9.917    3.92 |16.000    3.26 | 22.08    1.31
              3.917    1.41 |10.000    3.92 |16.083    3.26 | 22.17    1.31
              4.000    1.41 |10.083    3.92 |16.167    3.26 | 22.25    1.31
              4.083    1.41 |10.167    3.92 |16.250    3.26 | 22.33    1.31
              4.167    1.41 |10.250    3.92 |16.333    1.96 | 22.42    1.31
              4.250    1.41 |10.333    5.00 |16.417    1.96 | 22.50    1.31
              4.333    1.74 |10.417    5.00 |16.500    1.96 | 22.58    1.31
              4.417    1.74 |10.500    5.00 |16.583    1.96 | 22.67    1.31
              4.500    1.74 |10.583    5.00 |16.667    1.96 | 22.75    1.31
              4.583    1.74 |10.667    5.00 |16.750    1.96 | 22.83    1.31
              4.667    1.74 |10.750    5.00 |16.833    1.96 | 22.92    1.31
              4.750    1.74 |10.833    6.75 |16.917    1.96 | 23.00    1.31
              4.833    1.74 |10.917    6.75 |17.000    1.96 | 23.08    1.31
              4.917    1.74 |11.000    6.75 |17.083    1.96 | 23.17    1.31
              5.000    1.74 |11.083    6.75 |17.167    1.96 | 23.25    1.31
              5.083    1.74 |11.167    6.75 |17.250    1.96 | 23.33    1.31
              5.167    1.74 |11.250    6.75 |17.333    1.96 | 23.42    1.31
              5.250    1.74 |11.333   10.44 |17.417    1.96 | 23.50    1.31
              5.333    1.74 |11.417   10.44 |17.500    1.96 | 23.58    1.31
              5.417    1.74 |11.500   10.44 |17.583    1.96 | 23.67    1.31
              5.500    1.74 |11.583   10.44 |17.667    1.96 | 23.75    1.31
              5.583    1.74 |11.667   10.44 |17.750    1.96 | 23.83    1.31
              5.667    1.74 |11.750   10.44 |17.833    1.96 | 23.92    1.31
              5.750    1.74 |11.833   32.20 |17.917    1.96 | 24.00    1.31
              5.833    1.74 |11.917   32.20 |18.000    1.96 | 24.08    1.31
              5.917    1.74 |12.000   32.20 |18.083    1.96 | 24.17    1.31
              6.000    1.74 |12.083  133.16 |18.167    1.96 | 24.25    1.31
              6.083    1.74 |12.167  133.17 |18.250    1.96 |

     Max.Eff.Inten.(mm/hr)=     133.17       243.49
                over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.71 (ii)    6.66 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.14
                                                            *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.15          0.150 (iii)
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     TIME TO PEAK    (hrs)=      12.25        12.25          12.25
     RUNOFF VOLUME    (mm)=     107.80        77.15          77.45
     TOTAL RAINFALL   (mm)=     108.80       108.80         108.80
     RUNOFF COEFFICIENT   =       0.99         0.71           0.71

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN*  =  74.0    Ia = Dep. 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  (  0246)|
 |   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
 --------------------        (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (  0245):     0.58   0.150    12.25    77.45
       + ID2= 2 (  0282):     0.51   0.122    12.33    77.45
         ==================================================
         ID = 3 (  0246):     1.09   0.261    12.25    77.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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 --------------------
 | CALIB            |
 | NASHYD   (  0302)|   Area    (ha)=   0.78   Curve Number   (CN)= 78.5
 |ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
 --------------------   U.H. Tp(hrs)=   0.20

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


                           ---- TRANSFORMED HYETOGRAPH ----
               TIME    RAIN | TIME    RAIN |'  TIME    RAIN | TIME    RAIN
                hrs   mm/hr |  hrs   mm/hr |'   hrs   mm/hr |  hrs   mm/hr
              0.083    0.00 | 6.167    1.74 |12.250  133.17 | 18.33    1.96
              0.167    0.00 | 6.250    1.74 |12.333   15.68 | 18.42    1.96
              0.250    0.00 | 6.333    1.96 |12.417   15.67 | 18.50    1.96
              0.333    1.20 | 6.417    1.96 |12.500   15.67 | 18.58    1.96
              0.417    1.20 | 6.500    1.96 |12.583   15.67 | 18.67    1.96
              0.500    1.20 | 6.583    1.96 |12.667   15.67 | 18.75    1.96
              0.583    1.20 | 6.667    1.96 |12.750   15.67 | 18.83    1.96
              0.667    1.20 | 6.750    1.96 |12.833    8.05 | 18.92    1.96
              0.750    1.20 | 6.833    1.96 |12.917    8.05 | 19.00    1.96
              0.833    1.20 | 6.917    1.96 |13.000    8.05 | 19.08    1.96
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    0.917    1.20 |  7.000    1.96 | 13.083    8.05 | 19.167    1.96
    1.000    1.20 |  7.083    1.96 | 13.167    8.05 | 19.250    1.96
    1.083    1.20 |  7.167    1.96 | 13.250    8.05 | 19.333    1.96
    1.167    1.20 |  7.250    1.96 | 13.333    5.88 | 19.42     1.96
    1.250    1.20 |  7.333    2.39 | 13.417    5.88 | 19.50     1.96
    1.333    1.20 |  7.417    2.39 | 13.500    5.88 | 19.58     1.96
    1.417    1.20 |  7.500    2.39 | 13.583    5.88 | 19.67     1.96
    1.500    1.20 |  7.583    2.39 | 13.667    5.88 | 19.75     1.96
    1.583    1.20 |  7.667    2.39 | 13.750    5.88 | 19.83     1.96
    1.667    1.20 |  7.750    2.39 | 13.833    4.57 | 19.92     1.96
    1.750    1.20 |  7.833    2.39 | 13.917    4.57 | 20.00     1.96
    1.833    1.20 |  7.917    2.39 | 14.000    4.57 | 20.08     1.96
    1.917    1.20 |  8.000    2.39 | 14.083    4.57 | 20.17     1.96
    2.000    1.20 |  8.083    2.39 | 14.167    4.57 | 20.25     1.96
    2.083    1.20 |  8.167    2.39 | 14.250    4.57 | 20.33     1.31
    2.167    1.20 |  8.250    2.39 | 14.333    3.26 | 20.42     1.31
    2.250    1.20 |  8.333    2.83 | 14.417    3.26 | 20.50     1.31
    2.333    1.41 |  8.417    2.83 | 14.500    3.26 | 20.58     1.31
    2.417    1.41 |  8.500    2.83 | 14.583    3.26 | 20.67     1.31
    2.500    1.41 |  8.583    2.83 | 14.667    3.26 | 20.75     1.31
    2.583    1.41 |  8.667    2.83 | 14.750    3.26 | 20.83     1.31
    2.667    1.41 |  8.750    2.83 | 14.833    3.26 | 20.92     1.31
    2.750    1.41 |  8.833    3.05 | 14.917    3.26 | 21.00     1.31
    2.833    1.41 |  8.917    3.05 | 15.000    3.26 | 21.08     1.31
    2.917    1.41 |  9.000    3.05 | 15.083    3.26 | 21.17     1.31
    3.000    1.41 |  9.083    3.05 | 15.167    3.26 | 21.25     1.31
    3.083    1.41 |  9.167    3.05 | 15.250    3.26 | 21.33     1.31
    3.167    1.41 |  9.250    3.05 | 15.333    3.26 | 21.42     1.31
    3.250    1.41 |  9.333    3.48 | 15.417    3.26 | 21.50     1.31
    3.333    1.41 |  9.417    3.48 | 15.500    3.26 | 21.58     1.31
    3.417    1.41 |  9.500    3.48 | 15.583    3.26 | 21.67     1.31
    3.500    1.41 |  9.583    3.48 | 15.667    3.26 | 21.75     1.31
    3.583    1.41 |  9.667    3.48 | 15.750    3.26 | 21.83     1.31
    3.667    1.41 |  9.750    3.48 | 15.833    3.26 | 21.92     1.31
    3.750    1.41 |  9.833    3.92 | 15.917    3.26 | 22.00     1.31
    3.833    1.41 |  9.917    3.92 | 16.000    3.26 | 22.08     1.31
    3.917    1.41 | 10.000    3.92 | 16.083    3.26 | 22.17     1.31
    4.000    1.41 | 10.083    3.92 | 16.167    3.26 | 22.25     1.31
    4.083    1.41 | 10.167    3.92 | 16.250    3.26 | 22.33     1.31
    4.167    1.41 | 10.250    3.92 | 16.333    1.96 | 22.42     1.31
    4.250    1.41 | 10.333    5.00 | 16.417    1.96 | 22.50     1.31
    4.333    1.74 | 10.417    5.00 | 16.500    1.96 | 22.58     1.31
    4.417    1.74 | 10.500    5.00 | 16.583    1.96 | 22.67     1.31
    4.500    1.74 | 10.583    5.00 | 16.667    1.96 | 22.75     1.31
    4.583    1.74 | 10.667    5.00 | 16.750    1.96 | 22.83     1.31
    4.667    1.74 | 10.750    5.00 | 16.833    1.96 | 22.92     1.31
    4.750    1.74 | 10.833    6.75 | 16.917    1.96 | 23.00     1.31
    4.833    1.74 | 10.917    6.75 | 17.000    1.96 | 23.08     1.31
    4.917    1.74 | 11.000    6.75 | 17.083    1.96 | 23.17     1.31
    5.000    1.74 | 11.083    6.75 | 17.167    1.96 | 23.25     1.31
    5.083    1.74 | 11.167    6.75 | 17.250    1.96 | 23.33     1.31
    5.167    1.74 | 11.250    6.75 | 17.333    1.96 | 23.42     1.31
    5.250    1.74 | 11.333   10.44 | 17.417    1.96 | 23.50     1.31
    5.333    1.74 | 11.417   10.44 | 17.500    1.96 | 23.58     1.31
    5.417    1.74 | 11.500   10.44 | 17.583    1.96 | 23.67     1.31
    5.500    1.74 | 11.583   10.44 | 17.667    1.96 | 23.75     1.31
    5.583    1.74 | 11.667   10.44 | 17.750    1.96 | 23.83     1.31
    5.667    1.74 | 11.750   10.44 | 17.833    1.96 | 23.92     1.31
    5.750    1.74 | 11.833   32.20 | 17.917    1.96 | 24.00     1.31
    5.833    1.74 | 11.917   32.20 | 18.000    1.96 | 24.08     1.31
    5.917    1.74 | 12.000   32.20 | 18.083    1.96 | 24.17     1.31
    6.000    1.74 | 12.083  133.16 | 18.167    1.96 | 24.25     1.31
    6.083    1.74 | 12.167  133.17 | 18.250    1.96 |

    Unit Hyd Qpeak  (cms)=   0.149

    PEAK FLOW       (cms)=   0.127 (i)
    TIME TO PEAK    (hrs)=  12.333
    RUNOFF VOLUME    (mm)=  62.532
    TOTAL RAINFALL   (mm)= 108.800
    RUNOFF COEFFICIENT   =   0.575

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

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-------------------
| CALIB             |
| STANDHYD (  0019)|   Area    (ha)=   0.50
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.28          0.22
    Dep. Storage     (mm)=       1.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length           (m)=      57.74         40.00
    Mannings n             =    0.013         0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
  TIME   RAIN |  TIME   RAIN |  TIME   RAIN |  TIME   RAIN
   hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr
 0.083   0.00 |  6.167   1.74 | 12.250  133.17 | 18.33   1.96
 0.167   0.00 |  6.250   1.74 | 12.333   15.68 | 18.42   1.96
 0.250   0.00 |  6.333   1.96 | 12.417   15.67 | 18.50   1.96
 0.333   1.20 |  6.417   1.96 | 12.500   15.67 | 18.58   1.96
 0.417   1.20 |  6.500   1.96 | 12.583   15.67 | 18.67   1.96
 0.500   1.20 |  6.583   1.96 | 12.667   15.67 | 18.75   1.96
 0.583   1.20 |  6.667   1.96 | 12.750   15.67 | 18.83   1.96
 0.667   1.20 |  6.750   1.96 | 12.833    8.05 | 18.92   1.96
 0.750   1.20 |  6.833   1.96 | 12.917    8.05 | 19.00   1.96
 0.833   1.20 |  6.917   1.96 | 13.000    8.05 | 19.08   1.96
 0.917   1.20 |  7.000   1.96 | 13.083    8.05 | 19.17   1.96
 1.000   1.20 |  7.083   1.96 | 13.167    8.05 | 19.25   1.96
 1.083   1.20 |  7.167   1.96 | 13.250    8.05 | 19.33   1.96
 1.167   1.20 |  7.250   1.96 | 13.333    5.88 | 19.42   1.96
 1.250   1.20 |  7.333   2.39 | 13.417    5.88 | 19.50   1.96
 1.333   1.20 |  7.417   2.39 | 13.500    5.88 | 19.58   1.96
 1.417   1.20 |  7.500   2.39 | 13.583    5.88 | 19.67   1.96
 1.500   1.20 |  7.583   2.39 | 13.667    5.88 | 19.75   1.96
 1.583   1.20 |  7.667   2.39 | 13.750    5.88 | 19.83   1.96
 1.667   1.20 |  7.750   2.39 | 13.833    4.57 | 19.92   1.96
 1.750   1.20 |  7.833   2.39 | 13.917    4.57 | 20.00   1.96
 1.833   1.20 |  7.917   2.39 | 14.000    4.57 | 20.08   1.96
 1.917   1.20 |  8.000   2.39 | 14.083    4.57 | 20.17   1.96
 2.000   1.20 |  8.083   2.39 | 14.167    4.57 | 20.25   1.96
 2.083   1.20 |  8.167   2.39 | 14.250    4.57 | 20.33   1.31
 2.167   1.20 |  8.250   2.39 | 14.333    3.26 | 20.42   1.31
 2.250   1.20 |  8.333   2.83 | 14.417    3.26 | 20.50   1.31
 2.333   1.41 |  8.417   2.83 | 14.500    3.26 | 20.58   1.31
 2.417   1.41 |  8.500   2.83 | 14.583    3.26 | 20.67   1.31
 2.500   1.41 |  8.583   2.83 | 14.667    3.26 | 20.75   1.31
 2.583   1.41 |  8.667   2.83 | 14.750    3.26 | 20.83   1.31
 2.667   1.41 |  8.750   2.83 | 14.833    3.26 | 20.92   1.31
 2.750   1.41 |  8.833   3.05 | 14.917    3.26 | 21.00   1.31
 2.833   1.41 |  8.917   3.05 | 15.000    3.26 | 21.08   1.31
 2.917   1.41 |  9.000   3.05 | 15.083    3.26 | 21.17   1.31
 3.000   1.41 |  9.083   3.05 | 15.167    3.26 | 21.25   1.31
 3.083   1.41 |  9.167   3.05 | 15.250    3.26 | 21.33   1.31
 3.167   1.41 |  9.250   3.05 | 15.333    3.26 | 21.42   1.31
 3.250   1.41 |  9.333   3.48 | 15.417    3.26 | 21.50   1.31
 3.333   1.41 |  9.417   3.48 | 15.500    3.26 | 21.58   1.31
 3.417   1.41 |  9.500   3.48 | 15.583    3.26 | 21.67   1.31
 3.500   1.41 |  9.583   3.48 | 15.667    3.26 | 21.75   1.31
 3.583   1.41 |  9.667   3.48 | 15.750    3.26 | 21.83   1.31
 3.667   1.41 |  9.750   3.48 | 15.833    3.26 | 21.92   1.31
 3.750   1.41 |  9.833   3.92 | 15.917    3.26 | 22.00   1.31
 3.833   1.41 |  9.917   3.92 | 16.000    3.26 | 22.08   1.31
 3.917   1.41 | 10.000   3.92 | 16.083    3.26 | 22.17   1.31
 4.000   1.41 | 10.083   3.92 | 16.167    3.26 | 22.25   1.31
 4.083   1.41 | 10.167   3.92 | 16.250    3.26 | 22.33   1.31
 4.167   1.41 | 10.250   3.92 | 16.333    1.96 | 22.42   1.31
 4.250   1.41 | 10.333   5.00 | 16.417    1.96 | 22.50   1.31
 4.333   1.74 | 10.417   5.00 | 16.500    1.96 | 22.58   1.31
 4.417   1.74 | 10.500   5.00 | 16.583    1.96 | 22.67   1.31
 4.500   1.74 | 10.583   5.00 | 16.667    1.96 | 22.75   1.31
 4.583   1.74 | 10.667   5.00 | 16.750    1.96 | 22.83   1.31
 4.667   1.74 | 10.750   5.00 | 16.833    1.96 | 22.92   1.31
 4.750   1.74 | 10.833   6.75 | 16.917    1.96 | 23.00   1.31
 4.833   1.74 | 10.917   6.75 | 17.000    1.96 | 23.08   1.31
 4.917   1.74 | 11.000   6.75 | 17.083    1.96 | 23.17   1.31
 5.000   1.74 | 11.083   6.75 | 17.167    1.96 | 23.25   1.31
 5.083   1.74 | 11.167   6.75 | 17.250    1.96 | 23.33   1.31
 5.167   1.74 | 11.250   6.75 | 17.333    1.96 | 23.42   1.31
 5.250   1.74 | 11.333   10.44 | 17.417    1.96 | 23.50   1.31
 5.333   1.74 | 11.417   10.44 | 17.500    1.96 | 23.58   1.31
 5.417   1.74 | 11.500   10.44 | 17.583    1.96 | 23.67   1.31
 5.500   1.74 | 11.583   10.44 | 17.667    1.96 | 23.75   1.31
 5.583   1.74 | 11.667   10.44 | 17.750    1.96 | 23.83   1.31
 5.667   1.74 | 11.750   10.44 | 17.833    1.96 | 23.92   1.31
 5.750   1.74 | 11.833   32.20 | 17.917    1.96 | 24.00   1.31
 5.833   1.74 | 11.917   32.20 | 18.000    1.96 | 24.08   1.31
 5.917   1.74 | 12.000   32.20 | 18.083    1.96 | 24.17   1.31
 6.000   1.74 | 12.083  133.16 | 18.167    1.96 | 24.25   1.31
 6.083   1.74 | 12.167  133.17 | 18.250    1.96 |

    Max.Eff.Inten.(mm/hr)=     133.17       243.49
              over (min)        5.00        10.00
    Storage Coeff.  (min)=     1.64 (ii)    6.58 (ii)
    Unit Hyd. Tpeak (min)=     5.00        10.00
    Unit Hyd. peak  (cms)=     0.32         0.14
                                                    *TOTALS*
    PEAK FLOW       (cms)=     0.00         0.13          0.129 (iii)
    TIME TO PEAK    (hrs)=    12.25        12.25         12.25
    RUNOFF VOLUME    (mm)=   107.80        77.15         77.45
    TOTAL RAINFALL   (mm)=   108.80       108.80        108.80
    RUNOFF COEFFICIENT   =     0.99         0.71          0.71

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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  (  0248)|
|   1 +  2 =  3    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
     ID1= 1 (  0019):      0.50    0.129     12.25     77.45
   + ID2= 2 (  0302):      0.78    0.127     12.33     62.53
     ==========================================================
     ID = 3 (  0248):      1.28    0.248     12.25     68.36
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    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB             |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.90          0.38
    Dep. Storage     (mm)=       1.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length           (m)=      92.38         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   0.00 |  6.167   1.74 | 12.250  133.17 | 18.33   1.96
 0.167   0.00 |  6.250   1.74 | 12.333   15.68 | 18.42   1.96
 0.250   0.00 |  6.333   1.96 | 12.417   15.67 | 18.50   1.96
 0.333   1.20 |  6.417   1.96 | 12.500   15.67 | 18.58   1.96
 0.417   1.20 |  6.500   1.96 | 12.583   15.67 | 18.67   1.96
 0.500   1.20 |  6.583   1.96 | 12.667   15.67 | 18.75   1.96
 0.583   1.20 |  6.667   1.96 | 12.750   15.67 | 18.83   1.96
 0.667   1.20 |  6.750   1.96 | 12.833    8.05 | 18.92   1.96
 0.750   1.20 |  6.833   1.96 | 12.917    8.05 | 19.00   1.96
 0.833   1.20 |  6.917   1.96 | 13.000    8.05 | 19.08   1.96
 0.917   1.20 |  7.000   1.96 | 13.083    8.05 | 19.17   1.96
 1.000   1.20 |  7.083   1.96 | 13.167    8.05 | 19.25   1.96
 1.083   1.20 |  7.167   1.96 | 13.250    8.05 | 19.33   1.96
 1.167   1.20 |  7.250   1.96 | 13.333    5.88 | 19.42   1.96
 1.250   1.20 |  7.333   2.39 | 13.417    5.88 | 19.50   1.96
 1.333   1.20 |  7.417   2.39 | 13.500    5.88 | 19.58   1.96
 1.417   1.20 |  7.500   2.39 | 13.583    5.88 | 19.67   1.96
 1.500   1.20 |  7.583   2.39 | 13.667    5.88 | 19.75   1.96
 1.583   1.20 |  7.667   2.39 | 13.750    5.88 | 19.83   1.96
 1.667   1.20 |  7.750   2.39 | 13.833    4.57 | 19.92   1.96
 1.750   1.20 |  7.833   2.39 | 13.917    4.57 | 20.00   1.96
 1.833   1.20 |  7.917   2.39 | 14.000    4.57 | 20.08   1.96
 1.917   1.20 |  8.000   2.39 | 14.083    4.57 | 20.17   1.96
 2.000   1.20 |  8.083   2.39 | 14.167    4.57 | 20.25   1.96
 2.083   1.20 |  8.167   2.39 | 14.250    4.57 | 20.33   1.31
 2.167   1.20 |  8.250   2.39 | 14.333    3.26 | 20.42   1.31
 2.250   1.20 |  8.333   2.83 | 14.417    3.26 | 20.50   1.31
 2.333   1.41 |  8.417   2.83 | 14.500    3.26 | 20.58   1.31
 2.417   1.41 |  8.500   2.83 | 14.583    3.26 | 20.67   1.31
 2.500   1.41 |  8.583   2.83 | 14.667    3.26 | 20.75   1.31
 2.583   1.41 |  8.667   2.83 | 14.750    3.26 | 20.83   1.31
 2.667   1.41 |  8.750   2.83 | 14.833    3.26 | 20.92   1.31
 2.750   1.41 |  8.833   3.05 | 14.917    3.26 | 21.00   1.31
 2.833   1.41 |  8.917   3.05 | 15.000    3.26 | 21.08   1.31
 2.917   1.41 |  9.000   3.05 | 15.083    3.26 | 21.17   1.31
 3.000   1.41 |  9.083   3.05 | 15.167    3.26 | 21.25   1.31
 3.083   1.41 |  9.167   3.05 | 15.250    3.26 | 21.33   1.31
 3.167   1.41 |  9.250   3.05 | 15.333    3.26 | 21.42   1.31
 3.250   1.41 |  9.333   3.48 | 15.417    3.26 | 21.50   1.31
 3.333   1.41 |  9.417   3.48 | 15.500    3.26 | 21.58   1.31
 3.417   1.41 |  9.500   3.48 | 15.583    3.26 | 21.67   1.31
 3.500   1.41 |  9.583   3.48 | 15.667    3.26 | 21.75   1.31
 3.583   1.41 |  9.667   3.48 | 15.750    3.26 | 21.83   1.31
 3.667   1.41 |  9.750   3.48 | 15.833    3.26 | 21.92   1.31
 3.750   1.41 |  9.833   3.92 | 15.917    3.26 | 22.00   1.31
 3.833   1.41 |  9.917   3.92 | 16.000    3.26 | 22.08   1.31
 3.917   1.41 | 10.000   3.92 | 16.083    3.26 | 22.17   1.31
 4.000   1.41 | 10.083   3.92 | 16.167    3.26 | 22.25   1.31
 4.083   1.41 | 10.167   3.92 | 16.250    3.26 | 22.33   1.31
 4.167   1.41 | 10.250   3.92 | 16.333    1.96 | 22.42   1.31
 4.250   1.41 | 10.333   5.00 | 16.417    1.96 | 22.50   1.31
 4.333   1.74 | 10.417   5.00 | 16.500    1.96 | 22.58   1.31
 4.417   1.74 | 10.500   5.00 | 16.583    1.96 | 22.67   1.31
 4.500   1.74 | 10.583   5.00 | 16.667    1.96 | 22.75   1.31
 4.583   1.74 | 10.667   5.00 | 16.750    1.96 | 22.83   1.31
 4.667   1.74 | 10.750   5.00 | 16.833    1.96 | 22.92   1.31
 4.750   1.74 | 10.833   6.75 | 16.917    1.96 | 23.00   1.31
 4.833   1.74 | 10.917   6.75 | 17.000    1.96 | 23.08   1.31
 4.917   1.74 | 11.000   6.75 | 17.083    1.96 | 23.17   1.31
 5.000   1.74 | 11.083   6.75 | 17.167    1.96 | 23.25   1.31
 5.083   1.74 | 11.167   6.75 | 17.250    1.96 | 23.33   1.31
 5.167   1.74 | 11.250   6.75 | 17.333    1.96 | 23.42   1.31
 5.250   1.74 | 11.333   10.44 | 17.417    1.96 | 23.50   1.31
 5.333   1.74 | 11.417   10.44 | 17.500    1.96 | 23.58   1.31
 5.417   1.74 | 11.500   10.44 | 17.583    1.96 | 23.67   1.31
 5.500   1.74 | 11.583   10.44 | 17.667    1.96 | 23.75   1.31
 5.583   1.74 | 11.667   10.44 | 17.750    1.96 | 23.83   1.31
 5.667   1.74 | 11.750   10.44 | 17.833    1.96 | 23.92   1.31
 5.750   1.74 | 11.833   32.20 | 17.917    1.96 | 24.00   1.31
 5.833   1.74 | 11.917   32.20 | 18.000    1.96 | 24.08   1.31
 5.917   1.74 | 12.000   32.20 | 18.083    1.96 | 24.17   1.31
 6.000   1.74 | 12.083  133.16 | 18.167    1.96 | 24.25   1.31
 6.083   1.74 | 12.167  133.17 | 18.250    1.96 |

    Max.Eff.Inten.(mm/hr)=     133.17       82.62
              over (min)        5.00        10.00
    Storage Coeff.  (min)=     2.17 (ii)    6.66 (ii)
    Unit Hyd. Tpeak (min)=     5.00        10.00
    Unit Hyd. peak  (cms)=     0.31         0.14
                                                    *TOTALS*
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    PEAK FLOW       (cms)=     0.33         0.07          0.403 (iii)
    TIME TO PEAK    (hrs)=    12.25        12.25         12.25
    RUNOFF VOLUME    (mm)=   107.80        55.81         92.20
    TOTAL RAINFALL   (mm)=   108.80       108.80        108.80
    RUNOFF COEFFICIENT   =     0.99         0.51          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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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| DUHYD    (  0279)|
| Inlet Cap.= 0.270|
| #of Inlets=   1  |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK     R.V.
-------------------          (ha)     (cms)     (hrs)     (mm)
    TOTAL HYD.(ID= 1):    1.28      0.40     12.25     92.20
    ==========================================================
    MAJOR SYS.(ID= 2):    0.10      0.13     12.25     92.20
    MINOR SYS.(ID= 3):    1.18      0.27     12.08     92.20

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 | Junction Command(0303) |
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                        AREA     QPEAK    TPEAK     R.V.
                        (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 8(  0279)   0.10     0.13    12.25     92.20
  OUTFLOW: ID= 2(  0303)   0.10     0.13    12.25     92.20

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-------------------
|Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                       Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA          |  STAGE      AREA
                       (m)         (m2)          |   (m)       (m2)
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```
                        0.000      100.000        |   1.500     100.000
                        0.500      100.000        |   0.000       0.000
                        1.000      100.000        |   0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=   0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     4.64

                    ENGINEERED SOIL LAYER:
                    Soil moisture =   0.30  Depth          (m)=  0.67
                    Width       (m)=  58.00  Length       (m)=  2.00
                    Porosity      =   0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  36.30

                    STORAGE LAYER:
                    Depth       (m)=   1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=    69.60

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
      INFLOW:ID= 2     1.18         0.270          12.08         92.20
    OVERFLOW:ID= 3     1.18         0.270          12.08         77.72

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      15.71
                    Time to reach Max Ponding storage       (Hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     178.92
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     154.59
                    Maximum Engineered Soil Volume       (cu.m.)=      24.39
                    ***** After simulation, water volume is not zero.

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 | Junction Command(0277) |
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                        AREA     QPEAK    TPEAK     R.V.
                        (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 3(  0278)   1.18     0.27    12.08     77.72
  OUTFLOW: ID= 2(  0277)   1.18     0.27    12.08     77.72

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| CALIB             |
| STANDHYD (  0313)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
-------------------
                          IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       2.43          1.62
    Dep. Storage     (mm)=       5.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length           (m)=     164.25         40.00
    Mannings n             =    0.013         0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
  TIME   RAIN |  TIME   RAIN |  TIME   RAIN |  TIME   RAIN
   hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr |  hrs   mm/hr
 0.083   0.00 |  6.167   1.74 | 12.250  133.17 | 18.33   1.96
 0.167   0.00 |  6.250   1.74 | 12.333   15.68 | 18.42   1.96
 0.250   0.00 |  6.333   1.96 | 12.417   15.67 | 18.50   1.96
 0.333   1.20 |  6.417   1.96 | 12.500   15.67 | 18.58   1.96
 0.417   1.20 |  6.500   1.96 | 12.583   15.67 | 18.67   1.96
 0.500   1.20 |  6.583   1.96 | 12.667   15.67 | 18.75   1.96
 0.583   1.20 |  6.667   1.96 | 12.750   15.67 | 18.83   1.96
 0.667   1.20 |  6.750   1.96 | 12.833    8.05 | 18.92   1.96
 0.750   1.20 |  6.833   1.96 | 12.917    8.05 | 19.00   1.96
 0.833   1.20 |  6.917   1.96 | 13.000    8.05 | 19.08   1.96
 0.917   1.20 |  7.000   1.96 | 13.083    8.05 | 19.17   1.96
 1.000   1.20 |  7.083   1.96 | 13.167    8.05 | 19.25   1.96
 1.083   1.20 |  7.167   1.96 | 13.250    8.05 | 19.33   1.96
 1.167   1.20 |  7.250   1.96 | 13.333    5.88 | 19.42   1.96
 1.250   1.20 |  7.333   2.39 | 13.417    5.88 | 19.50   1.96
 1.333   1.20 |  7.417   2.39 | 13.500    5.88 | 19.58   1.96
 1.417   1.20 |  7.500   2.39 | 13.583    5.88 | 19.67   1.96
 1.500   1.20 |  7.583   2.39 | 13.667    5.88 | 19.75   1.96
 1.583   1.20 |  7.667   2.39 | 13.750    5.88 | 19.83   1.96
 1.667   1.20 |  7.750   2.39 | 13.833    4.57 | 19.92   1.96
 1.750   1.20 |  7.833   2.39 | 13.917    4.57 | 20.00   1.96
 1.833   1.20 |  7.917   2.39 | 14.000    4.57 | 20.08   1.96
 1.917   1.20 |  8.000   2.39 | 14.083    4.57 | 20.17   1.96
 2.000   1.20 |  8.083   2.39 | 14.167    4.57 | 20.25   1.96
 2.083   1.20 |  8.167   2.39 | 14.250    4.57 | 20.33   1.31
 2.167   1.20 |  8.250   2.39 | 14.333    3.26 | 20.42   1.31
 2.250   1.20 |  8.333   2.83 | 14.417    3.26 | 20.50   1.31
 2.333   1.41 |  8.417   2.83 | 14.500    3.26 | 20.58   1.31
 2.417   1.41 |  8.500   2.83 | 14.583    3.26 | 20.67   1.31
 2.500   1.41 |  8.583   2.83 | 14.667    3.26 | 20.75   1.31
 2.583   1.41 |  8.667   2.83 | 14.750    3.26 | 20.83   1.31
 2.667   1.41 |  8.750   2.83 | 14.833    3.26 | 20.92   1.31
 2.750   1.41 |  8.833   3.05 | 14.917    3.26 | 21.00   1.31
 2.833   1.41 |  8.917   3.05 | 15.000    3.26 | 21.08   1.31
 2.917   1.41 |  9.000   3.05 | 15.083    3.26 | 21.17   1.31
 3.000   1.41 |  9.083   3.05 | 15.167    3.26 | 21.25   1.31
 3.083   1.41 |  9.167   3.05 | 15.250    3.26 | 21.33   1.31
 3.167   1.41 |  9.250   3.05 | 15.333    3.26 | 21.42   1.31
 3.250   1.41 |  9.333   3.48 | 15.417    3.26 | 21.50   1.31
 3.333   1.41 |  9.417   3.48 | 15.500    3.26 | 21.58   1.31
 3.417   1.41 |  9.500   3.48 | 15.583    3.26 | 21.67   1.31
 3.500   1.41 |  9.583   3.48 | 15.667    3.26 | 21.75   1.31
 3.583   1.41 |  9.667   3.48 | 15.750    3.26 | 21.83   1.31
 3.667   1.41 |  9.750   3.48 | 15.833    3.26 | 21.92   1.31
 3.750   1.41 |  9.833   3.92 | 15.917    3.26 | 22.00   1.31
 3.833   1.41 |  9.917   3.92 | 16.000    3.26 | 22.08   1.31
 3.917   1.41 | 10.000   3.92 | 16.083    3.26 | 22.17   1.31
 4.000   1.41 | 10.083   3.92 | 16.167    3.26 | 22.25   1.31
 4.083   1.41 | 10.167   3.92 | 16.250    3.26 | 22.33   1.31
 4.167   1.41 | 10.250   3.92 | 16.333    1.96 | 22.42   1.31
 4.250   1.41 | 10.333   5.00 | 16.417    1.96 | 22.50   1.31
 4.333   1.74 | 10.417   5.00 | 16.500    1.96 | 22.58   1.31
 4.417   1.74 | 10.500   5.00 | 16.583    1.96 | 22.67   1.31
 4.500   1.74 | 10.583   5.00 | 16.667    1.96 | 22.75   1.31
 4.583   1.74 | 10.667   5.00 | 16.750    1.96 | 22.83   1.31
 4.667   1.74 | 10.750   5.00 | 16.833    1.96 | 22.92   1.31
 4.750   1.74 | 10.833   6.75 | 16.917    1.96 | 23.00   1.31
```

2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

```
     Max.Eff.Inten.(mm/hr)=     133.17        82.62
               over (min)        5.00        15.00
     Storage Coeff.  (min)=     3.07 (ii)   10.69 (ii)
     Unit Hyd. Tpeak (min)=     5.00        15.00
     Unit Hyd. peak  (cms)=     0.27         0.09
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.89         0.24          1.101 (iii)
     TIME TO PEAK    (hrs)=    12.25        12.33         12.25
```

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     RUNOFF VOLUME    (mm)=     103.80        55.81         84.60
     TOTAL RAINFALL   (mm)=     108.80       108.80        108.80
     RUNOFF COEFFICIENT   =       0.95         0.51          0.78

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN* =  74.0      Ia = Dep. 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 (  0314)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.72         0.72
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope    (%)=       0.50         2.00
     Length           (m)=      97.74        30.00
     Mannings n            =    0.013        0.250

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

                        ---- TRANSFORMED HYETOGRAPH ----
   TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
    hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
   0.083   0.00 |  6.167   1.74 | 12.250  133.17 |  18.33   1.96
   0.167   0.00 |  6.250   1.74 | 12.333   15.68 |  18.42   1.96
   0.250   0.00 |  6.333   1.96 | 12.417   15.67 |  18.50   1.96
   0.333   1.20 |  6.417   1.96 | 12.500   15.67 |  18.58   1.96
   0.417   1.20 |  6.500   1.96 | 12.583   15.67 |  18.67   1.96
   0.500   1.20 |  6.583   1.96 | 12.667   15.67 |  18.75   1.96
   0.583   1.20 |  6.667   1.96 | 12.750   15.67 |  18.83   1.96
   0.667   1.20 |  6.750   1.96 | 12.833    8.05 |  18.92   1.96
   0.750   1.20 |  6.833   1.96 | 12.917    8.05 |  19.00   1.96
   0.833   1.20 |  6.917   1.96 | 13.000    8.05 |  19.08   1.96
   0.917   1.20 |  7.000   1.96 | 13.083    8.05 |  19.17   1.96
   1.000   1.20 |  7.083   1.96 | 13.167    8.05 |  19.25   1.96
   1.083   1.20 |  7.167   1.96 | 13.250    8.05 |  19.33   1.96
   1.167   1.20 |  7.250   1.96 | 13.333    5.88 |  19.42   1.96
   1.250   1.20 |  7.333   2.39 | 13.417    5.88 |  19.50   1.96
   1.333   1.20 |  7.417   2.39 | 13.500    5.88 |  19.58   1.96
   1.417   1.20 |  7.500   2.39 | 13.583    5.88 |  19.67   1.96
   1.500   1.20 |  7.583   2.39 | 13.667    5.88 |  19.75   1.96
   1.583   1.20 |  7.667   2.39 | 13.750    5.88 |  19.83   1.96
```

1.667	1.20	7.750	2.39	13.833	4.57	19.92	1.96
1.750	1.20	7.833	2.39	13.917	4.57	20.00	1.96
1.833	1.20	7.917	2.39	14.000	4.57	20.08	1.96
1.917	1.20	8.000	2.39	14.083	4.57	20.17	1.96
2.000	1.20	8.083	2.39	14.167	4.57	20.25	1.96
2.083	1.20	8.167	2.39	14.250	4.57	20.33	1.31
2.167	1.20	8.250	2.39	14.333	3.26	20.42	1.31
2.250	1.20	8.333	2.83	14.417	3.26	20.50	1.31
2.333	1.41	8.417	2.83	14.500	3.26	20.58	1.31
2.417	1.41	8.500	2.83	14.583	3.26	20.67	1.31
2.500	1.41	8.583	2.83	14.667	3.26	20.75	1.31
2.583	1.41	8.667	2.83	14.750	3.26	20.83	1.31
2.667	1.41	8.750	2.83	14.833	3.26	20.92	1.31
2.750	1.41	8.833	3.05	14.917	3.26	21.00	1.31
2.833	1.41	8.917	3.05	15.000	3.26	21.08	1.31
2.917	1.41	9.000	3.05	15.083	3.26	21.17	1.31
3.000	1.41	9.083	3.05	15.167	3.26	21.25	1.31
3.083	1.41	9.167	3.05	15.250	3.26	21.33	1.31
3.167	1.41	9.250	3.05	15.333	3.26	21.42	1.31
3.250	1.41	9.333	3.48	15.417	3.26	21.50	1.31
3.333	1.41	9.417	3.48	15.500	3.26	21.58	1.31
3.417	1.41	9.500	3.48	15.583	3.26	21.67	1.31
3.500	1.41	9.583	3.48	15.667	3.26	21.75	1.31
3.583	1.41	9.667	3.48	15.750	3.26	21.83	1.31
3.667	1.41	9.750	3.48	15.833	3.26	21.92	1.31
3.750	1.41	9.833	3.92	15.917	3.26	22.00	1.31
3.833	1.41	9.917	3.92	16.000	3.26	22.08	1.31
3.917	1.41	10.000	3.92	16.083	3.26	22.17	1.31
4.000	1.41	10.083	3.92	16.167	3.26	22.25	1.31
4.083	1.41	10.167	3.92	16.250	3.26	22.33	1.31
4.167	1.41	10.250	3.92	16.333	1.96	22.42	1.31
4.250	1.41	10.333	5.00	16.417	1.96	22.50	1.31
4.333	1.74	10.417	5.00	16.500	1.96	22.58	1.31
4.417	1.74	10.500	5.00	16.583	1.96	22.67	1.31
4.500	1.74	10.583	5.00	16.667	1.96	22.75	1.31
4.583	1.74	10.667	5.00	16.750	1.96	22.83	1.31
4.667	1.74	10.750	5.00	16.833	1.96	22.92	1.31
4.750	1.74	10.833	6.75	16.917	1.96	23.00	1.31
4.833	1.74	10.917	6.75	17.000	1.96	23.08	1.31
4.917	1.74	11.000	6.75	17.083	1.96	23.17	1.31
5.000	1.74	11.083	6.75	17.167	1.96	23.25	1.31
5.083	1.74	11.167	6.75	17.250	1.96	23.33	1.31
5.167	1.74	11.250	6.75	17.333	1.96	23.42	1.31
5.250	1.74	11.333	10.44	17.417	1.96	23.50	1.31
5.333	1.74	11.417	10.44	17.500	1.96	23.58	1.31
5.417	1.74	11.500	10.44	17.583	1.96	23.67	1.31
5.500	1.74	11.583	10.44	17.667	1.96	23.75	1.31
5.583	1.74	11.667	10.44	17.750	1.96	23.83	1.31
5.667	1.74	11.750	10.44	17.833	1.96	23.92	1.31
5.750	1.74	11.833	32.20	17.917	1.96	24.00	1.31
5.833	1.74	11.917	32.20	18.000	1.96	24.08	1.31
5.917	1.74	12.000	32.20	18.083	1.96	24.17	1.31
6.000	1.74	12.083	133.16	18.167	1.96	24.25	1.31
6.083	1.74	12.167	133.17	18.250	1.96		

```
     Max.Eff.Inten.(mm/hr)=     133.17        82.62
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     2.77 (ii)    9.18 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.28         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=     0.26         0.12          0.383 (iii)
     TIME TO PEAK    (hrs)=    12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=   106.80        55.81         81.30
     TOTAL RAINFALL   (mm)=   108.80       108.80        108.80
     RUNOFF COEFFICIENT   =     0.98         0.51          0.75

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN* =  74.0    Ia = Dep. 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  (  0310)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0313):     4.05    1.101    12.25    84.60
     + ID2= 2 (  0314):     1.43    0.383    12.25    81.30
       ========================================================
       ID = 3 (  0310):     5.48    1.484    12.25    83.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB                |
| STANDHYD (  0315)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     10.09         4.12
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope    (%)=       1.00         2.00
     Length           (m)=     307.76        40.00
     Mannings n            =    0.013        0.250
```

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

                        ---- TRANSFORMED HYETOGRAPH ----
   TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
    hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
   0.083   0.00 |  6.167   1.74 | 12.250  133.17 |  18.33   1.96
   0.167   0.00 |  6.250   1.74 | 12.333   15.68 |  18.42   1.96
   0.250   0.00 |  6.333   1.96 | 12.417   15.67 |  18.50   1.96
   0.333   1.20 |  6.417   1.96 | 12.500   15.67 |  18.58   1.96
   0.417   1.20 |  6.500   1.96 | 12.583   15.67 |  18.67   1.96
   0.500   1.20 |  6.583   1.96 | 12.667   15.67 |  18.75   1.96
   0.583   1.20 |  6.667   1.96 | 12.750   15.67 |  18.83   1.96
   0.667   1.20 |  6.750   1.96 | 12.833    8.05 |  18.92   1.96
   0.750   1.20 |  6.833   1.96 | 12.917    8.05 |  19.00   1.96
   0.833   1.20 |  6.917   1.96 | 13.000    8.05 |  19.08   1.96
   0.917   1.20 |  7.000   1.96 | 13.083    8.05 |  19.17   1.96
   1.000   1.20 |  7.083   1.96 | 13.167    8.05 |  19.25   1.96
   1.083   1.20 |  7.167   1.96 | 13.250    8.05 |  19.33   1.96
   1.167   1.20 |  7.250   1.96 | 13.333    5.88 |  19.42   1.96
   1.250   1.20 |  7.333   2.39 | 13.417    5.88 |  19.50   1.96
   1.333   1.20 |  7.417   2.39 | 13.500    5.88 |  19.58   1.96
   1.417   1.20 |  7.500   2.39 | 13.583    5.88 |  19.67   1.96
   1.500   1.20 |  7.583   2.39 | 13.667    5.88 |  19.75   1.96
   1.583   1.20 |  7.667   2.39 | 13.750    5.88 |  19.83   1.96
   1.667   1.20 |  7.750   2.39 | 13.833    4.57 |  19.92   1.96
   1.750   1.20 |  7.833   2.39 | 13.917    4.57 |  20.00   1.96
   1.833   1.20 |  7.917   2.39 | 14.000    4.57 |  20.08   1.96
   1.917   1.20 |  8.000   2.39 | 14.083    4.57 |  20.17   1.96
   2.000   1.20 |  8.083   2.39 | 14.167    4.57 |  20.25   1.96
   2.083   1.20 |  8.167   2.39 | 14.250    4.57 |  20.33   1.31
   2.167   1.20 |  8.250   2.39 | 14.333    3.26 |  20.42   1.31
   2.250   1.20 |  8.333   2.83 | 14.417    3.26 |  20.50   1.31
   2.333   1.41 |  8.417   2.83 | 14.500    3.26 |  20.58   1.31
   2.417   1.41 |  8.500   2.83 | 14.583    3.26 |  20.67   1.31
   2.500   1.41 |  8.583   2.83 | 14.667    3.26 |  20.75   1.31
   2.583   1.41 |  8.667   2.83 | 14.750    3.26 |  20.83   1.31
   2.667   1.41 |  8.750   2.83 | 14.833    3.26 |  20.92   1.31
   2.750   1.41 |  8.833   3.05 | 14.917    3.26 |  21.00   1.31
   2.833   1.41 |  8.917   3.05 | 15.000    3.26 |  21.08   1.31
   2.917   1.41 |  9.000   3.05 | 15.083    3.26 |  21.17   1.31
   3.000   1.41 |  9.083   3.05 | 15.167    3.26 |  21.25   1.31
   3.083   1.41 |  9.167   3.05 | 15.250    3.26 |  21.33   1.31
   3.167   1.41 |  9.250   3.05 | 15.333    3.26 |  21.42   1.31
   3.250   1.41 |  9.333   3.48 | 15.417    3.26 |  21.50   1.31
   3.333   1.41 |  9.417   3.48 | 15.500    3.26 |  21.58   1.31
   3.417   1.41 |  9.500   3.48 | 15.583    3.26 |  21.67   1.31
   3.500   1.41 |  9.583   3.48 | 15.667    3.26 |  21.75   1.31
   3.583   1.41 |  9.667   3.48 | 15.750    3.26 |  21.83   1.31
   3.667   1.41 |  9.750   3.48 | 15.833    3.26 |  21.92   1.31
   3.750   1.41 |  9.833   3.92 | 15.917    3.26 |  22.00   1.31
   3.833   1.41 |  9.917   3.92 | 16.000    3.26 |  22.08   1.31
   3.917   1.41 | 10.000   3.92 | 16.083    3.26 |  22.17   1.31
   4.000   1.41 | 10.083   3.92 | 16.167    3.26 |  22.25   1.31
   4.083   1.41 | 10.167   3.92 | 16.250    3.26 |  22.33   1.31
   4.167   1.41 | 10.250   3.92 | 16.333    1.96 |  22.42   1.31
   4.250   1.41 | 10.333   5.00 | 16.417    1.96 |  22.50   1.31
   4.333   1.74 | 10.417   5.00 | 16.500    1.96 |  22.58   1.31
   4.417   1.74 | 10.500   5.00 | 16.583    1.96 |  22.67   1.31
   4.500   1.74 | 10.583   5.00 | 16.667    1.96 |  22.75   1.31
   4.583   1.74 | 10.667   5.00 | 16.750    1.96 |  22.83   1.31
   4.667   1.74 | 10.750   5.00 | 16.833    1.96 |  22.92   1.31
   4.750   1.74 | 10.833   6.75 | 16.917    1.96 |  23.00   1.31
   4.833   1.74 | 10.917   6.75 | 17.000    1.96 |  23.08   1.31
   4.917   1.74 | 11.000   6.75 | 17.083    1.96 |  23.17   1.31
   5.000   1.74 | 11.083   6.75 | 17.167    1.96 |  23.25   1.31
   5.083   1.74 | 11.167   6.75 | 17.250    1.96 |  23.33   1.31
   5.167   1.74 | 11.250   6.75 | 17.333    1.96 |  23.42   1.31
   5.250   1.74 | 11.333   10.44 | 17.417   1.96 |  23.50   1.31
   5.333   1.74 | 11.417   10.44 | 17.500   1.96 |  23.58   1.31
   5.417   1.74 | 11.500   10.44 | 17.583   1.96 |  23.67   1.31
   5.500   1.74 | 11.583   10.44 | 17.667   1.96 |  23.75   1.31
   5.583   1.74 | 11.667   10.44 | 17.750   1.96 |  23.83   1.31
   5.667   1.74 | 11.750   10.44 | 17.833   1.96 |  23.92   1.31
   5.750   1.74 | 11.833   32.20 | 17.917   1.96 |  24.00   1.31
   5.833   1.74 | 11.917   32.20 | 18.000   1.96 |  24.08   1.31
   5.917   1.74 | 12.000   32.20 | 18.083   1.96 |  24.17   1.31
   6.000   1.74 | 12.083  133.16 | 18.167   1.96 |  24.25   1.31
   6.083   1.74 | 12.167  133.17 | 18.250   1.96 |
```

```
     Max.Eff.Inten.(mm/hr)=     133.17        82.62
               over (min)        5.00        10.00
     Storage Coeff.  (min)=     4.47 (ii)   9.97 (ii)
     Unit Hyd. Tpeak (min)=     5.00        10.00
     Unit Hyd. peak  (cms)=     0.23         0.12
                                                    *TOTALS*
     PEAK FLOW       (cms)=     3.63         0.69          4.324 (iii)
     TIME TO PEAK    (hrs)=    12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=   107.80        55.81         92.72
     TOTAL RAINFALL   (mm)=   108.80       108.80        108.80
     RUNOFF COEFFICIENT   =     0.99         0.51          0.85

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN* =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
```

```
--------------------
| DUHYD    (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=  2.9|       AREA    QPEAK    TPEAK    R.V.
--------------------        (ha)    (cms)    (hrs)    (mm)
      TOTAL HYD.(ID= 1):  14.21    4.32    12.25   92.72
     ==================================================
     MAJOR SYS.(ID= 2):   0.80    1.38    12.25   92.72
     MINOR SYS.(ID= 3):  13.41    2.95    12.08   92.72

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

```
--------------------
|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
--------------------   SURFACE PONDING LAYER:

                         Max. Ponding Storage(cu.m.)=     149.95

                       STAGE       AREA          |  STAGE      AREA
                        (m)        (m2)          |   (m)       (m2)
                       0.000     100.000         |  1.500     100.000
                       0.500     100.000         |  0.000       0.000
                       1.000     100.000         |  0.000       0.000

                     MULCH LAYER:
                     Depth       (m)=    0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    62.40

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth           (m)=  0.67
                     Width         (m)=  780.00  Length        (m)=  2.00
                     Porosity          =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                     STORAGE LAYER:
                     Depth       (m)=    1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   936.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                     NATIVE SOIL LAYER:
```

```
                     Infiltration (m/hr) = 0.0060

                                AREA         QPEAK          TPEAK         R.V.
                                 (ha)         (cms)          (hrs)         (mm)
     INFLOW:ID= 2    13.41        2.948          12.08         92.72
   OVERFLOW:ID= 3    13.41        2.945          12.08         89.50

                     Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      3.48
                     Time to reach Max Ponding storage       (Hr)=      0.00
                     Volume of water for drawdown in LID  (cu.m.)=    540.22
                     Volume of Max. Water Storage         (cu.m.)=      0.00
                     Maximum Surface Ponding And Mulch Vol(cu.m.)=    212.35
                     Maximum Engineered Soil Volume       (cu.m.)=    331.94
                     ***** After simulation, water volume is not zero.
```

```
--------------------
| Junction Command(0317) |
------------------------

                                AREA     QPEAK   TPEAK    R.V.
                                 (ha)     (cms)   (hrs)    (mm)
  INFLOW : ID= 3(  0318)  13.41     2.95   12.08    89.50
  OUTFLOW: ID= 2(  0317)  13.41     2.95   12.08    89.50
```

```
--------------------
| ADD HYD  (  0316)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0311):     0.80   1.376    12.25    92.72
     + ID2= 2 (  0317):    13.41   2.945    12.08    89.50
       ========================================================
       ID = 3 (  0316):    14.21   4.322    12.25    89.68

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

```
--------------------
| CALIB                |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.39         0.20
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope    (%)=       1.00         2.00
     Length           (m)=      62.78        40.00
     Mannings n            =    0.013        0.250

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

```
                        ---- TRANSFORMED HYETOGRAPH ----
   TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
    hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
   0.083   0.00 |  6.167   1.74 | 12.250  133.17 |  18.33   1.96
   0.167   0.00 |  6.250   1.74 | 12.333   15.68 |  18.42   1.96
   0.250   0.00 |  6.333   1.96 | 12.417   15.67 |  18.50   1.96
   0.333   1.20 |  6.417   1.96 | 12.500   15.67 |  18.58   1.96
   0.417   1.20 |  6.500   1.96 | 12.583   15.67 |  18.67   1.96
   0.500   1.20 |  6.583   1.96 | 12.667   15.67 |  18.75   1.96
   0.583   1.20 |  6.667   1.96 | 12.750   15.67 |  18.83   1.96
   0.667   1.20 |  6.750   1.96 | 12.833    8.05 |  18.92   1.96
   0.750   1.20 |  6.833   1.96 | 12.917    8.05 |  19.00   1.96
   0.833   1.20 |  6.917   1.96 | 13.000    8.05 |  19.08   1.96
   0.917   1.20 |  7.000   1.96 | 13.083    8.05 |  19.17   1.96
   1.000   1.20 |  7.083   1.96 | 13.167    8.05 |  19.25   1.96
   1.083   1.20 |  7.167   1.96 | 13.250    8.05 |  19.33   1.96
   1.167   1.20 |  7.250   1.96 | 13.333    5.88 |  19.42   1.96
   1.250   1.20 |  7.333   2.39 | 13.417    5.88 |  19.50   1.96
   1.333   1.20 |  7.417   2.39 | 13.500    5.88 |  19.58   1.96
   1.417   1.20 |  7.500   2.39 | 13.583    5.88 |  19.67   1.96
   1.500   1.20 |  7.583   2.39 | 13.667    5.88 |  19.75   1.96
   1.583   1.20 |  7.667   2.39 | 13.750    5.88 |  19.83   1.96
   1.667   1.20 |  7.750   2.39 | 13.833    4.57 |  19.92   1.96
   1.750   1.20 |  7.833   2.39 | 13.917    4.57 |  20.00   1.96
   1.833   1.20 |  7.917   2.39 | 14.000    4.57 |  20.08   1.96
   1.917   1.20 |  8.000   2.39 | 14.083    4.57 |  20.17   1.96
   2.000   1.20 |  8.083   2.39 | 14.167    4.57 |  20.25   1.96
   2.083   1.20 |  8.167   2.39 | 14.250    4.57 |  20.33   1.31
   2.167   1.20 |  8.250   2.39 | 14.333    3.26 |  20.42   1.31
   2.250   1.20 |  8.333   2.83 | 14.417    3.26 |  20.50   1.31
   2.333   1.41 |  8.417   2.83 | 14.500    3.26 |  20.58   1.31
   2.417   1.41 |  8.500   2.83 | 14.583    3.26 |  20.67   1.31
   2.500   1.41 |  8.583   2.83 | 14.667    3.26 |  20.75   1.31
   2.583   1.41 |  8.667   2.83 | 14.750    3.26 |  20.83   1.31
   2.667   1.41 |  8.750   2.83 | 14.833    3.26 |  20.92   1.31
   2.750   1.41 |  8.833   3.05 | 14.917    3.26 |  21.00   1.31
   2.833   1.41 |  8.917   3.05 | 15.000    3.26 |  21.08   1.31
   2.917   1.41 |  9.000   3.05 | 15.083    3.26 |  21.17   1.31
   3.000   1.41 |  9.083   3.05 | 15.167    3.26 |  21.25   1.31
   3.083   1.41 |  9.167   3.05 | 15.250    3.26 |  21.33   1.31
   3.167   1.41 |  9.250   3.05 | 15.333    3.26 |  21.42   1.31
   3.250   1.41 |  9.333   3.48 | 15.417    3.26 |  21.50   1.31
   3.333   1.41 |  9.417   3.48 | 15.500    3.26 |  21.58   1.31
   3.417   1.41 |  9.500   3.48 | 15.583    3.26 |  21.67   1.31
   3.500   1.41 |  9.583   3.48 | 15.667    3.26 |  21.75   1.31
   3.583   1.41 |  9.667   3.48 | 15.750    3.26 |  21.83   1.31
   3.667   1.41 |  9.750   3.48 | 15.833    3.26 |  21.92   1.31
   3.750   1.41 |  9.833   3.92 | 15.917    3.26 |  22.00   1.31
```

```
                3.833    1.41 |  9.917    3.92 | 16.000    3.26 |  22.08    1.31
                3.917    1.41 | 10.000    3.92 | 16.083    3.26 |  22.17    1.31
                4.000    1.41 | 10.083    3.92 | 16.167    3.26 |  22.25    1.31
                4.083    1.41 | 10.167    3.92 | 16.250    3.26 |  22.33    1.31
                4.167    1.41 | 10.250    3.92 | 16.333    1.96 |  22.42    1.31
                4.250    1.41 | 10.333    5.00 | 16.417    1.96 |  22.50    1.31
                4.333    1.74 | 10.417    5.00 | 16.500    1.96 |  22.58    1.31
                4.417    1.74 | 10.500    5.00 | 16.583    1.96 |  22.67    1.31
                4.500    1.74 | 10.583    5.00 | 16.667    1.96 |  22.75    1.31
                4.583    1.74 | 10.667    5.00 | 16.750    1.96 |  22.83    1.31
                4.667    1.74 | 10.750    5.00 | 16.833    1.96 |  22.92    1.31
                4.750    1.74 | 10.833    6.75 | 16.917    1.96 |  23.00    1.31
                4.833    1.74 | 10.917    6.75 | 17.000    1.96 |  23.08    1.31
                4.917    1.74 | 11.000    6.75 | 17.083    1.96 |  23.17    1.31
                5.000    1.74 | 11.083    6.75 | 17.167    1.96 |  23.25    1.31
                5.083    1.74 | 11.167    6.75 | 17.250    1.96 |  23.33    1.31
                5.167    1.74 | 11.250    6.75 | 17.333    1.96 |  23.42    1.31
                5.250    1.74 | 11.333   10.44 | 17.417    1.96 |  23.50    1.31
                5.333    1.74 | 11.417   10.44 | 17.500    1.96 |  23.58    1.31
                5.417    1.74 | 11.500   10.44 | 17.583    1.96 |  23.67    1.31
                5.500    1.74 | 11.583   10.44 | 17.667    1.96 |  23.75    1.31
                5.583    1.74 | 11.667   10.44 | 17.750    1.96 |  23.83    1.31
                5.667    1.74 | 11.750   10.44 | 17.833    1.96 |  23.92    1.31
                5.750    1.74 | 11.833   32.20 | 17.917    1.96 |  24.00    1.31
                5.833    1.74 | 11.917   32.20 | 18.000    1.96 |  24.08    1.31
                5.917    1.74 | 12.000   32.20 | 18.083    1.96 |  24.17    1.31
                6.000    1.74 | 12.083  133.16 | 18.167    1.96 |  24.25    1.31
                6.083    1.74 | 12.167  133.17 | 18.250    1.96 |

     Max.Eff.Inten.(mm/hr)=     133.17       244.31
               over (min)        5.00        10.00
     Storage Coeff.  (min)=       1.72 (ii)    6.66 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.14
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.05         0.11         0.169 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     107.80        77.21         84.85
     TOTAL RAINFALL   (mm)=     108.80       108.80        108.80
     RUNOFF COEFFICIENT   =       0.99         0.71          0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

```
--------------------
| DUHYD    (  0331)|
| Inlet Cap.=  0.112|
| #of Inlets=     1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.17     12.25   84.85
     ------------------------------------------------------
     MAJOR SYS.(ID= 2):   0.03      0.06     12.25   84.85
     MINOR SYS.(ID= 3):   0.56      0.11     12.17   84.85

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)| OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=     149.95

                     STAGE       AREA          |   STAGE      AREA
                      (m)        (m2)          |    (m)       (m2)
                     0.000      100.000         |   1.500      100.000
                     0.500      100.000         |   0.000        0.000
                     1.000      100.000         |   0.000        0.000

                    MULCH LAYER:
                    Depth      (m)=    0.00  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     0.00

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.72
                    Width      (m)=    3.00  Length           (m)=240.00
                    Porosity     =     0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                      DEPTH       DISCHARGE       |   DEPTH       DISCHARGE
                       (m)          (cms)         |    (m)         (cms)
                      0.000         0.000         |   0.559        0.030
                      0.279         0.010         |   0.762        0.040
                      0.406         0.020         |   1.300        0.050

                    STORAGE LAYER:
                    Depth      (m)=    1.00  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   288.00

                    TOTAL AVAILABLE STORAGE:
```

```
                                TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
          +Storage Layer(cu.m.)=      680.04

                                NATIVE SOIL LAYER:
                                Infiltration (m/hr) = 0.0060

                                   AREA         QPEAK            TPEAK          R.V.
                                   (ha)         (cms)            (hrs)          (mm)
                         INFLOW:ID= 2     0.56         0.112            12.17          84.85
                        OUTFLOW:ID= 1     0.21         0.009             0.08          66.70
                       OVERFLOW:ID= 3     0.35         0.110            12.33          66.70

                                Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       21.40
                                Time to reach Max Ponding storage       (Hr)=        0.00
                                Volume of water for drawdown in LID  (cu.m.)=      156.53
                                Volume of Max. Water Storage         (cu.m.)=        0.00
                                Maximum Surface Ponding And Mulch Vol(cu.m.)=      149.95
                                Maximum Engineered Soil Volume       (cu.m.)=       69.86
                                ***** After simulation, water volume is not zero.

                          -------------------------
                          | Junction Command(0330) |
                          -------------------------

                                                AREA     QPEAK   TPEAK     R.V.
                                                (ha)     (cms)    (hrs)     (mm)
                          INFLOW : ID= 3(  0329)    0.35     0.11   12.33    66.70
                          OUTFLOW: ID= 2(  0330)    0.35     0.11   12.33    66.70

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

                          -------------------------
                          | Junction Command(0332) |
                          -------------------------

                                                AREA     QPEAK   TPEAK     R.V.
                                                (ha)     (cms)    (hrs)     (mm)
                          INFLOW : ID= 1(  0329)    0.21     0.01    0.08    66.70
                          OUTFLOW: ID= 2(  0332)    0.21     0.01    0.08    66.70

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

                        --------------------
                        | ADD HYD  (  3106)|
                        |   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
                        --------------------      (ha)     (cms)     (hrs)     (mm)
                             ID1= 1 (  0330):     0.35   0.110     12.33     66.70
                           + ID2= 2 (  0331):     0.03   0.057     12.25     84.85
                             ==================================================
```

```
          ID = 3 (  3106):     0.38   0.147    12.25    68.20

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

--------------------
| ADD HYD  (  3106)|
|   3 +  2 =  1    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (  3106):     0.38   0.147    12.25    68.20
        + ID2= 2 (  0332):     0.21   0.009     0.08    66.70
          ==================================================
          ID = 1 (  3106):     0.59   0.148    12.25    67.66

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (  0277):     1.18   0.270    12.08    77.72
        + ID2= 2 (  0310):     5.48   1.484    12.25    83.74
          ==================================================
          ID = 3 (  0312):     6.66   1.754    12.25    82.67

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

--------------------
| ADD HYD  (  0312)|
|   3 +  2 =  1    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (  0312):     6.66   1.754    12.25    82.67
        + ID2= 2 (  3106):     0.59   0.148    12.25    67.66
          ==================================================
          ID = 1 (  0312):     7.25   1.901    12.25    81.45

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (  0312):     7.25   1.901    12.25    81.45
        + ID2= 2 (  0316):    14.21   4.322    12.25    89.68
          ==================================================
          ID = 3 (  0312):    21.46   6.223    12.25    86.90
```

```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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    |  0.6610      0.9850
                           0.0400     0.1140    |  1.0960      1.3320
                           0.0760     0.3690    |  1.4260      1.5860
                           0.2810     0.6450    |  0.0000      0.0000

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0312)     21.458     6.223     12.25      86.90
   OUTFLOW: ID= 1 (  0319)     21.458     0.721     12.83      86.86

                          PEAK   FLOW   REDUCTION [Qout/Qin](%)= 11.59
                          TIME SHIFT OF PEAK FLOW         (min)= 35.00
                          MAXIMUM  STORAGE   USED       (ha.m.)=  1.0340

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

```
================================================================================
========================

       V    V   I    SSSSS  U   U    A     L              (v 6.2.2008)
       V    V   I    SS     U   U   A A    L
        V  V    I     SS    U   U  AAAAA   L
         V V    I      SS   U   U A     A  L
          VV    I    SSSSS  UUUUU A     A  LLLLL

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

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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\af415
ff4-af4e-42e7-b976-1368ece16288\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\af415
ff4-af4e-42e7-b976-1368ece16288\scena

DATE: 08-28-2022                      TIME: 02:37:54

USER:


COMMENTS: _____

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  ************************************************
  ** SIMULATION : K. 50yr 24hr 15min SCS Type I **
  ************************************************


--------------------
|     READ STORM     |     Filename: C:\Users\kswain\AppD
|                    |               ata\Local\Temp\
```

```
|                    |                 493684fd-5088-4e79-aaf3-4a5a81863920\15b81333
| Ptotal=120.77 mm   |   Comments: K. 50yr 24hr 15min SCS Type II
--------------------
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
            hrs    mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.00     0.00 |  6.25    2.17 | 12.50   17.39 | 18.75    2.17
           0.25     1.33 |  6.50    2.17 | 12.75    8.94 | 19.00    2.17
           0.50     1.33 |  6.75    2.17 | 13.00    8.94 | 19.25    2.17
           0.75     1.33 |  7.00    2.17 | 13.25    6.52 | 19.50    2.17
           1.00     1.33 |  7.25    2.66 | 13.50    6.52 | 19.75    2.17
           1.25     1.33 |  7.50    2.66 | 13.75    5.07 | 20.00    2.17
           1.50     1.33 |  7.75    2.66 | 14.00    5.07 | 20.25    1.45
           1.75     1.33 |  8.00    2.66 | 14.25    3.62 | 20.50    1.45
           2.00     1.33 |  8.25    3.14 | 14.50    3.62 | 20.75    1.45
           2.25     1.57 |  8.50    3.14 | 14.75    3.62 | 21.00    1.45
           2.50     1.57 |  8.75    3.38 | 15.00    3.62 | 21.25    1.45
           2.75     1.57 |  9.00    3.38 | 15.25    3.62 | 21.50    1.45
           3.00     1.57 |  9.25    3.86 | 15.50    3.62 | 21.75    1.45
           3.25     1.57 |  9.50    3.86 | 15.75    3.62 | 22.00    1.45
           3.50     1.57 |  9.75    4.35 | 16.00    3.62 | 22.25    1.45
           3.75     1.57 | 10.00    4.35 | 16.25    2.17 | 22.50    1.45
           4.00     1.57 | 10.25    5.56 | 16.50    2.17 | 22.75    1.45
           4.25     1.93 | 10.50    5.56 | 16.75    2.17 | 23.00    1.45
           4.50     1.93 | 10.75    7.49 | 17.00    2.17 | 23.25    1.45
           4.75     1.93 | 11.00    7.49 | 17.25    2.17 | 23.50    1.45
           5.00     1.93 | 11.25   11.59 | 17.50    2.17 | 23.75    1.45
           5.25     1.93 | 11.50   11.59 | 17.75    2.17 | 24.00    1.45
           5.50     1.93 | 11.75   35.75 | 18.00    2.17 |
           5.75     1.93 | 12.00  147.82 | 18.25    2.17 |
           6.00     1.93 | 12.25   17.39 | 18.50    2.17 |

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--------------------
| CALIB              |
| NASHYD  (  0185)|   Area     (ha)=   1.66   Curve Number    (CN)= 74.4
|ID= 1 DT= 5.0 min |   Ia       (mm)=   4.44   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.24

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


                        ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 | 6.167    1.93 |12.250  147.82 | 18.33    2.17
           0.167    0.00 | 6.250    1.93 |12.333   17.41 | 18.42    2.17
           0.250    0.00 | 6.333    2.17 |12.417   17.39 | 18.50    2.17
           0.333    1.33 | 6.417    2.17 |12.500   17.39 | 18.58    2.17
           0.417    1.33 | 6.500    2.17 |12.583   17.39 | 18.67    2.17
```

```
           0.500    1.33 | 6.583    2.17 |12.667   17.39 | 18.75    2.17
           0.583    1.33 | 6.667    2.17 |12.750   17.39 | 18.83    2.17
           0.667    1.33 | 6.750    2.17 |12.833    8.94 | 18.92    2.17
           0.750    1.33 | 6.833    2.17 |12.917    8.94 | 19.00    2.17
           0.833    1.33 | 6.917    2.17 |13.000    8.94 | 19.08    2.17
           0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
           1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
           1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
           1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
           1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
           1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
           1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
           1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
           1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
           1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
           1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
           1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
           1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
           2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
           2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
           2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
           2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
           2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
           2.417    1.57 | 8.500    3.14 |14.583    3.62 | 20.67    1.45
           2.500    1.57 | 8.583    3.14 |14.667    3.62 | 20.75    1.45
           2.583    1.57 | 8.667    3.14 |14.750    3.62 | 20.83    1.45
           2.667    1.57 | 8.750    3.14 |14.833    3.62 | 20.92    1.45
           2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
           2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
           2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
           3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
           3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
           3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
           3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
           3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
           3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
           3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
           3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
           3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
           3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
           3.833    1.57 | 9.917    4.35 |16.000    3.62 | 22.08    1.45
           3.917    1.57 |10.000    4.35 |16.083    3.62 | 22.17    1.45
           4.000    1.57 |10.083    4.35 |16.167    3.62 | 22.25    1.45
           4.083    1.57 |10.167    4.35 |16.250    3.62 | 22.33    1.45
           4.167    1.57 |10.250    4.35 |16.333    2.17 | 22.42    1.45
           4.250    1.57 |10.333    5.56 |16.417    2.17 | 22.50    1.45
           4.333    1.93 |10.417    5.56 |16.500    2.17 | 22.58    1.45
           4.417    1.93 |10.500    5.56 |16.583    2.17 | 22.67    1.45
           4.500    1.93 |10.583    5.56 |16.667    2.17 | 22.75    1.45
           4.583    1.93 |10.667    5.56 |16.750    2.17 | 22.83    1.45
           4.667    1.93 |10.750    5.56 |16.833    2.17 | 22.92    1.45
           4.750    1.93 |10.833    7.49 |16.917    2.17 | 23.00    1.45
           4.833    1.93 |10.917    7.49 |17.000    2.17 | 23.08    1.45
           4.917    1.93 |11.000    7.49 |17.083    2.17 | 23.17    1.45
           5.000    1.93 |11.083    7.49 |17.167    2.17 | 23.25    1.45
           5.083    1.93 |11.167    7.49 |17.250    2.17 | 23.33    1.45
           5.167    1.93 |11.250    7.49 |17.333    2.17 | 23.42    1.45
           5.250    1.93 |11.333   11.59 |17.417    2.17 | 23.50    1.45
           5.333    1.93 |11.417   11.59 |17.500    2.17 | 23.58    1.45
           5.417    1.93 |11.500   11.59 |17.583    2.17 | 23.67    1.45
           5.500    1.93 |11.583   11.59 |17.667    2.17 | 23.75    1.45
           5.583    1.93 |11.667   11.59 |17.750    2.17 | 23.83    1.45
           5.667    1.93 |11.750   11.59 |17.833    2.17 | 23.92    1.45
           5.750    1.93 |11.833   35.75 |17.917    2.17 | 24.00    1.45
           5.833    1.93 |11.917   35.75 |18.000    2.17 | 24.08    1.45
           5.917    1.93 |12.000   35.75 |18.083    2.17 | 24.17    1.45
           6.000    1.93 |12.083  147.81 |18.167    2.17 | 24.25    1.45
           6.083    1.93 |12.167  147.82 |18.250    2.17 |

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW       (cms)=   0.254 (i)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME    (mm)=  66.363
     TOTAL RAINFALL   (mm)= 120.770
     RUNOFF COEFFICIENT   =   0.549

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

--------------------------------------------------------------------------------
---------------------
| DUHYD     (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK     R.V.
---------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.66      0.25     12.33     66.36
     ================================================
     MAJOR SYS.(ID= 2):   0.21      0.12     12.33     66.36
     MINOR SYS.(ID= 3):   1.46      0.13     12.17     66.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:
```

```
                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE       AREA          |  STAGE      AREA
                       (m)        (m2)          |   (m)       (m2)
                      0.000     100.000          |  1.500     100.000
                      0.500     100.000          |  0.000       0.000
                      1.000     100.000          |  0.000       0.000

                     MULCH LAYER:
                     Depth      (m)=   0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    21.60

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth              (m)=  0.72
                     Width      (m)=  180.00  Length             (m)=  3.00
                     Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                     STORAGE LAYER:
                     Depth      (m)=   0.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   108.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     1.46      0.131          12.17        66.36
       OVERFLOW:ID= 3     1.46      0.130          12.25        50.19

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      24.37
                    Time to reach Max Ponding storage       (hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     276.62
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     171.55
                    Maximum Engineered Soil Volume       (cu.m.)=     107.06
                    ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                       AREA     QPEAK     TPEAK     R.V.
                       (ha)     (cms)     (hrs)     (mm)
```

```
  INFLOW : ID= 3(  0184)     1.46     0.13     12.25     50.19
  OUTFLOW: ID= 2(  0181)     1.46     0.13     12.25     50.19

  ------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0265)|   Area     (ha)=   0.86
|ID= 1 DT= 5.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
--------------------

                        IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.56         0.30
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope    (%)=       1.00         2.00
     Length           (m)=      75.87        40.00
     Mannings n             =   0.013        0.250

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

                        ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 | 6.167    1.93 |12.250  147.82 | 18.33    2.17
           0.167    0.00 | 6.250    1.93 |12.333   17.41 | 18.42    2.17
           0.250    0.00 | 6.333    2.17 |12.417   17.39 | 18.50    2.17
           0.333    1.33 | 6.417    2.17 |12.500   17.39 | 18.58    2.17
           0.417    1.33 | 6.500    2.17 |12.583   17.39 | 18.67    2.17
           0.500    1.33 | 6.583    2.17 |12.667   17.39 | 18.75    2.17
           0.583    1.33 | 6.667    2.17 |12.750   17.39 | 18.83    2.17
           0.667    1.33 | 6.750    2.17 |12.833    8.94 | 18.92    2.17
           0.750    1.33 | 6.833    2.17 |12.917    8.94 | 19.00    2.17
           0.833    1.33 | 6.917    2.17 |13.000    8.94 | 19.08    2.17
           0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
           1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
           1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
           1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
           1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
           1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
           1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
           1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
           1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
           1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
           1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
           1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
           1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
           2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
           2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
           2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
           2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
           2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
```

```
     Unit Hyd. peak  (cms)=       0.32          0.14

     PEAK FLOW       (cms)=       0.23          0.07          0.297 (iii)
     TIME TO PEAK    (hrs)=      12.25         12.25         12.25
     RUNOFF VOLUME    (mm)=     119.77         65.37        100.73
     TOTAL RAINFALL   (mm)=     120.77        120.77        120.77
     RUNOFF COEFFICIENT   =       0.99          0.54          0.83

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

        (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
              CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
      (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
---------------------
| DUHYD     (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=    1|
| Total(cms)=   0.2|      AREA     QPEAK     TPEAK     R.V.
---------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   0.86      0.30     12.25     100.73
     ================================================
     MAJOR SYS.(ID= 2):   0.09      0.12     12.25     100.73
     MINOR SYS.(ID= 3):   0.77      0.17     12.08     100.73

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE       AREA          |  STAGE      AREA
                       (m)        (m2)          |   (m)       (m2)
                      0.000     100.000          |  1.500     100.000
                      0.500     100.000          |  0.000       0.000
                      1.000     100.000          |  0.000       0.000

                     MULCH LAYER:
                     Depth      (m)=   0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    3.20

                     ENGINEERED SOIL LAYER:
```

```
                     Soil moisture =    0.30  Depth              (m)=  0.67
                     Width      (m)=   40.00  Length             (m)=  2.00
                     Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                     STORAGE LAYER:
                     Depth      (m)=   1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=    48.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                     NATIVE SOIL LAYER:
                     Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     0.77      0.174          12.08        100.73
       OVERFLOW:ID= 3     0.77      0.174          12.08         79.50

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      21.07
                    Time to reach Max Ponding storage       (hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     169.97
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
                    Maximum Engineered Soil Volume       (cu.m.)=      16.86
                    ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                       AREA     QPEAK     TPEAK     R.V.
                       (ha)     (cms)     (hrs)     (mm)
  INFLOW : ID= 3(  0264)     0.77     0.17     12.08     79.50
  OUTFLOW: ID= 2(  0262)     0.77     0.17     12.08     79.50

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

--------------------
| ADD HYD  (  0243)|
|  1 + 2 =  3      |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
       ID1= 1 (  0181):   1.46    0.130     12.25     50.19
     + ID2= 2 (  0182):   0.21    0.123     12.33     66.36
       ================================================
       ID = 3 (  0243):   1.66    0.253     12.33     52.18
```

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

--------------------
| ADD HYD  (  0243)|
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 3 (  0243):      1.66   0.253    12.33    52.18
      + ID2= 2 (  0262):      0.77   0.174    12.08    79.50
        ====================================================
        ID = 1 (  0243):      2.44   0.392    12.25    60.86

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

--------------------
| ADD HYD  (  0243)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0243):      2.44   0.392    12.25    60.86
      + ID2= 2 (  0263):      0.09   0.123    12.25   100.73
        ====================================================
        ID = 3 (  0243):      2.53   0.515    12.25    62.26

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0188)|     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   |   0.4800     0.0190

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0243)      2.527      0.515     12.25      62.26
   OUTFLOW: ID= 1 (  0188)      2.527      0.382     12.33      62.26

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 74.30
                  TIME SHIFT OF PEAK FLOW         (min)=  5.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0156

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--------------------
| CALIB            |
| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
```

```
    Surface Area     (ha)=       0.22          0.10
    Dep. Storage     (mm)=       1.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length            (m)=      45.84         40.00
    Mannings n          =       0.013         0.250

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

                         ---- TRANSFORMED HYETOGRAPH ----
                  TIME     RAIN | TIME     RAIN |'  TIME    RAIN | TIME     RAIN
                   hrs    mm/hr |  hrs    mm/hr |'   hrs   mm/hr |  hrs    mm/hr
                 0.083     0.00 | 6.167     1.93 |12.250  147.82 | 18.33     2.17
                 0.167     0.00 | 6.250     1.93 |12.333   17.41 | 18.42     2.17
                 0.250     0.00 | 6.333     2.17 |12.417   17.39 | 18.50     2.17
                 0.333     1.33 | 6.417     2.17 |12.500   17.39 | 18.58     2.17
                 0.417     1.33 | 6.500     2.17 |12.583   17.39 | 18.67     2.17
                 0.500     1.33 | 6.583     2.17 |12.667   17.39 | 18.75     2.17
                 0.583     1.33 | 6.667     2.17 |12.750   17.39 | 18.83     2.17
                 0.667     1.33 | 6.750     2.17 |12.833    8.94 | 18.92     2.17
                 0.750     1.33 | 6.833     2.17 |12.917    8.94 | 19.00     2.17
                 0.833     1.33 | 6.917     2.17 |13.000    8.94 | 19.08     2.17
                 0.917     1.33 | 7.000     2.17 |13.083    8.94 | 19.17     2.17
                 1.000     1.33 | 7.083     2.17 |13.167    8.94 | 19.25     2.17
                 1.083     1.33 | 7.167     2.17 |13.250    8.94 | 19.33     2.17
                 1.167     1.33 | 7.250     2.17 |13.333    6.52 | 19.42     2.17
                 1.250     1.33 | 7.333     2.66 |13.417    6.52 | 19.50     2.17
                 1.333     1.33 | 7.417     2.66 |13.500    6.52 | 19.58     2.17
                 1.417     1.33 | 7.500     2.66 |13.583    6.52 | 19.67     2.17
                 1.500     1.33 | 7.583     2.66 |13.667    6.52 | 19.75     2.17
                 1.583     1.33 | 7.667     2.66 |13.750    6.52 | 19.83     2.17
                 1.667     1.33 | 7.750     2.66 |13.833    5.07 | 19.92     2.17
                 1.750     1.33 | 7.833     2.66 |13.917    5.07 | 20.00     2.17
                 1.833     1.33 | 7.917     2.66 |14.000    5.07 | 20.08     2.17
                 1.917     1.33 | 8.000     2.66 |14.083    5.07 | 20.17     2.17
                 2.000     1.33 | 8.083     2.66 |14.167    5.07 | 20.25     2.17
                 2.083     1.33 | 8.167     2.66 |14.250    5.07 | 20.33     1.45
                 2.167     1.33 | 8.250     2.66 |14.333    3.62 | 20.42     1.45
                 2.250     1.33 | 8.333     3.14 |14.417    3.62 | 20.50     1.45
                 2.333     1.57 | 8.417     3.14 |14.500    3.62 | 20.58     1.45
                 2.417     1.57 | 8.500     3.14 |14.583    3.62 | 20.67     1.45
                 2.500     1.57 | 8.583     3.14 |14.667    3.62 | 20.75     1.45
                 2.583     1.57 | 8.667     3.14 |14.750    3.62 | 20.83     1.45
                 2.667     1.57 | 8.750     3.14 |14.833    3.62 | 20.92     1.45
                 2.750     1.57 | 8.833     3.38 |14.917    3.62 | 21.00     1.45
                 2.833     1.57 | 8.917     3.38 |15.000    3.62 | 21.08     1.45
                 2.917     1.57 | 9.000     3.38 |15.083    3.62 | 21.17     1.45
                 3.000     1.57 | 9.083     3.38 |15.167    3.62 | 21.25     1.45
                 3.083     1.57 | 9.167     3.38 |15.250    3.62 | 21.33     1.45
                 3.167     1.57 | 9.250     3.38 |15.333    3.62 | 21.42     1.45
```

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                 3.250     1.57 | 9.333     3.86 |15.417    3.62 | 21.50     1.45
                 3.333     1.57 | 9.417     3.86 |15.500    3.62 | 21.58     1.45
                 3.417     1.57 | 9.500     3.86 |15.583    3.62 | 21.67     1.45
                 3.500     1.57 | 9.583     3.86 |15.667    3.62 | 21.75     1.45
                 3.583     1.57 | 9.667     3.86 |15.750    3.62 | 21.83     1.45
                 3.667     1.57 | 9.750     3.86 |15.833    3.62 | 21.92     1.45
                 3.750     1.57 | 9.833     4.35 |15.917    3.62 | 22.00     1.45
                 3.833     1.57 | 9.917     4.35 |16.000    3.62 | 22.08     1.45
                 3.917     1.57 |10.000     4.35 |16.083    3.62 | 22.17     1.45
                 4.000     1.57 |10.083     4.35 |16.167    3.62 | 22.25     1.45
                 4.083     1.57 |10.167     4.35 |16.250    3.62 | 22.33     1.45
                 4.167     1.57 |10.250     4.35 |16.333    2.17 | 22.42     1.45
                 4.250     1.57 |10.333     5.56 |16.417    2.17 | 22.50     1.45
                 4.333     1.93 |10.417     5.56 |16.500    2.17 | 22.58     1.45
                 4.417     1.93 |10.500     5.56 |16.583    2.17 | 22.67     1.45
                 4.500     1.93 |10.583     5.56 |16.667    2.17 | 22.75     1.45
                 4.583     1.93 |10.667     5.56 |16.750    2.17 | 22.83     1.45
                 4.667     1.93 |10.750     5.56 |16.833    2.17 | 22.92     1.45
                 4.750     1.93 |10.833     7.49 |16.917    2.17 | 23.00     1.45
                 4.833     1.93 |10.917     7.49 |17.000    2.17 | 23.08     1.45
                 4.917     1.93 |11.000     7.49 |17.083    2.17 | 23.17     1.45
                 5.000     1.93 |11.083     7.49 |17.167    2.17 | 23.25     1.45
                 5.083     1.93 |11.167     7.49 |17.250    2.17 | 23.33     1.45
                 5.167     1.93 |11.250     7.49 |17.333    2.17 | 23.42     1.45
                 5.250     1.93 |11.333    11.59 |17.417    2.17 | 23.50     1.45
                 5.333     1.93 |11.417    11.59 |17.500    2.17 | 23.58     1.45
                 5.417     1.93 |11.500    11.59 |17.583    2.17 | 23.67     1.45
                 5.500     1.93 |11.583    11.59 |17.667    2.17 | 23.75     1.45
                 5.583     1.93 |11.667    11.59 |17.750    2.17 | 23.83     1.45
                 5.667     1.93 |11.750    11.59 |17.833    2.17 | 23.92     1.45
                 5.750     1.93 |11.833    35.75 |17.917    2.17 | 24.00     1.45
                 5.833     1.93 |11.917    35.75 |18.000    2.17 | 24.08     1.45
                 5.917     1.93 |12.000    35.75 |18.083    2.17 | 24.17     1.45
                 6.000     1.93 |12.083   147.81 |18.167    2.17 | 24.25     1.45
                 6.083     1.93 |12.167   147.82 |18.250    2.17 |

     Max.Eff.Inten.(mm/hr)=     147.82       285.90
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       1.37 (ii)    6.00 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.33         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.04         0.07         0.106 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     119.77        88.92         98.16
     TOTAL RAINFALL   (mm)=     120.77       120.77        120.77
     RUNOFF COEFFICIENT   =       0.99         0.74          0.81

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

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0179)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0188):      2.53   0.382    12.33    62.26
      + ID2= 2 (  0252):      0.32   0.106    12.25    98.16
        ====================================================
        ID = 3 (  0179):      2.84   0.446    12.33    66.24

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.28          0.23
    Dep. Storage     (mm)=       1.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length            (m)=      58.22         40.00
    Mannings n          =       0.013         0.250

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

                         ---- TRANSFORMED HYETOGRAPH ----
                  TIME     RAIN | TIME     RAIN |'  TIME    RAIN | TIME     RAIN
                   hrs    mm/hr |  hrs    mm/hr |'   hrs   mm/hr |  hrs    mm/hr
                 0.083     0.00 | 6.167     1.93 |12.250  147.82 | 18.33     2.17
                 0.167     0.00 | 6.250     1.93 |12.333   17.41 | 18.42     2.17
                 0.250     0.00 | 6.333     2.17 |12.417   17.39 | 18.50     2.17
                 0.333     1.33 | 6.417     2.17 |12.500   17.39 | 18.58     2.17
                 0.417     1.33 | 6.500     2.17 |12.583   17.39 | 18.67     2.17
                 0.500     1.33 | 6.583     2.17 |12.667   17.39 | 18.75     2.17
                 0.583     1.33 | 6.667     2.17 |12.750   17.39 | 18.83     2.17
                 0.667     1.33 | 6.750     2.17 |12.833    8.94 | 18.92     2.17
                 0.750     1.33 | 6.833     2.17 |12.917    8.94 | 19.00     2.17
                 0.833     1.33 | 6.917     2.17 |13.000    8.94 | 19.08     2.17
                 0.917     1.33 | 7.000     2.17 |13.083    8.94 | 19.17     2.17
                 1.000     1.33 | 7.083     2.17 |13.167    8.94 | 19.25     2.17
                 1.083     1.33 | 7.167     2.17 |13.250    8.94 | 19.33     2.17
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                 1.167     1.33 | 7.250     2.17 |13.333    6.52 | 19.42     2.17
                 1.250     1.33 | 7.333     2.66 |13.417    6.52 | 19.50     2.17
                 1.333     1.33 | 7.417     2.66 |13.500    6.52 | 19.58     2.17
                 1.417     1.33 | 7.500     2.66 |13.583    6.52 | 19.67     2.17
                 1.500     1.33 | 7.583     2.66 |13.667    6.52 | 19.75     2.17
                 1.583     1.33 | 7.667     2.66 |13.750    6.52 | 19.83     2.17
                 1.667     1.33 | 7.750     2.66 |13.833    5.07 | 19.92     2.17
                 1.750     1.33 | 7.833     2.66 |13.917    5.07 | 20.00     2.17
                 1.833     1.33 | 7.917     2.66 |14.000    5.07 | 20.08     2.17
                 1.917     1.33 | 8.000     2.66 |14.083    5.07 | 20.17     2.17
                 2.000     1.33 | 8.083     2.66 |14.167    5.07 | 20.25     2.17
                 2.083     1.33 | 8.167     2.66 |14.250    5.07 | 20.33     1.45
                 2.167     1.33 | 8.250     2.66 |14.333    3.62 | 20.42     1.45
                 2.250     1.33 | 8.333     3.14 |14.417    3.62 | 20.50     1.45
                 2.333     1.57 | 8.417     3.14 |14.500    3.62 | 20.58     1.45
                 2.417     1.57 | 8.500     3.14 |14.583    3.62 | 20.67     1.45
                 2.500     1.57 | 8.583     3.14 |14.667    3.62 | 20.75     1.45
                 2.583     1.57 | 8.667     3.14 |14.750    3.62 | 20.83     1.45
                 2.667     1.57 | 8.750     3.14 |14.833    3.62 | 20.92     1.45
                 2.750     1.57 | 8.833     3.38 |14.917    3.62 | 21.00     1.45
                 2.833     1.57 | 8.917     3.38 |15.000    3.62 | 21.08     1.45
                 2.917     1.57 | 9.000     3.38 |15.083    3.62 | 21.17     1.45
                 3.000     1.57 | 9.083     3.38 |15.167    3.62 | 21.25     1.45
                 3.083     1.57 | 9.167     3.38 |15.250    3.62 | 21.33     1.45
                 3.167     1.57 | 9.250     3.38 |15.333    3.62 | 21.42     1.45
                 3.250     1.57 | 9.333     3.86 |15.417    3.62 | 21.50     1.45
                 3.333     1.57 | 9.417     3.86 |15.500    3.62 | 21.58     1.45
                 3.417     1.57 | 9.500     3.86 |15.583    3.62 | 21.67     1.45
                 3.500     1.57 | 9.583     3.86 |15.667    3.62 | 21.75     1.45
                 3.583     1.57 | 9.667     3.86 |15.750    3.62 | 21.83     1.45
                 3.667     1.57 | 9.750     3.86 |15.833    3.62 | 21.92     1.45
                 3.750     1.57 | 9.833     4.35 |15.917    3.62 | 22.00     1.45
                 3.833     1.57 | 9.917     4.35 |16.000    3.62 | 22.08     1.45
                 3.917     1.57 |10.000     4.35 |16.083    3.62 | 22.17     1.45
                 4.000     1.57 |10.083     4.35 |16.167    3.62 | 22.25     1.45
                 4.083     1.57 |10.167     4.35 |16.250    3.62 | 22.33     1.45
                 4.167     1.57 |10.250     4.35 |16.333    2.17 | 22.42     1.45
                 4.250     1.57 |10.333     5.56 |16.417    2.17 | 22.50     1.45
                 4.333     1.93 |10.417     5.56 |16.500    2.17 | 22.58     1.45
                 4.417     1.93 |10.500     5.56 |16.583    2.17 | 22.67     1.45
                 4.500     1.93 |10.583     5.56 |16.667    2.17 | 22.75     1.45
                 4.583     1.93 |10.667     5.56 |16.750    2.17 | 22.83     1.45
                 4.667     1.93 |10.750     5.56 |16.833    2.17 | 22.92     1.45
                 4.750     1.93 |10.833     7.49 |16.917    2.17 | 23.00     1.45
                 4.833     1.93 |10.917     7.49 |17.000    2.17 | 23.08     1.45
                 4.917     1.93 |11.000     7.49 |17.083    2.17 | 23.17     1.45
                 5.000     1.93 |11.083     7.49 |17.167    2.17 | 23.25     1.45
                 5.083     1.93 |11.167     7.49 |17.250    2.17 | 23.33     1.45
                 5.167     1.93 |11.250     7.49 |17.333    2.17 | 23.42     1.45
                 5.250     1.93 |11.333    11.59 |17.417    2.17 | 23.50     1.45
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                 5.333     1.93 |11.417    11.59 |17.500    2.17 | 23.58     1.45
                 5.417     1.93 |11.500    11.59 |17.583    2.17 | 23.67     1.45
                 5.500     1.93 |11.583    11.59 |17.667    2.17 | 23.75     1.45
                 5.583     1.93 |11.667    11.59 |17.750    2.17 | 23.83     1.45
                 5.667     1.93 |11.750    11.59 |17.833    2.17 | 23.92     1.45
                 5.750     1.93 |11.833    35.75 |17.917    2.17 | 24.00     1.45
                 5.833     1.93 |11.917    35.75 |18.000    2.17 | 24.08     1.45
                 5.917     1.93 |12.000    35.75 |18.083    2.17 | 24.17     1.45
                 6.000     1.93 |12.083   147.81 |18.167    2.17 | 24.25     1.45
                 6.083     1.93 |12.167   147.82 |18.250    2.17 |

     Max.Eff.Inten.(mm/hr)=     147.82       276.97
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       1.58 (ii)    6.27 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.33         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.15         0.152 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     119.77        88.28         88.59
     TOTAL RAINFALL   (mm)=     120.77       120.77        120.77
     RUNOFF COEFFICIENT   =       0.99         0.73          0.73

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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(  0282)|     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   |   0.1000     0.0020

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0106)      0.508      0.152     12.25      88.59
   OUTFLOW: ID= 1 (  0282)      0.508      0.140     12.33      88.59

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 92.36
                  TIME SHIFT OF PEAK FLOW         (min)=  5.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  0.0029
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--------------------
| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                              IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.32          0.26
    Dep. Storage     (mm)=       1.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length            (m)=      62.24         40.00
    Mannings n          =       0.013         0.250

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

                         ---- TRANSFORMED HYETOGRAPH ----
                  TIME     RAIN | TIME     RAIN |'  TIME    RAIN | TIME     RAIN
                   hrs    mm/hr |  hrs    mm/hr |'   hrs   mm/hr |  hrs    mm/hr
                 0.083     0.00 | 6.167     1.93 |12.250  147.82 | 18.33     2.17
                 0.167     0.00 | 6.250     1.93 |12.333   17.41 | 18.42     2.17
                 0.250     0.00 | 6.333     2.17 |12.417   17.39 | 18.50     2.17
                 0.333     1.33 | 6.417     2.17 |12.500   17.39 | 18.58     2.17
                 0.417     1.33 | 6.500     2.17 |12.583   17.39 | 18.67     2.17
                 0.500     1.33 | 6.583     2.17 |12.667   17.39 | 18.75     2.17
                 0.583     1.33 | 6.667     2.17 |12.750   17.39 | 18.83     2.17
                 0.667     1.33 | 6.750     2.17 |12.833    8.94 | 18.92     2.17
                 0.750     1.33 | 6.833     2.17 |12.917    8.94 | 19.00     2.17
                 0.833     1.33 | 6.917     2.17 |13.000    8.94 | 19.08     2.17
                 0.917     1.33 | 7.000     2.17 |13.083    8.94 | 19.17     2.17
                 1.000     1.33 | 7.083     2.17 |13.167    8.94 | 19.25     2.17
                 1.083     1.33 | 7.167     2.17 |13.250    8.94 | 19.33     2.17
                 1.167     1.33 | 7.250     2.17 |13.333    6.52 | 19.42     2.17
                 1.250     1.33 | 7.333     2.66 |13.417    6.52 | 19.50     2.17
                 1.333     1.33 | 7.417     2.66 |13.500    6.52 | 19.58     2.17
                 1.417     1.33 | 7.500     2.66 |13.583    6.52 | 19.67     2.17
                 1.500     1.33 | 7.583     2.66 |13.667    6.52 | 19.75     2.17
                 1.583     1.33 | 7.667     2.66 |13.750    6.52 | 19.83     2.17
                 1.667     1.33 | 7.750     2.66 |13.833    5.07 | 19.92     2.17
                 1.750     1.33 | 7.833     2.66 |13.917    5.07 | 20.00     2.17
                 1.833     1.33 | 7.917     2.66 |14.000    5.07 | 20.08     2.17
                 1.917     1.33 | 8.000     2.66 |14.083    5.07 | 20.17     2.17
                 2.000     1.33 | 8.083     2.66 |14.167    5.07 | 20.25     2.17
                 2.083     1.33 | 8.167     2.66 |14.250    5.07 | 20.33     1.45
                 2.167     1.33 | 8.250     2.66 |14.333    3.62 | 20.42     1.45
                 2.250     1.33 | 8.333     3.14 |14.417    3.62 | 20.50     1.45
                 2.333     1.57 | 8.417     3.14 |14.500    3.62 | 20.58     1.45
                 2.417     1.57 | 8.500     3.14 |14.583    3.62 | 20.67     1.45
                 2.500     1.57 | 8.583     3.14 |14.667    3.62 | 20.75     1.45
                 2.583     1.57 | 8.667     3.14 |14.750    3.62 | 20.83     1.45
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                 2.667     1.57 | 8.750     3.14 |14.833    3.62 | 20.92     1.45
                 2.750     1.57 | 8.833     3.38 |14.917    3.62 | 21.00     1.45
                 2.833     1.57 | 8.917     3.38 |15.000    3.62 | 21.08     1.45
                 2.917     1.57 | 9.000     3.38 |15.083    3.62 | 21.17     1.45
                 3.000     1.57 | 9.083     3.38 |15.167    3.62 | 21.25     1.45
                 3.083     1.57 | 9.167     3.38 |15.250    3.62 | 21.33     1.45
                 3.167     1.57 | 9.250     3.38 |15.333    3.62 | 21.42     1.45
                 3.250     1.57 | 9.333     3.86 |15.417    3.62 | 21.50     1.45
                 3.333     1.57 | 9.417     3.86 |15.500    3.62 | 21.58     1.45
                 3.417     1.57 | 9.500     3.86 |15.583    3.62 | 21.67     1.45
                 3.500     1.57 | 9.583     3.86 |15.667    3.62 | 21.75     1.45
                 3.583     1.57 | 9.667     3.86 |15.750    3.62 | 21.83     1.45
                 3.667     1.57 | 9.750     3.86 |15.833    3.62 | 21.92     1.45
                 3.750     1.57 | 9.833     4.35 |15.917    3.62 | 22.00     1.45
                 3.833     1.57 | 9.917     4.35 |16.000    3.62 | 22.08     1.45
                 3.917     1.57 |10.000     4.35 |16.083    3.62 | 22.17     1.45
                 4.000     1.57 |10.083     4.35 |16.167    3.62 | 22.25     1.45
                 4.083     1.57 |10.167     4.35 |16.250    3.62 | 22.33     1.45
                 4.167     1.57 |10.250     4.35 |16.333    2.17 | 22.42     1.45
                 4.250     1.57 |10.333     5.56 |16.417    2.17 | 22.50     1.45
                 4.333     1.93 |10.417     5.56 |16.500    2.17 | 22.58     1.45
                 4.417     1.93 |10.500     5.56 |16.583    2.17 | 22.67     1.45
                 4.500     1.93 |10.583     5.56 |16.667    2.17 | 22.75     1.45
                 4.583     1.93 |10.667     5.56 |16.750    2.17 | 22.83     1.45
                 4.667     1.93 |10.750     5.56 |16.833    2.17 | 22.92     1.45
                 4.750     1.93 |10.833     7.49 |16.917    2.17 | 23.00     1.45
                 4.833     1.93 |10.917     7.49 |17.000    2.17 | 23.08     1.45
                 4.917     1.93 |11.000     7.49 |17.083    2.17 | 23.17     1.45
                 5.000     1.93 |11.083     7.49 |17.167    2.17 | 23.25     1.45
                 5.083     1.93 |11.167     7.49 |17.250    2.17 | 23.33     1.45
                 5.167     1.93 |11.250     7.49 |17.333    2.17 | 23.42     1.45
                 5.250     1.93 |11.333    11.59 |17.417    2.17 | 23.50     1.45
                 5.333     1.93 |11.417    11.59 |17.500    2.17 | 23.58     1.45
                 5.417     1.93 |11.500    11.59 |17.583    2.17 | 23.67     1.45
                 5.500     1.93 |11.583    11.59 |17.667    2.17 | 23.75     1.45
                 5.583     1.93 |11.667    11.59 |17.750    2.17 | 23.83     1.45
                 5.667     1.93 |11.750    11.59 |17.833    2.17 | 23.92     1.45
                 5.750     1.93 |11.833    35.75 |17.917    2.17 | 24.00     1.45
                 5.833     1.93 |11.917    35.75 |18.000    2.17 | 24.08     1.45
                 5.917     1.93 |12.000    35.75 |18.083    2.17 | 24.17     1.45
                 6.000     1.93 |12.083   147.81 |18.167    2.17 | 24.25     1.45
                 6.083     1.93 |12.167   147.82 |18.250    2.17 |

     Max.Eff.Inten.(mm/hr)=     147.82       276.97
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       1.64 (ii)    6.34 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.15
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.00         0.17         0.173 (iii)
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     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     119.77        88.28         88.59
     TOTAL RAINFALL   (mm)=     120.77       120.77        120.77
     RUNOFF COEFFICIENT   =       0.99         0.73          0.73

 ***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
 ***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
               YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0246)|
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
        ID1= 1 (  0245):      0.58   0.173    12.25    88.59
      + ID2= 2 (  0282):      0.51   0.140    12.33    88.59
        ====================================================
        ID = 3 (  0246):      1.09   0.303    12.25    88.59

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB            |
| NASHYD   (  0302)|   Area    (ha)=   0.78   Curve Number   (CN)= 78.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

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

                         ---- TRANSFORMED HYETOGRAPH ----
                  TIME     RAIN | TIME     RAIN |'  TIME    RAIN | TIME     RAIN
                   hrs    mm/hr |  hrs    mm/hr |'   hrs   mm/hr |  hrs    mm/hr
                 0.083     0.00 | 6.167     1.93 |12.250  147.82 | 18.33     2.17
                 0.167     0.00 | 6.250     1.93 |12.333   17.41 | 18.42     2.17
                 0.250     0.00 | 6.333     2.17 |12.417   17.39 | 18.50     2.17
                 0.333     1.33 | 6.417     2.17 |12.500   17.39 | 18.58     2.17
                 0.417     1.33 | 6.500     2.17 |12.583   17.39 | 18.67     2.17
                 0.500     1.33 | 6.583     2.17 |12.667   17.39 | 18.75     2.17
                 0.583     1.33 | 6.667     2.17 |12.750   17.39 | 18.83     2.17
                 0.667     1.33 | 6.750     2.17 |12.833    8.94 | 18.92     2.17
                 0.750     1.33 | 6.833     2.17 |12.917    8.94 | 19.00     2.17
                 0.833     1.33 | 6.917     2.17 |13.000    8.94 | 19.08     2.17
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0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
2.417    1.57 | 8.500    3.14 |14.583    3.62 | 20.67    1.45
2.500    1.57 | 8.583    3.14 |14.667    3.62 | 20.75    1.45
2.583    1.57 | 8.667    3.14 |14.750    3.62 | 20.83    1.45
2.667    1.57 | 8.750    3.14 |14.833    3.62 | 20.92    1.45
2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
3.833    1.57 | 9.917    4.35 |16.000    3.62 | 22.08    1.45
3.917    1.57 |10.000    4.35 |16.083    3.62 | 22.17    1.45
4.000    1.57 |10.083    4.35 |16.167    3.62 | 22.25    1.45
4.083    1.57 |10.167    4.35 |16.250    3.62 | 22.33    1.45
4.167    1.57 |10.250    4.35 |16.333    2.17 | 22.42    1.45
4.250    1.57 |10.333    5.56 |16.417    2.17 | 22.50    1.45
4.333    1.93 |10.417    5.56 |16.500    2.17 | 22.58    1.45
4.417    1.93 |10.500    5.56 |16.583    2.17 | 22.67    1.45
4.500    1.93 |10.583    5.56 |16.667    2.17 | 22.75    1.45
4.583    1.93 |10.667    5.56 |16.750    2.17 | 22.83    1.45
4.667    1.93 |10.750    5.56 |16.833    2.17 | 22.92    1.45
4.750    1.93 |10.833    7.49 |16.917    2.17 | 23.00    1.45
4.833    1.93 |10.917    7.49 |17.000    2.17 | 23.08    1.45
4.917    1.93 |11.000    7.49 |17.083    2.17 | 23.17    1.45
5.000    1.93 |11.083    7.49 |17.167    2.17 | 23.25    1.45
5.083    1.93 |11.167    7.49 |17.250    2.17 | 23.33    1.45
5.167    1.93 |11.250    7.49 |17.333    2.17 | 23.42    1.45
5.250    1.93 |11.333   11.59 |17.417    2.17 | 23.50    1.45
5.333    1.93 |11.417   11.59 |17.500    2.17 | 23.58    1.45
5.417    1.93 |11.500   11.59 |17.583    2.17 | 23.67    1.45
5.500    1.93 |11.583   11.59 |17.667    2.17 | 23.75    1.45
5.583    1.93 |11.667   11.59 |17.750    2.17 | 23.83    1.45
5.667    1.93 |11.750   11.59 |17.833    2.17 | 23.92    1.45
5.750    1.93 |11.833   35.75 |17.917    2.17 | 24.00    1.45
5.833    1.93 |11.917   35.75 |18.000    2.17 | 24.08    1.45
5.917    1.93 |12.000   35.75 |18.083    2.17 | 24.17    1.45
6.000    1.93 |12.083  147.81 |18.167    2.17 | 24.25    1.45
6.083    1.93 |12.167  147.82 |18.250    2.17 |

     Max.Eff.Inten.(mm/hr)=     147.82       276.97
               over (min)          5.00        10.00
     Storage Coeff.  (min)=        1.57 (ii)    6.27 (ii)
     Unit Hyd. Tpeak (min)=        5.00        10.00
     Unit Hyd. peak  (cms)=        0.33         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=        0.00         0.15         0.150 (iii)
     TIME TO PEAK    (hrs)=       12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=      119.77        88.28        88.59
     TOTAL RAINFALL   (mm)=      120.77       120.77       120.77
     RUNOFF COEFFICIENT   =        0.99         0.73         0.73

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
             YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. 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   (  0248)|
|   1 +  2 =  3     |        AREA    QPEAK     TPEAK      R.V.
--------------------         (ha)    (cms)     (hrs)      (mm)
     ID1= 1 (  0019):      0.50   0.150    12.25    88.59
   + ID2= 2 (  0302):      0.78   0.148    12.33    72.69
     ==========================================================
     ID = 3 (  0248):      1.28   0.288    12.25    78.90
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     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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--------------------
| CALIB             |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.90         0.38
     Dep. Storage     (mm)=       1.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=      92.38        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    0.00 | 6.167    1.93 |12.250  147.82 | 18.33    2.17
 0.167    0.00 | 6.250    1.93 |12.333   17.41 | 18.42    2.17
 0.250    0.00 | 6.333    2.17 |12.417   17.39 | 18.50    2.17
 0.333    1.33 | 6.417    2.17 |12.500   17.39 | 18.58    2.17
 0.417    1.33 | 6.500    2.17 |12.583   17.39 | 18.67    2.17
 0.500    1.33 | 6.583    2.17 |12.667   17.39 | 18.75    2.17
 0.583    1.33 | 6.667    2.17 |12.750   17.39 | 18.83    2.17
 0.667    1.33 | 6.750    2.17 |12.833    8.94 | 18.92    2.17
 0.750    1.33 | 6.833    2.17 |12.917    8.94 | 19.00    2.17
 0.833    1.33 | 6.917    2.17 |13.000    8.94 | 19.08    2.17
 0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
 1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
 1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
 1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
 1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
 1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
 1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
 1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
 1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
 1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
 1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
 1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
 1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
 2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
 2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
 2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
 2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
 2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
 2.417    1.57 | 8.500    3.14 |14.583    3.62 | 20.67    1.45
 2.500    1.57 | 8.583    3.14 |14.667    3.62 | 20.75    1.45
 2.583    1.57 | 8.667    3.14 |14.750    3.62 | 20.83    1.45
 2.667    1.57 | 8.750    3.14 |14.833    3.62 | 20.92    1.45
 2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
 2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
 2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
 3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
 3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
 3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
 3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
 3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
 3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
 3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
 3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
 3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
 3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
 3.833    1.57 | 9.917    4.35 |16.000    3.62 | 22.08    1.45
 3.917    1.57 |10.000    4.35 |16.083    3.62 | 22.17    1.45
 4.000    1.57 |10.083    4.35 |16.167    3.62 | 22.25    1.45
 4.083    1.57 |10.167    4.35 |16.250    3.62 | 22.33    1.45
 4.167    1.57 |10.250    4.35 |16.333    2.17 | 22.42    1.45
 4.250    1.57 |10.333    5.56 |16.417    2.17 | 22.50    1.45
 4.333    1.93 |10.417    5.56 |16.500    2.17 | 22.58    1.45
 4.417    1.93 |10.500    5.56 |16.583    2.17 | 22.67    1.45
 4.500    1.93 |10.583    5.56 |16.667    2.17 | 22.75    1.45
 4.583    1.93 |10.667    5.56 |16.750    2.17 | 22.83    1.45
 4.667    1.93 |10.750    5.56 |16.833    2.17 | 22.92    1.45
 4.750    1.93 |10.833    7.49 |16.917    2.17 | 23.00    1.45
 4.833    1.93 |10.917    7.49 |17.000    2.17 | 23.08    1.45
 4.917    1.93 |11.000    7.49 |17.083    2.17 | 23.17    1.45
 5.000    1.93 |11.083    7.49 |17.167    2.17 | 23.25    1.45
 5.083    1.93 |11.167    7.49 |17.250    2.17 | 23.33    1.45
 5.167    1.93 |11.250    7.49 |17.333    2.17 | 23.42    1.45
 5.250    1.93 |11.333   11.59 |17.417    2.17 | 23.50    1.45
 5.333    1.93 |11.417   11.59 |17.500    2.17 | 23.58    1.45
 5.417    1.93 |11.500   11.59 |17.583    2.17 | 23.67    1.45
 5.500    1.93 |11.583   11.59 |17.667    2.17 | 23.75    1.45
 5.583    1.93 |11.667   11.59 |17.750    2.17 | 23.83    1.45
 5.667    1.93 |11.750   11.59 |17.833    2.17 | 23.92    1.45
 5.750    1.93 |11.833   35.75 |17.917    2.17 | 24.00    1.45
 5.833    1.93 |11.917   35.75 |18.000    2.17 | 24.08    1.45
 5.917    1.93 |12.000   35.75 |18.083    2.17 | 24.17    1.45
 6.000    1.93 |12.083  147.81 |18.167    2.17 | 24.25    1.45
 6.083    1.93 |12.167  147.82 |18.250    2.17 |

     Max.Eff.Inten.(mm/hr)=     147.82        96.52
               over (min)          5.00        10.00
     Storage Coeff.  (min)=        2.08 (ii)    6.38 (ii)
     Unit Hyd. Tpeak (min)=        5.00        10.00
     Unit Hyd. peak  (cms)=        0.31         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=        0.37         0.08         0.453 (iii)
     TIME TO PEAK    (hrs)=       12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=      119.77        65.37       103.45
     TOTAL RAINFALL   (mm)=      120.77       120.77       120.77
     RUNOFF COEFFICIENT   =        0.99         0.54         0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  74.0    Ia = Dep. 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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--------------------
| DUHYD    (  0279)|
| Inlet Cap.= 0.270|
| #of Inlets=   1  |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK     R.V.
--------------------         (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):    1.28      0.45     12.25   103.45
     ==========================================================
     MAJOR SYS.(ID= 2):    0.13      0.18     12.25   103.45
     MINOR SYS.(ID= 3):    1.15      0.27     12.08   103.45

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  | Junction Command(0303) |
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                         AREA     QPEAK    TPEAK     R.V.
                          (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 8(  0279)    0.13     0.18    12.25   103.45
  OUTFLOW: ID= 2(  0303)    0.13     0.18    12.25   103.45

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|Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                       Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA          |  STAGE      AREA
                       (m)         (m2)          |   (m)       (m2)
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                       0.000      100.000         |  1.500      100.000
                       0.500      100.000         |  0.000        0.000
                       1.000      100.000         |  0.000        0.000

                      MULCH LAYER:
                      Depth       (m)=   0.10  Porosity           =  0.40
                      Maximum Mulch layer Volume (cu.m.)=     4.64

                      ENGINEERED SOIL LAYER:
                      Soil moisture =   0.30  Depth          (m)=  0.67
                      Width         (m)=  58.00  Length         (m)=  2.00
                      Porosity      =   0.47  Infiltration (m/hr) = 0.0060
                      Maximum Engineered Soil layer Volume(cu.m.)=   36.30

                      STORAGE LAYER:
                      Depth       (m)=   1.50  Porosity           =  0.40
                      Seepage (m/hr) = 0.0010
                      Maximum Storage layer Volume(cu.m.)=    69.60

                      TOTAL AVAILABLE STORAGE:

                      TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                      NATIVE SOIL LAYER:
                      Infiltration (m/hr) = 0.0060

                         AREA         QPEAK          TPEAK         R.V.
                          (ha)         (cms)          (hrs)         (mm)
                INFLOW:ID= 2     1.15         0.270          12.08       103.45
              OVERFLOW:ID= 3     1.15         0.270          12.08        88.59

                      Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      14.37
                      Time to reach Max Ponding storage       (Hr)=       0.00
                      Volume of water for drawdown in LID  (cu.m.)=     178.98
                      Volume of Max. Water Storage         (cu.m.)=       0.00
                      Maximum Surface Ponding and Mulch Vol(cu.m.)=     154.59
                      Maximum Engineered Soil Volume       (cu.m.)=      24.45
                      ***** After simulation, water volume is not zero.

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  | Junction Command(0277) |
  -------------------------

                         AREA     QPEAK    TPEAK     R.V.
                          (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 3(  0278)    1.15     0.27    12.08    88.59
  OUTFLOW: ID= 2(  0277)    1.15     0.27    12.08    88.59

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| CALIB             |
| STANDHYD (  0313)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
--------------------
                           IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.43         1.62
     Dep. Storage     (mm)=       5.00         5.00
     Average Slope     (%)=       1.00         2.00
     Length           (m)=     164.25        40.00
     Mannings n            =     0.013        0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
  TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
 0.083    0.00 | 6.167    1.93 |12.250  147.82 | 18.33    2.17
 0.167    0.00 | 6.250    1.93 |12.333   17.41 | 18.42    2.17
 0.250    0.00 | 6.333    2.17 |12.417   17.39 | 18.50    2.17
 0.333    1.33 | 6.417    2.17 |12.500   17.39 | 18.58    2.17
 0.417    1.33 | 6.500    2.17 |12.583   17.39 | 18.67    2.17
 0.500    1.33 | 6.583    2.17 |12.667   17.39 | 18.75    2.17
 0.583    1.33 | 6.667    2.17 |12.750   17.39 | 18.83    2.17
 0.667    1.33 | 6.750    2.17 |12.833    8.94 | 18.92    2.17
 0.750    1.33 | 6.833    2.17 |12.917    8.94 | 19.00    2.17
 0.833    1.33 | 6.917    2.17 |13.000    8.94 | 19.08    2.17
 0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
 1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
 1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
 1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
 1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
 1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
 1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
 1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
 1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
 1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
 1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
 1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
 1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
 2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
 2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
 2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
 2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
 2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
 2.417    1.57 | 8.500    3.14 |14.583    3.62 | 20.67    1.45
 2.500    1.57 | 8.583    3.14 |14.667    3.62 | 20.75    1.45
 2.583    1.57 | 8.667    3.14 |14.750    3.62 | 20.83    1.45
 2.667    1.57 | 8.750    3.14 |14.833    3.62 | 20.92    1.45
 2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
 2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
 2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
 3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
 3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
 3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
 3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
 3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
 3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
 3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
 3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
 3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
 3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
 3.833    1.57 | 9.917    4.35 |16.000    3.62 | 22.08    1.45
 3.917    1.57 |10.000    4.35 |16.083    3.62 | 22.17    1.45
 4.000    1.57 |10.083    4.35 |16.167    3.62 | 22.25    1.45
 4.083    1.57 |10.167    4.35 |16.250    3.62 | 22.33    1.45
 4.167    1.57 |10.250    4.35 |16.333    2.17 | 22.42    1.45
 4.250    1.57 |10.333    5.56 |16.417    2.17 | 22.50    1.45
 4.333    1.93 |10.417    5.56 |16.500    2.17 | 22.58    1.45
 4.417    1.93 |10.500    5.56 |16.583    2.17 | 22.67    1.45
 4.500    1.93 |10.583    5.56 |16.667    2.17 | 22.75    1.45
 4.583    1.93 |10.667    5.56 |16.750    2.17 | 22.83    1.45
 4.667    1.93 |10.750    5.56 |16.833    2.17 | 22.92    1.45
 4.750    1.93 |10.833    7.49 |16.917    2.17 | 23.00    1.45
 4.833    1.93 |10.917    7.49 |17.000    2.17 | 23.08    1.45
 4.917    1.93 |11.000    7.49 |17.083    2.17 | 23.17    1.45
 5.000    1.93 |11.083    7.49 |17.167    2.17 | 23.25    1.45
 5.083    1.93 |11.167    7.49 |17.250    2.17 | 23.33    1.45
 5.167    1.93 |11.250    7.49 |17.333    2.17 | 23.42    1.45
 5.250    1.93 |11.333   11.59 |17.417    2.17 | 23.50    1.45
 5.333    1.93 |11.417   11.59 |17.500    2.17 | 23.58    1.45
 5.417    1.93 |11.500   11.59 |17.583    2.17 | 23.67    1.45
 5.500    1.93 |11.583   11.59 |17.667    2.17 | 23.75    1.45
 5.583    1.93 |11.667   11.59 |17.750    2.17 | 23.83    1.45
 5.667    1.93 |11.750   11.59 |17.833    2.17 | 23.92    1.45
 5.750    1.93 |11.833   35.75 |17.917    2.17 | 24.00    1.45
 5.833    1.93 |11.917   35.75 |18.000    2.17 | 24.08    1.45
 5.917    1.93 |12.000   35.75 |18.083    2.17 | 24.17    1.45
 6.000    1.93 |12.083  147.81 |18.167    2.17 | 24.25    1.45
 6.083    1.93 |12.167  147.82 |18.250    2.17 |
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       2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
       2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
       2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
       3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
       3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
       3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
       3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
       3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
       3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
       3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
       3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
       3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
       3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
       3.833    1.57 | 9.917    4.35 |16.000    3.62 | 22.08    1.45
       3.917    1.57 |10.000    4.35 |16.083    3.62 | 22.17    1.45
       4.000    1.57 |10.083    4.35 |16.167    3.62 | 22.25    1.45
       4.083    1.57 |10.167    4.35 |16.250    3.62 | 22.33    1.45
       4.167    1.57 |10.250    4.35 |16.333    2.17 | 22.42    1.45
       4.250    1.57 |10.333    5.56 |16.417    2.17 | 22.50    1.45
       4.333    1.93 |10.417    5.56 |16.500    2.17 | 22.58    1.45
       4.417    1.93 |10.500    5.56 |16.583    2.17 | 22.67    1.45
       4.500    1.93 |10.583    5.56 |16.667    2.17 | 22.75    1.45
       4.583    1.93 |10.667    5.56 |16.750    2.17 | 22.83    1.45
       4.667    1.93 |10.750    5.56 |16.833    2.17 | 22.92    1.45
       4.750    1.93 |10.833    7.49 |16.917    2.17 | 23.00    1.45
       4.833    1.93 |10.917    7.49 |17.000    2.17 | 23.08    1.45
       4.917    1.93 |11.000    7.49 |17.083    2.17 | 23.17    1.45
       5.000    1.93 |11.083    7.49 |17.167    2.17 | 23.25    1.45
       5.083    1.93 |11.167    7.49 |17.250    2.17 | 23.33    1.45
       5.167    1.93 |11.250    7.49 |17.333    2.17 | 23.42    1.45
       5.250    1.93 |11.333   11.59 |17.417    2.17 | 23.50    1.45
       5.333    1.93 |11.417   11.59 |17.500    2.17 | 23.58    1.45
       5.417    1.93 |11.500   11.59 |17.583    2.17 | 23.67    1.45
       5.500    1.93 |11.583   11.59 |17.667    2.17 | 23.75    1.45
       5.583    1.93 |11.667   11.59 |17.750    2.17 | 23.83    1.45
       5.667    1.93 |11.750   11.59 |17.833    2.17 | 23.92    1.45
       5.750    1.93 |11.833   35.75 |17.917    2.17 | 24.00    1.45
       5.833    1.93 |11.917   35.75 |18.000    2.17 | 24.08    1.45
       5.917    1.93 |12.000   35.75 |18.083    2.17 | 24.17    1.45
       6.000    1.93 |12.083  147.81 |18.167    2.17 | 24.25    1.45
       6.083    1.93 |12.167  147.82 |18.250    2.17 |

 Max.Eff.Inten.(mm/hr)=     147.82        96.52
           over (min)         5.00        15.00
 Storage Coeff.  (min)=       2.94 (ii)   10.10 (ii)
 Unit Hyd. Tpeak (min)=       5.00        15.00
 Unit Hyd. peak  (cms)=       0.28         0.10
                                                     *TOTALS*
 PEAK FLOW       (cms)=       0.99         0.29        1.244 (iii)
 TIME TO PEAK    (hrs)=      12.25        12.33        12.25
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 RUNOFF VOLUME    (mm)=     115.77        65.37         95.61
 TOTAL RAINFALL   (mm)=     120.77       120.77        120.77
 RUNOFF COEFFICIENT   =       0.96         0.54          0.79

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

     (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. 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 (  0314)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.72         0.72
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope     (%)=      0.50         2.00
     Length            (m)=     97.74        30.00
     Mannings n          =      0.013        0.250

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


                        ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 | 6.167    1.93 |12.250  147.82 | 18.33    2.17
           0.167    0.00 | 6.250    1.93 |12.333   17.41 | 18.42    2.17
           0.250    0.00 | 6.333    2.17 |12.417   17.39 | 18.50    2.17
           0.333    1.33 | 6.417    2.17 |12.500   17.39 | 18.58    2.17
           0.417    1.33 | 6.500    2.17 |12.583   17.39 | 18.67    2.17
           0.500    1.33 | 6.583    2.17 |12.667   17.39 | 18.75    2.17
           0.583    1.33 | 6.667    2.17 |12.750   17.39 | 18.83    2.17
           0.667    1.33 | 6.750    2.17 |12.833    8.94 | 18.92    2.17
           0.750    1.33 | 6.833    2.17 |12.917    8.94 | 19.00    2.17
           0.833    1.33 | 6.917    2.17 |13.000    8.94 | 19.08    2.17
           0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
           1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
           1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
           1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
           1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
           1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
           1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
           1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
           1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
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           1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
           1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
           1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
           1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
           2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
           2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
           2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
           2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
           2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
           2.417    1.57 | 8.500    3.14 |14.583    3.62 | 20.67    1.45
           2.500    1.57 | 8.583    3.14 |14.667    3.62 | 20.75    1.45
           2.583    1.57 | 8.667    3.14 |14.750    3.62 | 20.83    1.45
           2.667    1.57 | 8.750    3.14 |14.833    3.62 | 20.92    1.45
           2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
           2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
           2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
           3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
           3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
           3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
           3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
           3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
           3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
           3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
           3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
           3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
           3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
           3.833    1.57 | 9.917    4.35 |16.000    3.62 | 22.08    1.45
           3.917    1.57 |10.000    4.35 |16.083    3.62 | 22.17    1.45
           4.000    1.57 |10.083    4.35 |16.167    3.62 | 22.25    1.45
           4.083    1.57 |10.167    4.35 |16.250    3.62 | 22.33    1.45
           4.167    1.57 |10.250    4.35 |16.333    2.17 | 22.42    1.45
           4.250    1.57 |10.333    5.56 |16.417    2.17 | 22.50    1.45
           4.333    1.93 |10.417    5.56 |16.500    2.17 | 22.58    1.45
           4.417    1.93 |10.500    5.56 |16.583    2.17 | 22.67    1.45
           4.500    1.93 |10.583    5.56 |16.667    2.17 | 22.75    1.45
           4.583    1.93 |10.667    5.56 |16.750    2.17 | 22.83    1.45
           4.667    1.93 |10.750    5.56 |16.833    2.17 | 22.92    1.45
           4.750    1.93 |10.833    7.49 |16.917    2.17 | 23.00    1.45
           4.833    1.93 |10.917    7.49 |17.000    2.17 | 23.08    1.45
           4.917    1.93 |11.000    7.49 |17.083    2.17 | 23.17    1.45
           5.000    1.93 |11.083    7.49 |17.167    2.17 | 23.25    1.45
           5.083    1.93 |11.167    7.49 |17.250    2.17 | 23.33    1.45
           5.167    1.93 |11.250    7.49 |17.333    2.17 | 23.42    1.45
           5.250    1.93 |11.333   11.59 |17.417    2.17 | 23.50    1.45
           5.333    1.93 |11.417   11.59 |17.500    2.17 | 23.58    1.45
           5.417    1.93 |11.500   11.59 |17.583    2.17 | 23.67    1.45
           5.500    1.93 |11.583   11.59 |17.667    2.17 | 23.75    1.45
           5.583    1.93 |11.667   11.59 |17.750    2.17 | 23.83    1.45
           5.667    1.93 |11.750   11.59 |17.833    2.17 | 23.92    1.45
           5.750    1.93 |11.833   35.75 |17.917    2.17 | 24.00    1.45
```

```
       5.833    1.93 |11.917   35.75 |18.000    2.17 | 24.08    1.45
       5.917    1.93 |12.000   35.75 |18.083    2.17 | 24.17    1.45
       6.000    1.93 |12.083  147.81 |18.167    2.17 | 24.25    1.45
       6.083    1.93 |12.167  147.82 |18.250    2.17 |

 Max.Eff.Inten.(mm/hr)=     147.82        96.52
           over (min)         5.00        10.00
 Storage Coeff.  (min)=       2.65 (ii)    8.68 (ii)
 Unit Hyd. Tpeak (min)=       5.00        10.00
 Unit Hyd. peak  (cms)=       0.29         0.12
                                                     *TOTALS*
 PEAK FLOW       (cms)=       0.29         0.14        0.436 (iii)
 TIME TO PEAK    (hrs)=      12.25        12.25        12.25
 RUNOFF VOLUME    (mm)=     118.77        65.37        92.07
 TOTAL RAINFALL   (mm)=     120.77       120.77       120.77
 RUNOFF COEFFICIENT   =       0.98         0.54         0.76

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

     (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. Storage  (Above)
    (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
         THAN THE STORAGE COEFFICIENT.
   (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0310)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0313):      4.05   1.244    12.25    95.61
     + ID2= 2 (  0314):      1.43   0.436    12.25    92.07
       ===================================================
       ID = 3 (  0310):      5.48   1.680    12.25    94.68

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0315)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     10.09         4.12
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=    307.76        40.00
     Mannings n          =      0.013        0.250
```

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


                        ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 | 6.167    1.93 |12.250  147.82 | 18.33    2.17
           0.167    0.00 | 6.250    1.93 |12.333   17.41 | 18.42    2.17
           0.250    0.00 | 6.333    2.17 |12.417   17.39 | 18.50    2.17
           0.333    1.33 | 6.417    2.17 |12.500   17.39 | 18.58    2.17
           0.417    1.33 | 6.500    2.17 |12.583   17.39 | 18.67    2.17
           0.500    1.33 | 6.583    2.17 |12.667   17.39 | 18.75    2.17
           0.583    1.33 | 6.667    2.17 |12.750   17.39 | 18.83    2.17
           0.667    1.33 | 6.750    2.17 |12.833    8.94 | 18.92    2.17
           0.750    1.33 | 6.833    2.17 |12.917    8.94 | 19.00    2.17
           0.833    1.33 | 6.917    2.17 |13.000    8.94 | 19.08    2.17
           0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
           1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
           1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
           1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
           1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
           1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
           1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
           1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
           1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
           1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
           1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
           1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
           1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
           2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
           2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
           2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
           2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
           2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
           2.417    1.57 | 8.500    3.14 |14.583    3.62 | 20.67    1.45
           2.500    1.57 | 8.583    3.14 |14.667    3.62 | 20.75    1.45
           2.583    1.57 | 8.667    3.14 |14.750    3.62 | 20.83    1.45
           2.667    1.57 | 8.750    3.14 |14.833    3.62 | 20.92    1.45
           2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
           2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
           2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
           3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
           3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
           3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
           3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
           3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
           3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
           3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
           3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
           3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
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           3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
           3.833    1.57 | 9.917    4.35 |16.000    3.62 | 22.08    1.45
           3.917    1.57 |10.000    4.35 |16.083    3.62 | 22.17    1.45
           4.000    1.57 |10.083    4.35 |16.167    3.62 | 22.25    1.45
           4.083    1.57 |10.167    4.35 |16.250    3.62 | 22.33    1.45
           4.167    1.57 |10.250    4.35 |16.333    2.17 | 22.42    1.45
           4.250    1.57 |10.333    5.56 |16.417    2.17 | 22.50    1.45
           4.333    1.93 |10.417    5.56 |16.500    2.17 | 22.58    1.45
           4.417    1.93 |10.500    5.56 |16.583    2.17 | 22.67    1.45
           4.500    1.93 |10.583    5.56 |16.667    2.17 | 22.75    1.45
           4.583    1.93 |10.667    5.56 |16.750    2.17 | 22.83    1.45
           4.667    1.93 |10.750    5.56 |16.833    2.17 | 22.92    1.45
           4.750    1.93 |10.833    7.49 |16.917    2.17 | 23.00    1.45
           4.833    1.93 |10.917    7.49 |17.000    2.17 | 23.08    1.45
           4.917    1.93 |11.000    7.49 |17.083    2.17 | 23.17    1.45
           5.000    1.93 |11.083    7.49 |17.167    2.17 | 23.25    1.45
           5.083    1.93 |11.167    7.49 |17.250    2.17 | 23.33    1.45
           5.167    1.93 |11.250    7.49 |17.333    2.17 | 23.42    1.45
           5.250    1.93 |11.333   11.59 |17.417    2.17 | 23.50    1.45
           5.333    1.93 |11.417   11.59 |17.500    2.17 | 23.58    1.45
           5.417    1.93 |11.500   11.59 |17.583    2.17 | 23.67    1.45
           5.500    1.93 |11.583   11.59 |17.667    2.17 | 23.75    1.45
           5.583    1.93 |11.667   11.59 |17.750    2.17 | 23.83    1.45
           5.667    1.93 |11.750   11.59 |17.833    2.17 | 23.92    1.45
           5.750    1.93 |11.833   35.75 |17.917    2.17 | 24.00    1.45
           5.833    1.93 |11.917   35.75 |18.000    2.17 | 24.08    1.45
           5.917    1.93 |12.000   35.75 |18.083    2.17 | 24.17    1.45
           6.000    1.93 |12.083  147.81 |18.167    2.17 | 24.25    1.45
           6.083    1.93 |12.167  147.82 |18.250    2.17 |

 Max.Eff.Inten.(mm/hr)=     147.82        96.52
           over (min)         5.00        10.00
 Storage Coeff.  (min)=       4.29 (ii)    8.51 (ii)
 Unit Hyd. Tpeak (min)=       5.00        10.00
 Unit Hyd. peak  (cms)=       0.23         0.12
                                                     *TOTALS*
 PEAK FLOW       (cms)=       4.05         0.83        4.873 (iii)
 TIME TO PEAK    (hrs)=      12.25        12.25        12.25
 RUNOFF VOLUME    (mm)=     119.77        65.37       104.00
 TOTAL RAINFALL   (mm)=     120.77       120.77       120.77
 RUNOFF COEFFICIENT   =       0.99         0.54         0.86

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

     (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
          CN*  =  74.0    Ia = Dep. 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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--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=     1|
| Total(cms)=   2.9|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):  14.21      4.87     12.25  104.00
     ==================================================
     MAJOR SYS.(ID= 2):   1.14      1.92     12.25  104.00
     MINOR SYS.(ID= 3):  13.07      2.95     12.08  104.00

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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----------------------
|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
----------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=      149.95

                      STAGE       AREA          |   STAGE      AREA
                       (m)        (m2)          |    (m)       (m2)
                      0.000       100.000       |   1.500      100.000
                      0.500       100.000       |   0.000        0.000
                      1.000       100.000       |   0.000        0.000

                    MULCH LAYER:
                    Depth      (m)=    0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=    62.40

                    ENGINEERED SOIL LAYER:
                    Soil moisture =    0.30  Depth            (m)=  0.67
                    Width      (m)=  780.00  Length           (m)=  2.00
                    Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                    STORAGE LAYER:
                    Depth       (m)=    1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=   936.00

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                    NATIVE SOIL LAYER:
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                    Infiltration (m/hr) = 0.0060

                      AREA         QPEAK          TPEAK        R.V.
                      (ha)         (cms)          (hrs)        (mm)
     INFLOW:ID= 2    13.07         2.948          12.08       104.00
   OVERFLOW:ID= 3    13.07         2.945          12.08       100.68

              Volume Reduction Rate[(RVin-RVout)/RVin] (%)=        3.19
              Time to reach Max Ponding storage       (Hr)=        0.00
              Volume of water for drawdown in LID  (cu.m.)=      541.02
              Volume of Max. Water Storage         (cu.m.)=        0.00
              Maximum Surface Ponding And Mulch Vol(cu.m.)=      212.35
              Maximum Engineered Soil Volume       (cu.m.)=      332.72
              ***** After simulation, water volume is not zero.

  --------------------------
  | Junction Command(0317) |
  --------------------------

                          AREA     QPEAK   TPEAK     R.V.
                          (ha)     (cms)    (hrs)    (mm)
  INFLOW : ID= 3(  0318)  13.07     2.95   12.08   100.68
  OUTFLOW: ID= 2(  0317)  13.07     2.95   12.08   100.68

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

--------------------
| ADD HYD  (  0316)|
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0311):      1.14   1.925    12.25   104.00
     + ID2= 2 (  0317):     13.07   2.945    12.08   100.68
       ===================================================
       ID = 3 (  0316):     14.21   4.870    12.25   100.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB              |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.39         0.20
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope     (%)=      1.00         2.00
     Length            (m)=     62.78        40.00
     Mannings n          =      0.013        0.250

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

```
                        ---- TRANSFORMED HYETOGRAPH ----
            TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
             hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
           0.083    0.00 | 6.167    1.93 |12.250  147.82 | 18.33    2.17
           0.167    0.00 | 6.250    1.93 |12.333   17.41 | 18.42    2.17
           0.250    0.00 | 6.333    2.17 |12.417   17.39 | 18.50    2.17
           0.333    1.33 | 6.417    2.17 |12.500   17.39 | 18.58    2.17
           0.417    1.33 | 6.500    2.17 |12.583   17.39 | 18.67    2.17
           0.500    1.33 | 6.583    2.17 |12.667   17.39 | 18.75    2.17
           0.583    1.33 | 6.667    2.17 |12.750   17.39 | 18.83    2.17
           0.667    1.33 | 6.750    2.17 |12.833    8.94 | 18.92    2.17
           0.750    1.33 | 6.833    2.17 |12.917    8.94 | 19.00    2.17
           0.833    1.33 | 6.917    2.17 |13.000    8.94 | 19.08    2.17
           0.917    1.33 | 7.000    2.17 |13.083    8.94 | 19.17    2.17
           1.000    1.33 | 7.083    2.17 |13.167    8.94 | 19.25    2.17
           1.083    1.33 | 7.167    2.17 |13.250    8.94 | 19.33    2.17
           1.167    1.33 | 7.250    2.17 |13.333    6.52 | 19.42    2.17
           1.250    1.33 | 7.333    2.66 |13.417    6.52 | 19.50    2.17
           1.333    1.33 | 7.417    2.66 |13.500    6.52 | 19.58    2.17
           1.417    1.33 | 7.500    2.66 |13.583    6.52 | 19.67    2.17
           1.500    1.33 | 7.583    2.66 |13.667    6.52 | 19.75    2.17
           1.583    1.33 | 7.667    2.66 |13.750    6.52 | 19.83    2.17
           1.667    1.33 | 7.750    2.66 |13.833    5.07 | 19.92    2.17
           1.750    1.33 | 7.833    2.66 |13.917    5.07 | 20.00    2.17
           1.833    1.33 | 7.917    2.66 |14.000    5.07 | 20.08    2.17
           1.917    1.33 | 8.000    2.66 |14.083    5.07 | 20.17    2.17
           2.000    1.33 | 8.083    2.66 |14.167    5.07 | 20.25    2.17
           2.083    1.33 | 8.167    2.66 |14.250    5.07 | 20.33    1.45
           2.167    1.33 | 8.250    2.66 |14.333    3.62 | 20.42    1.45
           2.250    1.33 | 8.333    3.14 |14.417    3.62 | 20.50    1.45
           2.333    1.57 | 8.417    3.14 |14.500    3.62 | 20.58    1.45
           2.417    1.57 | 8.500    3.14 |14.583    3.62 | 20.67    1.45
           2.500    1.57 | 8.583    3.14 |14.667    3.62 | 20.75    1.45
           2.583    1.57 | 8.667    3.14 |14.750    3.62 | 20.83    1.45
           2.667    1.57 | 8.750    3.14 |14.833    3.62 | 20.92    1.45
           2.750    1.57 | 8.833    3.38 |14.917    3.62 | 21.00    1.45
           2.833    1.57 | 8.917    3.38 |15.000    3.62 | 21.08    1.45
           2.917    1.57 | 9.000    3.38 |15.083    3.62 | 21.17    1.45
           3.000    1.57 | 9.083    3.38 |15.167    3.62 | 21.25    1.45
           3.083    1.57 | 9.167    3.38 |15.250    3.62 | 21.33    1.45
           3.167    1.57 | 9.250    3.38 |15.333    3.62 | 21.42    1.45
           3.250    1.57 | 9.333    3.86 |15.417    3.62 | 21.50    1.45
           3.333    1.57 | 9.417    3.86 |15.500    3.62 | 21.58    1.45
           3.417    1.57 | 9.500    3.86 |15.583    3.62 | 21.67    1.45
           3.500    1.57 | 9.583    3.86 |15.667    3.62 | 21.75    1.45
           3.583    1.57 | 9.667    3.86 |15.750    3.62 | 21.83    1.45
           3.667    1.57 | 9.750    3.86 |15.833    3.62 | 21.92    1.45
           3.750    1.57 | 9.833    4.35 |15.917    3.62 | 22.00    1.45
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                3.833    1.57 |  9.917    4.35 |16.000    3.62 |  22.08    1.45
                3.917    1.57 |10.000    4.35 |16.083    3.62 |  22.17    1.45
                4.000    1.57 |10.083    4.35 |16.167    3.62 |  22.25    1.45
                4.083    1.57 |10.167    4.35 |16.250    3.62 |  22.33    1.45
                4.167    1.57 |10.250    4.35 |16.333    2.17 |  22.42    1.45
                4.250    1.57 |10.333    5.56 |16.417    2.17 |  22.50    1.45
                4.333    1.93 |10.417    5.56 |16.500    2.17 |  22.58    1.45
                4.417    1.93 |10.500    5.56 |16.583    2.17 |  22.67    1.45
                4.500    1.93 |10.583    5.56 |16.667    2.17 |  22.75    1.45
                4.583    1.93 |10.667    5.56 |16.750    2.17 |  22.83    1.45
                4.667    1.93 |10.750    5.56 |16.833    2.17 |  22.92    1.45
                4.750    1.93 |10.833    7.49 |16.917    2.17 |  23.00    1.45
                4.833    1.93 |10.917    7.49 |17.000    2.17 |  23.08    1.45
                4.917    1.93 |11.000    7.49 |17.083    2.17 |  23.17    1.45
                5.000    1.93 |11.083    7.49 |17.167    2.17 |  23.25    1.45
                5.083    1.93 |11.167    7.49 |17.250    2.17 |  23.33    1.45
                5.167    1.93 |11.250    7.49 |17.333    2.17 |  23.42    1.45
                5.250    1.93 |11.333   11.59 |17.417    2.17 |  23.50    1.45
                5.333    1.93 |11.417   11.59 |17.500    2.17 |  23.58    1.45
                5.417    1.93 |11.500   11.59 |17.583    2.17 |  23.67    1.45
                5.500    1.93 |11.583   11.59 |17.667    2.17 |  23.75    1.45
                5.583    1.93 |11.667   11.59 |17.750    2.17 |  23.83    1.45
                5.667    1.93 |11.750   11.59 |17.833    2.17 |  23.92    1.45
                5.750    1.93 |11.833   35.75 |17.917    2.17 |  24.00    1.45
                5.833    1.93 |11.917   35.75 |18.000    2.17 |  24.08    1.45
                5.917    1.93 |12.000   35.75 |18.083    2.17 |  24.17    1.45
                6.000    1.93 |12.083  147.81 |18.167    2.17 |  24.25    1.45
                6.083    1.93 |12.167  147.82 |18.250    2.17 |

     Max.Eff.Inten.(mm/hr)=     147.82       277.87
               over (min)         5.00        10.00
     Storage Coeff.  (min)=       1.65 (ii)    6.34 (ii)
     Unit Hyd. Tpeak (min)=       5.00        10.00
     Unit Hyd. peak  (cms)=       0.32         0.15
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.06         0.13         0.192 (iii)
     TIME TO PEAK    (hrs)=      12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     119.77        88.34         96.19
     TOTAL RAINFALL   (mm)=     120.77       120.77        120.77
     RUNOFF COEFFICIENT   =       0.99         0.73          0.80

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

```
--------------------
| DUHYD    (  0331)|
| Inlet Cap.=  0.112|
| #of Inlets=     1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.19     12.25   96.19
     ------------------------------------------------------
     MAJOR SYS.(ID= 2):   0.05      0.08     12.25   96.19
     MINOR SYS.(ID= 3):   0.54      0.11     12.08   96.19

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)|  OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=     149.95

                    STAGE       AREA          |   STAGE      AREA
                     (m)        (m2)          |    (m)       (m2)
                    0.000      100.000        |   1.500      100.000
                    0.500      100.000        |   0.000        0.000
                    1.000      100.000        |   0.000        0.000

                   MULCH LAYER:
                   Depth      (m)=    0.00  Porosity           =  0.40
                   Maximum Mulch layer Volume (cu.m.)=     0.00

                   ENGINEERED SOIL LAYER:
                   Soil moisture =    0.30  Depth            (m)=  0.72
                   Width      (m)=    3.00  Length           (m)=240.00
                   Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                   Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                     DEPTH       DISCHARGE       |   DEPTH       DISCHARGE
                      (m)          (cms)         |    (m)         (cms)
                     0.000         0.000         |   0.559        0.030
                     0.279         0.010         |   0.762        0.040
                     0.406         0.020         |   1.300        0.050

                   STORAGE LAYER:
                   Depth       (m)=    1.00  Porosity           =  0.40
                   Seepage (m/hr) = 0.0010
                   Maximum Storage layer Volume(cu.m.)=   288.00

                   TOTAL AVAILABLE STORAGE:
```

```
                        TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
     +Storage Layer(cu.m.)=      680.04

                        NATIVE SOIL LAYER:
                        Infiltration (m/hr) = 0.0060

                           AREA         QPEAK            TPEAK         R.V.
                           (ha)         (cms)            (hrs)         (mm)
          INFLOW:ID= 2     0.54         0.112            12.08        96.19
         OUTFLOW:ID= 1     0.19         0.009             0.08        77.54
        OVERFLOW:ID= 3     0.36         0.111            12.25        77.54

                   Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       19.40
                   Time to reach Max Ponding storage       (Hr)=        0.00
                   Volume of water for drawdown in LID  (cu.m.)=      156.54
                   Volume of Max. Water Storage         (cu.m.)=        0.00
                   Maximum Surface Ponding And Mulch Vol(cu.m.)=      149.95
                   Maximum Engineered Soil Volume       (cu.m.)=       69.86
                   ***** After simulation, water volume is not zero.

     -------------------------
     | Junction Command(0330) |
     -------------------------

                              AREA     QPEAK   TPEAK     R.V.
                              (ha)     (cms)    (hrs)    (mm)
     INFLOW : ID= 3(  0329)    0.36     0.11   12.25    77.54
     OUTFLOW: ID= 2(  0330)    0.36     0.11   12.25    77.54

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

     -------------------------
     | Junction Command(0332) |
     -------------------------

                              AREA     QPEAK   TPEAK     R.V.
                              (ha)     (cms)    (hrs)    (mm)
     INFLOW : ID= 1(  0329)    0.19     0.01    0.08    77.54
     OUTFLOW: ID= 2(  0332)    0.19     0.01    0.08    77.54

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

     --------------------
     | ADD HYD  (  3106)|
     |   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
     --------------------      (ha)     (cms)     (hrs)     (mm)
            ID1= 1 (  0330):    0.36   0.111     12.25    77.54
          + ID2= 2 (  0331):    0.05   0.080     12.25    96.19
            ================================================
```

```
          ID = 3 (  3106):     0.41   0.191    12.25    79.66

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

--------------------
| ADD HYD  (  3106)|
|   3 +  2 =  1    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
          ID1= 3 (  3106):     0.41   0.191    12.25    79.66
        + ID2= 2 (  0332):     0.19   0.009     0.08    77.54
          ================================================
          ID = 1 (  3106):     0.59   0.192    12.25    79.00

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
          ID1= 1 (  0277):     1.15   0.270    12.08    88.59
        + ID2= 2 (  0310):     5.48   1.680    12.25    94.68
          ================================================
          ID = 3 (  0312):     6.63   1.950    12.25    93.63

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

--------------------
| ADD HYD  (  0312)|
|   3 +  2 =  1    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
          ID1= 3 (  0312):     6.63   1.950    12.25    93.63
        + ID2= 2 (  3106):     0.59   0.192    12.25    79.00
          ================================================
          ID = 1 (  0312):     7.22   2.142    12.25    92.43

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA     QPEAK     TPEAK     R.V.
--------------------      (ha)     (cms)     (hrs)     (mm)
          ID1= 1 (  0312):     7.22   2.142    12.25    92.43
        + ID2= 2 (  0316):    14.21   4.870    12.25   100.94
          ================================================
          ID = 3 (  0312):    21.43   7.012    12.25    98.07
```

```
     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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     |  0.6610      0.9850
                          0.0400    0.1140     |  1.0960      1.3320
                          0.0760    0.3690     |  1.4260      1.5860
                          0.2810    0.6450     |  0.0000      0.0000

                               AREA      QPEAK     TPEAK        R.V.
                               (ha)      (cms)     (hrs)        (mm)
     INFLOW : ID= 2 (  0312)     21.429      7.012     12.25      98.07
     OUTFLOW: ID= 1 (  0319)     21.429      0.868     12.83      98.04

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 12.38
                    TIME SHIFT OF PEAK FLOW         (min)= 35.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  1.1524

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

```
================================================================================
========================

       V    V   I    SSSSS  U   U    A     L              (v 6.2.2008)
       V    V   I    SS     U   U   A A    L
        V  V    I     SS    U   U  AAAAA   L
        V  V    I      SS   U   U  A   A   L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

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

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

  Output  filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\01150
ea5-08e9-4784-acdc-459efcf7e2eb\scena
  Summary filename:
C:\Users\kswain\AppData\Local\Civica\VH5\4c9aa870-2b3a-4142-a551-3404df768702\01150
ea5-08e9-4784-acdc-459efcf7e2eb\scena

DATE: 08-28-2022                          TIME: 02:37:54

USER:


COMMENTS: _____

--------------------------------------------------------------------------------
---------------------
  ************************************************
  ** SIMULATION : L. 100yr 24hr 15min SCS Type  **
  ************************************************


--------------------
|     READ STORM     |     Filename: C:\Users\kswain\AppD
|                    |               ata\Local\Temp\
```

```
|                    |                  493684fd-5088-4e79-aaf3-4a5a81863920\15758074
| Ptotal=132.74 mm   |   Comments: L. 100yr 24hr 15min SCS Type II
--------------------
            TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
            hrs    mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
           0.00     0.00 |  6.25    2.39 | 12.50   19.11 | 18.75    2.39
           0.25     1.46 |  6.50    2.39 | 12.75    9.82 | 19.00    2.39
           0.50     1.46 |  6.75    2.39 | 13.00    9.82 | 19.25    2.39
           0.75     1.46 |  7.00    2.39 | 13.25    7.17 | 19.50    2.39
           1.00     1.46 |  7.25    2.92 | 13.50    7.17 | 19.75    2.39
           1.25     1.46 |  7.50    2.92 | 13.75    5.58 | 20.00    2.39
           1.50     1.46 |  7.75    2.92 | 14.00    5.58 | 20.25    1.59
           1.75     1.46 |  8.00    2.92 | 14.25    3.98 | 20.50    1.59
           2.00     1.46 |  8.25    3.45 | 14.50    3.98 | 20.75    1.59
           2.25     1.73 |  8.50    3.45 | 14.75    3.98 | 21.00    1.59
           2.50     1.73 |  8.75    3.72 | 15.00    3.98 | 21.25    1.59
           2.75     1.73 |  9.00    3.72 | 15.25    3.98 | 21.50    1.59
           3.00     1.73 |  9.25    4.25 | 15.50    3.98 | 21.75    1.59
           3.25     1.73 |  9.50    4.25 | 15.75    3.98 | 22.00    1.59
           3.50     1.73 |  9.75    4.78 | 16.00    3.98 | 22.25    1.59
           3.75     1.73 | 10.00    4.78 | 16.25    2.39 | 22.50    1.59
           4.00     1.73 | 10.25    6.11 | 16.50    2.39 | 22.75    1.59
           4.25     2.12 | 10.50    6.11 | 16.75    2.39 | 23.00    1.59
           4.50     2.12 | 10.75    8.23 | 17.00    2.39 | 23.25    1.59
           4.75     2.12 | 11.00    8.23 | 17.25    2.39 | 23.50    1.59
           5.00     2.12 | 11.25   12.74 | 17.50    2.39 | 23.75    1.59
           5.25     2.12 | 11.50   12.74 | 17.75    2.39 | 24.00    1.59
           5.50     2.12 | 11.75   39.29 | 18.00    2.39 |
           5.75     2.12 | 12.00  162.47 | 18.25    2.39 |
           6.00     2.12 | 12.25   19.11 | 18.50    2.39 |

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

--------------------
| CALIB              |
| NASHYD   (  0185)| |   Area    (ha)=   1.66   Curve Number   (CN)= 74.4
|ID= 1 DT= 5.0 min | |   Ia      (mm)=   4.44   # of Linear Res.(N)= 3.00
------------------   |   U.H. Tp(hrs)=   0.24

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

                                ---- TRANSFORMED HYETOGRAPH ----
                      TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
                       hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
                     0.083    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
                     0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
                     0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
                     0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
                     0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
```

```
           0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
           0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
           0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
           0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
           0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
           0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
           1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
           1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
           1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
           1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
           1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
           1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
           1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
           1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
           1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
           1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
           1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
           1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
           2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
           2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
           2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
           2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
           2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
           2.417    1.73 | 8.500    3.45 |14.583    3.98 | 20.67    1.59
           2.500    1.73 | 8.583    3.45 |14.667    3.98 | 20.75    1.59
           2.583    1.73 | 8.667    3.45 |14.750    3.98 | 20.83    1.59
           2.667    1.73 | 8.750    3.45 |14.833    3.98 | 20.92    1.59
           2.750    1.73 | 8.833    3.72 |14.917    3.98 | 21.00    1.59
           2.833    1.73 | 8.917    3.72 |15.000    3.98 | 21.08    1.59
           2.917    1.73 | 9.000    3.72 |15.083    3.98 | 21.17    1.59
           3.000    1.73 | 9.083    3.72 |15.167    3.98 | 21.25    1.59
           3.083    1.73 | 9.167    3.72 |15.250    3.98 | 21.33    1.59
           3.167    1.73 | 9.250    3.72 |15.333    3.98 | 21.42    1.59
           3.250    1.73 | 9.333    4.25 |15.417    3.98 | 21.50    1.59
           3.333    1.73 | 9.417    4.25 |15.500    3.98 | 21.58    1.59
           3.417    1.73 | 9.500    4.25 |15.583    3.98 | 21.67    1.59
           3.500    1.73 | 9.583    4.25 |15.667    3.98 | 21.75    1.59
           3.583    1.73 | 9.667    4.25 |15.750    3.98 | 21.83    1.59
           3.667    1.73 | 9.750    4.25 |15.833    3.98 | 21.92    1.59
           3.750    1.73 | 9.833    4.78 |15.917    3.98 | 22.00    1.59
           3.833    1.73 | 9.917    4.78 |16.000    3.98 | 22.08    1.59
           3.917    1.73 |10.000    4.78 |16.083    3.98 | 22.17    1.59
           4.000    1.73 |10.083    4.78 |16.167    3.98 | 22.25    1.59
           4.083    1.73 |10.167    4.78 |16.250    3.98 | 22.33    1.59
           4.167    1.73 |10.250    4.78 |16.333    2.39 | 22.42    1.59
           4.250    1.73 |10.333    6.11 |16.417    2.39 | 22.50    1.59
           4.333    2.12 |10.417    6.11 |16.500    2.39 | 22.58    1.59
           4.417    2.12 |10.500    6.11 |16.583    2.39 | 22.67    1.59
           4.500    2.12 |10.583    6.11 |16.667    2.39 | 22.75    1.59
           4.583    2.12 |10.667    6.11 |16.750    2.39 | 22.83    1.59
           4.667    2.12 |10.750    6.11 |16.833    2.39 | 22.92    1.59
           4.750    2.12 |10.833    8.23 |16.917    2.39 | 23.00    1.59
           4.833    2.12 |10.917    8.23 |17.000    2.39 | 23.08    1.59
           4.917    2.12 |11.000    8.23 |17.083    2.39 | 23.17    1.59
           5.000    2.12 |11.083    8.23 |17.167    2.39 | 23.25    1.59
           5.083    2.12 |11.167    8.23 |17.250    2.39 | 23.33    1.59
           5.167    2.12 |11.250    8.23 |17.333    2.39 | 23.42    1.59
           5.250    2.12 |11.333   12.74 |17.417    2.39 | 23.50    1.59
           5.333    2.12 |11.417   12.74 |17.500    2.39 | 23.58    1.59
           5.417    2.12 |11.500   12.74 |17.583    2.39 | 23.67    1.59
           5.500    2.12 |11.583   12.74 |17.667    2.39 | 23.75    1.59
           5.583    2.12 |11.667   12.74 |17.750    2.39 | 23.83    1.59
           5.667    2.12 |11.750   12.74 |17.833    2.39 | 23.92    1.59
           5.750    2.12 |11.833   39.29 |17.917    2.39 | 24.00    1.59
           5.833    2.12 |11.917   39.29 |18.000    2.39 | 24.08    1.59
           5.917    2.12 |12.000   39.29 |18.083    2.39 | 24.17    1.59
           6.000    2.12 |12.083  162.46 |18.167    2.39 | 24.25    1.59
           6.083    2.12 |12.167  162.47 |18.250    2.39 |

     Unit Hyd Qpeak  (cms)=   0.265

     PEAK FLOW       (cms)=   0.293 (1)
     TIME TO PEAK    (hrs)=  12.333
     RUNOFF VOLUME    (mm)=  76.244
     TOTAL RAINFALL   (mm)= 132.740
     RUNOFF COEFFICIENT   =   0.574

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

--------------------------------------------------------------------------------
---------------------
| DUHYD      (  0182)|
| Inlet Cap.= 0.131|
| #of Inlets=    1|
| Total(cms)=   0.1|      AREA     QPEAK     TPEAK    R.V.
---------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   1.66      0.29     12.33   76.24
     ================================================
     MAJOR SYS.(ID= 2):   0.26      0.16     12.33   76.24
     MINOR SYS.(ID= 3):   1.40      0.13     12.17   76.24

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0184)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:
```

```
                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE       AREA          |  STAGE      AREA
                         (m)        (m2)          |   (m)       (m2)
                        0.000     100.000         |  1.500     100.000
                        0.500     100.000         |  0.000       0.000
                        1.000     100.000         |  0.000       0.000

                       MULCH LAYER:
                       Depth      (m)=   0.10  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=    21.60

                       ENGINEERED SOIL LAYER:
                       Soil moisture =    0.30  Depth             (m)=  0.72
                       Width      (m)=  180.00  Length            (m)=  3.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=  181.57

                       STORAGE LAYER:
                       Depth      (m)=   0.50  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=   108.00

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      461.12

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060

                         AREA         QPEAK          TPEAK         R.V.
                         (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     1.40      0.131          12.17        76.24
       OVERFLOW:ID= 3      1.40      0.130          12.25        59.34

                     Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      22.17
                     Time to reach Max Ponding storage       (hr)=       0.00
                     Volume of water for drawdown in LID  (cu.m.)=     278.03
                     Volume of Max. Water Storage         (cu.m.)=       0.00
                     Maximum Surface Ponding And Mulch Vol(cu.m.)=     171.55
                     Maximum Engineered Soil Volume       (cu.m.)=     108.42
                     ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0181) |
  -------------------------

                              AREA     QPEAK    TPEAK     R.V.
                              (ha)     (cms)    (hrs)     (mm)
```

```
     INFLOW : ID= 3(  0184)    1.40     0.13    12.25    59.34
     OUTFLOW: ID= 2(  0181)    1.40     0.13    12.25    59.34

  --------------------------------------------------------------------------------
---------------------
| CALIB              |
| STANDHYD (  0265)|   Area    (ha)=   0.86
|ID= 1 DT= 5.0 min |   Total Imp(%)=  65.00   Dir. Conn.(%)=  65.00
--------------------

                        IMPERVIOUS    PERVIOUS (i)
          Surface Area     (ha)=       0.56         0.30
          Dep. Storage     (mm)=       1.00         5.00
          Average Slope    (%)=        1.00         2.00
          Length           (m)=       75.87        40.00
          Mannings n            =     0.013        0.250

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

                                ---- TRANSFORMED HYETOGRAPH ----
                      TIME    RAIN |  TIME    RAIN |  TIME    RAIN |  TIME    RAIN
                       hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr |   hrs   mm/hr
                     0.083    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
                     0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
                     0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
                     0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
                     0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
                     0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
                     0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
                     0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
                     0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
                     0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
                     0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
                     1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
                     1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
                     1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
                     1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
                     1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
                     1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
                     1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
                     1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
                     1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
                     1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
                     1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
                     1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
                     2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
                     2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
                     2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
                     2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
                     2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
```

```
     Unit Hyd. peak  (cms)=       0.32          0.15

                                 *TOTALS*
     PEAK FLOW       (cms)=       0.25          0.08          0.330 (iii)
     TIME TO PEAK    (hrs)=      12.25         12.25         12.25
     RUNOFF VOLUME    (mm)=     131.74         75.20        111.95
     TOTAL RAINFALL   (mm)=     132.74        132.74        132.74
     RUNOFF COEFFICIENT   =       0.99          0.57          0.84

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
       (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
            THAN THE STORAGE COEFFICIENT.
       (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
---------------------
| DUHYD      (  0263)|
| Inlet Cap.= 0.174|
| #of Inlets=    1|
| Total(cms)=   0.2|      AREA     QPEAK     TPEAK    R.V.
---------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.86      0.33     12.25   111.95
     ================================================
     MAJOR SYS.(ID= 2):   0.10      0.16     12.25   111.95
     MINOR SYS.(ID= 3):   0.76      0.17     12.08   111.95

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
---------------------
|Bioretention(  0264)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                          Max. Ponding Storage(cu.m.)=      149.95

                        STAGE       AREA          |  STAGE      AREA
                         (m)        (m2)          |   (m)       (m2)
                        0.000     100.000         |  1.500     100.000
                        0.500     100.000         |  0.000       0.000
                        1.000     100.000         |  0.000       0.000

                       MULCH LAYER:
                       Depth      (m)=   0.10  Porosity           =  0.40
                       Maximum Mulch layer Volume (cu.m.)=    3.20

                       ENGINEERED SOIL LAYER:
```

```
                       Soil moisture =    0.30  Depth             (m)=  0.67
                       Width      (m)=   40.00  Length            (m)=  2.00
                       Porosity      =    0.47  Infiltration (m/hr) = 0.0060
                       Maximum Engineered Soil layer Volume(cu.m.)=   25.03

                       STORAGE LAYER:
                       Depth      (m)=   1.50  Porosity           =  0.40
                       Seepage (m/hr) = 0.0010
                       Maximum Storage layer Volume(cu.m.)=    48.00

                       TOTAL AVAILABLE STORAGE:

                       TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      226.18

                       NATIVE SOIL LAYER:
                       Infiltration (m/hr) = 0.0060

                         AREA         QPEAK          TPEAK         R.V.
                         (ha)         (cms)          (hrs)         (mm)
          INFLOW:ID= 2     0.76      0.174          12.08        111.95
       OVERFLOW:ID= 3      0.76      0.174          12.08         90.27

                     Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      19.37
                     Time to reach Max Ponding storage       (hr)=       0.00
                     Volume of water for drawdown in LID  (cu.m.)=     170.01
                     Volume of Max. Water Storage         (cu.m.)=       0.00
                     Maximum Surface Ponding And Mulch Vol(cu.m.)=     153.15
                     Maximum Engineered Soil Volume       (cu.m.)=      16.90
                     ***** After simulation, water volume is not zero.

  -------------------------
  | Junction Command(0262) |
  -------------------------

                              AREA     QPEAK    TPEAK     R.V.
                              (ha)     (cms)    (hrs)     (mm)
     INFLOW : ID= 3(  0264)    0.76     0.17    12.08    90.27
     OUTFLOW: ID= 2(  0262)    0.76     0.17    12.08    90.27

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

--------------------
| ADD HYD  (  0243)|
|  1 + 2 =  3      |      AREA     QPEAK    TPEAK     R.V.
--------------------      (ha)     (cms)    (hrs)     (mm)
       ID1= 1 (  0181):   1.40     0.130     12.25    59.34
     + ID2= 2 (  0182):   0.26     0.162     12.33    76.24
       ================================================
       ID = 3 (  0243):   1.66     0.292     12.33    61.98
```

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

--------------------
| ADD HYD  (  0243)|
|  3 +  2 =  1     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0243):       1.66   0.292    12.33    61.98
     + ID2= 2 (  0262):       0.76   0.174    12.08    90.27
       ==================================================
       ID = 1 (  0243):       2.42   0.426    12.25    70.84

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

--------------------
| ADD HYD  (  0243)|
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0243):       2.42   0.426    12.25    70.84
     + ID2= 2 (  0263):       0.10   0.156    12.25   111.95
       ==================================================
       ID = 3 (  0243):       2.53   0.582    12.25    72.54

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0188)|     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   |   0.4800     0.0190

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0243)    2.527      0.582     12.25      72.54
   OUTFLOW: ID= 1 (  0188)    2.527      0.454     12.33      72.54

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 77.96
                   TIME SHIFT OF PEAK FLOW         (min)=  5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0187

--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0252)|   Area    (ha)=   0.32
|ID= 1 DT= 5.0 min |   Total Imp(%)=  69.00   Dir. Conn.(%)=  30.00
--------------------
                               IMPERVIOUS    PERVIOUS (i)
```

```
     Surface Area     (ha)=       0.22          0.10
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      45.84         40.00
     Mannings n          =       0.013         0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN | TIME    RAIN |' TIME    RAIN | TIME    RAIN
                   hrs   mm/hr |  hrs   mm/hr |'  hrs   mm/hr |  hrs   mm/hr
                 0.083    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
                 0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
                 0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
                 0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
                 0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
                 0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
                 0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
                 0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
                 0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
                 0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
                 0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
                 1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
                 1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
                 1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
                 1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
                 1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
                 1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
                 1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
                 1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
                 1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
                 1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
                 1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
                 1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
                 2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
                 2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
                 2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
                 2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
                 2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
                 2.417    1.73 | 8.500    3.45 |14.583    3.98 | 20.67    1.59
                 2.500    1.73 | 8.583    3.45 |14.667    3.98 | 20.75    1.59
                 2.583    1.73 | 8.667    3.45 |14.750    3.98 | 20.83    1.59
                 2.667    1.73 | 8.750    3.45 |14.833    3.98 | 20.92    1.59
                 2.750    1.73 | 8.833    3.72 |14.917    3.98 | 21.00    1.59
                 2.833    1.73 | 8.917    3.72 |15.000    3.98 | 21.08    1.59
                 2.917    1.73 | 9.000    3.72 |15.083    3.98 | 21.17    1.59
                 3.000    1.73 | 9.083    3.72 |15.167    3.98 | 21.25    1.59
                 3.083    1.73 | 9.167    3.72 |15.250    3.98 | 21.33    1.59
                 3.167    1.73 | 9.250    3.72 |15.333    3.98 | 21.42    1.59
```

```
                 3.250    1.73 | 9.333    4.25 |15.417    3.98 | 21.50    1.59
                 3.333    1.73 | 9.417    4.25 |15.500    3.98 | 21.58    1.59
                 3.417    1.73 | 9.500    4.25 |15.583    3.98 | 21.67    1.59
                 3.500    1.73 | 9.583    4.25 |15.667    3.98 | 21.75    1.59
                 3.583    1.73 | 9.667    4.25 |15.750    3.98 | 21.83    1.59
                 3.667    1.73 | 9.750    4.25 |15.833    3.98 | 21.92    1.59
                 3.750    1.73 | 9.833    4.78 |15.917    3.98 | 22.00    1.59
                 3.833    1.73 | 9.917    4.78 |16.000    3.98 | 22.08    1.59
                 3.917    1.73 |10.000    4.78 |16.083    3.98 | 22.17    1.59
                 4.000    1.73 |10.083    4.78 |16.167    3.98 | 22.25    1.59
                 4.083    1.73 |10.167    4.78 |16.250    3.98 | 22.33    1.59
                 4.167    1.73 |10.250    4.78 |16.333    2.39 | 22.42    1.59
                 4.250    1.73 |10.333    6.11 |16.417    2.39 | 22.50    1.59
                 4.333    2.12 |10.417    6.11 |16.500    2.39 | 22.58    1.59
                 4.417    2.12 |10.500    6.11 |16.583    2.39 | 22.67    1.59
                 4.500    2.12 |10.583    6.11 |16.667    2.39 | 22.75    1.59
                 4.583    2.12 |10.667    6.11 |16.750    2.39 | 22.83    1.59
                 4.667    2.12 |10.750    6.11 |16.833    2.39 | 22.92    1.59
                 4.750    2.12 |10.833    8.23 |16.917    2.39 | 23.00    1.59
                 4.833    2.12 |10.917    8.23 |17.000    2.39 | 23.08    1.59
                 4.917    2.12 |11.000    8.23 |17.083    2.39 | 23.17    1.59
                 5.000    2.12 |11.083    8.23 |17.167    2.39 | 23.25    1.59
                 5.083    2.12 |11.167    8.23 |17.250    2.39 | 23.33    1.59
                 5.167    2.12 |11.250    8.23 |17.333    2.39 | 23.42    1.59
                 5.250    2.12 |11.333   12.74 |17.417    2.39 | 23.50    1.59
                 5.333    2.12 |11.417   12.74 |17.500    2.39 | 23.58    1.59
                 5.417    2.12 |11.500   12.74 |17.583    2.39 | 23.67    1.59
                 5.500    2.12 |11.583   12.74 |17.667    2.39 | 23.75    1.59
                 5.583    2.12 |11.667   12.74 |17.750    2.39 | 23.83    1.59
                 5.667    2.12 |11.750   12.74 |17.833    2.39 | 23.92    1.59
                 5.750    2.12 |11.833   39.29 |17.917    2.39 | 24.00    1.59
                 5.833    2.12 |11.917   39.29 |18.000    2.39 | 24.08    1.59
                 5.917    2.12 |12.000   39.29 |18.083    2.39 | 24.17    1.59
                 6.000    2.12 |12.083  162.46 |18.167    2.39 | 24.25    1.59
                 6.083    2.12 |12.167  162.47 |18.250    2.39 |

     Max.Eff.Inten.(mm/hr)=     162.47       320.32
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.32 (ii)    5.75 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.33         0.15
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.04         0.08        0.119 (iii)
     TIME TO PEAK    (hrs)=     12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=    131.74       100.19       109.65
     TOTAL RAINFALL   (mm)=    132.74       132.74       132.74
     RUNOFF COEFFICIENT   =      0.99         0.75         0.83

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

```
       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

--------------------
| ADD HYD  (  0179)|
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0188):       2.53   0.454    12.33    72.54
     + ID2= 2 (  0252):       0.32   0.119    12.25   109.65
       ==================================================
       ID = 3 (  0179):       2.84   0.525    12.33    76.66

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0106)|   Area    (ha)=   0.51
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.28          0.23
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      58.22         40.00
     Mannings n          =       0.013         0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN | TIME    RAIN |' TIME    RAIN | TIME    RAIN
                   hrs   mm/hr |  hrs   mm/hr |'  hrs   mm/hr |  hrs   mm/hr
                 0.083    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
                 0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
                 0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
                 0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
                 0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
                 0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
                 0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
                 0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
                 0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
                 0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
                 0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
                 1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
                 1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
```

```
                 1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
                 1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
                 1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
                 1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
                 1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
                 1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
                 1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
                 1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
                 1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
                 1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
                 2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
                 2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
                 2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
                 2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
                 2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
                 2.417    1.73 | 8.500    3.45 |14.583    3.98 | 20.67    1.59
                 2.500    1.73 | 8.583    3.45 |14.667    3.98 | 20.75    1.59
                 2.583    1.73 | 8.667    3.45 |14.750    3.98 | 20.83    1.59
                 2.667    1.73 | 8.750    3.45 |14.833    3.98 | 20.92    1.59
                 2.750    1.73 | 8.833    3.72 |14.917    3.98 | 21.00    1.59
                 2.833    1.73 | 8.917    3.72 |15.000    3.98 | 21.08    1.59
                 2.917    1.73 | 9.000    3.72 |15.083    3.98 | 21.17    1.59
                 3.000    1.73 | 9.083    3.72 |15.167    3.98 | 21.25    1.59
                 3.083    1.73 | 9.167    3.72 |15.250    3.98 | 21.33    1.59
                 3.167    1.73 | 9.250    3.72 |15.333    3.98 | 21.42    1.59
                 3.250    1.73 | 9.333    4.25 |15.417    3.98 | 21.50    1.59
                 3.333    1.73 | 9.417    4.25 |15.500    3.98 | 21.58    1.59
                 3.417    1.73 | 9.500    4.25 |15.583    3.98 | 21.67    1.59
                 3.500    1.73 | 9.583    4.25 |15.667    3.98 | 21.75    1.59
                 3.583    1.73 | 9.667    4.25 |15.750    3.98 | 21.83    1.59
                 3.667    1.73 | 9.750    4.25 |15.833    3.98 | 21.92    1.59
                 3.750    1.73 | 9.833    4.78 |15.917    3.98 | 22.00    1.59
                 3.833    1.73 | 9.917    4.78 |16.000    3.98 | 22.08    1.59
                 3.917    1.73 |10.000    4.78 |16.083    3.98 | 22.17    1.59
                 4.000    1.73 |10.083    4.78 |16.167    3.98 | 22.25    1.59
                 4.083    1.73 |10.167    4.78 |16.250    3.98 | 22.33    1.59
                 4.167    1.73 |10.250    4.78 |16.333    2.39 | 22.42    1.59
                 4.250    1.73 |10.333    6.11 |16.417    2.39 | 22.50    1.59
                 4.333    2.12 |10.417    6.11 |16.500    2.39 | 22.58    1.59
                 4.417    2.12 |10.500    6.11 |16.583    2.39 | 22.67    1.59
                 4.500    2.12 |10.583    6.11 |16.667    2.39 | 22.75    1.59
                 4.583    2.12 |10.667    6.11 |16.750    2.39 | 22.83    1.59
                 4.667    2.12 |10.750    6.11 |16.833    2.39 | 22.92    1.59
                 4.750    2.12 |10.833    8.23 |16.917    2.39 | 23.00    1.59
                 4.833    2.12 |10.917    8.23 |17.000    2.39 | 23.08    1.59
                 4.917    2.12 |11.000    8.23 |17.083    2.39 | 23.17    1.59
                 5.000    2.12 |11.083    8.23 |17.167    2.39 | 23.25    1.59
                 5.083    2.12 |11.167    8.23 |17.250    2.39 | 23.33    1.59
                 5.167    2.12 |11.250    8.23 |17.333    2.39 | 23.42    1.59
                 5.250    2.12 |11.333   12.74 |17.417    2.39 | 23.50    1.59
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                 5.333    2.12 |11.417   12.74 |17.500    2.39 | 23.58    1.59
                 5.417    2.12 |11.500   12.74 |17.583    2.39 | 23.67    1.59
                 5.500    2.12 |11.583   12.74 |17.667    2.39 | 23.75    1.59
                 5.583    2.12 |11.667   12.74 |17.750    2.39 | 23.83    1.59
                 5.667    2.12 |11.750   12.74 |17.833    2.39 | 23.92    1.59
                 5.750    2.12 |11.833   39.29 |17.917    2.39 | 24.00    1.59
                 5.833    2.12 |11.917   39.29 |18.000    2.39 | 24.08    1.59
                 5.917    2.12 |12.000   39.29 |18.083    2.39 | 24.17    1.59
                 6.000    2.12 |12.083  162.46 |18.167    2.39 | 24.25    1.59
                 6.083    2.12 |12.167  162.47 |18.250    2.39 |

     Max.Eff.Inten.(mm/hr)=     162.47       310.50
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.52 (ii)    6.01 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.33         0.15
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.00         0.17        0.173 (iii)
     TIME TO PEAK    (hrs)=     12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=    131.74        99.52        99.84
     TOTAL RAINFALL   (mm)=    132.74       132.74       132.74
     RUNOFF COEFFICIENT   =      0.99         0.75         0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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(  0282)|     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   |   0.1000     0.0020

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0106)    0.508      0.173     12.25      99.84
   OUTFLOW: ID= 1 (  0282)    0.508      0.159     12.33      99.84

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 92.04
                   TIME SHIFT OF PEAK FLOW         (min)=  5.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0033
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| CALIB            |
| STANDHYD (  0245)|   Area    (ha)=   0.58
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
--------------------
                               IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.32          0.26
     Dep. Storage     (mm)=       1.00          5.00
     Average Slope     (%)=       1.00          2.00
     Length            (m)=      62.24         40.00
     Mannings n          =       0.013         0.250

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

                          ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN | TIME    RAIN |' TIME    RAIN | TIME    RAIN
                   hrs   mm/hr |  hrs   mm/hr |'  hrs   mm/hr |  hrs   mm/hr
                 0.083    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
                 0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
                 0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
                 0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
                 0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
                 0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
                 0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
                 0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
                 0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
                 0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
                 0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
                 1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
                 1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
                 1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
                 1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
                 1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
                 1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
                 1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
                 1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
                 1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
                 1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
                 1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
                 1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
                 2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
                 2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
                 2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
                 2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
                 2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
                 2.417    1.73 | 8.500    3.45 |14.583    3.98 | 20.67    1.59
                 2.500    1.73 | 8.583    3.45 |14.667    3.98 | 20.75    1.59
                 2.583    1.73 | 8.667    3.45 |14.750    3.98 | 20.83    1.59
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                 2.667    1.73 | 8.750    3.45 |14.833    3.98 | 20.92    1.59
                 2.750    1.73 | 8.833    3.72 |14.917    3.98 | 21.00    1.59
                 2.833    1.73 | 8.917    3.72 |15.000    3.98 | 21.08    1.59
                 2.917    1.73 | 9.000    3.72 |15.083    3.98 | 21.17    1.59
                 3.000    1.73 | 9.083    3.72 |15.167    3.98 | 21.25    1.59
                 3.083    1.73 | 9.167    3.72 |15.250    3.98 | 21.33    1.59
                 3.167    1.73 | 9.250    3.72 |15.333    3.98 | 21.42    1.59
                 3.250    1.73 | 9.333    4.25 |15.417    3.98 | 21.50    1.59
                 3.333    1.73 | 9.417    4.25 |15.500    3.98 | 21.58    1.59
                 3.417    1.73 | 9.500    4.25 |15.583    3.98 | 21.67    1.59
                 3.500    1.73 | 9.583    4.25 |15.667    3.98 | 21.75    1.59
                 3.583    1.73 | 9.667    4.25 |15.750    3.98 | 21.83    1.59
                 3.667    1.73 | 9.750    4.25 |15.833    3.98 | 21.92    1.59
                 3.750    1.73 | 9.833    4.78 |15.917    3.98 | 22.00    1.59
                 3.833    1.73 | 9.917    4.78 |16.000    3.98 | 22.08    1.59
                 3.917    1.73 |10.000    4.78 |16.083    3.98 | 22.17    1.59
                 4.000    1.73 |10.083    4.78 |16.167    3.98 | 22.25    1.59
                 4.083    1.73 |10.167    4.78 |16.250    3.98 | 22.33    1.59
                 4.167    1.73 |10.250    4.78 |16.333    2.39 | 22.42    1.59
                 4.250    1.73 |10.333    6.11 |16.417    2.39 | 22.50    1.59
                 4.333    2.12 |10.417    6.11 |16.500    2.39 | 22.58    1.59
                 4.417    2.12 |10.500    6.11 |16.583    2.39 | 22.67    1.59
                 4.500    2.12 |10.583    6.11 |16.667    2.39 | 22.75    1.59
                 4.583    2.12 |10.667    6.11 |16.750    2.39 | 22.83    1.59
                 4.667    2.12 |10.750    6.11 |16.833    2.39 | 22.92    1.59
                 4.750    2.12 |10.833    8.23 |16.917    2.39 | 23.00    1.59
                 4.833    2.12 |10.917    8.23 |17.000    2.39 | 23.08    1.59
                 4.917    2.12 |11.000    8.23 |17.083    2.39 | 23.17    1.59
                 5.000    2.12 |11.083    8.23 |17.167    2.39 | 23.25    1.59
                 5.083    2.12 |11.167    8.23 |17.250    2.39 | 23.33    1.59
                 5.167    2.12 |11.250    8.23 |17.333    2.39 | 23.42    1.59
                 5.250    2.12 |11.333   12.74 |17.417    2.39 | 23.50    1.59
                 5.333    2.12 |11.417   12.74 |17.500    2.39 | 23.58    1.59
                 5.417    2.12 |11.500   12.74 |17.583    2.39 | 23.67    1.59
                 5.500    2.12 |11.583   12.74 |17.667    2.39 | 23.75    1.59
                 5.583    2.12 |11.667   12.74 |17.750    2.39 | 23.83    1.59
                 5.667    2.12 |11.750   12.74 |17.833    2.39 | 23.92    1.59
                 5.750    2.12 |11.833   39.29 |17.917    2.39 | 24.00    1.59
                 5.833    2.12 |11.917   39.29 |18.000    2.39 | 24.08    1.59
                 5.917    2.12 |12.000   39.29 |18.083    2.39 | 24.17    1.59
                 6.000    2.12 |12.083  162.46 |18.167    2.39 | 24.25    1.59
                 6.083    2.12 |12.167  162.47 |18.250    2.39 |

     Max.Eff.Inten.(mm/hr)=     162.47       310.50
               over (min)        5.00        10.00
     Storage Coeff.  (min)=      1.58 (ii)    6.07 (ii)
     Unit Hyd. Tpeak (min)=      5.00        10.00
     Unit Hyd. peak  (cms)=      0.33         0.15
                                                        *TOTALS*
     PEAK FLOW       (cms)=      0.00         0.19        0.197 (iii)
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     TIME TO PEAK    (hrs)=     12.25        12.25        12.25
     RUNOFF VOLUME    (mm)=    131.74        99.52        99.84
     TOTAL RAINFALL   (mm)=    132.74       132.74       132.74
     RUNOFF COEFFICIENT   =      0.99         0.75         0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
              YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
            CN*  =  74.0    Ia = Dep. 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  (  0246)|
|  1 +  2 =  3     |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0245):       0.58   0.197    12.25    99.84
     + ID2= 2 (  0282):       0.51   0.159    12.33    99.84
       ==================================================
       ID = 3 (  0246):       1.09   0.345    12.25    99.84

    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| NASHYD   (  0302)|   Area    (ha)=   0.78   Curve Number   (CN)= 78.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

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

                          ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN | TIME    RAIN |' TIME    RAIN | TIME    RAIN
                   hrs   mm/hr |  hrs   mm/hr |'  hrs   mm/hr |  hrs   mm/hr
                 0.083    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
                 0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
                 0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
                 0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
                 0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
                 0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
                 0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
                 0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
                 0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
                 0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
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0.917	1.46	7.000	2.39	13.083	9.82	19.17	2.39
1.000	1.46	7.083	2.39	13.167	9.82	19.25	2.39
1.083	1.46	7.167	2.39	13.250	9.82	19.33	2.39
1.167	1.46	7.250	2.39	13.333	7.17	19.42	2.39
1.250	1.46	7.333	2.92	13.417	7.17	19.50	2.39
1.333	1.46	7.417	2.92	13.500	7.17	19.58	2.39
1.417	1.46	7.500	2.92	13.583	7.17	19.67	2.39
1.500	1.46	7.583	2.92	13.667	7.17	19.75	2.39
1.583	1.46	7.667	2.92	13.750	7.17	19.83	2.39
1.667	1.46	7.750	2.92	13.833	5.58	19.92	2.39
1.750	1.46	7.833	2.92	13.917	5.58	20.00	2.39
1.833	1.46	7.917	2.92	14.000	5.58	20.08	2.39
1.917	1.46	8.000	2.92	14.083	5.58	20.17	2.39
2.000	1.46	8.083	2.92	14.167	5.58	20.25	2.39
2.083	1.46	8.167	2.92	14.250	5.58	20.33	1.59
2.167	1.46	8.250	2.92	14.333	3.98	20.42	1.59
2.250	1.46	8.333	3.45	14.417	3.98	20.50	1.59
2.333	1.73	8.417	3.45	14.500	3.98	20.58	1.59
2.417	1.73	8.500	3.45	14.583	3.98	20.67	1.59
2.500	1.73	8.583	3.45	14.667	3.98	20.75	1.59
2.583	1.73	8.667	3.45	14.750	3.98	20.83	1.59
2.667	1.73	8.750	3.45	14.833	3.98	20.92	1.59
2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	2.39	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

```
    Unit Hyd Qpeak  (cms)=   0.149

    PEAK FLOW       (cms)=   0.169 (i)
    TIME TO PEAK    (hrs)=  12.333
    RUNOFF VOLUME    (mm)=  83.068
    TOTAL RAINFALL   (mm)= 132.740
    RUNOFF COEFFICIENT   =   0.626

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

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-------------------
| CALIB             |
| STANDHYD (  0019)|   Area    (ha)=   0.50
|ID= 1 DT= 5.0 min |   Total Imp(%)=  55.00   Dir. Conn.(%)=   1.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.28          0.22
    Dep. Storage     (mm)=       1.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length           (m)=      57.74         40.00
    Mannings n            =     0.013         0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
      TIME   RAIN |  TIME   RAIN |  TIME   RAIN |  TIME   RAIN
       hrs  mm/hr |   hrs  mm/hr |   hrs  mm/hr |   hrs  mm/hr
     0.083   0.00 |  6.167   2.12 | 12.250 162.47 | 18.33   2.39
     0.167   0.00 |  6.250   2.12 | 12.333  19.13 | 18.42   2.39
     0.250   0.00 |  6.333   2.39 | 12.417  19.11 | 18.50   2.39
     0.333   1.46 |  6.417   2.39 | 12.500  19.11 | 18.58   2.39
     0.417   1.46 |  6.500   2.39 | 12.583  19.11 | 18.67   2.39
     0.500   1.46 |  6.583   2.39 | 12.667  19.11 | 18.75   2.39
     0.583   1.46 |  6.667   2.39 | 12.750  19.11 | 18.83   2.39
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    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB             |
| STANDHYD (  0276)|   Area    (ha)=   1.28
|ID= 1 DT= 5.0 min |   Total Imp(%)=  70.00   Dir. Conn.(%)=  70.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       0.90          0.38
    Dep. Storage     (mm)=       1.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length           (m)=      92.38         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   0.00 |  6.167   2.12 | 12.250 162.47 | 18.33   2.39
     0.167   0.00 |  6.250   2.12 | 12.333  19.13 | 18.42   2.39
     0.250   0.00 |  6.333   2.39 | 12.417  19.11 | 18.50   2.39
     0.333   1.46 |  6.417   2.39 | 12.500  19.11 | 18.58   2.39
     0.417   1.46 |  6.500   2.39 | 12.583  19.11 | 18.67   2.39
     0.500   1.46 |  6.583   2.39 | 12.667  19.11 | 18.75   2.39
     0.583   1.46 |  6.667   2.39 | 12.750  19.11 | 18.83   2.39
```

```
    Max.Eff.Inten.(mm/hr)=    162.47       310.50
              over (min)        5.00        10.00
    Storage Coeff.  (min)=     1.51 (ii)    6.00 (ii)
    Unit Hyd. Tpeak (min)=     5.00        10.00
    Unit Hyd. peak  (cms)=     0.33         0.15
                                                  *TOTALS*
    PEAK FLOW       (cms)=     0.00         0.17         0.170 (iii)
    TIME TO PEAK    (hrs)=    12.25        12.25        12.25
    RUNOFF VOLUME    (mm)=   131.74        99.52        99.84
    TOTAL RAINFALL   (mm)=   132.74       132.74       132.74
    RUNOFF COEFFICIENT   =     0.99         0.75         0.75

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
***** WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
             YOU SHOULD CONSIDER SPLITTING THE AREA.

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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  (  0248)|
|   1 +  2 =  3    |         AREA     QPEAK     TPEAK      R.V.
-------------------          (ha)     (cms)     (hrs)      (mm)
     ID1= 1 (  0019):      0.50    0.170     12.25      99.84
   + ID2= 2 (  0302):      0.78    0.169     12.33      83.07
     =================================================
     ID = 3 (  0248):      1.28    0.328     12.25      89.62
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```
    Max.Eff.Inten.(mm/hr)=    162.47       110.72
              over (min)        5.00        10.00
    Storage Coeff.  (min)=     2.01 (ii)    6.15 (ii)
    Unit Hyd. Tpeak (min)=     5.00        10.00
    Unit Hyd. peak  (cms)=     0.31         0.15
                                                  *TOTALS*
    PEAK FLOW       (cms)=     0.40         0.10         0.503 (iii)
    TIME TO PEAK    (hrs)=    12.25        12.25        12.25
    RUNOFF VOLUME    (mm)=   131.74        75.20       114.77
    TOTAL RAINFALL   (mm)=   132.74       132.74       132.74
    RUNOFF COEFFICIENT   =     0.99         0.57         0.86

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. 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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-------------------
| DUHYD    (  0279)|
| Inlet Cap.= 0.270|
| #of Inlets=   1  |
| Total(cms)=  0.3 |      AREA     QPEAK     TPEAK     R.V.
-------------------      (ha)     (cms)     (hrs)     (mm)
     TOTAL HYD.(ID= 1):   1.28      0.50     12.25   114.77
     ================================================
     MAJOR SYS.(ID= 2):   0.15      0.23     12.25   114.77
     MINOR SYS.(ID= 3):   1.13      0.27     12.08   114.77

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  ------------------------
  | Junction Command(0303) |
  ------------------------

                        AREA     QPEAK    TPEAK     R.V.
                        (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 8(  0279)   0.15     0.23   12.25   114.77
  OUTFLOW: ID= 2(  0303)   0.15     0.23   12.25   114.77

  -----------------------------------------------------------------------------
-------------------
|Bioretention(  0278)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
---------------------  SURFACE PONDING LAYER:

                       Max. Ponding Storage(cu.m.)=      149.95

                      STAGE        AREA          |  STAGE      AREA
                       (m)         (m2)          |   (m)       (m2)
```

```
                        0.000      100.000        |   1.500     100.000
                        0.500      100.000        |   0.000       0.000
                        1.000      100.000        |   0.000       0.000

                    MULCH LAYER:
                    Depth       (m)=   0.10  Porosity           =  0.40
                    Maximum Mulch layer Volume (cu.m.)=     4.64

                    ENGINEERED SOIL LAYER:
                    Soil moisture =   0.30  Depth           (m)=  0.67
                    Width         (m)=  58.00  Length        (m)=  2.00
                    Porosity      =   0.47  Infiltration (m/hr) = 0.0060
                    Maximum Engineered Soil layer Volume(cu.m.)=  36.30

                    STORAGE LAYER:
                    Depth       (m)=   1.50  Porosity           =  0.40
                    Seepage (m/hr) = 0.0010
                    Maximum Storage layer Volume(cu.m.)=     69.60

                    TOTAL AVAILABLE STORAGE:

                    TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=      260.48

                    NATIVE SOIL LAYER:
                    Infiltration (m/hr) = 0.0060

                       AREA         QPEAK          TPEAK         R.V.
                       (ha)         (cms)          (hrs)         (mm)
    INFLOW:ID= 2     1.13         0.270          12.08         114.77
  OVERFLOW:ID= 3     1.13         0.270          12.08          99.59

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      13.23
                    Time to reach Max Ponding storage       (Hr)=       0.00
                    Volume of water for drawdown in LID  (cu.m.)=     179.04
                    Volume of Max. Water Storage         (cu.m.)=       0.00
                    Maximum Surface Ponding and Mulch Vol(cu.m.)=     154.59
                    Maximum Engineered Soil Volume       (cu.m.)=      24.51
                    ***** After simulation, water volume is not zero.

  ------------------------
  | Junction Command(0277) |
  ------------------------

                        AREA     QPEAK    TPEAK     R.V.
                        (ha)     (cms)    (hrs)     (mm)
  INFLOW : ID= 3(  0278)   1.13     0.27   12.08    99.59
  OUTFLOW: ID= 2(  0277)   1.13     0.27   12.08    99.59

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| CALIB             |
| STANDHYD (  0313)|   Area    (ha)=   4.05
|ID= 1 DT= 5.0 min |   Total Imp(%)=  60.00   Dir. Conn.(%)=  60.00
-------------------

                        IMPERVIOUS    PERVIOUS (i)
    Surface Area     (ha)=       2.43          1.62
    Dep. Storage     (mm)=       5.00          5.00
    Average Slope     (%)=       1.00          2.00
    Length           (m)=     164.25         40.00
    Mannings n            =     0.013         0.250

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

                    ---- TRANSFORMED HYETOGRAPH ----
      TIME   RAIN |  TIME   RAIN |  TIME   RAIN |  TIME   RAIN
       hrs  mm/hr |   hrs  mm/hr |   hrs  mm/hr |   hrs  mm/hr
     0.083   0.00 |  6.167   2.12 | 12.250 162.47 | 18.33   2.39
     0.167   0.00 |  6.250   2.12 | 12.333  19.13 | 18.42   2.39
     0.250   0.00 |  6.333   2.39 | 12.417  19.11 | 18.50   2.39
     0.333   1.46 |  6.417   2.39 | 12.500  19.11 | 18.58   2.39
     0.417   1.46 |  6.500   2.39 | 12.583  19.11 | 18.67   2.39
     0.500   1.46 |  6.583   2.39 | 12.667  19.11 | 18.75   2.39
     0.583   1.46 |  6.667   2.39 | 12.750  19.11 | 18.83   2.39
     0.667   1.46 |  6.750   2.39 | 12.833   9.82 | 18.92   2.39
     0.750   1.46 |  6.833   2.39 | 12.917   9.82 | 19.00   2.39
     0.833   1.46 |  6.917   2.39 | 13.000   9.82 | 19.08   2.39
     0.917   1.46 |  7.000   2.39 | 13.083   9.82 | 19.17   2.39
     1.000   1.46 |  7.083   2.39 | 13.167   9.82 | 19.25   2.39
     1.083   1.46 |  7.167   2.39 | 13.250   9.82 | 19.33   2.39
     1.167   1.46 |  7.250   2.39 | 13.333   7.17 | 19.42   2.39
     1.250   1.46 |  7.333   2.92 | 13.417   7.17 | 19.50   2.39
     1.333   1.46 |  7.417   2.92 | 13.500   7.17 | 19.58   2.39
     1.417   1.46 |  7.500   2.92 | 13.583   7.17 | 19.67   2.39
     1.500   1.46 |  7.583   2.92 | 13.667   7.17 | 19.75   2.39
     1.583   1.46 |  7.667   2.92 | 13.750   7.17 | 19.83   2.39
     1.667   1.46 |  7.750   2.92 | 13.833   5.58 | 19.92   2.39
     1.750   1.46 |  7.833   2.92 | 13.917   5.58 | 20.00   2.39
     1.833   1.46 |  7.917   2.92 | 14.000   5.58 | 20.08   2.39
     1.917   1.46 |  8.000   2.92 | 14.083   5.58 | 20.17   2.39
     2.000   1.46 |  8.083   2.92 | 14.167   5.58 | 20.25   2.39
     2.083   1.46 |  8.167   2.92 | 14.250   5.58 | 20.33   1.59
     2.167   1.46 |  8.250   2.92 | 14.333   3.98 | 20.42   1.59
     2.250   1.46 |  8.333   3.45 | 14.417   3.98 | 20.50   1.59
     2.333   1.73 |  8.417   3.45 | 14.500   3.98 | 20.58   1.59
     2.417   1.73 |  8.500   3.45 | 14.583   3.98 | 20.67   1.59
     2.500   1.73 |  8.583   3.45 | 14.667   3.98 | 20.75   1.59
     2.583   1.73 |  8.667   3.45 | 14.750   3.98 | 20.83   1.59
     2.667   1.73 |  8.750   3.45 | 14.833   3.98 | 20.92   1.59
     2.750   1.73 |  8.833   3.72 | 14.917   3.98 | 21.00   1.59
     2.833   1.73 |  8.917   3.72 | 15.000   3.98 | 21.08   1.59
     2.917   1.73 |  9.000   3.72 | 15.083   3.98 | 21.17   1.59
     3.000   1.73 |  9.083   3.72 | 15.167   3.98 | 21.25   1.59
     3.083   1.73 |  9.167   3.72 | 15.250   3.98 | 21.33   1.59
     3.167   1.73 |  9.250   3.72 | 15.333   3.98 | 21.42   1.59
     3.250   1.73 |  9.333   4.25 | 15.417   3.98 | 21.50   1.59
     3.333   1.73 |  9.417   4.25 | 15.500   3.98 | 21.58   1.59
     3.417   1.73 |  9.500   4.25 | 15.583   3.98 | 21.67   1.59
     3.500   1.73 |  9.583   4.25 | 15.667   3.98 | 21.75   1.59
     3.583   1.73 |  9.667   4.25 | 15.750   3.98 | 21.83   1.59
     3.667   1.73 |  9.750   4.25 | 15.833   3.98 | 21.92   1.59
     3.750   1.73 |  9.833   4.78 | 15.917   3.98 | 22.00   1.59
     3.833   1.73 |  9.917   4.78 | 16.000   3.98 | 22.08   1.59
     3.917   1.73 | 10.000   4.78 | 16.083   3.98 | 22.17   1.59
     4.000   1.73 | 10.083   4.78 | 16.167   3.98 | 22.25   1.59
     4.083   1.73 | 10.167   4.78 | 16.250   3.98 | 22.33   1.59
     4.167   1.73 | 10.250   4.78 | 16.333   2.39 | 22.42   1.59
     4.250   1.73 | 10.333   6.11 | 16.417   2.39 | 22.50   1.59
     4.333   2.12 | 10.417   6.11 | 16.500   2.39 | 22.58   1.59
     4.417   2.12 | 10.500   6.11 | 16.583   2.39 | 22.67   1.59
     4.500   2.12 | 10.583   6.11 | 16.667   2.39 | 22.75   1.59
     4.583   2.12 | 10.667   6.11 | 16.750   2.39 | 22.83   1.59
     4.667   2.12 | 10.750   6.11 | 16.833   2.39 | 22.92   1.59
     4.750   2.12 | 10.833   8.23 | 16.917   2.39 | 23.00   1.59
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2.750	1.73	8.833	3.72	14.917	3.98	21.00	1.59
2.833	1.73	8.917	3.72	15.000	3.98	21.08	1.59
2.917	1.73	9.000	3.72	15.083	3.98	21.17	1.59
3.000	1.73	9.083	3.72	15.167	3.98	21.25	1.59
3.083	1.73	9.167	3.72	15.250	3.98	21.33	1.59
3.167	1.73	9.250	3.72	15.333	3.98	21.42	1.59
3.250	1.73	9.333	4.25	15.417	3.98	21.50	1.59
3.333	1.73	9.417	4.25	15.500	3.98	21.58	1.59
3.417	1.73	9.500	4.25	15.583	3.98	21.67	1.59
3.500	1.73	9.583	4.25	15.667	3.98	21.75	1.59
3.583	1.73	9.667	4.25	15.750	3.98	21.83	1.59
3.667	1.73	9.750	4.25	15.833	3.98	21.92	1.59
3.750	1.73	9.833	4.78	15.917	3.98	22.00	1.59
3.833	1.73	9.917	4.78	16.000	3.98	22.08	1.59
3.917	1.73	10.000	4.78	16.083	3.98	22.17	1.59
4.000	1.73	10.083	4.78	16.167	3.98	22.25	1.59
4.083	1.73	10.167	4.78	16.250	3.98	22.33	1.59
4.167	1.73	10.250	4.78	16.333	3.99	22.42	1.59
4.250	1.73	10.333	6.11	16.417	2.39	22.50	1.59
4.333	2.12	10.417	6.11	16.500	2.39	22.58	1.59
4.417	2.12	10.500	6.11	16.583	2.39	22.67	1.59
4.500	2.12	10.583	6.11	16.667	2.39	22.75	1.59
4.583	2.12	10.667	6.11	16.750	2.39	22.83	1.59
4.667	2.12	10.750	6.11	16.833	2.39	22.92	1.59
4.750	2.12	10.833	8.23	16.917	2.39	23.00	1.59
4.833	2.12	10.917	8.23	17.000	2.39	23.08	1.59
4.917	2.12	11.000	8.23	17.083	2.39	23.17	1.59
5.000	2.12	11.083	8.23	17.167	2.39	23.25	1.59
5.083	2.12	11.167	8.23	17.250	2.39	23.33	1.59
5.167	2.12	11.250	8.23	17.333	2.39	23.42	1.59
5.250	2.12	11.333	12.74	17.417	2.39	23.50	1.59
5.333	2.12	11.417	12.74	17.500	2.39	23.58	1.59
5.417	2.12	11.500	12.74	17.583	2.39	23.67	1.59
5.500	2.12	11.583	12.74	17.667	2.39	23.75	1.59
5.583	2.12	11.667	12.74	17.750	2.39	23.83	1.59
5.667	2.12	11.750	12.74	17.833	2.39	23.92	1.59
5.750	2.12	11.833	39.29	17.917	2.39	24.00	1.59
5.833	2.12	11.917	39.29	18.000	2.39	24.08	1.59
5.917	2.12	12.000	39.29	18.083	2.39	24.17	1.59
6.000	2.12	12.083	162.46	18.167	2.39	24.25	1.59
6.083	2.12	12.167	162.47	18.250	2.39		

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     Max.Eff.Inten.(mm/hr)=     162.47       110.72
               over (min)          5.00        10.00
     Storage Coeff.  (min)=        2.83 (ii)    7.78 (ii)
     Unit Hyd. Tpeak (min)=        5.00        10.00
     Unit Hyd. peak  (cms)=        0.28         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=        1.09         0.39          1.478 (iii)
     TIME TO PEAK    (hrs)=       12.25        12.25         12.25
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     RUNOFF VOLUME    (mm)=     127.74        75.20         106.72
     TOTAL RAINFALL   (mm)=     132.74       132.74         132.74
     RUNOFF COEFFICIENT   =       0.96         0.57           0.80

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

          (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
                CN* =  74.0     Ia = Dep. 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 (  0314)|   Area    (ha)=   1.43
|ID= 1 DT= 5.0 min |   Total Imp(%)=  50.00   Dir. Conn.(%)=  50.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.72         0.72
     Dep. Storage     (mm)=      2.00         5.00
     Average Slope    (%)=       0.50         2.00
     Length           (m)=      97.74        30.00
     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    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
 0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
 0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
 0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
 0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
 0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
 0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
 0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
 0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
 0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
 0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
 1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
 1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
 1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
 1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
 1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
 1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
 1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
 1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
 1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
 1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
 1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
 1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
 2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
 2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
 2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
 2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
 2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
 2.417    1.73 | 8.500    3.45 |14.583    3.98 | 20.67    1.59
 2.500    1.73 | 8.583    3.45 |14.667    3.98 | 20.75    1.59
 2.583    1.73 | 8.667    3.45 |14.750    3.98 | 20.83    1.59
 2.667    1.73 | 8.750    3.45 |14.833    3.98 | 20.92    1.59
 2.750    1.73 | 8.833    3.72 |14.917    3.98 | 21.00    1.59
 2.833    1.73 | 8.917    3.72 |15.000    3.98 | 21.08    1.59
 2.917    1.73 | 9.000    3.72 |15.083    3.98 | 21.17    1.59
 3.000    1.73 | 9.083    3.72 |15.167    3.98 | 21.25    1.59
 3.083    1.73 | 9.167    3.72 |15.250    3.98 | 21.33    1.59
 3.167    1.73 | 9.250    3.72 |15.333    3.98 | 21.42    1.59
 3.250    1.73 | 9.333    4.25 |15.417    3.98 | 21.50    1.59
 3.333    1.73 | 9.417    4.25 |15.500    3.98 | 21.58    1.59
 3.417    1.73 | 9.500    4.25 |15.583    3.98 | 21.67    1.59
 3.500    1.73 | 9.583    4.25 |15.667    3.98 | 21.75    1.59
 3.583    1.73 | 9.667    4.25 |15.750    3.98 | 21.83    1.59
 3.667    1.73 | 9.750    4.25 |15.833    3.98 | 21.92    1.59
 3.750    1.73 | 9.833    4.78 |15.917    3.98 | 22.00    1.59
 3.833    1.73 | 9.917    4.78 |16.000    3.98 | 22.08    1.59
 3.917    1.73 | 10.000   4.78 |16.083    3.98 | 22.17    1.59
 4.000    1.73 | 10.083   4.78 |16.167    3.98 | 22.25    1.59
 4.083    1.73 | 10.167   4.78 |16.250    3.98 | 22.33    1.59
 4.167    1.73 | 10.250   4.78 |16.333    3.99 | 22.42    1.59
 4.250    1.73 | 10.333   6.11 |16.417    2.39 | 22.50    1.59
 4.333    2.12 | 10.417   6.11 |16.500    2.39 | 22.58    1.59
 4.417    2.12 | 10.500   6.11 |16.583    2.39 | 22.67    1.59
 4.500    2.12 | 10.583   6.11 |16.667    2.39 | 22.75    1.59
 4.583    2.12 | 10.667   6.11 |16.750    2.39 | 22.83    1.59
 4.667    2.12 | 10.750   6.11 |16.833    2.39 | 22.92    1.59
 4.750    2.12 | 10.833   8.23 |16.917    2.39 | 23.00    1.59
 4.833    2.12 | 10.917   8.23 |17.000    2.39 | 23.08    1.59
 4.917    2.12 | 11.000   8.23 |17.083    2.39 | 23.17    1.59
 5.000    2.12 | 11.083   8.23 |17.167    2.39 | 23.25    1.59
 5.083    2.12 | 11.167   8.23 |17.250    2.39 | 23.33    1.59
 5.167    2.12 | 11.250   8.23 |17.333    2.39 | 23.42    1.59
 5.250    2.12 | 11.333   12.74 |17.417    2.39 | 23.50    1.59
 5.333    2.12 | 11.417   12.74 |17.500    2.39 | 23.58    1.59
 5.417    2.12 | 11.500   12.74 |17.583    2.39 | 23.67    1.59
 5.500    2.12 | 11.583   12.74 |17.667    2.39 | 23.75    1.59
 5.583    2.12 | 11.667   12.74 |17.750    2.39 | 23.83    1.59
 5.667    2.12 | 11.750   12.74 |17.833    2.39 | 23.92    1.59
 5.750    2.12 | 11.833   39.29 |17.917    2.39 | 24.00    1.59
 5.833    2.12 | 11.917   39.29 |18.000    2.39 | 24.08    1.59
 5.917    2.12 | 12.000   39.29 |18.083    2.39 | 24.17    1.59
 6.000    2.12 | 12.083  162.46 |18.167    2.39 | 24.25    1.59
 6.083    2.12 | 12.167  162.47 |18.250    2.39 |
```

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     Max.Eff.Inten.(mm/hr)=     162.47       110.72
               over (min)          5.00        10.00
     Storage Coeff.  (min)=        2.55 (ii)    7.45 (ii)
     Unit Hyd. Tpeak (min)=        5.00        10.00
     Unit Hyd. peak  (cms)=        0.29         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=        0.32         0.17          0.496 (iii)
     TIME TO PEAK    (hrs)=       12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     130.74        75.20         102.97
     TOTAL RAINFALL   (mm)=     132.74       132.74         132.74
     RUNOFF COEFFICIENT   =       0.98         0.57           0.78

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN* =  74.0     Ia = Dep. 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  (  0310)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0313):     4.05    1.478    12.25   106.72
     + ID2= 2 (  0314):     1.43    0.496    12.25   102.97
       ==========================================================
       ID = 3 (  0310):     5.48    1.974    12.25   105.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0315)|   Area    (ha)=  14.21
|ID= 1 DT= 5.0 min |   Total Imp(%)=  71.00   Dir. Conn.(%)=  71.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=     10.09         4.12
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope    (%)=       1.00         2.00
     Length           (m)=     307.76        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    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
 0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
 0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
 0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
 0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
 0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
 0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
 0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
 0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
 0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
 0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
 1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
 1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
 1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
 1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
 1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
 1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
 1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
 1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
 1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
 1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
 1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
 1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
 2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
 2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
 2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
 2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
 2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
 2.417    1.73 | 8.500    3.45 |14.583    3.98 | 20.67    1.59
 2.500    1.73 | 8.583    3.45 |14.667    3.98 | 20.75    1.59
 2.583    1.73 | 8.667    3.45 |14.750    3.98 | 20.83    1.59
 2.667    1.73 | 8.750    3.45 |14.833    3.98 | 20.92    1.59
 2.750    1.73 | 8.833    3.72 |14.917    3.98 | 21.00    1.59
 2.833    1.73 | 8.917    3.72 |15.000    3.98 | 21.08    1.59
 2.917    1.73 | 9.000    3.72 |15.083    3.98 | 21.17    1.59
 3.000    1.73 | 9.083    3.72 |15.167    3.98 | 21.25    1.59
 3.083    1.73 | 9.167    3.72 |15.250    3.98 | 21.33    1.59
 3.167    1.73 | 9.250    3.72 |15.333    3.98 | 21.42    1.59
 3.250    1.73 | 9.333    4.25 |15.417    3.98 | 21.50    1.59
 3.333    1.73 | 9.417    4.25 |15.500    3.98 | 21.58    1.59
 3.417    1.73 | 9.500    4.25 |15.583    3.98 | 21.67    1.59
 3.500    1.73 | 9.583    4.25 |15.667    3.98 | 21.75    1.59
 3.583    1.73 | 9.667    4.25 |15.750    3.98 | 21.83    1.59
 3.667    1.73 | 9.750    4.25 |15.833    3.98 | 21.92    1.59
 3.750    1.73 | 9.833    4.78 |15.917    3.98 | 22.00    1.59
 3.833    1.73 | 9.917    4.78 |16.000    3.98 | 22.08    1.59
 3.917    1.73 | 10.000   4.78 |16.083    3.98 | 22.17    1.59
 4.000    1.73 | 10.083   4.78 |16.167    3.98 | 22.25    1.59
 4.083    1.73 | 10.167   4.78 |16.250    3.98 | 22.33    1.59
 4.167    1.73 | 10.250   4.78 |16.333    3.99 | 22.42    1.59
 4.250    1.73 | 10.333   6.11 |16.417    2.39 | 22.50    1.59
 4.333    2.12 | 10.417   6.11 |16.500    2.39 | 22.58    1.59
 4.417    2.12 | 10.500   6.11 |16.583    2.39 | 22.67    1.59
 4.500    2.12 | 10.583   6.11 |16.667    2.39 | 22.75    1.59
 4.583    2.12 | 10.667   6.11 |16.750    2.39 | 22.83    1.59
 4.667    2.12 | 10.750   6.11 |16.833    2.39 | 22.92    1.59
 4.750    2.12 | 10.833   8.23 |16.917    2.39 | 23.00    1.59
 4.833    2.12 | 10.917   8.23 |17.000    2.39 | 23.08    1.59
 4.917    2.12 | 11.000   8.23 |17.083    2.39 | 23.17    1.59
 5.000    2.12 | 11.083   8.23 |17.167    2.39 | 23.25    1.59
 5.083    2.12 | 11.167   8.23 |17.250    2.39 | 23.33    1.59
 5.167    2.12 | 11.250   8.23 |17.333    2.39 | 23.42    1.59
 5.250    2.12 | 11.333   12.74 |17.417    2.39 | 23.50    1.59
 5.333    2.12 | 11.417   12.74 |17.500    2.39 | 23.58    1.59
 5.417    2.12 | 11.500   12.74 |17.583    2.39 | 23.67    1.59
 5.500    2.12 | 11.583   12.74 |17.667    2.39 | 23.75    1.59
 5.583    2.12 | 11.667   12.74 |17.750    2.39 | 23.83    1.59
 5.667    2.12 | 11.750   12.74 |17.833    2.39 | 23.92    1.59
 5.750    2.12 | 11.833   39.29 |17.917    2.39 | 24.00    1.59
 5.833    2.12 | 11.917   39.29 |18.000    2.39 | 24.08    1.59
 5.917    2.12 | 12.000   39.29 |18.083    2.39 | 24.17    1.59
 6.000    2.12 | 12.083  162.46 |18.167    2.39 | 24.25    1.59
 6.083    2.12 | 12.167  162.47 |18.250    2.39 |
```

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     Max.Eff.Inten.(mm/hr)=     162.47       110.72
               over (min)          5.00        10.00
     Storage Coeff.  (min)=        4.13 (ii)    9.19 (ii)
     Unit Hyd. Tpeak (min)=        5.00        10.00
     Unit Hyd. peak  (cms)=        0.24         0.13
                                                    *TOTALS*
     PEAK FLOW       (cms)=        4.46         0.97          5.426 (iii)
     TIME TO PEAK    (hrs)=       12.25        12.25         12.25
     RUNOFF VOLUME    (mm)=     131.74        75.20         115.34
     TOTAL RAINFALL   (mm)=     132.74       132.74         132.74
     RUNOFF COEFFICIENT   =       0.99         0.57           0.87

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
             CN* =  74.0   Ia = Dep. 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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--------------------------------------------------------------------------------
--------------------
| DUHYD    (  0311)|
| Inlet Cap.= 2.948|
| #of Inlets=    1|
| Total(cms)=  2.9|      AREA    QPEAK    TPEAK    R.V.
--------------------      (ha)     (cms)    (hrs)    (mm)
     TOTAL HYD.(ID= 1):  14.21     5.43    12.25  115.34
     ==========================================================
     MAJOR SYS.(ID= 2):   1.41     2.48    12.25  115.34
     MINOR SYS.(ID= 3):  12.79     2.95    12.08  115.34

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
|Bioretention(  0318)|  OUTFLOW: OFF,  UNDERDRAIN: OFF
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=     149.95

                      STAGE       AREA          |  STAGE      AREA
                       (m)        (m2)          |   (m)       (m2)
                      0.000     100.000          |  1.500    100.000
                      0.500     100.000          |  0.000      0.000
                      1.000     100.000          |  0.000      0.000

                     MULCH LAYER:
                     Depth       (m)=    0.10  Porosity           =  0.40
                     Maximum Mulch layer Volume (cu.m.)=    62.40

                     ENGINEERED SOIL LAYER:
                     Soil moisture =    0.30  Depth           (m)=  0.67
                     Width       (m)=  780.00  Length          (m)=  2.00
                     Porosity        =    0.47  Infiltration (m/hr) = 0.0060
                     Maximum Engineered Soil layer Volume(cu.m.)=  488.11

                     STORAGE LAYER:
                     Depth       (m)=    1.50  Porosity           =  0.40
                     Seepage (m/hr) = 0.0010
                     Maximum Storage layer Volume(cu.m.)=   936.00

                     TOTAL AVAILABLE STORAGE:

                     TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
+Storage Layer(cu.m.)=     1636.46

                     NATIVE SOIL LAYER:
```

```
                        Infiltration (m/hr) = 0.0060

                          AREA         QPEAK          TPEAK          R.V.
                          (ha)         (cms)          (hrs)          (mm)
     INFLOW:ID= 2    12.79          2.948          12.08          115.34
    OVERFLOW:ID= 3   12.79          2.945          12.08          111.95

                     Volume Reduction Rate[(RVin-RVout)/RVin] (%)=      2.94
                     Time to reach Max Ponding storage       (Hr)=      0.00
                     Volume of water for drawdown in LID  (cu.m.)=    541.91
                     Volume of Max. Water Storage         (cu.m.)=      0.00
                     Maximum Surface Ponding And Mulch Vol(cu.m.)=    212.35
                     Maximum Engineered Soil Volume       (cu.m.)=    332.85
                     ***** After simulation, water volume is not zero.

  --------------------
  | Junction Command(0317) |
  --------------------

                          AREA     QPEAK   TPEAK    R.V.
                          (ha)     (cms)   (hrs)    (mm)
  INFLOW : ID= 3(  0318)  12.79     2.95   12.08   111.95
  OUTFLOW: ID= 2(  0317)  12.79     2.95   12.08   111.95

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

--------------------
| ADD HYD  (  0316)|
|   1 +  2 =  3    |        AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0311):     1.41    2.478    12.25   115.34
     + ID2= 2 (  0317):    12.79    2.945    12.08   111.95
       ==========================================================
       ID = 3 (  0316):    14.21    5.424    12.25   112.29

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| CALIB            |
| STANDHYD (  0323)|   Area    (ha)=   0.59
|ID= 1 DT= 5.0 min |   Total Imp(%)=  66.00   Dir. Conn.(%)=  25.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.39         0.20
     Dep. Storage     (mm)=      1.00         5.00
     Average Slope    (%)=       1.00         2.00
     Length           (m)=      62.78        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    0.00 | 6.167    2.12 |12.250  162.47 | 18.33    2.39
 0.167    0.00 | 6.250    2.12 |12.333   19.13 | 18.42    2.39
 0.250    0.00 | 6.333    2.39 |12.417   19.11 | 18.50    2.39
 0.333    1.46 | 6.417    2.39 |12.500   19.11 | 18.58    2.39
 0.417    1.46 | 6.500    2.39 |12.583   19.11 | 18.67    2.39
 0.500    1.46 | 6.583    2.39 |12.667   19.11 | 18.75    2.39
 0.583    1.46 | 6.667    2.39 |12.750   19.11 | 18.83    2.39
 0.667    1.46 | 6.750    2.39 |12.833    9.82 | 18.92    2.39
 0.750    1.46 | 6.833    2.39 |12.917    9.82 | 19.00    2.39
 0.833    1.46 | 6.917    2.39 |13.000    9.82 | 19.08    2.39
 0.917    1.46 | 7.000    2.39 |13.083    9.82 | 19.17    2.39
 1.000    1.46 | 7.083    2.39 |13.167    9.82 | 19.25    2.39
 1.083    1.46 | 7.167    2.39 |13.250    9.82 | 19.33    2.39
 1.167    1.46 | 7.250    2.39 |13.333    7.17 | 19.42    2.39
 1.250    1.46 | 7.333    2.92 |13.417    7.17 | 19.50    2.39
 1.333    1.46 | 7.417    2.92 |13.500    7.17 | 19.58    2.39
 1.417    1.46 | 7.500    2.92 |13.583    7.17 | 19.67    2.39
 1.500    1.46 | 7.583    2.92 |13.667    7.17 | 19.75    2.39
 1.583    1.46 | 7.667    2.92 |13.750    7.17 | 19.83    2.39
 1.667    1.46 | 7.750    2.92 |13.833    5.58 | 19.92    2.39
 1.750    1.46 | 7.833    2.92 |13.917    5.58 | 20.00    2.39
 1.833    1.46 | 7.917    2.92 |14.000    5.58 | 20.08    2.39
 1.917    1.46 | 8.000    2.92 |14.083    5.58 | 20.17    2.39
 2.000    1.46 | 8.083    2.92 |14.167    5.58 | 20.25    2.39
 2.083    1.46 | 8.167    2.92 |14.250    5.58 | 20.33    1.59
 2.167    1.46 | 8.250    2.92 |14.333    3.98 | 20.42    1.59
 2.250    1.46 | 8.333    3.45 |14.417    3.98 | 20.50    1.59
 2.333    1.73 | 8.417    3.45 |14.500    3.98 | 20.58    1.59
 2.417    1.73 | 8.500    3.45 |14.583    3.98 | 20.67    1.59
 2.500    1.73 | 8.583    3.45 |14.667    3.98 | 20.75    1.59
 2.583    1.73 | 8.667    3.45 |14.750    3.98 | 20.83    1.59
 2.667    1.73 | 8.750    3.45 |14.833    3.98 | 20.92    1.59
 2.750    1.73 | 8.833    3.72 |14.917    3.98 | 21.00    1.59
 2.833    1.73 | 8.917    3.72 |15.000    3.98 | 21.08    1.59
 2.917    1.73 | 9.000    3.72 |15.083    3.98 | 21.17    1.59
 3.000    1.73 | 9.083    3.72 |15.167    3.98 | 21.25    1.59
 3.083    1.73 | 9.167    3.72 |15.250    3.98 | 21.33    1.59
 3.167    1.73 | 9.250    3.72 |15.333    3.98 | 21.42    1.59
 3.250    1.73 | 9.333    4.25 |15.417    3.98 | 21.50    1.59
 3.333    1.73 | 9.417    4.25 |15.500    3.98 | 21.58    1.59
 3.417    1.73 | 9.500    4.25 |15.583    3.98 | 21.67    1.59
 3.500    1.73 | 9.583    4.25 |15.667    3.98 | 21.75    1.59
 3.583    1.73 | 9.667    4.25 |15.750    3.98 | 21.83    1.59
 3.667    1.73 | 9.750    4.25 |15.833    3.98 | 21.92    1.59
 3.750    1.73 | 9.833    4.78 |15.917    3.98 | 22.00    1.59
```

```
    3.833    1.73 |  9.917    4.78 |16.000    3.98 |  22.08    1.59
    3.917    1.73 | 10.000    4.78 |16.083    3.98 |  22.17    1.59
    4.000    1.73 | 10.083    4.78 |16.167    3.98 |  22.25    1.59
    4.083    1.73 | 10.167    4.78 |16.250    3.98 |  22.33    1.59
    4.167    1.73 | 10.250    4.78 |16.333    2.39 |  22.42    1.59
    4.250    1.73 | 10.333    6.11 |16.417    2.39 |  22.50    1.59
    4.333    2.12 | 10.417    6.11 |16.500    2.39 |  22.58    1.59
    4.417    2.12 | 10.500    6.11 |16.583    2.39 |  22.67    1.59
    4.500    2.12 | 10.583    6.11 |16.667    2.39 |  22.75    1.59
    4.583    2.12 | 10.667    6.11 |16.750    2.39 |  22.83    1.59
    4.667    2.12 | 10.750    6.11 |16.833    2.39 |  22.92    1.59
    4.750    2.12 | 10.833    8.23 |16.917    2.39 |  23.00    1.59
    4.833    2.12 | 10.917    8.23 |17.000    2.39 |  23.08    1.59
    4.917    2.12 | 11.000    8.23 |17.083    2.39 |  23.17    1.59
    5.000    2.12 | 11.083    8.23 |17.167    2.39 |  23.25    1.59
    5.083    2.12 | 11.167    8.23 |17.250    2.39 |  23.33    1.59
    5.167    2.12 | 11.250    8.23 |17.333    2.39 |  23.42    1.59
    5.250    2.12 | 11.333   12.74 |17.417    2.39 |  23.50    1.59
    5.333    2.12 | 11.417   12.74 |17.500    2.39 |  23.58    1.59
    5.417    2.12 | 11.500   12.74 |17.583    2.39 |  23.67    1.59
    5.500    2.12 | 11.583   12.74 |17.667    2.39 |  23.75    1.59
    5.583    2.12 | 11.667   12.74 |17.750    2.39 |  23.83    1.59
    5.667    2.12 | 11.750   12.74 |17.833    2.39 |  23.92    1.59
    5.750    2.12 | 11.833   39.29 |17.917    2.39 |  24.00    1.59
    5.833    2.12 | 11.917   39.29 |18.000    2.39 |  24.08    1.59
    5.917    2.12 | 12.000   39.29 |18.083    2.39 |  24.17    1.59
    6.000    2.12 | 12.083  162.46 |18.167    2.39 |  24.25    1.59
    6.083    2.12 | 12.167  162.47 |18.250    2.39 |

    Max.Eff.Inten.(mm/hr)=     162.47       311.50
              over (min)          5.00        10.00
    Storage Coeff.  (min)=       1.59 (ii)    6.07 (ii)
    Unit Hyd. Tpeak (min)=       5.00        10.00
    Unit Hyd. peak  (cms)=       0.33         0.15
                                                      *TOTALS*
    PEAK FLOW       (cms)=       0.07         0.15         0.217 (iii)
    TIME TO PEAK    (hrs)=      12.25        12.25        12.25
    RUNOFF VOLUME    (mm)=     131.74        99.59       107.62
    TOTAL RAINFALL   (mm)=     132.74       132.74       132.74
    RUNOFF COEFFICIENT   =       0.99         0.75         0.81

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

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN*  =  74.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

```
--------------------
| DUHYD    (  0331)|
| Inlet Cap.= 0.112|
| #of Inlets=     1|
| Total(cms)=  0.1|      AREA     QPEAK     TPEAK    R.V.
--------------------      (ha)     (cms)     (hrs)    (mm)
     TOTAL HYD.(ID= 1):   0.59      0.22     12.25  107.62
     ------------------------------------------------------
     MAJOR SYS.(ID= 2):   0.06      0.10     12.25  107.62
     MINOR SYS.(ID= 3):   0.53      0.11     12.08  107.62

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
--------------------
|Bioretention(  0329)| OUTFLOW: OFF UNDERDRAIN: ON
|IN= 2--> OUT= 3     |
| DT=  5.0 min       |
--------------------  SURFACE PONDING LAYER:

                        Max. Ponding Storage(cu.m.)=     149.95

                    STAGE       AREA          |   STAGE      AREA
                     (m)        (m2)          |    (m)       (m2)
                    0.000      100.000        |   1.500      100.000
                    0.500      100.000        |   0.000        0.000
                    1.000      100.000        |   0.000        0.000

                   MULCH LAYER:
                   Depth      (m)=    0.00  Porosity           =  0.40
                   Maximum Mulch layer Volume (cu.m.)=     0.00

                   ENGINEERED SOIL LAYER:
                   Soil moisture =    0.30  Depth            (m)=  0.72
                   Width      (m)=    3.00  Length           (m)=240.00
                   Porosity     =    0.47  Infiltration (m/hr) = 0.0060
                   Maximum Engineered Soil layer Volume(cu.m.)=  242.09

                     DEPTH       DISCHARGE       |   DEPTH       DISCHARGE
                      (m)          (cms)         |    (m)         (cms)
                     0.000         0.000         |   0.559        0.030
                     0.279         0.010         |   0.762        0.040
                     0.406         0.020         |   1.300        0.050

                   STORAGE LAYER:
                   Depth       (m)=    1.00  Porosity           =  0.40
                   Seepage (m/hr) = 0.0010
                   Maximum Storage layer Volume(cu.m.)=   288.00

                   TOTAL AVAILABLE STORAGE:
```

```
                        TOTAL STORAGE=Surface Ponding + Mulch Layer + Engineered soil
   +Storage Layer(cu.m.)=      680.04

                        NATIVE SOIL LAYER:
                        Infiltration (m/hr) = 0.0060

                          AREA         QPEAK            TPEAK         R.V.
                          (ha)         (cms)            (hrs)         (mm)
              INFLOW:ID= 2     0.53         0.112            12.08       107.62
            OUTFLOW:ID= 1      0.16         0.009             0.08        88.40
           OVERFLOW:ID= 3      0.37         0.111            12.25        88.40

                    Volume Reduction Rate[(RVin-RVout)/RVin] (%)=       17.86
                    Time to reach Max Ponding storage       (Hr)=        0.00
                    Volume of water for drawdown in LID  (cu.m.)=      156.56
                    Volume of Max. Water Storage         (cu.m.)=        0.00
                    Maximum Surface Ponding And Mulch Vol(cu.m.)=      149.95
                    Maximum Engineered Soil Volume       (cu.m.)=       69.86
                    ***** After simulation, water volume is not zero.

     -------------------------
     | Junction Command(0330) |
     -------------------------

                              AREA     QPEAK   TPEAK     R.V.
                              (ha)     (cms)    (hrs)    (mm)
     INFLOW : ID= 3(  0329)    0.37     0.11   12.25    88.40
     OUTFLOW: ID= 2(  0330)    0.37     0.11   12.25    88.40

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

     -------------------------
     | Junction Command(0332) |
     -------------------------

                              AREA     QPEAK   TPEAK     R.V.
                              (ha)     (cms)    (hrs)    (mm)
     INFLOW : ID= 1(  0329)    0.16     0.01    0.08    88.40
     OUTFLOW: ID= 2(  0332)    0.16     0.01    0.08    88.40

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

   --------------------
   | ADD HYD  (  3106)|
   |   1 +  2 =  3    |      AREA    QPEAK    TPEAK     R.V.
   --------------------      (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (  0330):    0.37   0.111    12.25    88.40
        + ID2= 2 (  0331):    0.06   0.105    12.25   107.62
          ======================================================
```

```
       ID = 3 (  3106):     0.43   0.215    12.25    91.20

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

--------------------
| ADD HYD  (  3106)|
|   3 +  2 =  1    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  3106):     0.43   0.215    12.25    91.20
     + ID2= 2 (  0332):     0.16   0.009     0.08    88.40
       ======================================================
       ID = 1 (  3106):     0.59   0.216    12.25    90.42

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0277):     1.13   0.270    12.08    99.59
     + ID2= 2 (  0310):     5.48   1.974    12.25   105.74
       ======================================================
       ID = 3 (  0312):     6.61   2.244    12.25   104.69

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

--------------------
| ADD HYD  (  0312)|
|   3 +  2 =  1    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 3 (  0312):     6.61   2.244    12.25   104.69
     + ID2= 2 (  3106):     0.59   0.216    12.25    90.42
       ======================================================
       ID = 1 (  0312):     7.20   2.461    12.25   103.52

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

--------------------
| ADD HYD  (  0312)|
|   1 +  2 =  3    |      AREA    QPEAK    TPEAK     R.V.
--------------------      (ha)    (cms)    (hrs)     (mm)
       ID1= 1 (  0312):     7.20   2.461    12.25   103.52
     + ID2= 2 (  0316):    14.21   5.424    12.25   112.29
       ======================================================
       ID = 3 (  0312):    21.40   7.884    12.25   109.34
```

```
    NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
--------------------------------------------------------------------------------
--------------------
| RESERVOIR(  0319)|     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   |  0.6610      0.9850
                          0.0400     0.1140   |  1.0960      1.3320
                          0.0760     0.3690   |  1.4260      1.5860
                          0.2810     0.6450   |  0.0000      0.0000

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
   INFLOW : ID= 2 (  0312)     21.405     7.884     12.25     109.34
   OUTFLOW: ID= 1 (  0319)     21.405     1.019     12.75     109.31

                  PEAK   FLOW   REDUCTION [Qout/Qin](%)= 12.93
                  TIME SHIFT OF PEAK FLOW         (min)= 30.00
                  MAXIMUM  STORAGE   USED       (ha.m.)=  1.2720

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APPENDIX E

SWM Facility Calculations

CROZIER & ASSOCIATES
Consulting Engineers

Water Quality Requirements
Project #: 1060-6220
Project: Glenelg Expansion Lands
Date: 2022.08.22
By: KS

Water Quality Requirements for Wet Pond

Areas Contributing	Area (ha)	% Imp	25mm RV (mm)	25mm RV (m^3)
Drainage to Tree Pits	14.21	71.0		0
Drainage to SWM Pond	4.05	60.0		0
SWM Pond Block	1.43	50.0		0
Drainage to Perm Pavers Walkway	0.59	66.0		0
Drainage to Tree Pits	1.28	70.0		0
WEIGHTED IMP	**21.55**	**67.3**	15.54	**3350**

MOE Total WQ Volume (m^3/ha)	219
MOE ED Volume (m^3/ha)	40
MOE ED Volume (m^3)	862
MOE PP Volume (m^3/ha)	179
MOE PP Volume (m^3)	3852
Pond Required ED Volume (m^3)	3350
Pond Required PP Volume (m^3)	3852
Available ED Volume (m^3)	3368
Provided PP Volume (m^3)	3990

CROZIER & ASSOCIATES
Consulting Engineers

Project: Glenelg Expansion Lands
Project No.: 1060-6220
File: SWMF Calculations
Design by: KS
Date: 2022.08.22

EXTENDED DETENTION SPECIFICATIONS - SWM FACILITY (PER MECP)

Extended Detention Volume (Area x runoff from 25 mm storm event)		3350
t (drawdown time - seconds, *hours in italics*)	*24.0*	86400
Ao (cross section area of orifice - sqm)		0.0314
h (maximum water elevation above orifice for extended detention- m)		0.83
C (discharge coefficient)		0.64
Ap (average surface area for extended detention - sqm)		4415

t = 2*Ap*(h^0.5)/(C*Ao*(g*2)^0.5)

Ao = 0.03284676 sqm d = 205 mm

Extended Detention Orifice Diameter (as designed) d = **200** mm

CROZIER CONSULTING ENGINEERS

Project:	Glenelg Expansion Lands
Project No.:	1060-6220
File:	SWMF Calculations
Design by:	K. Swain
Date:	2022.08.22

SWMF
STAGE STORAGE DISCHARGE

Outlet Structure		
E.D. Orifice Diameter:	0.200	m
E.D. Orifice Invert Elevation:	518.20	m
V-notch angle	0	degrees
V-notch constant	0.00	const
V-notch invert	0.00	m
Rect weir length	0.31	m
Rect weir invert	519.03	m
Extended Detention Depth:	0.83	m

	Pond Dimensions				Outlet Structure			Cell Spillway			
	Elev.	Depth Above PP	Area	Storage Volume	ED Orifice Discharge	V-notch Discharge	Rect. Weir Discharge	Emerg. Weir Ave. Width	Emerg. Weir Discharge	Total Discharge	Storage
	(m)	(m)	(sqm)	(cu.m)	(cu.m/s)	(cu.m/s)	(cu.m/s)	(m)	(cu.m/s)	(cu.m/s)	(ha-m)
PP	518.20	0.00	3460	0	0.000	0.000	0.000	0.00	0.000	0.000	0.000
	518.30	0.10	3697	358	0.000	0.000	0.000	0.00	0.000	0.000	0.036
	518.40	0.20	3934	739	0.028	0.000	0.000	0.00	0.000	0.028	0.074
	518.50	0.30	4171	1145	0.040	0.000	0.000	0.00	0.000	0.040	0.114
	518.60	0.40	4407	1573	0.049	0.000	0.000	0.00	0.000	0.049	0.157
	518.70	0.50	4644	2026	0.056	0.000	0.000	0.00	0.000	0.056	0.203
	518.80	0.60	4881	2502	0.063	0.000	0.000	0.00	0.000	0.063	0.250
	518.90	0.70	5118	3002	0.069	0.000	0.000	0.00	0.000	0.069	0.300
ED	519.03	0.83	5426	3688	0.076	0.000	0.000	0.00	0.000	0.076	0.369
	519.10	0.90	5560	4072	0.080	0.000	0.011	0.00	0.000	0.090	0.407
	519.20	1.00	5751	4638	0.084	0.000	0.040	0.00	0.000	0.124	0.464
	519.30	1.10	5942	5222	0.089	0.000	0.080	0.00	0.000	0.169	0.522
	519.40	1.20	6134	5826	0.093	0.000	0.128	0.00	0.000	0.222	0.583
	519.50	1.30	6325	6449	0.098	0.000	0.184	0.00	0.000	0.281	0.645
	519.60	1.40	6516	7091	0.102	0.000	0.245	0.00	0.000	0.347	0.709
	519.70	1.50	6707	7752	0.105	0.000	0.313	0.00	0.000	0.418	0.775
	519.80	1.60	6899	8433	0.109	0.000	0.385	0.00	0.000	0.494	0.843
	519.90	1.70	7090	9132	0.113	0.000	0.463	0.00	0.000	0.576	0.913
	520.00	1.80	7281	9851	0.116	0.000	0.545	0.00	0.000	0.661	0.985
	520.10	1.90	7473	10588	0.119	0.000	0.631	0.00	0.000	0.751	1.059
	520.20	2.00	7664	11345	0.123	0.000	0.722	0.00	0.000	0.845	1.135
	520.30	2.10	7855	12121	0.126	0.000	0.816	0.00	0.000	0.942	1.212
	520.40	2.20	8046	12916	0.129	0.000	0.915	0.00	0.000	1.044	1.292
100-YR HWL	520.45	2.25	8142	13321	0.131	0.000	0.965	0.00	0.000	1.096	1.332
	520.55	2.35	8353	14146	0.134	0.000	1.069	0.00	0.000	1.203	1.415
	520.65	2.45	8563	14992	0.137	0.000	1.176	0.00	0.000	1.313	1.499
TOP	520.75	2.55	8774	15858	0.139	0.000	1.287	0.00	0.000	1.426	1.586

CROZIER CONSULTING ENGINEERS

Project No: 1060-6220
Project: Glenelg Expansion Lands
File: Forebay Design
Design by: K. Swain
Date: 2022-08-26

Forebay Design Calculations

	Variable	*Value*
Forebay Settling Length	Length of forebay (m)	50.0
	Average Width of forebay (m)	6.5
	Length-to-width ratio of forebay	7.7
	Peak flow rate from forebay in quality event (m^3/s)	0.076
	Settling velocity (m/s)	0.0003
	Required Forebay Length (m)	**44**
Dispersion Length	Inlet flowrate in 5 year event (m^3/s)	4.228
	Depth of of the permanent pool in the forebay (m)	1.58
	Desired velocity in the forebay (m/s)	0.5
	Length of Dispersion (m)	**43**
Velocity in Forebay Check	Depth of forebay in 10 year event (m) **	1.70
	Cross sectional area (m^2)	16.2
	10 Year Event Flowrate (m^3/s)	5.10
	Velocity in Forebay (m/s)*	**0.32**
Forebay Bottom Width	Length of forebay (m)	50.0
	Minimum Forebay Bottom Width (m)	**6.25**
DESIGN FOREBAY LENGTH (m)		**50.0**
DESIGN BOTTOM WIDTH (m)		**6.5**

* Desired maximum average velocity in the forebay is 0.15 m/s, per MOE 2003, Page 4-56

APPENDIX F

Water Balance Calculations

CROZIER CONSULTING ENGINEERS

Project Name: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Checked By: AW
Date: 4-Aug-2022

Water Budget - Pre-Development
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Pre-development area available for infiltration (landscaped/lawn area considered to infiltrate)
Pre-development area not available for infiltration (total site area less landscaped area noted above)
Remaining Impervious area (e.g. parking asphalt area)

Note: site land use areas consistent with Pre-Development SWM hydrologic modeling & calculations

Catchment Designation	Site					Glenelg Phase 2 Lands	
	Pervious Area to CP Trail	Pervious Area to North Tile Drain	Pervious Area to South Residential	Pervious Area to Southeast Tile Drain	Pervious Area to East Tile Drain	Pervious Area from Glenelg Phase 2 Lands - External	Totals
Area (m^2)	43200	133300	30000	22900	30500	7800	267700
Pervious Area (m^2)	43200	133300	30000	22900	30500	7800	267700
Impervious Area (m^2)	0	0	0	0	0	0	0
Infiltration Factors							
Topography Infiltration Factor	0.25	0.25	0.25	0.25	0.25	0.25	
Soil Infiltration Factor	0.2	0.2	0.2	0.2	0.2	0.2	
Land Cover Infiltration Factor	0.1	0.1	0.1	0.1	0.1	0.1	
MOE Infiltration Factor	0.55	0.55	0.55	0.55	0.55	0.55	
Actual Infiltration Factor	0.55	0.55	0.55	0.55	0.55	0.55	
Run-off Coefficient	0.25	0.25	0.25	0.25	0.25	0.25	
Runoff from Impervious Surfaces *	0	0	0	0	0	0	
Inputs (per Unit Area)							
Precipitation (mm/yr)	1106	1106	1106	1106	1106	1106	1106
Run-On (mm/yr)	0	0	0	0	0	0	0
Other Inputs (mm/yr)	0	0	0	0	0	0	0
Total Inputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**
Outputs (per Unit Area)							
Precipitation Surplus (mm/yr)	573	573	573	573	573	573	573
Net Surplus (mm/yr)	573	573	573	573	573	573	573
Evapotranspiration (mm/yr) *	533	533	533	533	533	533	533
Infiltration (mm/yr)	315	315	315	315	315	315	315
Topsoil Amendment Infiltration(mmyr)	0	0	0	0	0	0	0
Bioretention Infiltration(mmyr)	0	0	0	0	0	0	0
Tree Pit Infiltration(mm/yr)	0	0	0	0	0	0	0
Permeable Paver Infiltration - Park (mm/yr)	0	0	0	0	0	0	0
Permeable Paver Infiltration - North (mm/yr)	0	0	0	0	0	0	0
Total Infiltration (mm/yr)	315	315	315	315	315	315	315
Runoff Pervious Areas (mm/yr)	258	258	258	258	258	258	258
Runoff Impervious Areas (mm/yr)	0	0	0	0	0	0	0
Total Runoff (mm/yr)	258	258	258	258	258	258	258
Total Outputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inputs (Volumes)							
Precipitation (m^3/yr)	47788	147456	33186	25332	33739	8628	296130
Run-On (m^3/yr)	0	0	0	0	0	0	0
Other Inputs (m^3/yr)	0	0	0	0	0	0	0
Total Inputs (m^3/yr)	**47788**	**147456**	**33186**	**25332**	**33739**	**8628**	**296130**
Outputs (Volumes)							
Precipitation Surplus (m^3/yr)	24766	76420	17199	13128	17485	4472	153470
Net Surplus (m^3/yr)	24766	76420	17199	13128	17485	4472	153470
Evapotranspiration (m^3/yr) *	23022	71037	15987	12204	16254	4157	142660
Infiltration (m^3/yr)	13621	42031	9459	7221	9617	2459	84408
Topsoil Amendment Infiltration(mmyr)	0	0	0	0	0	0	0
Bioretention Infiltration(m^3/yr)	0	0	0	0	0	0	0
Tree Pit Infiltration(m^3/yr)	0	0	0	0	0	0	0
Permeable Paver Infiltration - Park (m^3/yr)	0	0	0	0	0	0	0
Permeable Paver Infiltration - North (m^3/yr)	0	0	0	0	0	0	0
Total Infiltration (m^3/yr)	13621	42031	9459	7221	9617	2459	84408
Runoff Pervious Areas (m^3/yr)	11145	34389	7739	5908	7868	2012	69061
Runoff Impervious Areas (m^3/yr)	0	0	0	0	0	0	0
Total Runoff (m^3/yr)	11145	34389	7739	5908	7868	2012	69061
Total Outputs (m^3/yr)	**47788**	**147456**	**33186**	**25332**	**33739**	**8628**	**296130**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTES:
* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project Name: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Checked By: AW
Date: 4-Aug-2022

Water Budget - Post-Development *Without Mitigation*
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Post-development area available for infiltration (landscaped/lawn area considered to infiltrate)
Post-development area not available for infiltration (total site area less landscaped area noted above)
Remaining Impervious area (e.g. parking asphalt area, building/rooftop area)

Note: site land use areas consistent with Post-Development SWM hydrologic modeling & calculations

Catchment Designation	Site			Glenelg Phase 2 Lands		
	Pervious Area	Impervious Block Area	Impervious Road Area	Pervious Area	Impervious Area	Totals
Area (m^2)	99378	100744	59778	6318	1482	267700
Pervious Area (m^2)	99378	0	0	6318	0	105696
Impervious Area (m^2)	0	100744	59778	0	1482	162004
Infiltration Factors						
Topography Infiltration Factor	0.25	0	0	0.25	0	
Soil Infiltration Factor	0.2	0	0	0.2	0	
Land Cover Infiltration Factor	0.1	0	0	0.1	0	
MOE Infiltration Factor	0.55	0	0	0.55	0	
Actual Infiltration Factor	0.55	0	0	0.55	0	
Run-off Coefficient	0.25	1	1	0.25	1	
Runoff from Impervious Surfaces *	0	0.8	0.8	0	0.8	
Inputs (per Unit Area)						
Precipitation (mm/yr)	1106	1106	1106	1106	1106	1106
Run-On (mm/yr)	0	0	0	0	0	0
Other Inputs (mm/yr)	0	0	0	0	0	0
Total Inputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**
Outputs (per Unit Area)						
Precipitation Surplus (mm/yr)	573	885	885	573	885	760
Net Surplus (mm/yr)	573	885	885	573	885	760
Evapotranspiration (mm/yr) *	533	221	221	533	221	346
Infiltration (mm/yr)	315	0	0	315	0	126
Topsoil Amendment Infiltration(mmyr)	0	0	0	0	0	0
Bioretention Infiltration(mmyr)	0	0	0	0	0	0
Tree Pit Infiltration(mm/yr)	0	0	0	0	0	0
Permeable Paver Infiltration - Park (mm/yr)	0	0	0	0	0	0
Permeable Paver Infiltration - North (mm/yr)	0	0	0	0	0	0
Total Infiltration (mm/yr)	315	0	0	315	0	126
Runoff Pervious Areas (mm/yr)	258	0	0	258	0	103
Runoff Impervious Areas (mm/yr)	0	885	885	0	885	531
Total Runoff (mm/yr)	258	885	885	258	885	634
Total Outputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**
Inputs (Volumes)						
Precipitation (m^3/yr)	109932	111443	66126	6989	1639	296130
Run-On (m^3/yr)	0	0	0	0	0	0
Other Inputs (m^3/yr)	0	0	0	0	0	0
Total Inputs (m^3/yr)	**109932**	**111443**	**66126**	**6989**	**1639**	**296130**
Outputs (Volumes)						
Precipitation Surplus (m^3/yr)	56972	89154	52901	3622	1312	203961
Net Surplus (m^3/yr)	56972	89154	52901	3622	1312	203961
Evapotranspiration (m^3/yr) *	52960	22289	13225	3367	328	92168
Infiltration (m^3/yr)	31335	0	0	1992	0	33327
Topsoil Amendment Infiltration(m^3/yr)	0	0	0	0	0	0
Bioretention Infiltration(m^3/yr)	0	0	0	0	0	0
Tree Pit Infiltration(m^3/yr)	0	0	0	0	0	0
Permeable Paver Infiltration - Park(m^3/yr)	0	0	0	0	0	0
Permeable Paver Infiltration - North (m^3/yr)	0	0	0	0	0	0
Total Infiltration (m^3/yr)	31335	0	0	1992	0	33327
Runoff Pervious Areas (m^3/yr)	25638	0	0	1630	0	27268
Runoff Impervious Areas (m^3/yr)	0	89154	52901	0	1312	143367
Total Runoff (m^3/yr)	25638	89154	52901	1630	1312	170634
Total Outputs (m^3/yr)	**109932**	**111443**	**66126**	**6989**	**1639**	**296130**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**

Pre-Development Total Infiltration:
84408 m^3/yr

NOTES:
* Evaporation from impervious areas was assumed to be 20% of precipitation.

CROZIER CONSULTING ENGINEERS

Project Name: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Checked By: AW
Date: 4-Aug-2022

Water Budget - Post-Development *with Mitigation*
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Post-development area available for infiltration (lawn/landscaped area considered to infiltrate)

Post-development area not available/directed to infiltrate (total site area less lawn/landscaped)

Site - Post-Development

Catchment Designation	Draining to CP Trail						Draining to Southeast Tile Drain				Draining to East Tile Drain	
	Pervious Area Draining Uncontrolled to CP Trail	Impervious Area Draining Uncontrolled to CP Trail	Impervious Draining to Tree Pits	Pervious Area Tributary to Tree Pits	Pervious Area Draining from TR-1 (Glenelg Phase 2 Lands)	Impervious Area Draining from TR-1 (Glenelg Phase 2 Lands)	Pervious Area Draining Uncontrolled to Southeast Tile Drain	Impervious Area Draining Uncontrolled to Southeast Tile Drain	Impervious Area Draining Controlled to SE Tile Drain	Pervious Area Draining Controlled to SE Tile Drain	Impervious Area Draining Uncontrolled to East Tile Drain	Pervious Area Draining Uncontrolled to East Tile Drain
Area (m^2)	2250	2750	8811	3989	6318	1482	2615	3196	2796	2288	2159	992
Pervious Area (m^2)	2250	0	0	3989	6318	0	2615	0	0	2288	0	992
Impervious Area (m^2)	0	2750	8811	0	0	1482	0	3196	2796	0	2159	0
Infiltration Factors												
Topography Infiltration Factor	0.25	0	0	0.25	0.25	0	0.25	0	0	0.25	0	0.25
Soil Infiltration Factor	0.2	0	0	0.2	0.2	0	0.2	0	0	0.2	0	0.2
Land Cover Infiltration Factor	0.1	0	0	0.1	0.1	0	0.1	0	0	0.1	0	0.1
MOE Infiltration Factor	0.55	0	0	0.55	0.55	0	0.55	0	0	0.55	0	0.55
Actual Infiltration Factor	0.55	0	0	0.55	0.55	0	0.55	0	0	0.55	0	0.55
Run-off Coefficient	0.25	1.00	1.00	0.25	0.25	1.00	0.25	1.00	1.00	0.25	1.00	0.25
Runoff from Impervious Surfaces *	0	0.8	0.8	0	0	0.8	0	0.8	0.8	0	0.8	0
Inputs (per Unit Area)												
Precipitation (mm/yr)	1106	1106	1106	1106	1106	1106	1106	1106	1106	1106	1106	1106
Run-On (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Other Inputs (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Total Inputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**
Outputs (per Unit Area)												
Precipitation Surplus (mm/yr)	573	885	885	573	573	885	573	885	885	573	885	573
Net Surplus (mm/yr)	573	885	885	573	573	885	573	885	885	573	885	573
Evapotranspiration (mm/yr) *	533	221	221	533	533	221	533	221	221	533	221	533
Infiltration (mm/yr)	315	0	0	315	315	0	315	0	0	315	0	315
Topsoil Amendment Infiltration(mm/yr)	64	0	0	64	0	0	64	0	0	64	0	64
Bioretention Infiltration(mm/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Tree Pit Infiltration(mm/yr)	0	0	75	75	0	0	0	0	0	0	0	0
Permeable Paver Infiltration - Park (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Permeable Paver Infiltration - North (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Total Infiltration (mm/yr)	380	0	75	455	315	0	380	0	0	380	0	380
Runoff Pervious Areas (mm/yr)	193	0	0	118	258	0	193	0	0	193	0	193
Runoff Impervious Areas (mm/yr)	0	885	810	0	0	885	0	885	885	0	885	0
Total Runoff (mm/yr)	193	885	810	118	258	885	193	885	885	193	885	193
Total Outputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inputs (Volumes)												
Precipitation (m^3/yr)	2489	3042	9746	4413	6989	1639	2893	3535	3093	2531	2389	1097
Run-On (m^3/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Other Inputs (m^3/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Total Inputs (m^3/yr)	**2489**	**3042**	**9746**	**4413**	**6989**	**1639**	**2893**	**3535**	**3093**	**2531**	**2389**	**1097**
Outputs (Volumes)												
Precipitation Surplus (m^3/yr)	1290	2434	2434	2287	3622	1312	1499	2828	2475	1312	1911	569
Net Surplus (m^3/yr)	1290	2434	2434	2287	3622	1312	1499	2828	2475	1312	1911	569
Evapotranspiration (m^3/yr) *	1199	608	608	2126	3367	328	1394	707	619	1219	478	529
Infiltration (m^3/yr)	709	0	0	1258	1992	0	825	0	0	721	0	313
Topsoil Amendment Infiltration(m^3/yr)	145	0	0	257	0	0	169	0	0	148	0	64
Bioretention Infiltration(m^3/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Tree Pit Infiltration(m^3/yr)	0	0	206	299	0	0	0	0	0	0	0	0
Permeable Paver Infiltration - Park(m^3/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Permeable Paver Infiltration - North(m^3/yr)	0	0	0	0	0	0	0	0	0	0	0	0
Total Infiltration (m^3/yr)	855	0	206	1814	1992	0	993	0	0	869	0	377
Runoff Pervious Areas (m^3/yr)	435	0	0	473	1630	0	506	0	0	443	0	192
Runoff Impervious Areas (m^3/yr)	0	2434	2227	0	0	1312	0	2828	2475	0	1911	0
Total Runoff (m^3/yr)	435	2434	2227	473	1630	1312	506	2828	2475	443	1911	192
Total Outputs (m^3/yr)	**2489**	**3042**	**3042**	**4413**	**6989**	**1639**	**2893**	**3535**	**3093**	**2531**	**2389**	**1097**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Catchment Designation	Draining to East Tile Drain (cont.)				Draining to North Tile Drain								
	Impervious Draining to Tree Pits	Pervious Area Tributary to Tree Pits	Impervious Draining to Bioretention and Permeable Pavers	Pervious Area Tributary to Bioretention and Permeable Pavers	Impervious Area Draining to Permeable Pavers (N Walkway)	Pervious Area Draining to Permeable Pavers (N Walkway)	Impervious Area Tributary to North Tile Drain	Pervious Area Tributary to North Tile Drain	Impervious Draining to Tree Pits	Pervious Area Tributary to Tree Pits	Impervious SWM Pond Block Tributary to North Tile Drain	Pervious SWM Pond Block Tributary to North Tile Drain	Totals
Area (m^2)	5622	3012	3486	13153	3912	2000	24061	16405	96565	45510	7165	7165	267700
Pervious Area (m^2)	0	3012	0	13153	0	2000	0	16405	0	45510	0	7165	105696
Impervious Area (m^2)	5622	0	3486	0	3912	0	24061	0	96565	0	7165	0	162004
Infiltration Factors													
Topography Infiltration Factor	0	0.25	0	0.25	0	0.25	0	0.25	0	0.25	0	0.25	
Soil Infiltration Factor	0	0.2	0	0.2	0	0.2	0	0.2	0	0.2	0	0.2	
Land Cover Infiltration Factor	0	0.1	0	0.1	0	0.1	0	0.1	0	0.1	0	0.1	
MOE Infiltration Factor	0	0.55	0	0.55	0	0.55	0	0.55	0	0.55	0	0.55	
Actual Infiltration Factor	0	0.55	0	0.55	0	0.55	0	0.55	0	0.55	0	0.55	
Run-off Coefficient	1.00	0.25	1.00	0.25	1.00	0.25	1.00	0.25	1.00	0.25	1.00	0.25	
Runoff from Impervious Surfaces *	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	0.8	0	
Inputs (per Unit Area)													
Precipitation (mm/yr)	1106	1106	1106	1106	1106	1106	1106	1106	1106	1106	1106	1106	1106
Run-On (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Inputs (mm/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	1106
Outputs (per Unit Area)													
Precipitation Surplus (mm/yr)	885	573	885	573	885	573	885	573	885	573	885	573	729
Net Surplus (mm/yr)	885	573	885	573	885	573	885	573	885	573	885	573	729
Evapotranspiration (mm/yr) *	221	533	221	533	221	533	221	533	221	533	221	533	377
Infiltration (mm/yr)	0	315	0	315	0	315	0	315	0	315	0	315	158
Topsoil Amendment Infiltration(mm/yr)	0	64	0	64	0	64	0	64	0	64	0	64	30
Bioretention Infiltration(mm/yr)	0	0	300	95	0	0	0	0	0	0	0	0	14
Tree Pit Infiltration(mm/yr)	75	75	0	0	0	0	0	0	94	94	0	0	24
Permeable Paver Infiltration - Park (mm/yr)	0	0	450	70	0	0	0	0	0	0	0	0	19
Permeable Paver Infiltration - North (mm/yr)	0	0	0	0	500	180	0	0	0	0	0	0	28
Total Infiltration (mm/yr)	75	455	750	545	500	560	0	380	94	474	0	380	269
Runoff Pervious Areas (mm/yr)	0	118	0	28	0	13	0	193	0	99	0	193	71
Runoff Impervious Areas (mm/yr)	810	0	135	0	385	0	885	0	791	0	885	0	389
Total Runoff (mm/yr)	810	118	135	28	385	13	885	193	791	99	885	193	460
Total Outputs (mm/yr)	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**	**1106**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**			0
Inputs (Volumes)													
Precipitation (m^3/yr)	6219	3332	3856	14550	4327	2213	26616	18147	106820	50343	7925	7925	296130
Run-On (m^3/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Inputs (m^3/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Inputs (m^3/yr)	**6219**	**3332**	**3856**	**14550**	**4327**	**2213**	**26616**	**18147**	**106820**	**50343**	**7925**	**7925**	**296130**
Outputs (Volumes)													
Precipitation Surplus (m^3/yr)	4975	1727	3085	7540	3462	1147	21293	9405	85456	26090	6340	4107	198598
Net Surplus (m^3/yr)	4975	1727	3085	7540	3462	1147	21293	9405	85456	26090	6340	4107	198598
Evapotranspiration (m^3/yr) *	1244	1605	771	7009	865	1066	5323	8742	21364	24253	1585	3818	90827
Infiltration (m^3/yr)	0	950	0	4147	0	631	0	5173	0	14350	0	2259	33327
Topsoil Amendment Infiltration(m^3/yr)	0	194	0	848	0	129	0	1058	0	2935	0	462	6409
Bioretention Infiltration(m^3/yr)	0	0	1046	1250	0	0	0	0	0	0	0	0	2295
Tree Pit Infiltration(m^3/yr)	422	226	0	0	0	0	0	0	9077	4278	0	0	14508
Permeable Paver Infiltration - Park(m^3/yr)	0	0	1569	921	0	0	0	0	0	0	0	0	2489
Permeable Paver Infiltration - North(m^3/yr)	0	0	0	0	1956	360	0	0	0	0	0	0	2316
Total Infiltration (m^3/yr)	422	1370	2615	7166	1956	1120	0	6231	9077	21563	0	2721	61345
Runoff Pervious Areas (m^3/yr)	0	357	0	375	0	27	0	3174	0	4528	0	1386	13525
Runoff Impervious Areas (m^3/yr)	4553	0	470	0	1506	0	21293	0	76379	0	6340	0	123728
Total Runoff (m^3/yr)	4553	357	470	375	1506	27	21293	3174	76379	4528	6340	1386	137253
Total Outputs (m^3/yr)	**6219**	**3332**	**3856**	**14550**	**4327**	**2213**	**26616**	**18147**	**106820**	**50343**	**7925**	**7925**	**289426**
Difference (Inputs- Outputs)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0

Runoff draining to CP Tile Drain decreased by **24% (2,634m^3/yr)** in Post-Development Conditions

Runoff draining to Southeast Tile Drain increased by **6% (344m^3/yr)** in Post-Development Conditions

Runoff draining to East Tile Drain decreased by **0% (10m^3/yr)** in Post-Development Conditions

Runoff draining to North Tile Drain increased by **233% (80,244m^3/yr)** in Post-Development Conditions

Proposed Infiltration via Mitigation

Pre-Development Total Infiltration:
315 mm/yr

Note:
621.9 mm
Precipitation available between Apr-Oct (non-winter months). Therefore available for infiltration into non-frozen soil

Pre-Development Total Infiltration:
84408 m3/yr

NOTES:
* Evaporation from impervious areas was assumed to be 20% of precipitation.

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Checked By: AW
Date: 4-Aug-2022

Water Budget Summary
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Characteristic	Site				
	Pre-Development	Post-Development	Post-Development *with Mitigation*	Change (Pre to Post)	Change (Pre to Post) *with Mititgation*
Inputs (Volumes)					
Precipitation (m^3/yr)	296130	296130	296130	0%	0%
Run-On (m^3/yr)	0	0	0	0%	0%
Other inputs (m^3/yr)	0	0	0	0%	0%
Total Inputs (m^3/yr)	**296130**	**296130**	**296130**	**0**	**0**
Outputs (Volumes)					
Precipitation Surplus (m^3/yr)	153470	203961	198598	33%	29%
Net Surplus (m^3/yr)	153470	203961	198598	33%	29%
Evapotranspiration (m^3/yr)	142660	92168	90827	-35%	-36%
Infiltration (m^3/yr)	84408	33327	33327	-61%	-61%
Topsoil Amendment Infiltration (m^3/yr)	0	0	6409	-	**6409 m3/yr**
Bioretention Infiltration (m^3/yr)	0	0	2295	-	**2295 m3/yr**
Tree Pit Infiltration(m^3/yr)	0	0	14508	-	**14508 m3/yr**
Permeable Paver Infiltration - Park (m^3/yr)	0	0	2489	-	**2489 m3/yr**
Permeable Paver Infiltration - North (m^3/yr)	0	0	2316	-	**2316 m3/yr**
Total Infiltration (m^3/yr)	**84408**	**33327**	**61345**	-61%	-27%
Runoff Pervious Areas (m^3/yr)	69061	27268	13525	-61%	-80%
Runoff Impervious Areas (m^3/yr)	0	143367	123728	-	-
Total Runoff (m^3/yr)	69061	170634	137253	147%	99%
Total Outputs (m^3/yr)	**296130**	**296130**	**289426**	0%	0%

NOTES:
* Total Infiltration into groundwater system (25702m3/yr) is to be maintained via the proposed LIDs.

Months contributing to Water Balance (winter months not considered due to freezing effects) - April, May, June, July, August, September, October = 7 months

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 4-Aug-2022

Design Storm Determination - Permeable Pavers in Park
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Days with Precipitation (From Climate Data)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
>= 0.2 mm	14.6	13	12.8	11.9	13.1	15.3	16.9	98
>= 5 mm	4.7	5.6	5.2	4.5	5.2	6.2	6.1	38
>= 10 mm	2.1	2.9	3.2	2.2	3	3.5	2.9	20
>= 25 mm	0.32	0.64	0.86	0.81	0.81	0.86	0.33	5

Available Precipitation

Storm Event (mm)	**Total Days Per Year**	**Incremental Precipitation (mm/yr)**	**Cummulative Precipitation (mm/yr)**
0.2	98	19.5	19.5
5	38	187.5	207.0
10	20	198.0	405.0
25	5	115.8	520.8
Total	**160**	**520.8**	

Permeable Paver Infiltration Target: 150 mm/yr

Runoff Coefficient: 0.35

Design Precipitation: 432 mm/yr (Design Infiltration / Contributing RC)

Therefore Min. Design Storm: 13.44 mm

Volume of Storage Required: 223.68 m^3

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 8-4-2022

Mitigation Sizing - Permeable Pavers in Park
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Contributing Drainage Area:	16639	m^2
Runoff Coefficient:	0.35	
Design Storm:	13	mm
Design Runoff/Infiltration Volume:	223.7	m^3

Maximum Depth of Cell

$$d_{cmax} = i*(t_s-d_p/i)/V_r$$

Where:
$d_{c\,max}$ = Maximum cell depth (mm)
i = Infiltration rate for native soils (mm/hr)
V_r = Void space ratio for filter bed and gravel storage layer (assume 0.4)
t_s = Time to drain
d_p = Maximum surface ponding depth (mm)

Assumptions

i^1 =	6	mm/hr
V_r =	0.4	
t_s =	48	hr
d_p =	0	mm
$d_{c\,max}$ =	0.7	m

Area of Permeable Pavers:	800	m^2
Storage Depth:	0.720	m
Drawdown Time:	48	hr
Void Ratio:	0.4	
Total Volume Retained:	230.4	m^3

Based on Borehole MW22-313 S

Depth to Groundwater:	1.985	m
Storage Depth:	0.720	m
Clearance from Groundwater:	1.265	m

Therefore, the proposed system will drain within 48 hours and will provide a retention volume that exceeds the volume for mitigation.

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 4-Aug-2022

Design Storm Determination - Permeable Pavers to North Walkway
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Days with Precipitation (From Climate Data)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
>= 0.2 mm	14.6	13	12.8	11.9	13.1	15.3	16.9	98
>= 5 mm	4.7	5.6	5.2	4.5	5.2	6.2	6.1	38
>= 10 mm	2.1	2.9	3.2	2.2	3	3.5	2.9	20
>= 25 mm	0.32	0.64	0.86	0.81	0.81	0.86	0.33	5

Available Precipitation

Storm Event (mm)	**Total Days Per Year**	**Incremental Precipitation (mm/yr)**	**Cummulative Precipitation (mm/yr)**
0.2	98	19.5	19.5
5	38	187.5	207.0
10	20	198.0	405.0
25	5	115.8	520.8
Total	**160**	**520.8**	

Permeable Paver Infiltration Target: 392 mm/yr

Runoff Coefficient: 0.66

Design Precipitation: 591 mm/yr (Design Infiltration / Contributing RC)

Therefore Min. Design Storm: 34.06 mm

Volume of Storage Required: 201.38 m^3

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 8-4-2022

Mitigation Sizing - Permeable Pavers to North Wallkway
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Contributing Drainage Area:	5912	m^2
Runoff Coefficient:	0.66	
Design Storm:	34	mm
Design Runoff/Infiltration Volume:	201.4	m^3

Maximum Depth of Cell

$$d_{cmax} = i*(t_s-d_p/i)/V_r$$

Where:
$d_{c\,max}$ = Maximum cell depth (mm)
i = Infiltration rate for native soils (mm/hr)
V_r = Void space ratio for filter bed and gravel storage layer (assume 0.4)
t_s = Time to drain
d_p = Maximum surface ponding depth (mm)

Assumptions

i^1 =	6	mm/hr
V_r =	0.4	
t_s =	48	hr
d_p =	0	mm
$d_{c\,max}$ =	0.7	m

Area of Permeable Pavers:	700	m^2
Storage Depth:	0.720	m
Drawdown Time:	48	hr
Void Ratio:	0.4	
Total Volume Retained:	201.6	m^3

Based on Borehole MW22-313 S

Depth to Groundwater:	1.985	m
Storage Depth:	0.720	m
Clearance from Groundwater:	1.265	m

Therefore, the proposed system will drain within 48 hours and will provide a retention volume that exceeds the volume for mitigation.

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 4-Aug-2022

Design Storm Determination - Bioretention
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Days with Precipitation (From Climate Data)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
>= 0.2 mm	14.6	13	12.8	11.9	13.1	15.3	16.9	98
>= 5 mm	4.7	5.6	5.2	4.5	5.2	6.2	6.1	38
>= 10 mm	2.1	2.9	3.2	2.2	3	3.5	2.9	20
>= 25 mm	0.32	0.64	0.86	0.81	0.81	0.86	0.33	5

Available Precipitation

Storm Event (mm)	**Total Days Per Year**	**Incremental Precipitation (mm/yr)**	**Cummulative Precipitation (mm/yr)**
0.2	98	19.5	19.5
5	38	187.5	207.0
10	20	198.0	405.0
25	5	115.8	520.8
Total	**160**	**520.8**	

Bioretention Infiltration Target: 138 mm/yr

Runoff Coefficient: 0.35

Design Precipitation: 398 mm/yr (Design Infiltration / Contributing RC)

Therefore Min. Design Storm: 9.08 mm

Volume of Storage Required: 151.13 m^3

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 8-4-2022

Mitigation Sizing - Bioretention
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Contributing Drainage Area:	16639	m^2
Runoff Coefficient:	0.35	
Design Storm:	9	mm
Design Runoff/Infiltration Volume:	151.1	m^3

Maximum Depth of Cell

$$d_{cmax} = i*(t_s-d_p/i)/V_r$$

Where:
$d_{c\,max}$ = Maximum cell depth (mm)
i = Infiltration rate for native soils (mm/hr)
V_r = Void space ratio for filter bed and gravel storage layer (assume 0.4)
t_s = Time to drain
d_p = Maximum surface ponding depth (mm)

Assumptions

i^1 =	6	mm/hr
V_r =	0.4	
t_s =	48	hr
d_p =	0	mm
$d_{c\,max}$ =	0.7	m

Length of Bioretention:	60	m
Width of Bioretention:	3	m
Number of LIDs:	3	
Storage Depth:	0.720	m
Drawdown Time:	48	hr
Total Volume Retained:	155.52	m^3

Based on Borehole MW22-313 S

Depth to Groundwater:	1.985	m
Storage Depth:	0.720	m
Clearance from Groundwater:	1.265	m

Therefore, the proposed system will drain within 48 hours and will provide a retention volume that exceeds the volume for mitigation.

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 27-Jul-2022

Design Storm Determination - Tree Pits
Project Name: Glenelg Expansion Lands
Water Balance/Water Budget Assessment

Days with Precipitation (From Climate Data)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
>= 0.2 mm	14.6	13	12.8	11.9	13.1	15.3	16.9	98
>= 5 mm	4.7	5.6	5.2	4.5	5.2	6.2	6.1	38
>= 10 mm	2.1	2.9	3.2	2.2	3	3.5	2.9	20
>= 25 mm	0.32	0.64	0.86	0.81	0.81	0.86	0.33	5

Available Precipitation

Storm Event (mm)	**Total Days Per Year**	**Incremental Precipitation (mm/yr)**	**Cummulative Precipitation (mm/yr)**
0.2	98	19.5	19.5
5	38	187.5	207.0
10	20	198.0	405.0
25	5	115.8	520.8
Total	**160**	**520.8**	

Tree Pit Infiltration Target: 96 mm/yr

Runoff Coefficient: 0.67

Design Precipitation: 143 mm/yr (Design Infiltration / Contributing RC)

Therefore Min. Design Storm: 3.35 mm

Volume of Storage Required: 505.4 m^3

CROZIER
CONSULTING ENGINEERS

Project: Glenelg Expansion Lands
Project No: 1060-6220
Modelled By: KS
Date: 7-27-2022

Stormwater Tree Pit
Project Name: Glenelg Expansion Lands

Water Balance/Water Budget Assessment

Location	Block Area (Ha)	TIMP	RC	A*RC	A*RC Proration	Required Storage Volume (m^3)	Native Soil Infiltration Rate* (mm/hr)	Safety Factor	Native Soil Infiltration Rate with Safety Factor (mm/hr)	Void Space of Sand Layer	Void Space Ratio of Gravel Layer	Depth of Sand Layer (m)	Depth of Gravel Layer (m)	Actual Length of Bioretention Cell (m)	Actual Width of the Biretention Cell (m)	Provided Surface Area (m^2)	Drawdown Time (hrs)	Total Retention Storage Provided per LID (m^3)	# of LIDs	Total Retention Storage Provided (m^3)
Tree Pits - CP Rail	1.280	69%	0.68	0.87	8%	40	12	2.0	6.00	0.20	0.40	0.10	0.67	2	2	4	48.00	1.152	29	33.41
Tree Pits - East Tile Drain	0.863	65%	0.66	0.57	5%	26	12	2.0	6.00	0.20	0.40	0.10	0.67	2	2	4	48.00	1.152	20	23.04
Tree Pits - North Tile Drain	14.208	68%	0.68	9.60	87%	505	12	2.0	6.00	0.20	0.40	0.10	0.67	2	2	4	48.00	1.152	390	449.28

Notes:
*Soil infiltration rate estimated as minimum 12mm/hr for infiltration LID's as per MOE 2003 Design Guidelines.
**Tree Species used shall be salt resistant species (i.e. Honey Locust, American Elm Cultivars, Kentucky Coffee-tree, Hackberry, & Bur Oak).
***Use of a Type 4 Bio Retention Mix is recommended for this feature, as per TS 5.10.

Soil Volumes

Area ID	Soil Depth (m)	Provided LID Area (m^2)	Provided Volume (m^3)	Allow. Vol per Tree (m^3)*	Allowable Number of Trees in LID
Tree Pit#0A	1.50	3.00	4.5	30	1.0

APPENDIX G

Glenelg Phase 2 Lands Design Excerpts

CROZIER CONSULTING ENGINEERS

Project Name:	GlenElg Phase 2	**D.A. NAME**	**TR-1**
Project Number:	1060-5545	**D.A. AREA (ha)**	**0.78**
Date:	2022-08-28		
By:	AM		

Hydrologic Parameters: CALIB STANDHYD Command
Post Development Drainage Area: Catchment TR-1
Uncontrolled Area to CP Rail Trail

Curve Number Calculation

Soil Types Present:

Type	ID	Hydrologic Group	% Area	Area
Listowel Silt Loam	Ls	BC	100	0.78
Total Area Check				0.78

Impervious Landuses Present:

	Roadway		Sidewalk		Driveway		Building		SWMF		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0.00	98	0.00	98	0.00	98	0.15	98		50	0.15	14.36
		98		98		98		98		50	0	0
		98		98		98		98		50	0	0
		98		98		98		98		50	0	0
Subtotal Area	0.00		0.00		0.00		0.15		0			

Pervious Landuses Present:

	Woodland		Meadow		Wetland		Lawn		Cultivated		Subtotals	
Soils	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area (ha)	CN	Area	A*CN
Ls	0	67	0	71	0	50	0.63	74	0	78	0.63	46.88
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
	0		0		0		0		0		0	0
Subtotal Area	0		0		0		0.63		0			

Pervious Area Calculations	Total Pervious Area	0.63
	Composite Pervious Curve Number	74
Impervious Area Calculations	Total Directly Connected Area	0.0
	Total Indirectly Connected Area	0.15
	Total Impervious Area	0.15
	% X imp	0
	% T imp	19
	Total Area Check	0.78

Initial Abstraction and Tp Calculations

Landuse	IA (mm)	Area (ha)	A * IA
Woodland	10	0	0
Meadow	8	0	0
Wetland	16	0	0
Lawn	5	0.63	3.17
Cultivated	7	0	0

Land Use	IA (mm)	Slope (%)	Travel Length (m)	Manning's n
Pervious	5.0	2	30	0.25
Impervious	2.0	0.5	72	0.013

LIST OF FIGURES

Legend

= SUBJECT LANDS

Project

TOWN OF DUNDALK

Drawing

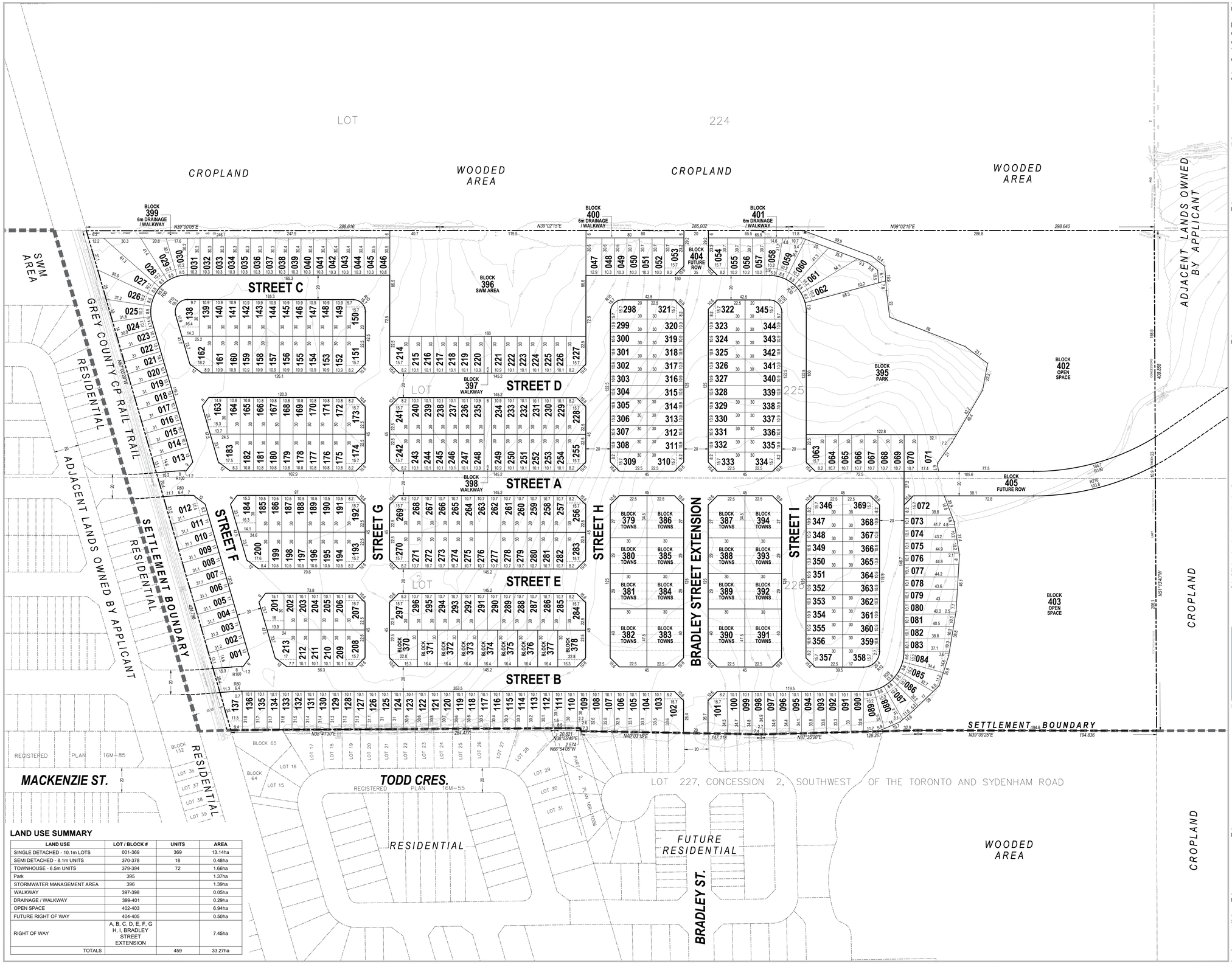
GLENELG EXPANSION LANDS

CROZIER CONSULTING ENGINEERS
Admiral Building
1 First Street, Suite 200
Collingwood, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

Drawn By	Design By	Project
D.K.	R.M.	1060-6220

Scale	Date	Check By	Drawing
N.T.S.	08/25/2022	R.M.	FIG. 1

J:\1000\1060-Flato Dev\6220- Glenelg Expansion Lands\CAD\Civil\Internal Review\2022.08.25_Figures\6220 - Site Location.dwg, 2022-08-25 4:55:20 PM, DWG To PDF.pc3



LAND USE SUMMARY

LAND USE	LOT / BLOCK #	UNITS	AREA
SINGLE DETACHED - 10.1m LOTS	001-369	369	13.14ha
SEMI DETACHED - 8.1m UNITS	370-378	18	0.48ha
TOWNHOUSE - 6.5m UNITS	379-394	72	1.66ha
Park	395		1.37ha
STORMWATER MANAGEMENT AREA	396		1.39ha
WALKWAY	397-398		0.05ha
DRAINAGE / WALKWAY	399-401		0.29ha
OPEN SPACE	402-403		6.94ha
FUTURE RIGHT OF WAY	404-405		0.50ha
RIGHT OF WAY	A, B, C, D, E, F, G H, I, BRADLEY STREET EXTENSION		7.45ha
TOTALS		459	33.27ha

LEGAL DESCRIPTION

PART OF LOTS 225 AND 226
CONCESSION 2, SOUTHWEST OF THE TORONTO AND SYDENHAM ROAD
GEOGRAPHIC TOWNSHIP OF PROTON
TOWNSHIP OF SOUTHGATE
COUNTY OF GREY

OWNER'S CERTIFICATE

I HEREBY AUTHORIZE MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED TO SUBMIT THIS PLAN FOR APPROVAL.

DATE: AUGUST 18, 2022

SHAKIR REHMATULLAH - PRESIDENT
DUNDALK VILLAGE TWO INC.

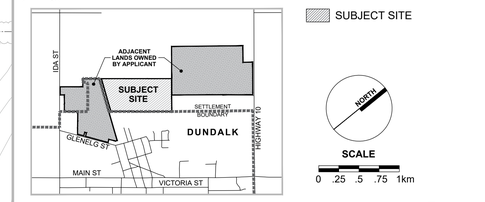
SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE: AUGUST 18, 2022

DAN DZALDOV - O.L.S.
SCHAEFFER DZALDOV BENNETT LTD.

KEY PLAN



LEGEND

- PROJECT BOUNDARY LINE
- RIGHT OF WAY LINE
- BLOCK LINE
- LOT LINE
- PARCEL FABRIC

REVISION No.	DATE	ISSUED / REVISION	BY

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT R.S.O. 1990 C.P.13 AS AMENDED

A. AS SHOWN
B. AS SHOWN
C. AS SHOWN
D. 369 SINGLES, 18 SEMIS, & 72 TOWNHOUSES
E. AS SHOWN
F. AS SHOWN
G. AS SHOWN
H. MUNICIPAL WATER SUPPLY
I. LOAM/SILT LOAM
J. AS SHOWN
K. ALL SERVICES AS REQUIRED (WATER, SANITARY, STORMWATER, HYDRO)
L. AS SHOWN

113 COLLIER STREET
BARRIE, ON, L4M 1H2
P: 705 728 0045 F: 705 728 2010
WWW.MHBCPLAN.COM
PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
MHBC PLANNING

STAMP

DATE	AUG. 18, 2022
FILE No.	15184AT
SCALE	1:1,400 (ARCH D)
DRAWN BY	M.M.
CHECKED BY	K.C.
OTHER	

PROJECT

GLENELG PHASE 3

DUNDALK VILLAGE TWO INC.
3621 HIGHWAY 7 EAST, SUITE 503
MARKHAM, ON L3R 0G6
P:(905) 479-9292 F:(905) 429-9165
WWW.FLATOGROUP.COM

NORTH

FILE NAME DRAFT PLAN OF SUBDIVISION

DWG No. 1 of 1

SCALE BAR

0 7 14 21 28 35 52.5 70 105 140m

MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

N:\Southgate\15184AT\Drawings\Draft Plan\CAD\

BLOCK 399 6m DRAINAGE / WALKWAY

BLOCK 400 6m DRAINAGE / WALKWAY

BLOCK 401 6m DRAINAGE / WALKWAY

BLOCK 404 FUTURE ROW

BLOCK 396 SWM AREA

BLOCK 397 WALKWAY

BLOCK 398 WALKWAY

BLOCK 395 PARK

BLOCK 405 FUTURE ROW

STREET C

STREET D

STREET A

STREET E

STREET B

STREET F

STREET G

STREET H

STREET I

BRADLEY STREET EXTENSION

GREY COUNTY CP RAIL TRAIL

RESIDENTIAL

CORBETT ST.

ADJACENT LANDS OWNED BY AP

SETTLEMENT BOUNDARY

RESIDENTIAL

SETTLEMENT B

ENVIRO PROTEC

BLOCK 379 TOWNS
BLOCK 380 TOWNS
BLOCK 381 TOWNS
BLOCK 382 TOWNS
BLOCK 383 TOWNS
BLOCK 384 TOWNS
BLOCK 385 TOWNS
BLOCK 386 TOWNS
BLOCK 387 TOWNS
BLOCK 388 TOWNS
BLOCK 389 TOWNS
BLOCK 390 TOWNS
BLOCK 391 TOWNS
BLOCK 392 TOWNS
BLOCK 393 TOWNS
BLOCK 394 TOWNS

BLOCK 370
BLOCK 371
BLOCK 372
BLOCK 373
BLOCK 374
BLOCK 375
BLOCK 376
BLOCK 377
BLOCK 378

SCALE: 1:1000

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2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

LEGEND

XXX.X — EX. CONTOUR
+XXX.XX — PR. ELEVATION
+XXX.XX — PR. ELEVATION (MATCH EX. ELEVATION)
PROPERTY LINE

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	1ST SUBMISSION	AUG/26/2022

Engineer

Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: PRELIMINARY GRADING PLAN

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
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Drawn By	Design By	Project
R.D.M.	K.S./A.W.	1060–6220
Check By	Check By	Scale / Drawing
K.S.	A.W.	1:1000 / FIG 3

BLOCK 399 6m DRAINAGE / WALKWAY

BLOCK 400 6m DRAINAGE / WALKWAY

BLOCK 401 6m DRAINAGE / WALKWAY

STORM DRAINAGE TO NORTH TILE DRAIN

BLOCK 404 FUTURE ROW

BLOCK 206 SWM AREA

STREET C

STREET D

STREET A

STREET G

STREET E

STREET B

STREET H

STREET I

STREET J

BRADLEY STREET EXTENSION

GREY COUNTY CP RAIL TRAIL

RESIDENTIAL

CORBETT ST.

SETTLEMENT BOUNDARY

ADJACENT LANDS OWNED BY RESID

RESIDENTIAL

BLOCK 395 PARK

STORM DRAINAGE TO EAST TILE DRAIN

BLOCK 405 FUTURE ROW

BLOCK 379 TOWNS
BLOCK 380 TOWNS
BLOCK 381 TOWNS
BLOCK 382 TOWNS
BLOCK 383 TOWNS
BLOCK 384 TOWNS
BLOCK 385 TOWNS
BLOCK 386 TOWNS
BLOCK 387 TOWNS
BLOCK 388 TOWNS
BLOCK 389 TOWNS
BLOCK 390 TOWNS
BLOCK 391 TOWNS
BLOCK 392 TOWNS
BLOCK 393 TOWNS
BLOCK 394 TOWNS

BLOCK 370
BLOCK 371
BLOCK 372
BLOCK 373
BLOCK 374
BLOCK 375
BLOCK 376
BLOCK 377
BLOCK 378

CONNECT TO SANITARY AND WATER SERVICING ALONG CORBETT STREET

CONNECTION TO FUTURE WHITE ROSE DEVELOPMENT PHASE 3.

STORM DRAINAGE TO SOUTHEAST TILE DRAIN

SETTLEMENT

SCALE: 1:1000

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5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

LEGEND

- APPROXIMATE SANITARY SEWER AND MANHOLE LAYOUT
- APPROXIMATE STORM SEWER AND MANHOLE LAYOUT
- APPROXIMATE RLCB LOCATION
- APPROXIMATE WATERMAIN LAYOUT
- PROPERTY LINE
- SANITARY DRAINAGE AREA TO WHITE ROSE DEVELOPMENT
- SANITARY DRAINAGE AREA TO SAN MH11 GLENELG PHASE 2
- SANITARY DRAINAGE AREA TO SAN MH9 GLENELG PHASE 2

Town

No.	ISSUE	DATE: MMM/DD/YYYY
0	1ST SUBMISSION	AUG/26/2022

Engineer

Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: GENERAL SITE SERVICING PLAN

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON, L9Y 1A1
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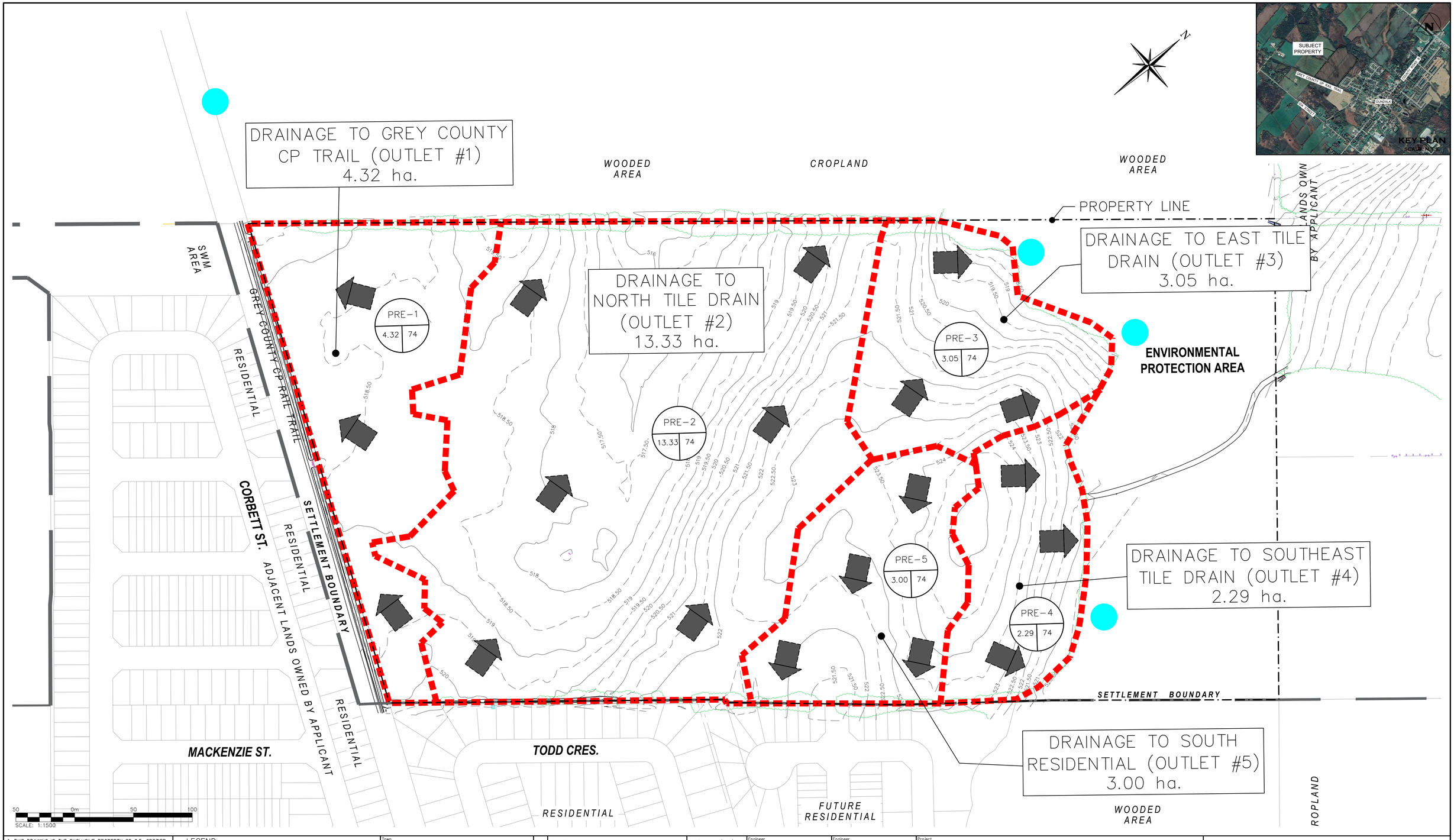
Drawn By	Design By	Project
R.D.M.	K.S./A.W.	1060-6220
Check By	Check By	Scale / Drawing
K.S.	A.W.	1:1000 / FIG 4



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5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

LEGEND
- OVERLAND FLOW DIRECTION
- CATCHMENT AREAS
- PROPERTY LINE
- PRE-X — DRAINAGE ID
- XX.XX | XX — AREA (ha.) | CN COEFFICIENT
- APPROXIMATE TILE DRAIN LOCATION

Town

No.	ISSUE	DATE: MMM/DD/YYYY
0	1ST SUBMISSION	AUG/26/2022

Engineer

Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: PREDEVELOPMENT DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
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Drawn By	Design By	Project
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Check By	Check By	Scale / Drawing
K.S.	A.W.	1:1500 / FIG 5

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LEGEND
- OVERLAND FLOW DIRECTION
- CATCHMENT AREAS
- PROPERTY LINE
- APPROXIMATE TILE DRAIN LOCATION

Town

No.	ISSUE	DATE: MMM/DD/YYYY
0	1ST SUBMISSION	AUG/26/2022

Engineer

Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: EXISTING TILE DRAINS AND PREDEVELOPMENT DRAINAGE

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
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Drawn By	Design By	Project
R.D.M.	K.S./A.W.	1060-6220
Check By	Check By	Scale / Drawing
K.S.	A.W.	1: 3000 / FIG 6

DRAINAGE TO GREY COUNTY CP TRAIL (OUTLET #1) 4.32 ha.

DRAINAGE TO NORTH TILE DRAIN (OUTLET #2) 13.33 ha.

DRAINAGE TO EAST TILE DRAIN (OUTLET #3) 3.05 ha.

DRAINAGE TO SOUTHEAST TILE DRAIN (OUTLET #4) 2.29 ha.

DRAINAGE TO SOUTH RESIDENTIAL (OUTLET #5) 3.00 ha.

PRE-1 | 4.32 | 74

PRE-2 | 13.33 | 74

PRE-3 | 3.05 | 74

PRE-4 | 2.29 | 74

PRE-5 | 3.00 | 74

PROPERTY LINE

SETTLEMENT BOUNDARY

ENVIRONMENTAL PROTECTION AREA

LANDS OWNED BY APPLICANT

SWM AREA

RESIDENTIAL

GREY COUNTY CP RAIL TRAIL

CORBETT ST.

ADJACENT LANDS OWNED BY APPLICANT

SETTLEMENT BOUNDARY

RESIDENTIAL

RESIDENTIAL

MACKENZIE ST.

TODD CRES.

RESIDENTIAL

FUTURE RESIDENTIAL

WOODED AREA

CROPLAND

WOODED AREA

WOODED AREA

CROPLAND

50 0m 50 100

SCALE: 1:1500

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LEGEND

- OVERLAND FLOW DIRECTION
- CATCHMENT AREAS
- PROPERTY LINE
- PRE-X | XX.XX | XX — DRAINAGE ID / AREA (ha.) | CN COEFFICIENT
- APPROXIMATE TILE DRAIN LOCATION
- GRCA REGULATION LIMIT
- SVCA SCREENING AREA (2021)

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	1ST SUBMISSION	AUG/26/2022

Engineer

Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: CONSERVATION AREAS & PREDEVELOPMENT DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
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COLLINGWOOD, ON, L9Y 1A1
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Drawn By	Design By	Project
R.D.M.	K.S./A.W.	1060-6220
Check By	Check By	Scale / Drawing
K.S.	A.W.	1:1500 / FIG 7

DRAINAGE TO GREY COUNTY CP TRAIL (OUTLET #1) 0.50 ha.

DRAINAGE TO PHASE 2 SWMF 1.28 ha.

DRAINAGE FROM PHASE 2 TO CP TRAIL (OUTLET #1) 0.78 ha.

DRAINAGE TO NORTH TILE DRAIN (OUTLET #2) 20.26 ha.

DRAINAGE TO EAST TILE DRAIN (OUTLET #3) 2.84 ha.

DRAINAGE TO SOUTHEAST TILE DRAIN (OUTLET #4) 1.09 ha.

CROPLAND

WOODED AREA

WOODED AREA

PROPERTY LINE

ADJACENT LANDS OWNED BY APPLICANT

SWM AREA

POST-1 | 0.50 | 55%

POST-2 | 18.83 | 69%

POST-3 | 2.84 | 40%

POST-4 | 1.09 | 55%

POST-5 | 1.28 | 70%

TR-1 | 0.78 | 78.5

SWMF | 1.43 | 50%

GREY COUNTY CP RAIL TRAIL

RESIDENTIAL

CORBETT ST.

SETTLEMENT BOUNDARY

ADJACENT LANDS OWNED BY APPLICANT

RESIDENTIAL

STREET A

STREET B

STREET C

STREET D

STREET E

STREET F

STREET G

STREET H

STREET I

BRADLEY STREET EXTENSION

BLOCK 395 PARK

BLOCK 402 OPEN SPACE

ENVIRONMENTAL PROTECTION AREA

BLOCK 405 FUTURE ROW

MACKENZIE ST.

TODD CRES.

SETTLEMENT BOUNDARY

FUTURE

SCALE: 1:1500

50 0m 50 100

SUBJECT PROPERTY

GREY COUNTY CP RAIL TRAIL

SOUTH AMABEL

DUNDALK

KEY PLAN
SCALE N.T.S.

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LEGEND

- OVERLAND FLOW DIRECTION
- CATCHMENT AREAS
- PROPERTY LINE
- POST-X | XX.XX | XX — DRAINAGE ID / AREA (ha.) | % IMPERVIOUS OR CN COEFFICIENT
- DRAINAGE AREA TO PHASE 2 SWMF
- DRAINAGE AREA TO OUTLET #1
- DRAINAGE AREA TO OUTLET #2
- DRAINAGE AREA TO OUTLET #3
- DRAINAGE AREA TO OUTLET #4

Town

No.	ISSUE	DATE: MMM/DD/YYYY
0	1ST SUBMISSION	AUG/26/2022

Engineer

Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: POST DEVELOPMENT DRAINAGE PLAN

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R.D.M.	K.S./A.W.	1060-6220
Check By	Check By	Scale / Drawing
K.S.	A.W.	1: 1500 / FIG 8

AREA

BLOCK 400
6m DRAINAGE / WALKWAY

REMAINS OF SNAKE RAIL FENCE

519.65 517.86 516.06 515.82 515.80 516.58 518.15

POST AND WIRE FENCE

041 042 043 044 045 046

047 048 049 050 051 052 053

BLOCK 404
FUTURE ROW

521.55

523.78 524.62

518.20
516.78
PERMANENT POOL 518.20

BLOCK 396
SWM AREA

BOTTOM OF POND 516.45

BOTTOM OF FOREBAY 516.62
PERMANENT POOL 518.20
EXTENDED DETENTION 519.03
HIGH WATER LEVEL 520.45
TOP OF POND 520.75
520.83

147 148 149 150

134 153 152 151

214 215 216 217 218 219 220 221 222 223 224 225 226 227

298 321
299 320
300 319
301 318
302 317
303 316
304 315

BLOCK 397
WALKWAY

STREET D

521.95

523.01

10 0m 10 20
SCALE: 1: 300

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Town

No.	ISSUE	DATE: MMM/DD/YYYY
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Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: PRELIMINARY SWMF#1

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Drawn By	Design By	Project
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Check By	Check By	Scale / Drawing
K.S.	A.W.	1: 300 / FIG 9

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LEGEND

- APPROXIMATE LOCATION OF PERMEABLE PAVEMENT
- PROPERTY LINE
- APPROXIMATE LOCATION OF TREE PITS
- APPROXIMATE LOCATION OF BIORETENTION

Town

No.	ISSUE	DATE: MMM/DD/YYYY
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Engineer

Engineer

Project: GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing: PROPOSED LID PLAN #1

CROZIER CONSULTING ENGINEERS
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Drawn By	Design By	Project	
R.D.M.	K.S./A.W.	1060-6220	
Check By	Check By	Scale	Drawing
K.S.	A.W.	1:1500	FIG 10